Environmental Humanities in the Anthropocene: A New Paradigm

TSHEWANG DORJI[1]

ABSTRACT. How does rethinking the environment inspire us to rethink being human? How can we transform our relations with other species and the planet? We ask these questions in more than one way in the age of the Anthropocene. For the last two and a half centuries, humanity has been relying on a singular scientific body of knowledge in understanding nature and in devising measures required to address environmental challenges. Did scientific knowledge on the environment serve us well? Science views the environment through utilitarian aspects largely dictated by a human-centered (anthropocentric) approach. In contrast, humanities views nature from humanistic aspects upholding biocentrism guided by the values and ethics. Notwithstanding their differences, science and humanities have equal strength and prowess to deal with the environment. Environmental Humanities brings a new and holistic understanding of nature by integrating science and humanities. This is critical to environmental problem-solving in the age of Anthropocene. This article attempts to unravel fundamental differences between science and humanities in terms of understanding nature and the way they approach environmental issues. Thereafter, this article argues how the harmonization of these two disciplines as "Environmental Humanities" can produce a new form of environmental knowledge required to address contemporary environmental challenges and issues.

[1] Tshewang Dorji, Associate Lecturer, Royal Thimphu College. He can be contacted at tshewangd@rtc.bt

Introduction

We live in one of the most turbulent times in human history. Never did our predecessors witness the kind of environmental instability we now experience. The planet earth has been deteriorated at a far more rapid pace, in the last 300 hundred years, than the 1000 years that preceded it (Zalasiewicz, 2008; IPCC, 2018). The concept "The Anthropocene" was coined by Paul Crutzen and Eugene Stoermer who regarded the influence of human behavior on Earth's surface in recent centuries as a significant transformer of the biophysical conditions of the Holocene epoch (Castree, 2014). The concept provoked grueling debates and conversations among geologists, environmentalists and humanists—mooting questions whether humanity is to be blamed for diminishing the biosphere. The key characteristic of the Anthropocene is the human domination over other species, so degrading the conditions of life on earth and causing unprecedented global environmental crises (Zalasiewicz, 2008; Castree, 2014). This points to the fact that human activities are altering the biosphere of the earth like never before. Human activities cause major planetary upheavals such as global warming, climate change, air pollution, biodiversity loss, ocean acidification, aerosol loading and nuclear fallout, leading to severe environmental challenges (Steffen, 2011; Sörlin, 2012; IPCC, 2014). Humanity has not only jeopardized the life of other species on the planet but also seriously endangered themselves. A certain course of human action, which is inimical to the environment, pushes humanity towards the precipice of self-destruction. Chief Seattle (1780-1866) said:

> All things are connected, like the blood that unites one family. Whatever befalls the earth, befalls the sons of the earth. Man did not weave the web of life; he is merely a strand in it. Whatever he does to the web, he does to himself. (Chief Seattle's Speech, 1852, pp.3)

Modern society relies on scientific knowledge, in fixing environmental problems, be it at the local or global level, too often disdaining social and cultural intelligence (Heise, 2016). For centuries, humanity has been depending on a singular scientific body of knowledge in understanding nature and in devising measures required to address environmental challenges (Schmidt, *et al.,* 2010). In what ways are we advancing environmental wisdom? The world has seen no actual progress in combating climate change, notwithstanding the rapid science and technological advancement in the recent decades. Many international conferences have been convened in the name of sustainable development. Several international agreements and protocols are already adopted and signed by many countries in the name of "global consensus" for

environmental wellbeing. However, we are never sure whether our environmental wellbeing is going to get any better. Our faith in scientific knowledge is shaken when the global temperature rose beyond the threshold limit of 1.5°C established by the Intergovernmental Panel for Climate Change (IPCC) (Sörlin, 2012; IPCC, 2018) and the climate continued to become unpredictable. Climate scientists have become increasingly frustrated with the slow pace of reductions in greenhouse gas emissions (Heise, 2016). Science and technology, in this sense, have failed us and we cannot think of a better environment, in any sense, if we continue with business as usual.

Can we humans not understand the environment in more holistic terms? Shouldn't we adopt different ways of thinking and understanding the human and non-human world? What we lack in scientific technical knowledge is the ability to understand the complex ways that nature, humanity and culture are intertwined. Environmental problems are complex because they are irreducibly entangled with social and cultural practices and politics. The Environmental Humanities brings humanities, sciences and social sciences together, in harmony, into discussions about approaches to today's environmental issues. Thus, it offers a space for alternative approaches to initiate, support and further a wide range of conversations on environmental issues amidst the growing awareness of the ecological and social challenges in the age of the Anthropocene (Rose *et al.*, 2012). It promotes an inclusive and challenging dialogue on the ethical, moral, visual, and human dimensions of environmental topics.

In this context, this article dwells on how rethinking the environment and environmental issues from environmental humanities perspectives would help humanity to rethink its relationship with nature and the environment. I argue that integrating traditional ecological knowledge and scientific knowledge on the environment, both in equal measures, can shape a new environmental knowledge and approach required to deal with contemporary environmental dilemmas. This paper is comprised of three sections. The first section deals with different approaches of science and humanities in viewing the environment and environmental challenges. The second section explains why environmental humanities offers hope in the age of the Anthropocene. The last section of the paper explores how a new environmental knowledge can be forged by combining traditional ecological knowledge (which is based on environmental values, ethics and morals) and scientific ecological knowledge.

Fundamental Difference between Science and humanities/Arts

The Arts are often associated with subjectivity in the way it expresses knowledge, which is most often in the form of subjective representation, while science is often understood as being objective and it is a system of acquiring knowledge. Natural science deals with the study of natural world and lifeforms while social science deals with the study of interactions between lifeforms, mostly focusing on the dynamic interface between people, their societies or their cultures. The two fields differ fundamentally from each other, in terms of understanding the environment and evaluating environmental issues. However, each discipline brings essential perspectives, viewpoints and unique approaches at varying levels to understand environmental aspects. Table 1 below shows some basic differences between science and humanities and their approaches to the environment. Table 2 illustrates how science and humanities take different approaches to environmental problem solving. For instance, water pollution is examined from different perspectives and as a result the problem is being approached using different techniques, skills and knowledge.

Table 1. Different Approaches to Environment and Environmental Issues

Component	**Natural science**	**Humanities/Arts**
Essential subject	Biology, geology, chemistry, physical geography, statistics	Language, arts, philosophy, beliefs, culture
Methods used for environmental assessment	Objective and quantitative	Qualitative and subjective
Basis of Environmental argument	Data, scale, measurement, data analysis	Perceptions, life experience, beliefs, culture (Heise, 2016)
Environmental problem solving tool	Scientific, technological, ecological and analytical	Cultural, indigenous knowledge, narratives, arts and history, philosophy, ethics, religion (Rose *et al.,* 2012)

Science view nature as a separate entity from human world, in the process often imagining humans as situated outside the natural world. Science brings objective and quantifiable variables to explain how nature works. On the other hand, humanities

focus on culture, religion and experience to explain how nature works. It recognizes that how one perceives the environment is largely shaped by our upbringings, culture, beliefs and ethos. For humanists, nature and the environment is a cultural construct. Ingold (2000, pp 15) in this book: *The Perception of the Environment: Essays on Livelihood, Dwelling and Skills* wrote:

> People from different cultural backgrounds perceive reality in different ways since they process the same data of experience in terms of alternative frameworks of belief or representational schemata… Thus the distinction between environment and nature corresponds to the difference in perceptive between seeing ourselves as beings *within* a world and as beings *without* it.

The argument here is that based on how one perceives the environment, it shapes how one responds to environmental problems.

Table 2. Different ways of examining and responding to environmental issues: water pollution

Component	Natural Science	Humanities/Arts
Examination	What are the various pollutants?	What leads to water pollution?
	What is the pollution level?	What does water pollution mean to you? What is your perception?
	How can we solve water pollution and the risks associated with it?	How can we reach out to the communities about water pollution and its effects on the environment?
	How can we prevent water pollution in the future from a scientific standpoint?	What policies, laws, and regulations, system do we require to prevent oil spill in future (Heise, 2016)
Approach	Utilitarian /practical	Humanistic and philosophical

Why Environmental Humanities "in the Anthropocene"?

We are now living in the Anthropocene which is inundated with a multiplicity of environmental crises (Zalasiewicz, 2008; Sörlin, 2012,). Solving these problems entails

the integration of different disciplines and techniques (Heise, 2016). Environmental Humanities seeks to bring wider perspectives in deepening our understanding of complex interrelationships between humankind and the environment. Climate change, species extinction and air pollution are profoundly social, cultural and political issues, perhaps as much as they are 'environmental' issues. Neither natural scientists nor sociologists alone can fix these problems. Amitav Ghosh, an Indian novelist, notes that climate solutions can't be left to scientists, technocrats, and politicians alone (2016). Further, Ghosh goes on to say that the climate crisis is also a crisis of culture, and thus of imagination. He asserts that humanity needs new ways of thinking and a new paradigm to tackle human-induced environmental problems. Sverker Sörlin, a professor of environmental history at the Royal Institute of Technology in Stockholm, Sweden made a similar remark (Sörlin, 2012, p 788):

> Our belief that science alone could deliver us from the planetary quagmire is long dead. For some time, hopes were high for economics and incentive driven new public management solutions. . . . It seems this time that our hopes are tied to the humanities. . . . in a world where cultural values, political and religious ideas, and deep-seated human behaviors still rule the way people lead their lives, produce, and consume, the idea of environmentally relevant knowledge must change. We cannot dream of sustainability unless we start to pay more attention to the human agents of the planetary pressure that environmental experts are masters at measuring but that they seem unable to prevent.

These complex problems and issues call for a wide range of disciplinary wisdom to productively rethink the environment and environmental problems. This means we have to reimagine and ultimately rebuild the relationship between nature, culture, sciences, and humanities. Science and the humanities together produce a new environmental knowledge which is a more accurate knowledge vested on this complex intertwinement of nature and humans (Robin *et al.,* 2018). It is equally important for us to be cognizant of the way in which human culture shapes environmental impacts. How does human activity (historical, contemporary, and imaginary) shape the world around us? How can the tracing such activity contribute to a deeper understanding of the environment? Particularly, we need to find new forms of environmental knowledge through scientific knowledge and traditional ecological narratives to understand ourselves, each other, and our place in the world in interdependent ways.

A New Form of Environmental knowledge: Blending of Traditional Ecological Knowledge and Scientific Knowledge

A new form of environmental knowledge is being advanced when we combine traditional knowledge and scientific knowledge. A diverse ecological narrative which is important to understand ourselves, the physical world and other sentient beings, shapes the foundation of this traditional ecological knowledge. Traditional ecological knowledge is crucial to garner new strategies to tackle complex environmental challenges confronting humanity in the modern world. Berkes *et al.*, (2000, pp.1251) argues that "traditional knowledge on environment and ecology has become relevant in recent decades partly due to recognition that such knowledge can contribute to the conservation of biodiversity, rare species, ecological processes, protected areas and sustainable resource use." Tibetan's traditional knowledge, for instance, relates ecology with local culture, social institutions and belief systems.They believe that local deities (*Neydeg and Zhideg*) reside in mountains, trees, lakes and river. Their belief in local deities and spirit powers help them maintain a sense of awe and respect for the natural environment, restraining them from destroying nature. They believed that if someone defecates or cuts down trees near water source, the local deities will be upset and they may send misfortune (sickness, death, and accident) to the entire community. This traditional knowledge has helped them to live in harmony with nature, thereby promoting biodiversity conservation and natural resources governance (Berkes *et al.*2000). Traditional knowledge counts on a particular system of knowledge and a set of beliefs and traditions. Huber and Pedersen (1997, pp. 588-590) aptly state:

> Modern scientific knowledge represents the environment as an ensemble of global, quantified interrelationships, whereas, traditional Tibetan knowledge represents it as a system of local, qualitative interrelationships of humans and spirit powers. Weather conditions were systematically linked to social life and correlated with a code of proper conduct. Nature and society were conceived to interact, thereby creating a 'moral climate' or, as we might say, a moral space.

For Tibetans, knowledge on weather is a local knowledge, something founded on shared local experience as opposed to scientific knowledge of weather which often refers to a state of the atmosphere which can be further separated into various quantifiable variables like temperature, humidity, wind, pressure and so forth. Furthermore, traditional knowledge attributes local weather patterns to deities and spirit powers, and

encourages rituals to propitiate tutelary deities for support and blessings. The local deities' blessing and favour manifest in the form of good harvest, good weather and the lack of natural calamities. Modern science relates climate change or weather with toxic chemical loading in the atmosphere such as carbon dioxide and methane gas due to fossil fuel burning in automobiles and megafactories. To mitigate climate change, modern science seeks scientific methods and technological solutions as opposed to Tibetan's traditional knowledge which emphasize correcting human code of conduct.

The Himalayan glacier melt is viewed as a deleterious effect of global warming in scientific communities, however, there are remnant human communities on earth, who still hold their tradition knowledge of glacier melt. These communities perceive pollution and environment degradation to be a signifier of moral corruption which are degenerate behavior and unethical conduct. They believe that if humans can overcome their moral shortcomings, the glaciers would surge again. They believe that the environment will redeem and heal itself if humanity can abide by specific morals (Drew, 2012). On a similar note, Drew (2012) recorded a different perception of ecological change and glacier melt among the residents of the Indian Himalayan state of Uttarakhand. The natives living near the river Ganga vehemently denied the scientific knowledge that was used to explain the drying of river Ganga. Further, the native populace asserted that the river could not be threatened or completely disappear from the earth because it simultaneously flows in three levels: in the heavens, in the riverbed, and beneath the surface of the earth. They singled out river Ganga and claimed its independence from other river systems. Further, they warned that Ganga's disappearance would signal the end of the world (Drew, 2012, p 352)

New environmental knowledge helps to resituate humans in ecological terms and non-humans in ethical terms to garner a greater affinity and harmony between the two. It draws essence from both scientific knowledge and traditional knowledge and balances both in order to generate a holistic view and approach towards contemporary environmental challenges. Drew, (2012) and Break *et al.,* (2000) both supported that ecological narratives enhance environmental awareness and help communities to adopt new adaptation strategies to bulwark against the effects of climate change and global warming thereby building community resilience in 'the Anthropocene.'

Combining traditional ecological knowledge with modern scientific knowledge has produced synergy paving new ways to environmental problem solving. For instance, the study of caribou ecology in the Sahtu region of Canada's Northwest Territories involved both the Dene traditions, language and modern biology to help determine caribou population dynamics (Schmidt, 2010):

> Dene hunters can distinguish between caribou varieties on the basis of morphology, tracks, and even behavior; woodland caribou, for instance, will loop back around on their own path to throw off predators. That the Dene have developed different terms and hunting tactics for each type…paying heed to indigenous language, in other words, advances science's grasp of evolutionary history and helps researchers identify subtle but crucial differences between subspecies. (*https://theconversation.com.*)

Why do we care about the environment? Why do we worry about harmful consequences for nature? According to Stern and Dietz (1994) the reasons for environmental concern are often rooted in a person's value system. People's attitudes and behaviors are based on the value they place on themselves, other people, and plants and animals. The value basis of environmental concern fosters a sustainable relationship with the environment. Each value provides different reasons for concern to different people. For instance, two people could express the same level of concern about air pollution or water pollution for fundamentally different reasons. The reasons for concern could be either on the basis of costs and benefits the value attributed to all living beings or it could be based on self-centered reasons. A study carried out by Moktan *et al.,* (2008) titled '*on Ecological and Social Aspects of Transhumant Herding in Bhutan*' reported that rural communities place immense value on nature and its biodiversity. Rural livelihoods are contingent on natural resources (for example timber for house materials, wild fruits and vegetables for food, firewood for fuel and other natural products like medicinal herbs, wild flowers for domestic income). To destroy nature is to destroy themselves.

Valuing the environment helps to promote societal beliefs, attitudes, and behavior towards environmental protection and conservation. In this way it indorses sustainable consumption and promotes a long-lasting relationship between human and non-human worlds. Livestock rearing has always been an important source of livelihood for the Bhutanese living in high altitude regions, along the northern border. Many yak-herders say they cannot imagine their life without yaks and the grassland. The difficulty in imagining their life without the yak demonstrates both the socio cultural and economic value attached to the yaks and the grassland.

Similarly, there are people who attach value to the existence of a species or a habitat that is not based on any form of economic return. For them, natural species, like flowers, waterfalls, birds, and a whirlpool are symbols of peace, equilibrium, stability and freedom in themselves. They embrace these natural species as their 'immediate neighbors.' Some people can receive enormous joy and satisfaction simply from

knowing that a wild river flows unspoiled through a remote and spectacular wilderness. The nomads living in the high altitude mountain ranges of Bhutan poignantly relate their relationship and sense of belongingness with their local mountain ecosystems far beyond economic terms. They are deeply intertwined with the natural ecosystem and relates to each other in multiple ways. The loss or deterioration of their 'neighbors' would make them feel a sense of loss and lead them to anguish and despair (Dorji, 2010).

Conclusion

We are now living in a new geological epoch—the Anthropocene—the contemporary global environment dominated by human activity (Zalasiewicz *et al.*, 2008; Bonneuil, 2015). This human-induced environmental problem is the biggest problem that humanity is facing today and it will continue to be a challenge in the future too, unless humanity calls for a paradigm shift in the way we perceive and understand the environment and ecological problems of today. In this sense, there is an urgent need to revisit our modus operandi in dealing with pressing issues of the environment like climate change, global warming, ocean acidification and species extinction. The modern society's idea of viewing the earth as a dead and inert destructible from outside, and exploitable for profit (Huber & Pedersen, 1997) is obsolete.

A complete rethinking of what it means to be human is important to transform our relations with other species and the planet. A better relationship between humans and the physical world can be established under two conditions: if we understand a complex intertwinement of the earth and humans and if we can engage environmental issues from humanistic approaches (Robin *et al.*, 2018). To this end, we need to acquire a new environmental knowledge—best suited for the age of the Anthropocene—a blend of modern scientific knowledge/techniques, traditional ecological knowledge, humanities and social science. Environmental Humanities brings new environmental knowledge and also provides a wider participation in conversations about the greatest challenges of our time (Robin *et al.*, 2018).

Acknowledgements

I would like to sincerely thank the anonymous reviewer, whose invaluable comments and feedbacks have significantly benefitted this paper. In addition, I am grateful to Dr. Jelle J.P. Wouters and Dr. Leishipem Khamrang for their constant support and encouragement.

References

Allen, M.R, Dube, W. Solecki, F. Aragon-Durand, W. Cramer, S. Humphreys, M. Kainuma, J. Kala, and N. Mahowald. (2018). Framing and Context. In Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels.

Berkes, F, Colding, J & Folke, C. (2000). Rediscovery of Traditional Ecological knowledge as adaptive management. *Ecological Society of America*. 10(5), 2000, *pp* 1251-1262.

Castree, N. (2014).The Anthropocene and the Environmental Humanities: Extending the Conversation. *Environmental Humanities,* vol. 5, 2014, pp. 233-260

Chief Seattle. (1780-1866). Chief Seattle's Speech. Retrieved on 23rd February *http://www.californiaindianeducation.org/famous_indian_chiefs/chief_seattle/*

Cronon, W. (1996). Uncommon ground: *Rethinking the Human Place in Nature.* New York: Norton & Company, Inc.

Dorji, C.T. (2010). Preserving our Folktales, Myths and Legends in the Digital Era. *Journal of Bhutan Studies,* 15. *Economic and Political Weekly.* pp 3.

Environmental Humanities Degree Programme in Australian National University (2019). Retrieved on 23rd February, 2019 from *https://programsandcourses.anu.edu.au*

Environmental Humanities Research level at University of New South Wales (2019). Retrieved on 23rd February, 2019 from *https://www.arts.unsw.edu.au/environmental humanities/*

Environmental Humanities. (2019). Retrieved on 26th January 2019 from *http://environmentalhumanities.org/*

Gohsh, A. (2016). *The Great Derangement: Climate Change and the Unthinkable*. Chicago: University of Chicago Press.

Huber, T. & Pedersen, P (1997). Meteorological Knowledge and Environmental Ideas in Traditional and Modern Societies: The Case of Tibet. *Journal of Royal Anthropological Institute.* Vol 3, No.3, *pp* 577-597.

Ingold, T. (2000). *The Perception of the Environment: Essays on Livelihood, Dwelling and Skills.* New York: Routledge Publishing press.

Intergovernmental Panel on Climate Change. (2018). Summary for Policymakers. In Global warming of 1.5°C.

Robin, L, Hulme, M & Heymann, M. (2018). Environmental humanities and climate change: understanding humans geologically and other life forms ethically. *WIREs Climate Change*, Vol (9). doi: 10.1002/wcc.499

Rose, D.B, Dooren, T, Chrulew, M, Cooke, S, Kearnes, M & O'Gorman, E. (2012). *Environmental Humanities* 1 (2012) 1-5. Retrieved on 23rd May, 2019 from *www.environmentalhumanities.org*.

Schmidt, Paige M. and Stricker, Heather K. (2010). What Tradition Teaches:

Indigenous knowledge complements western wildlife science? USDA National *Wildlife Research Center - Staff Publications. 1283. http://digitalcommons.unl.edu/icwdm_usdanwrc/1283*

Stern, P. C., & Dietz, T. (1994). The value basis of environmental concern. *Journal of Social Issues*, 50, 65-84. Retrieved from *http://dx.doi.org/10.1111/j.1540-4560.1994.tb02420.x*

The Conversation. (2019). How Indigenous knowledge advances modern science and technology. Retrieved on 2nd June, 2019 from *https://theconversation.com/how-indigenous-knowledge-advances-modern-science-and-technology-89351*

Zalasiewicz, Jan *et al.*,(2008). "Are We Now Living in the Anthropocene?" GSA *Today* 18, no. 2. 4-8