

Conservation needs to include a ‘story about feeling’

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Abstract

Can science properly serve as the exclusive or framing epistemology for conservation? It is argued here that, regardless of the ontological findings of science, its epistemology subtly reinforces anthropocentric bias by distancing the knower from the known in the name of value neutrality. If conservation is to escape the grip of anthropocentric bias, its underlying epistemology needs to be expanded to include very different ways of knowing, based on feeling and hence on caring, that may be found in certain Indigenous cultures.

Keywords

epistemology of science; methodological solipsism; relational epistemology; *liyan*; Caring for Country; Lawlands.

1. Science and the problem of anthropocentrism

The Cartesian days of seeing nature as blind mechanism and all living things apart from humans as complex automata, bereft of mind, are happily now passed. This Cartesian view, of humanity as the exclusive locus of consciousness in the universe, and hence the exclusive source of meaning and purpose, was a feature of the mechanical science of the 17th century. It represented the apotheosis of the anthropocentrism that had characterized Western civilization since its origins. In the modern era, the era that began with the Scientific Revolution, nature has consistently been viewed in purely instrumental fashion, as mindless matter to be treated in whatever manner humans saw fit, thereby legitimating the exploitation and despoliation of the natural environment on an unprecedented scale. Modern industrial civilization, in the West and elsewhere, is still basically science-based, inasmuch as its economy is almost entirely designed and defined by science, but science itself is increasingly challenging the Cartesian view of matter, as scientists – particularly biological scientists - are progressively bringing to light new layers of mind in nature.

But will these recent developments that are opening windows into exciting new worlds of nonhuman thought and consciousness expand the moral horizons of industrialized societies? Will they expose as unconscionable the instrumental attitudes that are currently ravaging the biosphere? Will acknowledging that the emotional lives of many animals are essentially the same in range as our own, as the neurologists who signed up to the Cambridge Declaration on Consciousness in 2012 attested, lead us to treat animals with due moral respect? Will the realization that certain species of ants and bees make decisions and learn from experience induce us to take insects seriously, in a moral sense? (Holldobler and Wilson 2009) Will the claim that plants also have intelligence and memory and a disposition to cooperate with one another, as, for example, by supporting one another with nutrients and warnings in times of need, lead us to include them and the communities they comprise in our moral universe? (Pollan 2013; Wohlleben 2015; Maher 2019) Will these revelations induce us to consider nature not merely as a stockpile of resources – or set of theoretical problems to be solved - but as a vast thinking manifold deserving of moral attention in its own right?

If we rely *exclusively* on science for our understanding of the biosphere, then perhaps not. We might instead remain morally blind to other-than-human life-worlds, because, despite the intellectual interest that the new research on mind in nature may arouse, its objects will still not be psychologically salient to us. Or this is what I shall argue in the present paper. In making this claim about science, I shall be using the term, *science*, not in its widest sense, which applies to systematic knowledge of any kind, but in the narrower sense denoting the specific form of inquiry that originated, in its methodological essentials, in the Scientific Revolution of 17th century Europe, and that is now practised in educational and research institutions throughout the world.

On what basis might one argue that science, whatever its theoretical findings with respect to reality, may continue, at a subtle level, to reinforce anthropocentric attitudes? To answer this, let us consider the distinction between the *ontologies* offered by science, on the one hand, and science as *epistemology*, as a distinctive *way of knowing* reality, on the other. Let us focus, in other words, not on the ‘facts’ discovered by science, on what science reveals about the world ‘out there’, but on the attitude it imposes on *us*, as knowers, in relation to those ‘facts’. The first rule of science as epistemology is the requirement of value-neutrality: the knower must, if she is to avoid projecting her own desires, prejudices and preconceptions onto the object of inquiry, bracket her personal ends, agency, emotions and expectations and attend only to rigorously selective evidence. She must step back from the object of inquiry, adopting the stance of a ‘detached observer’ with respect to it, lest it sway her investigation through any kind of direct communicative engagement with her.¹

¹ In the 1980s and 1990s, feminist philosophers and historians of science offered wide-ranging critiques of objectivity as this concept figures, normatively, in science. As an alternative to the standard epistemology of objectivity based on detachment, or separation of knower from known, they put forward relational epistemologies based instead on affect and attachment. (Mathews 1993; Anderson 2020) This is the broad theoretical basis for the critique of objectivity offered the first section of the present

The object is thus to become, for the purposes of the inquiry, something of purely intellectual interest to the inquirer. This stance of detached neutrality is key to the guiding ideal of *objectivity* which is so definitive of classical science and is the linchpin of its authority in society.

It is worth looking at this stance of detached neutrality in a little more detail to see how deeply it informs core aspects of scientific method. To ensure that the stance is achieved, certain conditions are imposed on the kind of evidence that may be used in support of scientific hypotheses. Such evidence must in the first instance be *empirical* and in principle universally accessible – it should not, for example, be accessible only to persons with special (eg mystical or supernormal) epistemic powers or faculties. Nor, in the second instance, should it consist in inherently one-off occurrences, since the claims of one investigator must in principle be *testable* by others if subjective distortions in those findings are to be detectable. In other words, the observations used to support a scientific claim must be *repeatable*: other investigators, in different circumstances and of different backgrounds, must be able to make the same set of observations for themselves. This methodological requirement of repeatability in turn gives rise to a preference, within science, for the *experimental method*. By making observations within the controlled conditions of a laboratory, an investigator is more likely to be able to satisfy the requirement of repeatability than if she simply observed events in the field. Other investigators can in principle set up the same conditions in their own laboratories, thereby verifying or falsifying the first investigator's findings. Fieldwork is of course also allowable, but it should be conducted in ways that may be replicated by other fieldworkers, and its findings should ideally be backed up by experimental eg genetic findings. In these ways the pursuit of objectivity through the stance of detached neutrality gives rise to certain broad methodological norms that are basic to the self-understanding of modern science. (Mathews 1993)

Such a stance of detached neutrality is of course highly commendable inasmuch as it does prevent unintentional bias, intentional ideological distortion, emotional attachment or self-interest from warping knowledge. The contempt for facts and preference for politicized fantasy that the advent of social media has recently unleashed in public discourse highlights the extreme importance of value-neutrality in inquiry. But there is also a cost to this requirement: as soon as one adopts the stance of detached observer with respect to an 'object', one positions oneself, for the purposes of the inquiry, beyond the influence of that 'object'. This means that one must pre-empt any communicative overture on its part, while also withholding any communicative response or overture of one's own. It is paramount that no relationship of an affective kind – whether positive or negative – be allowed to intrude into the inquiry, since affect with respect to the 'object' may sway one's findings.

Well intentioned and in many ways commendable though this methodological intention may be, it overlooks the fact that the method of detached observation

paper; more specifically, this critique draws on and adapts the foundational work of Evelyn Fox Keller. See Keller 1985.

effectively gives rise, at a subtle, phenomenological level, to a *solipsist* stance. For while it does not question the subjectivity of the knower, it implicitly denies that the known is, in its relation to the knower, also a subject, since the known is denied the capacity, intrinsic to subjects, to signal its subjectivity communicatively to others. The knower thus becomes, for the purposes of the inquiry, a lone subject in a world of 'objects', objects that are rendered by the rules of the inquiry incapable of communicativity and responsiveness relative to him.

This is not of course to say that the knower is unaware that the known may engage communicatively and responsively with other entities in the object-realm posited by the inquiry. In that respect the knower may be prepared to admit theoretically – ontologically – that the known is possessed of subjectivity. But at a phenomenological level, he himself, as knower, remains outside that object-realm. Qua scientist then, he continues to occupy an effectively solipsist stance with respect to the object-realms of his inquiries.

Societies epistemologically and ideologically rooted in science, as modern industrial societies are, will similarly implicitly occupy a solipsist stance with respect to the object-realms posited by their institutionalized scientific practices. In the 19th century, these object-realms included not only fauna and flora and indeed the whole of nature but, notoriously, Indigenous peoples as well, who were studied – observed, examined, measured, dissected – in exactly the same way as were fauna. In the 21st century this object-realm, as posited by science, no longer includes Indigenous peoples but continues to include fauna and flora and the rest of nature.

Methodological solipsism, enacted at a phenomenological level as a denial of subjectivity to the objects of knowledge, may not be the only way in which science, taken as exclusive guide to the nature of reality, limits our view. For it may turn out that there exist additional dimensions of understanding that depend upon direct communication and collaboration between knower and known. Direct communication and collaboration might, in other words, bring to light further aspects even of ontology that would otherwise remain hidden. Consider, for example, a case in which a knower is studying a wildlife community. Instead of merely stepping back, in science mode, and seeking to observe the behaviour of its members from a vantage point outside the community, she attends to them while also inviting individual animals to engage communicatively with her. She may discover, in consequence, behaviours that would not otherwise, under normal conditions, have become manifest. She might discover moreover that different individuals respond differently to her or perhaps that a particular individual responds differently to different knowers. In short, the empirical natures of things may turn out not to be 'exhausted' by the attributes and repertoires they display in their normal environments and circumstances. Their responsiveness to the address of particular knowers may elicit potentials in their nature that had not hitherto been detectable.²

² Such a relational approach has become familiar through the work of popular ethologists such as Jane Goodall.

The classical scientific requirement that the knower remain insulated at a communicative level from the system under investigation may then miss opportunities for knowledge that might be gained precisely by opening the system up to new levels of relationship. It is not inconceivable after all that a communicative impulse might lurk at the very core of reality, with the consequence that opening systems up to such new levels of relationship might reveal unsuspected depths of communicative capacity not only in all manner of organisms but in the cosmos as a whole. (Mathews 2021b) Indeed, such unsuspected depths of communicative capacity may prove to be the most important dimension of reality for our understanding of the purpose and meaning of all life, and most especially of human life. (Weber 2017; Mathews 2021b)

Informed as it is with an epistemology that solipsizes the knower and ‘ex-communicates’ whatever the scientist seeks to know, science subtly undergirds anthropocentric attitudes to nature. To the extent that science is permitted to dictate the goals and methods of the conservation movement then, this movement is likely to remain captive to anthropocentric bias in its policy if not in its rhetoric. This is so despite the fact that contemporary science is itself bringing to light ever-increasing evidence of intelligence in biological systems. Evidence of such intelligence does not overcome the affective gap that science itself enacts between the scientific knower and the ‘knowns’ of science. At an affective level, the gap between knower as subject and known as object inflects the knower’s sense of what truly matters, morally speaking, and what does not.

The goals of the conservation movement have of course historically been shaped by attitudes not derived exclusively from the practice of scientists. People seek to protect the natural environment for all kinds of reasons, including their own experiences of personal connection with fellow beings or of belonging to ecological communities, experiences that have arisen in other-than-scientific contexts. Indeed, it is surely the case that a great many conservation scientists themselves are drawn to their profession as a result of such experiences. But a distinction needs to be drawn between values that originate within the practice of conservation science and values that are imported into its discourse from outside. Values of the latter kind remain open to contestation amongst scientists and all who rely on science to underwrite the legitimacy of conservation discourse. Indeed, if the present argument from phenomenology is correct, external values arising from personal experiences of connection or belonging are in outright tension with the incipiently anthropocentric values that arise from the actual practice of science.

A conservation movement premised on a sense that the biosphere represents a community of fellow beings rather than a mere object-domain characterised in terms of scientific categories such as ‘biodiversity’ or ‘biomass’ may then be in tension with itself if it relies exclusively on science for its legitimacy. While it is unquestionable that scientific protocols will still prove invaluable and indispensable in providing ‘data’ for conservation interventions, the framing epistemology – the one that internally sets the normative parameters for the

conservation project – may have to be expanded so as to enable the engagement of the knower with the prospective known. Knowing, within this new epistemic frame, would no longer be a matter merely of abstract cognition but would need to implicate mutual feeling and conativity (understood as the will of each thing to persevere in its own existence) in the respective parties. In this sense it would no longer be correct to characterize knowing as an entirely separate faculty: knowing would have become integral to a larger condition of communicative and conative co-existence.

Where might such an expanded epistemology be found? While it might be prefigured to some degree at a philosophical level, philosophy can never fully disclose it since any purely theoretical exercise will tend to re-enact at a phenomenological level the distancing protocol that gives rise to the solipsistic stance. An expanded epistemology can only be fully discovered by knowers resituating themselves on Earth as collaborators with and within ecological communities.

2. Alternative Epistemologies from Aboriginal Australia

Although exponents of such an epistemology are unlikely to be found in the contemporary academy, one does not have to seek too far afield to find them. From a range of different First Nations societies around the world we hear testimony to ways of knowing that emanate precisely from a larger condition of co-existence and partnership with ecological communities.

For the purposes of this paper I shall (as an Australian attuned to my local cultural context) focus on testimony drawn from Aboriginal Australia, specifically from three Senior Lawmen (SLM): Bill Neidjie, from Kakadu in the Northern Territory and David Mowaljarlai from the Kimberley in Western Australia, whose ‘oratories’ have been insightfully interpreted by Indigenous scholar, Christine Black; and Paddy Roe, also from the Kimberley, who entrusted his colleague, Frans Hoogland, and others with the task of publicly transmitting aspects of his traditional knowledge. The testimony of these Senior Lawmen conveys an epistemological alternative that may be found, albeit in varying forms, in other Aboriginal societies around Australia. It is very likely also a component of traditional epistemologies in a variety of other Indigenous societies, though discussion of this is beyond the scope of the present paper. (Black 2011, 16)

All three Senior Lawmen emphasize that Aboriginal ways of knowing cannot be extricated from *feeling*. Drawing particularly on an ‘oratory’ left by Bill Neidjie, *Story about Feeling*, Black explains how one comes to know the land and its beings not by adopting a stance of detached observation but by cultivating a sense of intimacy and partnership with them. Rather than stepping back from land, as the scientific observer does, Neidjie urges the knower actively to *address* land and its beings, acknowledging affinity and seeking collaboration with them. As Black says, “the land-centredness of Aboriginal culture is not based on reason or theory, faith or scriptural authority, but on feeling.” (Black 2011, 41) She quotes Hannah Bell, long-time student of SLM Mowaljarlai: “you must suspend your more familiar intellectual thinking in favour of sensory receptivity,

awareness, and responsiveness. Above all, you must observe nature mindfully, listen to the elements carefully and receive knowledge subjectively.” (Black 2011, 23-24)

To receive knowledge subjectively in this sense is not to project one’s own emotion onto the known but to attend to it empathically, with an expectation of the possibility of relationship, of intimacy, of a certain kind of interior access. It is, in a word, to receive knowledge through feeling. This involves a high degree of attentiveness to the ecological patterns as well as to the minutiae of one’s local surroundings together with a deeply embodied responsiveness to whatever is going on there. In the languages of the Kimberley, this faculty of cognitive feeling is known as *liyan*, a word that signifies a visceral way of knowing that is shared not only by people but by all beings and by land itself. Frans Hoogland, in dialogue with Paddy Roe, explains *liyan* as follows.

“In order to experience [this feeling], we have to walk the land. At a certain time for everybody, the land will take over. The land will take that person. You think you’re following something, but the land is actually pulling you. When the land starts pulling you, you’re not even aware you’re walking – you’re off, you’re gone. When you experience this, it’s like a shift of your reality. You start seeing things you never seen before. I mean, you’re trained one way or other and you actually look through that upbringing at the land.....And all of a sudden, it doesn’t fit anything. Then something comes out of the land, guides you. It can be a tree, a rock, a face in the sand, a bird.....Then another thing might grab your attention, and before you know it there’s a path created that is connected to you. It belongs to you, and that is the way you start to communicate with the land, through your path experiences. And that path brings you right back to yourself. You become very aware about yourself. You start to tune finer and finer. Then you become aware that when you’re walking the path, it’s coming out of you – you are connected to it....[When this happens] we get a shift in mind that drops down to a feeling. Then we wake up to feeling, what we call le-an [*liyan*] here, and we become more alive, we start feeling, we become more sensitive. You start to read the country.....Then you wake up,....and the country starts living for you. Everything is based on that feeling le-an [*liyan*], seeing through that feeling.” (Sinatra and Murphy 1999, 19-21)

To experience the land’s responsiveness to one’s own presence in this way cannot leave one other than profoundly moved. To sense that one is noticed and intimately acknowledged by land is to experience a metaphysical affirmation that anchors one’s existence in a level of reality that lies beyond the ordinary. Although this experience is subjective, in the sense that it relies on *interpretation* of communicative cues - as indeed does all communicative exchange - it may involve a self-evidence at the level of affect that will render it resistant to skepticism: just as ‘seeing is believing’, so is feeling, properly understood, believing. It is this kind of feeling – a blend of sensory attunement, visceral resonance, conative investment and even a sense of entry into the inner life of the cosmos – that is generally so absent in the scientific experience of land. Once such a way of knowing-through-feeling has been discovered however, there can be no question of relegating land to some object-realm exclusively defined – and

thereby disenfranchised - by theory. Slipping under the subject-object divide by way of cognitive feeling implicates land in one's own being. One will, in the words of Anne Poelina and her Indigenous and non-Indigenous co-authors, have 'become family with it'. (Poelina et al 2020; Woollorton et al 2020b) Land, under this aspect, is perceived as Country, in the distinctive Aboriginal sense. "Country is living, responsive and caring, and [the word] is capitalised to denote an Indigenous understanding of one's place, which connects people, socio-economic systems, language, spirit and Nature through interrelationship." (Woollorton et al 2020a) The upshot of the shift from knowing as an outsider, the traditional Western stance, to becoming family with Country, knowing it as an insider through feeling, is that we discover that if we have love for Country, "Country will have love for us." (Woollorton et al 2020a).

Knowing through feeling emanates from an underlying phenomenological orientation that takes *relationship* for granted as the basic condition for life. Relationship is a pre-condition for the feeling that in turn orients one to one's world. Through feeling, as Neidjie explains, the knower is able to sense in his own body to what extent his immediate environment is in or out of balance. Balance is understood as a dynamic and continuous process of restoring symmetry between competing forces in a field of energies, energies representative of the distinct but related components of the environment. Each of these components has its own conative trajectory but at the same time must, if the system is to remain generative for life, allow its trajectory to be bent or adapted in response to conative pressures from others. The conative trajectories of distinct components must remain mutually responsive and co-adaptive in this way if relationship is to be preserved: unbalanced relationships result ultimately in the collapse of distinction between parties and hence in the collapse of relationship itself. Relationship in the relevant sense then requires an ongoing stance of active accommodation with respect to others who are at the same time acknowledged as autonomous centres of self-activity. [Black 2011; Rose 1992; Mathews 2020]

In Aboriginal societies, this insight into relationship as a condition for feeling and hence for knowing, and of balance as a condition for ongoing relationship, functions as a root intuition. (Graham 2019) Read as a normative premise for metaphysics per se, it is articulated as Law, a Law which is patterned into the fundamental structure of reality. Whilst Law is storied in different ways across different Aboriginal nations within Australia, the underlying intuition remains that it is fundamentally a Law of Relationship. (Black 2011; Graham 2019)) The truth of this intuition is borne out at an empirical level by the evidence of inexhaustibly complex ecological inter-dependencies in local environments, but it is definitively revealed, as already noted, at a more visceral level, via the knower's capacity to feel the energies in the fields of relationships that surround him. This capacity, like other cognitive modalities in humans, may be cultivated or repressed by specific education systems or enculturation processes. In many modern societies today it has been repressed in favour of different cognitive eg theoretic modalities. But with appropriate training the student may gradually become so attuned to Country as not only to detect departures from Law in her immediate surrounds but become disposed herself to act spontaneously in

accordance with Law, without need for external inducements or threat of penalties. (Black 2011, 25) To be aligned in this inner way, through feeling, with the Law that is at work in all things is to experience directly the dynamic of relationship that is needed to bind things into the coherent patterns of continuity-through-change that characterize life.

While Law in this sense is describable abstractly as a principle of mutual accommodation and balance, it may not be *known* merely *in abstracto* but must also be directly experienced as a state of the knower's own being. (Black 2011, 36) Because it is known directly in this way, becoming apprised of Law is necessarily at the same time a process of falling under that Law oneself.

3. But how can feeling be taught?

All this is of course a world away from contemporary conservation science, but in light of the ecological catastrophe to which modern science-based civilization has given rise we might well wonder whether science has shown itself to be an altogether reliable guide to reality. Perhaps it is time to consider whether certain older, ecologically-proven ways of knowing, such as those evinced in Aboriginal Australia, might better frame the goals of conservation.

To suggest this is not, again, to deny that Western science will continue to play a major role in the conservation project, but only that its limitations as an orienting epistemology will be acknowledged. Nor is it to say that Aboriginal epistemologies may not also benefit from rapprochement with science: in some quarters, Aboriginal thinking may have accreted fallacies – such as that human deaths are invariably a consequence of sorcery – that could usefully be peeled away by scientific method. Any such imputation of fallacy would need to be carefully scrutinized however in a process of cross-epistemic dialogue, since dismissing Aboriginal belief systems as 'primitive' and 'superstitious' has been a standard colonial tactic. Nevertheless, there is no reason to suppose *a priori* that Aboriginal belief systems are infallible, and a potentially fruitful dialogue may await conservationists in this connection.³

Similarly, to take up the suggestion that the epistemological parameters of conservation need to be significantly expanded in the way that has here been outlined does not imply that the epistemologies of all colonised or subjugated societies should, as a matter of ideological principle, be retrieved and prioritized in conservation discourse. The 'story about feeling' featured in this paper has

³ It would also be a mistake to relegate Aboriginal epistemology to the status of religion. As Black, commenting on the 'oratories' of Neidjie and Mowaljarlai, points out, the way of knowing to which these SLM testify is arguably even more deeply empiricist than science. (Black 2011, 47) This is an empiricism that has not begged the metaphysical question by ruling out at the start, as science does, the possibility of communicative engagement between knower and known. Science rules out such engagement by insisting, as a matter of self-definition, on the stance of value neutrality and hence of detachment. But there is no reason thus to suppose dogmatically at the outset that the ultimate nature of the cosmos may not require, for its divulgence, a process of rapprochement between knower and known.

been selected for attention because it redresses a perceived major flaw in the epistemological foundations of science, a flaw that is arguably perpetuating objectifying attitudes to Earth that vitiate the conservation effort. The argument of the paper is in no way a call for epistemological relativism, but on the contrary a call for a *better* epistemology, one which affords us as knowers more reliable access to reality.

Were the type of expanded epistemology advocated here to be prioritized in conservation, a major reorganization of conservation policy making and education would be required. In Australia this would involve conservation professionals becoming enculturated into Aboriginal epistemology and hence Law as part of their conservation training. Induction into Aboriginal epistemology would need to take place on Country rather than in centralized educational facilities such as universities, since Aboriginal epistemologies, as has been indicated, arise out of actual relationships with local environments and cannot be adequately transmitted via texts. (Black 2011; Emmanouil 2016; Woollorton et al 2017, 12; Mathews 2021) Such training would also of course need to be offered by locally acknowledged Aboriginal knowledge-holders. As an educational initiative, this might be viewed as a continuation of the Bush University project, a project instigated in the Kimberley in the 1990s by SLM Mowaljarlai in reaction to the co-optation of Aboriginal knowledge by non-Indigenous academics. "Bush University. We do that thing in our country. Tell our own stories. Professors can come and learn from us, proper way." (Bell 2009, 30)

Knowledge acquired on Country however can be fully conveyed only in the relevant local Aboriginal languages, since many of the descriptive and conceptual resources of those languages cannot be translated into English. (Bradley 2017; Woollorton and Collard 2017; Woollorton et al 2020b) This point is underlined by the discourse of biocultural diversity, according to which the ecological specifics of particular environments are only captured in locally evolved languages. When those languages are lost or ignored, the associated knowledge is lost. Without the capacity adequately to describe an environment, the capacity to manage it competently also disappears. (Mathews 2021; Maffi 2001) Some basic grounding in local language would therefore figure as part of such *in situ* conservation training.

In light of these proposals, key Aboriginal communities might, with the consent and enthusiasm of their members, be revisioned and partly reorganised as places of instruction - educational centres in their own right. New professional and support roles, together with new local industries, would be required to serve this purpose. De-centralizing aspects of conservation education in this way in accordance with the localism of Aboriginal method would not only then expand the horizons of conservation education itself but also provide a strong new backbone of training and enterprise around which to re-organize the struggling economies of remote Indigenous communities, which are presently often dependent on welfare and mining royalties. That 'culture and conservation' should become the backbone of these economies, so that communities would be less susceptible to incentives emanating from destructive extractive industries such as mining and inappropriate agriculture, has already been proposed by

advocates such as Anne Poelina. (McDuffie 2012) The present argument for the reorganisation of conservation education strengthens this proposal.

In Australia, many conservation projects that reference local Indigenous knowledge, employ Aboriginal rangers and include consultation with Traditional Owners are already under way, especially in remote areas.⁴ But these programs tend to assimilate local Indigenous knowledge to the Western mind-set that perceives such knowledge as merely affording additional databases rather than as prescribing an entirely different mode of cognition. (Muir et al 2010) ‘Two-way thinking’, which is properly understood in truly dialogical terms (Bell 2009), tends in other words to be interpreted in policy reports as “two-way knowledge engagement between Indigenous and scientific ‘tool-boxes’ for management”. (Hill et al 2013, 2) But as Muir et al point out, “management [from an Aboriginal perspective] is not a toolkit”. (Muir et al 2010, 260) It is a process, an ethos of interaction amongst people, other living beings and non-living elements of the environment.⁵ As such it cannot simply be tacked onto the Western paradigm but calls for a major revision and expansion of that paradigm.⁶ Arguably then, two-way thinking is not a modality that is properly the province of Indigenous people only but is rather an appropriate approach for conservation per se, an approach that situates Aboriginal epistemology at the core of all conservation education. Conservation professionals would be trained by Aboriginal knowledge holders - or by instructors certified by Aboriginal knowledge holders - on Country, as an integral part of conservation education.

⁴ The Indigenous Ranger Program, for example, is deployed in Indigenous Protected Areas across Australia. See <https://www.countryneedspeople.org.au/what-are-indigenous-rangers> See also Hill et al, 2013.

⁵ In a North American context, Whyte et al develop a similar argument in terms of the contrasting protocols adopted by Indigenous and Western scientists in their attempts to know the world. They sum this contrast up beautifully. “...it seems Indigenous protocols may approach the human condition as not a struggle to know the universe; the condition rather is to know ourselves well enough so we can act morally in the universe.” (Whyte et al, 2015; 8).

⁶ This an ambiguity which also infects currently emerging calls for the de-colonisation of science generally. At present such calls are largely sociological rather than philosophical in scope. They point to discriminatory practices in the education, funding and hiring of scientists and demand more inclusiveness at an institutional level, particularly in settler societies. Calls at a slightly deeper level enjoin inclusion of Traditional Ecological Knowledge in the data sets of scientific investigations eg traditional medicinal plant species in pharmacological research. That much deeper epistemological or phenomenological critiques of science may emanate from pre-colonial perspectives is sometimes flagged, but has so far been little explored. Linda Nordling notes, writing about South Africa, that while many universities have recently set up committees to de-colonise their curricula, where this involves “making way for the local philosophy and traditions that colonists had cast aside”, the question of how to de-colonise the natural sciences is more complicated. “Does decolonizing science mean throwing out Isaac Newton, Charles Darwin and Gregor Mendel, and starting afresh with indigenous knowledge?” Only a small minority of scientists in South Africa would agree to this, she says. The question of how to effect a de-colonisation of science is thus presently rather obscure though acknowledged as important. (Nordling 2018)

One example of this approach, afforded by a West Australian research team based in Broome and Perth, shows how Indigenous and non-Indigenous epistemologies may be woven together to construct a new, two-way model of conservation education. This new model teaches a co-operative form of inquiry or 'thinking-together' (Heron 1996; Reason 2006) which is sensitive to the particularities of place, affective and responsive as well as empiricist in its approach to that place, inclusive of narrative elements under its addressive aspect and prepared to leave questions of ontology open rather than foreclosing them prior to the investigation. (Wooltorton et al 2020b) Using this approach, Poelina, Wooltorton and their colleagues offer the notion of "'becoming family with place' as an onto-poetically integrated practice of engagement, to facilitate place-based kinship and renewed participation. Country needs the discourse of love, care and relationship, in the languages it understands – one of which is kinaesthetic and empathic. It needs humans who feel and hear Country, and respond." (Poelina et al 2020, 13)

Australia is well-endowed with Indigenous knowledge holders who are keen to induct non-Indigenous compatriots, including conservation professionals, into better ways of 'caring for Country'. Mowaljarlai himself described this knowledge as the 'Gift' that Aboriginal Australia was trying to give the world. "'We have a gift we bin trying to give you, but you blocked from hearing us! Now we only got a little bit of time left ..." (quoted in Bell, undated)⁷ Indigenous knowledge traditions in other parts of the world may yield similar epistemic resources, particularly in settler societies. (Borrows 2018; Kimmerer 2013; Nelson and Shilling 2018; Black 2011, 16) Plainly however there are also many countries in which traditions with the potential to yield such resources are no longer extant. Yet the example of an effectively de-colonised conservation practice in settler societies may in due course infiltrate and begin to open up the practice of conservation globally.

Finally, an expanded conservation discourse, which includes, indeed prioritizes, epistemological possibilities wider than those of science and is open to ontologies that exceed materialist premises, will call for conservation categories that encompass these larger possibilities. The category of 'biodiversity', for example, which in the 1980s overtook the earlier category of 'wilderness', was arguably introduced in order to bolster and legitimate conservation by fully 'scientizing' its discourse. (Mathews 2020) 'Wilderness', with its romantic and subjective connotations, was, by the 1980s, deemed a liability in winning full respectability for conservation. The term *biodiversity*, by contrast, served to define in fully scientifically rationalized terms what it was that conservationists sought to protect, thereby increasing the credibility of their project. Conservation has been broadly understood at a popular level as biodiversity conservation ever since. But reliance on biodiversity as a framing category has also served to entrench the objectifying tendencies outlined in this paper,

⁷ Indeed, this willingness to share knowledge as a gift is implied in the historic Uluru Statement from the Heart: "We seek constitutional reforms to empower our people and take a *rightful place* in our own country. When we have power over our destiny our children will flourish. They will walk in two worlds and their culture will be a gift to their country." <https://ulurustatement.org/the-statement>

tendencies which undercut the possibility of affective commitment of the knower to the known. The result, as we have seen, may be a subtle 'ex-communication' of other-than-human life that leads to a psychologically distanced relation to it.

New categories, which include, as connotation, a 'story about feeling', may therefore be required. One category around which conservation might reconfigure itself is that of Law, understood in the Aboriginal sense as an ordering principle immanent in land itself – a principle of mutual accommodation and adaptation that ensures ongoing regenerativity. As has been explained, Law is revealed to the knower through cognitive feeling and applies as much to the person of the knower as to the natural environment. In this way Law might be posited as a normative compass to guide our conservation efforts. Lands that conform in their ecological integrity to Law might be designated 'Lawlands'. To manage lands, whether restoratively or for the purposes of preservation, so that they achieve or maintain the condition of Lawlands might be seen as an ultimate goal of conservation. (Mathews 2020)

The category of biodiversity, along with innumerable other scientific categories, metrics and methods, must surely remain integral to the nuts and bolts of environmental management. Science in general unquestionably offers what might be described as a noble truth of its own as a mode of epistemic access to reality. But it represents a recent addition to our human heritage – it is only a few hundred years old. As such, science has not yet been integrated into the deeper grooves of consciousness that the long history of human experimentation with cognition has laid down. Here in Australia we are just beginning, as a nation, to situate ourselves not merely within the two hundred year history of colonialism but within the still living story of 60,000 years of human habitation of this continent. Science has yet to find its place within this longer story. That it should do so, and do so soon, has now become a matter of urgency as the biosphere enters a period of radical instability. Conservation discourse seems a logical place to begin this process of integration.

4. Conclusion

New conservation epistemologies then, together with new matching categories, such as Lawlands, could help to transform conservation from a technical, science-based discourse into a fully fledged discourse of 'caring for Country'. As such it would signal what has arguably been the deeper conviction of the conservation movement all along: that caring for our Earth is, or ought to be, nothing less than the core of all human endeavor.

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