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More than Science: Reflections on Science, Spirit, Tradition, and Environment

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In this paper, I argue that two ways of knowing and forms of knowledge have provided the evidence we need to know that our modernist, rationalist worldview of the environment stands in the way of 'better knowing for better responses' to environmental sustainability. I argue that this knowledge - provided by traditional forms of science on the one hand and traditional indigenous knowledge on the other - has found us wanting. In keeping with the question 'Can spirituality transform our world?' I explore whether spirituality has the transformative power we need to motivate us to change our lifestyles in ways that are more consistent with these two bodies of knowledge for environmental sustainability. I consider this in light of an understanding that science (by which I mean these two different forms of knowing derived through empirical research) provides evidence but not ethics for environmental sustainability. I end with brief consideration of what traditional environmental knowledge offers to support the view that many cosmologists in the Western scientific tradition have reached.

KEYWORDS science, spirituality, tradition, environment

Introduction

This paper was given as a keynote address to the Fourth International Conference of the British Association for the Study of Spirituality which asked '*Can spirituality transform our world?*' (Manchester, UK, 23-27 May 2016). It is a personal account of how I approached the challenge to answer that question. In preparing the paper, several seemingly disparate experiences shaped my thinking about how to approach the topic of 'science, spirit, tradition, and the environment'. I was not thinking at the time that this reflective piece would find its way into an academic journal. Now that it has, it might best be described as a rather unorthodox approach that invites you, the reader, to ponder on your own understanding of spirituality - stimulated, hopefully, by mine.

When I wrote the abstract over a year ago, I had in mind the idea that science and spirituality belonged in different camps and thought that trying to find empirical foundations for our religious and spiritual beliefs was fruitless and unnecessary: Knowledge was one thing, belief something entirely different. Transcendentalism belonged in the realm of spirituality, not science. This was not to say science was wanting: scientists have taught us a great deal about the environment and environmental sustainability. The problem was not with science but with our modernist worldview. What was needed was a perspective transformation: a complete change in values and attitudes away from individualism and

materialism toward relationship and connectedness. Only then could we follow the direction in which science was taking us. The map – the ideas with which I began – proved to be a poor depiction of the territory I was traversing. Several key markers helped me in coming to these conclusions.

Key markers

First, John Coates, my friend and fellow traveler on my journey into spirituality and the environment through our writing over many years, pointed me in the right direction and for this I am truly grateful (see for example Coates, Gray & Hetherington 2006, 2007, 2013; Gray & Coates 2010, 2012a, 2012b, 2013, 2015; Gray, Coates, Yellow-Bird & Hetherington 2013).

Second was Alan Alda's (2016) talk to the National Press Club in Australia on science communication - about the importance of how you communicate your message and how some scientists are not that good at this.

Third, there was a book called *Science and Spirituality* by John Ryan (2016) which itself has an interesting side story. I came across this title from an obscure publisher in Malawi and thought it would be just what the doctor ordered. When it arrived, my first thought was what a poor excuse for a book – more like a paper, so small was it. But, fortunately, good things come in small packages and from surprising quarters. I was looking for insights into African tradition in a title from Mzumi Press and instead found a Catholic priest passionate about mathematics. While several readings and further research would not make me any wiser in understanding maths and quantum theory, the subject matter of this little book, it dawned on me that Alan Alda (2016) was right: science, especially quantum physics, is awesome and every bit as transcendental as spirituality – our quest for meaning in life.

Next came my interest and expertise in photography. Father John Ryan is an expert in mathematics. He says that the beauty and elegance found in Mathematics has always pointed him to the Divine: he never saw a division between them. My photography had taught me something about the elegance of mathematics and the order of the world. When we take a photograph or, better, compose an image, we look through the viewfinder onto a small section of what is before us and decide how much or how little to include in the frame. We learn rules of photography that help us to compose an image that is pleasing to the eye. The 'rule of thirds', for example, helps us mentally to divide our image into rectangular segments: the grassy plain at the base is one third of a landscape image; the mountains in the middle are the second third; and the sky on top is the final third. Sometimes we place images on the thirds to show dominance: for example, Aunt Jane in her red jersey will stand out and create a centre of interest to which the eye will go first. We use lines to lead the eye into the picture and oblique lines to create a sense of restfulness and so on. So, if mathematics improved my photography how much better might it improve my understanding of the relationship between 'science, spirit, tradition, and the environment'? A lot actually!

The quantum world

In my mind, quantum theory was about bigger picture stuff so I was surprised when I read in Ryan's book that it concerns the microscopic world. How was looking through a microscope going to help me to understand the new cosmology - as promised on the book's cover - or even transcendental spirituality? I read:

Entering into the microscopic world is entering a world unknown to us, a world which (despite the fact that it provides the building blocks of all of reality as we know it) does not obey the laws of the middle world [the things we can experience]. It is a world which baffles us. It is a world which does not follow 'our logic'. It is a world of mystery. It is a world of fascination. It is beyond our understanding, beyond our dreams and beyond our imaginings (Ryan 2016: 19)

I was hooked!

I read on as Father Ryan promised to show me how the microscopic world provides a better understanding of the world of our experience – how it changes our worldview. If ever a change in the modern worldview were needed, it was in our relationships to one another and to the environment. I was sure of that. And so I read about photons and electrons, waves and particles, and about how the fuzziness in the way they behave makes scientists uncomfortable because they do not fit traditional moulds.

A photon in Physics-speak is 'a particle representing a quantum of light or other electromagnetic radiation that carries energy proportional to the radiation frequency but has zero rest mass' (Ryan 2016: 24). It is a 'bundle of energy relationships': 'The precise science of measurement and exactness seems to be totally inadequate to describe this reality of relationships of energy', wrote Father Ryan (2016: 26). There was that word again – relationships. Such is the brilliance of Einstein's theory of relativity which, Ryan explains, basically says 'nothing exists in isolation but everything depends on everything else' (2016: 27). Everything is relative. Energy and mass are merely different faces of the same reality, as are space and time – one is not fixed, and the other continuously passing. It seems we, like the fish in the water that are unable to see or conceptualise the whole lake, are limited in our vision. As Ryan says: 'Our everyday language which is based on our everyday experience of reality is incapable of describing the bigger picture, the "bigger lake" in which we live' (2016:27). Is he talking about science? It sounds more like spirituality to me. Science and the mystics are coming together.

Ryan continues: 'We are now beginning to realise that during the past couple of centuries we have been exposed to an excess of rationalism which has blinded us to the bigger picture and to greater realities' (2016:28). As Hamlet said to Horatio 'There are more things in heaven and earth, Horatio/Than are dreamt of in your philosophy' (Shakespeare: *Hamlet*, Act 1, Scene 5, lines 167-8).

Science is now inviting us to transcend the ordinary everyday picture of reality, to go beyond our everyday experience, to get a glimpse of the 'bigger picture'. In this context, Father Ryan introduces the concept of 'Entanglement' which, he says, opens up infinite possibilities of connectedness and relatedness:

It has been proven that it is possible to connect or 'entangle' two photons in such a way that even if they were later separated by vast distances (even distances as large as light years), making a change to one photon would instantaneously affect the other photon (Ryan 2016:29).

How insignificant are humans. How much larger is reality than what our minds can grasp: 'Relationships and how things are related is the paramount issue if we are to have a proper understanding of reality' (Ryan 2016:30). This, says Ryan, raises the question of a participatory world:

We are not mere inhabitants of the world but we are participating in the ongoing creation/development/transformation/evolution of the world to a far greater extent than we ever realised. This together with the fact that everything is connected and interconnected makes humans part of the whole movement towards transformation to higher realities ... We are deeply involved in the whole evolutionary process. Even without being consciously aware of it, we are involved. But, the exciting thing is that being aware allows us to become even more involved (Ryan 2016:34).

When we diminish the environment we diminish ourselves. When we diminish or devalue others, we devalue ourselves. How can we get this message across?

Environmental sustainability

It is the awareness of 'Entanglement' - which indigenous peoples have long had - that we now need in order to take action toward environmental sustainability. The denial of many politicians (and religious adherents) has resulted in the need for a massive global response to avoid the worst effects of climate change and environmental degradation. There are those, like my friend John Coates, who think we are too late - but we need to act from a place of hope and believe that any improvement is for the better. The central question is how can we garner support for action on environmental sustainability? Can spirituality and tradition be major motivating forces for action on environmental sustainability?

For most of us, science is a form of factual knowledge; rationalism is a way of learning and knowledge development, but it does not convey a sense of purpose, intent or ethics. It does not answer the question of how we learn to live within the knowledge of the universe that science has given us. However, science, as expressed by cosmologists Brian Swimme and Thomas Berry (1992), quantum theorists and Irish Catholic priests Diarmud O'Murchu (2004) and John Ryan (2016), theologian Mathew Fox (1988, 2000), and others offers a cosmology that reflects the essential connectedness of all things. There is a lot of similarity between the findings of these writers and the traditional beliefs of indigenous peoples. Science and tradition have similarities – it is modernists who need a framework for joining this line of thought. My friend John believes most Westerners have an old view of science and are ignorant of tradition so use spirit as a motivating force. He believes most of us still operate from an individualistic, isolated stance which gets in the way of seeing the connections and acting in concert with one another, in community.

It is against this backdrop that we need to ask the question the BASS conference poses: *Can spirituality transform our world?* And further, what are the new frontiers for understanding and exploring contemporary spiritualities? What transformations are needed even to go there?

These are complex questions for environmental sustainability because the transformation we need is one of the hardest to achieve. Swimme, Berry, Fox, and others tell us we need a shift in basic beliefs and values (a change in worldview similar to what Father Ryan describes) – a new story that matches what we now know about the universe, where connectedness and community are not subsidiary to, or less important than, individualism and materialism. The answer lies in shifting the balance from individualism towards community.

This is where tradition comes in for there are cultures where community and connectedness are central, wherein the destiny of humans and nature are inextricably intertwined: they share a holistic cosmology built around connectedness and relationship, where environmental sustainability is an outcome of a deeper set of values and beliefs. An indigenous cosmology perceives all as an integrated whole, in which land has symbolic

meaning. It is seen as a resource which behaves as a living being – James Lovelock’s *Gaia* hypothesis (1979) – and as a life-support system for humans and other life forms. Farmers recognise, accept, and work with the fact that ‘land moves and behaves’ according to seasonal rhythm, climate and rainfall variations, and management practices (Barrera-Bassols & Zinck 2003).

When we see our individual actions connected to a larger purpose, we are able to persevere in the face of uncertainty and difficulty. Our actions can be based on purpose and ethics, on what we see as the right thing to do, and good for people and the environment, not solely on often-elusive pursuits of materialistic success.

Hence, the concept of environmental sustainability is a modern term that is important for Western thinkers because it is innate to the beliefs of traditional thinkers. The challenge for Western thinkers is:

- Can we embrace our connectedness to the environment and each other and redefine our priorities and actions in light of this new foundational value and belief?
- What stands in our way? How do we learn to live within the knowledge of the universe that science has given us? Can spirituality take us there?

Can spirituality transform our world?

When it comes to matters of the spirit, some see the workings of a creator or creative force in the world around us and others see the workings of science - biology, physics, mathematics, chemistry, and so forth. But, regardless of what we believe, and what we know and do not know, we are born into a world in which matters of the spirit and religion, and their lack, have long influenced the course of human events and shaped human thought. It is important that we know our own beliefs, or the lack thereof, and that we are sensitive to the same or differing beliefs among those with whom we live and work. Beliefs and values are factors in how people frame the world within which they are immersed and seek a sense of wholeness and interconnectedness while having the courage to venture into the unknown. To ignore the spiritual within and among the people with whom we interact is to hobble our minds, hearts, and our comprehension of what is and what might be in the lives of others.

By the same token, to ignore science or the evidence is equally short-sighted. Spirituality, like science, involves being comfortable with the unknown and accepting of uncertainty, as Father Ryan shows. I have since read theoretical physicist and Nobel Laureate Richard Feynman (1999) who says ‘we have learnt it is of paramount importance that in order to progress we must recognize the ignorance and leave room for doubt’ (p. 146). He sees science as ‘the belief in the ignorance of experts’ (p. 187), that is, people who believe they know beyond doubt. Having the strength to move into areas of uncertainty, whether through science, art or spirituality, is an essential skill of all critical and creative thinkers, for social workers, scientists, artists, environmentalists, and religious believers, alike. As Feynman (1999) reminds us, ‘the world looks so different after learning science’ (p. 186).

As I continued my exploration, I found my ideas coming together in a surprising manner. Although Father Ryan might seem an obscure source on quantum physics, I would like to remind you that I was looking for a source on African tradition and discovered something entirely different! Perhaps you might like to think about your own trajectories and worldviews at this juncture? As I continue on mine, I am ever mindful of distortions and misconceptions about science and of the importance not only of recognising ignorance or the limits of what we think we know but also different ways of knowing.

To return for a minute to photography, the human intellect has some similarity to the function of a camera – a metal-and-glass metaphor for how we perceive the world. In a Western mind, its lens frames a subject, excludes most of what is not wanted or is to be ignored in the picture, focuses until it fills the frame, and then records the selected image. In a Western mind, our seeing and imagining extracts from the whole: it focuses on some parts, ignores others, and loses the sense of the ‘bigger picture’. Grossly, in the Eastern and indigenous mind, the lens focuses first on the background – the context – so images can be viewed in relationship. When things in the mind’s frame can be perceived by the senses, the process is fairly straightforward. When the subjects in the frame are conceptually abstract, like energy or mass, they must be converted into mathematical symbols for their relationship to be communicated.

When the conceptual frame is filled with spiritual matters, they are often a mix of the physical, emotional, past, future, and the stuff of connectedness – empathy, shared experiences and beliefs, and meaning – and our place in the scheme of things. The symbols used when we sense the spiritual, whether they be a cross, mandala, crescent moon, fish, yin-yang, or intersecting circles, signify purpose, meaning, feelings, rights and wrongs, and things not often spoken in common language. In short, our rational minds do not always do well with articulating the symbolic and fuzzy language of spiritual matters – they do, however, allow us unpredictable glimpses of the extraordinary in the ordinariness of life. Such moments can change us and cause us to see in ways not possible before. When I learnt to see in photography I had an ‘Aha!’ moment and felt as though I had been reborn with a new pair of eyes. Photography taught me to see differently. The result of such different seeing, as Gregory Bateson’s (1987) notion of ‘double description’ conveys, is that we are improved as a people – whether we are photographers, scientists, artists, or social workers – by having more ways of seeing, sensing, and imagining something than by having only concrete and scientific *or* esoteric and spiritual ways alone. We are better when we see the whole – the big picture, as Father Ryan says.

Descartes’s familiar phrase *cogito ergo sum* - ‘I think therefore I am’ - can spark similar thought. To it might be added:

- ‘I experience spiritual feelings therefore I am’
- ‘I feel emotions therefore I am’
- ‘I make and feel and am defined by connections with others therefore I am’
- ‘I sense things that I cannot describe therefore I am’

Throughout much, if not all, of our history, humans have lived with a sense of the spiritual, a need for connectedness, meaning, and purpose, regardless of the form and shape that it took. This sense is closely related to our sense of morality – our values and ethics. Environmental researchers and activists have asserted that attention to values is an important consideration; that new sources of motivation to break the political deadlock are needed; moral authority and courage is lacking; and consumerism, individualism, and neoliberalism, among other ideologies, are barriers to meaningful adaptation. Among social institutions, religions are one of the most important avenues for values, motivations, morals, and worldviews. Religions are important influences on adherents’ attitudes and subsequent behaviour, as well as being powerful social actors.

But all too often we are blinded by our over-emphasis on secular rationalism, individualism and notions like ‘economic man’, by the myth that individuals are merely – or ought to be – rational decision makers, freely choosing, autonomous, and self-determining.

The issue here is: can an expanded awareness of spirituality enrich our understanding not only of environmental sustainability but also of what we do in practice through better apprehending the worldviews of others and their values and preferences? Will this enrich our ability to see how extraordinary the ordinary is?

We are aware that, while the subjective sense of what the ‘spiritual’ is has likely been connected with our species as both feeling and thought for innumerable years, more than has organised religion, the term is of more recent origin. Robertson (2008) asserts that its broader use came about in the 1830s with the advent of Emersonian transcendentalism, based on the belief that people’s knowledge about themselves and the world around them ‘transcends’ or goes beyond what they can see, hear, taste, touch, or feel:

- Transcendentalists believe this knowledge comes through intuition and imagination not through logic or sense perception, that people can overcome their biases and be their own authority on what is right.
- Transcendentalists accept these ideas not as religious beliefs but as a way of understanding life relationships and thus their ideas have been attractive to environmentalists.
- Transcendentalists created a ‘state of mind’ in which imagination was as important as reason, creativity as relevant as theory, and action as essential as contemplation.
- Transcendentalists had faith that all would be well in the world because humans could transcend limits and reach astonishing heights.

Notwithstanding critiques of its radical individualism, and competing understandings of spirituality, human connectedness with nature, illustrated through the writings of transcendentalists like Emerson (2012) and Thoreau (2010), has been seen as a link with the Divine that is to be found within, and conveyed between, people. While religions have frequently ‘housed’ spirituality, much exploration of our spiritual natures is linked to individuals’ growth rather than creeds and organised religions.

Much of the considerable Western spirituality literature follows the path of psychological modernism. It is about the inherent search for meaning – people trying to find themselves, trying to find their way in a world outside of, or aside from, organised religion and science. Ours is often a spirituality geared to self-development and creating meaning for our isolated individual senses of self. It can, at times, be self-centred and self-absorbed rather than other-centred. It may mollify and placate people rather than help liberate them from oppression. It can be an empty vessel – spirituality without soul and devoid of larger social connection and purpose – a safe, solipsistic, secular search for meaning.

How was it that we left Emersonian transcendentalism to accept a watered down, soul-less, secular spirituality with its lost connection to morality and any relational sense of connectedness with something larger? Western psychological modernism mated to individualism has led to the assumption that we each have an autonomous, disconnected self, a self that makes individual moral choices rather than a self embedded in a collective, relational co-creation of morality by behaviour and thought. The thought that mind and spirit are inclusive of something larger than individuals is a reality difficult for many to frame. Emerging work on mirror neurons and the co-creation of minds and on quantum physics is, however, changing our understanding of the importance of our capacity for connectedness and being tied to multiple others, and our interdependence with the environment.

It is this transcendental element of spirituality that can satisfy the need to *feel* a sense of belief in something greater than the reality of ‘all this’ in which our lives are immersed. One can feel part of something greater – through a sense of everything being connected, as Father Ryan describes – a feeling one is not alone, one is part of something ‘more than’ – the bigger picture.

We need to think seriously about the place of spirituality and religion in this bigger picture, that is, the notion that there is a connection with something greater than the world of our self – something greater that is akin to Kant's (1781, 1787) and Schopenhauer's (1969) *noumenon*. Like Thomas Moore (1992), who finds soul in everyday things, Marsha Sinetar (1986) suggests that spirituality does not happen in isolation but blossoms in contexts and connectedness:

It is a way of ‘seeing’ which has no dualities, a way of perceiving that shows us we are born, have our lives and ‘die’ within the context of a comprehensible, coherent, intelligent whole – a whole that loses nothing even though everything is always changing (Sinetar 1986:99–100).

Cultural historian Morris Berman asserts that:

... a number of thinkers are beginning to argue that the intellect, or conscious mind, is a subsystem of a larger system that we might call Mind with a capital M. This Mind is in fact the ‘strange kind of physical reality’ of which Heisenberg spoke, suspended between possibility and reality. As Gregory Bateson has put it: ‘the individual mind is imminent but not only in the body. It is imminent also in the pathways and messages outside the body; and there is a larger Mind of which the individual mind is only a subsystem. This larger Mind is comparable to God and is perhaps what some people mean by ‘God,’ but it is still immanent in the total interconnected social system and planetary ecology’ (Berman 1984:140).

If we habitually associate minds with individuals, we might well be missing a phenomenon that is all around us but unnoticed. Berman's (1984) notion of a ‘Larger Mind’ – akin to Emerson's (1841) ‘Over-Soul’ – is the flipside of many notions of a separate individual God (or gods) ‘out there’. He suggests that a larger mind is everywhere but is manifested as an inner light in individuals. But this is a limited anthropocentric view and leads to the self-centred spirituality we are critiquing. Much more fruitful is a cosmology built around connectedness and relationship, where environmental sustainability is an outcome of a deeper set of values and beliefs.

This way of thinking points us to a form of spirituality that helps us to be sensitive to the spiritual impulse in others, and how it shapes thought and behaviour, and to understand more fully our fellow human beings and the sense of our place in the cosmos. We want to relate to people in a world of ‘resonance, resemblance, and incredible richness’ (Berman 1984: 65). We want a spirituality that fosters a horizontal sense of connectedness between people and the natural world rather than the more common vertical spirituality implicitly premised on higher and lower estimations of power and goodness, and on resulting differences in power and privilege (Berman 2000). Richmond (2004) suggests a simpler perspective – that, in some measure, the spiritual impulse represents that part of us that seeks to be ‘wiser’ about all things.

Some scientists who study religion and spirituality, such as geneticist Dean Hamer (2004), suggest that our capacity for faith and spiritual feelings is hardwired into our genes; it is part of our genetic heritage. It is too early to tell conclusively whether Hamer and others are correct about this assertion but their thoughts are, at least, intriguing. Hamer

acknowledges that defining spirituality is not an easy task since the concept and term often takes on different meanings among different people and cultures. He suggests that religion itself stems from the spiritual impulse and becomes ritualised expressions of a common impulse. For Hamer, ‘feelings of spirituality are a matter of emotion rather than intellect’ (2004:139). He says, ‘to lose one’s sense of self, to become at one with the universe and everybody and everything in it, is at the heart and core of spirituality’ (2004:137).

It is also present when we are making meaning in the company of others. With the sense of connectedness with others comes the possibility of a sense of obligation, an embodied sense of compassion, and a realisation that the results of our actions do not end with us. Spirituality calls us to reflect on moral matters and to consider the meanings that flow from our relationships.

Martin Buber (1965, 1967) expressed this in his notions of an ‘I-It’ and an ‘I-Thou’ relationship with spirituality:

- It is an ‘It’ when we talk about it as a topic to be intellectualised and consciously factored into our thinking.
- It is a ‘Thou’ when we co-create it and subjectively experience in our interactions with others and our sense of connection with and immersion in something greater in our lives.

Thus the individualism embedded in much contemporary thinking about spirituality gives cause for concern. While individuals may purport to be rational and autonomous beings, they are also social and relational beings and, more importantly, moral and spiritual beings. Indeed, we learn about morality from our various relationships-in-settings with one another. Thus self-centred views of atomistic spirituality concerned mainly with self-development seem to be of limited use. Still they may be marginally applicable to enhancing our connections with others in deeper and more meaningful and productive ways and taking issues relating to environmental sustainability seriously.

Problematic too is a meta-analysis of the language of spirituality or an empirical search for truth about it; this is not the means to the end we are seeking. Of concern is the intellectually fashionable romance with rationality, which results in the tendency to ‘talk the talk’ at the expense of ‘walking the walk’. This arises partly from the assumption that *only language constructs meaning*. Spirituality, which cannot be conveyed by common language, can be a legitimate part of our subject matter. There are many symbolic languages continuously woven into our world and we can ‘feel’ meaning and see its effects if the spoken word fails us. As Ryan shows, even science has found our language wanting.

As John Coates and I have suggested, we must look to other cultures with different traditions of visual and oral communication. In encountering different cultures, our understanding is enriched by perspectives that are new to us. Diverse spiritualities are among the new ideas that seep in and lead us to rethink the secular notion that individuals can successfully mastermind their own lives and relationships and that morality is theoretically possible without religion or spirituality. Interest in spirituality is perhaps evidence that people are grasping for the unknown – for sources of reassurance and emotional quieting that have been displaced in modern, secular society.

An examination of the life worlds of traditional – religious and indigenous – cultures leads to different or alternative ways of understanding spirituality. Traditional ways of framing things are not the dominant view of Western societies which prize the notion of autonomous individuals. What we often find when we look outside our own culture is a high

importance placed on ‘other-regarding’ virtues and a valuing of loyalty, obligation, compassion, trustworthiness, responsibility, sensitivity, shared decision making, and so on, and to valuing individual service to the community. An indigenous cosmology brings greater breadth and depth of environmental information to bear, along with a more holistic understanding of the relationships among living beings and their environments. It is a model with so much to offer.

Conclusion

By way of bringing this paper to a close, I would like to say something about traditional or indigenous environmental knowledge (TEK). It is generally regarded as a cumulative body of knowledge and beliefs handed down by cultural transmission that illuminates the relationship of living beings, including humans, with one another and with the environment (Dods 2004). This particular form of knowledge is important because much of the interest in indigenous knowledge has focused on natural resources and the environment, and has endured because of its flexibility and ability to adapt to change (Usher 2000). There is no indigenous knowledge detached from society or that fails to take account of the specificities of local situations. However, problematically, TEK not corroborated by scientific evidence is often prematurely rejected instead of being pursued as substance for further inquiry. Further, often its contributions are commonly rejected because they are deemed anecdotal. The conventional paradigm of environmental decision making thus remains intact and unchallenged.

The problem is partly one of very different and seemingly incompatible systems of understanding, and fundamentally one of power. At heart, indigenous knowledge is cooperative and, in its adaptability, has embraced Western scientific knowledge though, generally, it is a culturally embedded form of knowledge managed on the basis of community interest and need (Briggs and Sharp 2004). It is a matter of survival and, as such, is evolutionary. Hence, only that knowledge that seems useful to people is likely to survive in a changing world (Brodt 2001). Most important to indigenous people is the way their knowledge is used. Indigenous people rightly express fears about the misappropriation of their knowledge and concerns about intellectual property rights (Dove 2006). In turn, the fear of appropriating the voices of others has led some researchers to question their ability to say anything about communities of which they are not a member.

From this, we might conclude that we are going the wrong way when we treat values, ethics, spirituality, the environment, and traditional knowledge for that matter, solely as a rational scientific project – seeking concrete explanations – without embracing a truly holistic understanding, one that enjoins science, ethics, spirituality, tradition, and environment. In this subjectively appreciated sense of the connectedness of everything, human beings become as significant as animals and plants and insects, and have within their control the ability to be both happy and responsible to all life. The answer lies within us and between us.

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