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Interpretive Skills for Environmental Ethics

NICOLE KLENK
University of New Brunswick

Introduction

Storytelling is central to the formation and reproduction of identities, cultures, and traditions (Ochs and Capps 1996; Bruchac 2003). Whether from a religious or secular perspective, the stories we are told as infants and those we tell ourselves as adults are a means of contextualizing our origin, our place, and our purpose while envisioning our individual and collective futures (Nelson 2003; Fagundes and Blayer 2007). Narratives also serve the important role of moral education: how to live a good life, how to be a good person, and how to engage in moral reasoning. For example, in the Christian tradition, biblical parables such as "the Good Samaritan" and "the Prodigal Son" convey important moral lessons and principles. A non-religious and remarkable example is the Western Apache's place-names, which mark geographical locations and past events as well as provide moral guidance (Basso 1996). That is, geographic features remind the Western Apache of "the moral teachings of their history" by recalling to mind events that occurred there in important moral narratives. The anthropologist Keith Basso describes these place-linked historical tales as having "the capacity to thrust socially delinquent persons into periods of intense critical self-examination from which (ideally, at least) they emerge chastened, repentant, and determined to 'live right'" (Basso 1996, 60).

Such narratives can be strongly compelling because they make sense of lived experience: they integrate facts and values in a way that enable us to find and make our place in the world. The narratives that structure identities, cultures, and traditions are not simply given, but constantly re-enacted and reinterpreted, thus changing in relation to life events and historical contexts. The continual interpretation of these narratives can radically change received views, and skillful storytelling can create new cultural and moral identities, and structure different modes of moral reasoning and behavior. Indeed, gifted storytellers can create new stories out of new facts and values, giving us a different sense of time, place, and purpose and inviting us to integrate our life experience into its unfolding storyline. The environmental ethicist Holmes Rolston is a master storyteller in this sense.

Rolston's *Environmental Ethics* (1988) integrates ecological knowledge (e.g., Darwinian evolution, ecosystem science) with particular values (e.g., "natural value") to provide a universal ethics to guide human behavior towards nature in all its diversity. His narrative is evident in his interpretation of the evolution of biodiversity as Earth's storied achievement. In Rolston's own words: "Nature is a fountain of life, and the whole fountain – not just the life that issues from it – is of value. Nature is genesis, Genesis" (Rolston 1988, 197). A pioneer in the field of environmental ethics, Rolston's evolutionary tale not only provides a sense of our species' past

and future trajectory on Earth, it provides a scientific context for the development of a new kind of ethics within moral philosophy, one that provides guidance to humanity for acting in a way that "fits" in nature.

In his most recent work, *A New Environmental Ethics: The Next Millennium for Life on Earth* (2012), he remains consistent with his prior elaboration of "natural value." However, Rolston does more than just present a philosophical argument for a new environmental ethics; he packs his narrative with an overwhelming number of facts, applying his environmental ethics to a vast array of current environmental policy issues, demonstrating to the reader how to apply his environmental ethics to deal with the complexity of environmental decision-making in our time. What is striking in this volume is how Rolston uses his narrative of "natural value" to rhetorically *reveal* to readers their proper identity, place and purpose:

> I am seeking, in this book you have in hand, to put you in your place. You will be finding out who you are, where you are and what you ought to do. You will be seeking to learn what you most need to know about nature: how to value it. (Rolston 2012, Preface)

Convincing people to adopt a new set of ethical values is a difficult thing to do. One way to make a new environmental ethics compelling is to make it seem necessary and legitimate by grounding it in science. But the choice of which ecological narrative to use to structure a new environmental ethics remains an outstanding issue. For example, one could use a declensionist ecological narrative which interprets natural history as the deterioration of nature due to humanity's destructive activities, drawing the moral lessons from the "fall of humanity" out of its Golden Age of the past, when humans were "in harmony" with nature. Or, one could use a progressivist ecological narrative in which the evolution of life on Earth is interpreted as the emergence of more advanced lifeforms, of which humanity is the apex. In this storyline, humans are interpreted as "rational animals" that have a special responsibility towards nature due to their ability to reason. Of course, not all interpretations of the evolution of life on Earth are scientifically accepted; nevertheless, there is a plurality of scientific interpretations of nature that are deemed scientifically plausible and could be used to construct a moral ecological narrative.

The fact that there is a plurality of actual, plausible, and useful ecological narratives has important implications for Rolston's project and for environmental ethics more generally. In this paper I make a number of observations which are part of a larger argument on interpretation, science, and environmental ethics I have made elsewhere (Klenk 2008). I identify two plausible evolutionary narratives that could structure an environmental ethics differently than the evolutionary narrative sketched by Rolston. I then discuss the implications of this pluralism for environmental ethics, in particular, the need for interpretive skills in ethical environmental reasoning. In the first section I begin by providing a summary of Holmes Rolston's moral ecological narrative.

The Tree of Life Story

Rolston's evolutionary narrative evokes the metaphor of the tree of life: its foundational trunk arising out of Earth's natural history, shooting forth like the arrow of time and branching out in the diversity of life unfolding, expanding, and flourishing. The tree of life and its scientific representation is arguably the root metaphor of Rolston's narrative of evolution and "natural value." Rolston interprets the evolution of different elements of diversity (e.g., humans, organisms, species, ecosystems) as the natural history of "intrinsic value" in it diverse manifestations. Rolston emphasizes the "pro-life" direction of "evolution's arrow," that is the emergence of an increasing number of species over evolutionary time (Rolston 1988, 197). In Rolston's environmental ethics, moral concern should be focused on evolution's "unit of development and survival," referring to species, but also to their environment:

> In a holistic ethic, this ecosystemic level in which all organisms are embedded also counts morally – in some respects more than any of the component organisms, because the systemic processes have generated, continue to support, and integrate tens of thousands of member organisms. The appropriate unit of moral concern is the fundamental unit of development and survival. That is the species line. But a species is what it is where it is, encircled by an ecology. (Rolston 2003, 524)

Morally good behavior consistent with this moral ecological narrative requires "following nature." In Rolston's words:

> What I call larger moral virtue, excellence of character comes in large part, although by no means in the whole, from this natural attunement; and here I find a natural ethic in the somewhat old-fashioned sense of a way of life – a life style that should "follow nature," that is, be properly sensitive to its flow through us and its bearing on our habits of life. A very significant portion of the meaning of life consists in our finding, expressing, and endorsing its naturalness. Otherwise, life lacks propriety. (Rolston 1979, 26).

In his most recent book, Rolston enhances his moral ecological narrative by contextualizing it within a whole range of current social-ecological policy issues (sustainable development, environmental justice, climate change, pollution, and urban planning, among others). Rolston's masterful storytelling is exhibited in the comprehensive and systematic way he integrates current and emerging events (i.e., what he call environmental crises) into his narrative, building upon readers' current historical context to provide them with a sense of "who they are, what their place is, and what they ought to do."

However, there are counter-narratives to the tree of life story. I present two narratives that suggest differing roles of humans in nature and modes of ethical environmental reasoning. These

ecological narratives could structure alternative environmental ethics, which are not necessarily consistent with Rolston's environmental ethics.

The Hypersea Story

Dianna and Mark McMenamin present an explanation for both the emergence of land animals and the origin of the plant kingdom, virtually all of which lives on land (McMenamin and McMenamin 1994, 3). The authors argue that the success of life on land, in comparison to marine life, is due to the vast number of direct, physical connections through which fluid is directed, creating in effect a new sea within the sum of its tissue:

> Land organisms have, by necessity, evolved together as part of a greater interconnected mass of living cells. In moving out of marine waters, complex life has taken the sea beyond the sea and folded it back inside of itself to form Hypersea. (McMenamin and McMenamin 1994, 5)

Hypersea provides life with the same sustenance that ocean currents do; however, in Hypersea, organisms control the flow of nutrients, unlike in the sea where marine organisms must actively search for opportunities to access essential nutrients.

Hypersea is the unifying story of life on Earth, directing nutrients and speeding up the evolution of biological diversity. This is made possible by cellular system of nutrient transport and distribution, facilitating more complex trophic webs of predation and parasitism, which in turn facilitates the evolution of more biological diversity. In their own words:

> Hypersea unifies what might at first hand appear to be opposites. Plants and land animals are shown in our new view to belong to the same collective, and geologically speaking, plants and land animals ought to be considered as part of a unified whole. Cases of parasitism and disease are related by Hypersea perspective to examples of mutualistic symbioses where the hosts and symbionts both benefit by living together. Natural selection, generally considered as a force of discrimination acting on separated individuals, evokes curious happenings on the insides of organisms. (McMenamin and McMenamin 1994, 5)

How could the Hypersea narrative inform a new environmental ethics? In this unified ecological perspective, individual species and ecosystems would not be the focus of moral concern; rather, it would be the flow of fluids through interconnected cells. The focus of this new environmental ethics would be the morality of manipulating Hypersea's currents. We have spread pollutants, diseases and parasites from one reservoir of Hypersea to another (e.g., the theory that HIV was spread to humans from primates), in some cases facilitating the evolution of biodiversity and in other cases transforming Hypersea reservoirs into toxic waste sites. By interpreting the evolution

of land organisms as connected aquatic environments, and the role of humans as catalytic and mobile reservoirs of Hypersea, we would take a fluid-centered perspective on environmental ethical reasoning.

A new environmental ethics might argue that Hypersea has intrinsic value as the sustainer of life on Earth and that its intrinsic value gives rise to ethical obligations and principles to facilitate its continued flow and expansion on land. For instance, if it were applied to the ethical dilemma of Lake Vostok, the Hypersea perspective would suggest that rather than viewing humans as a threat to the largest pristine sub-glacial body of water in Antarctica, we should not hesitate to study its extremophile inhabitants to better understand their role in facilitating the evolution of life on land.[1] Moreover, in the narrative of Hypersea land organisms form a unified whole that transcends the boundaries erected between common ecological taxonomies (organisms, species, ecosystems). Interpreting land organisms as this unified whole would allow environmental ethicists to sidesteps the thorny issue of how to distribute intrinsic value – do animals have more intrinsic value than plants? For Rolston, animals have a higher "intrinsic value magnitude" than plants and microorganisms (Rolston 1988, 120), but from the Hypersea perspective such a "gradient" of intrinsic value is nonsensical since in Hypersea land plants and animals are connected in radically intimate ways.

Lastly, for those concerned about global biological diversity, the McMenamins suggest focusing on unique Hypersea organisms. For example, they suggest protecting the Southeast Asian plant genus *Rafflesia* which forms the world's largest flower (over a meter in diameter) and is an exemplary reservoir of Hypersea. In their own words:

> The plant has become so specialized for its hypermarine habitat that it lacks leaves, stems or roots. The only vegetative part of the plant, directly connect to the flower, are the fine filamentous hairs that penetrate and parasitize tropical vines – vines which are themselves parasitic on other vascular plants. The host vines are not badly injured by this parasitism. Sadly, though its range includes Borneo, Sumatra, Java, and Peninsular Malaysia, *Rafflesia* is one of the rarest of vascular plant genera, and redoubled efforts to protect this flower ought to be undertaken in light of its importance for hypermarine studies. (McMenamin and McMenamin 1994, 255)

In the next section I discuss another narrative of the evolution of life on Earth, but this one takes a plant-centered perspective. Its implications for the role of humans on Earth present a striking contrast to Rolston's moral ecological narrative.

The Emerald Planet Story

In *The Emerald Planet: How Plants Changed Earth's History* (2007), David Beerling starts his ecological narrative by describing how cyanobacteria changed the atmosphere's chemical constitution, starting at least 3.5 billion years ago, which had the effect of undoing their worldly

dominance. Cyanobacteria thrived in an oxygen-impoverished atmosphere, but due to their large numbers and their photosynthesis they increased the proportion of oxygen in the atmosphere to a level that rendered their habitats inhospitable – cyanobacteria had to retreat to oxygen deficient environments such as mud flats and other fetid localities (Mackenzie 1998, 194).

The main gist of *The Emerald Planet* narrative is that plants have had a massive impact on the Earth's atmosphere through photosynthesis and their acceleration of the weathering of silicate rocks, which also consume carbon dioxide. These two processes help explain the plummeting of carbon dioxide levels in the middle to late Paleozoic era, 400 to 350 million years ago:

> Plants, and their fungal partners below ground, are evidently engaged in a conspiracy of silence as they gradually consume the rocks beneath our feet over the ages. Careful investigations have shown them to dissolve rocks five times faster than normal, irrespective of whether they are tropical rainforests in Hawaii or conifer forests in the Swiss Alps. Through these processes plants have been imperceptibly removing carbon dioxide from the atmosphere and regulating climate as the millennia ticked away. […] Interestingly, plant evolution generated changes in the global environment that persisted in a legacy to modify subsequent generations. Falling carbon dioxide levels saw the evolution of leafy plants, which in turn accelerated the diversification of terrestrial animals and insects. (Beerling 2007, 33–34)

In a recent study, botanists have suggested that the impact of non-vascular plants such as mosses may have triggered the growth of ice sheets even earlier, that is in the Late Ordovician period, ending 444 million years ago (Lenton et al. 2012).

Apparently plants facilitated the evolution of non-plant life but they also precipitated an ice age, thereby putting themselves at risk of global extinction had the Earth's "thermostat" not kicked in: rock weathering slowed in the cooling climate which decreased carbon dioxide removal from the atmosphere, which in turn helped return the climate to a more hospitable range for land organisms. In a nutshell, plants have been transforming the Earth by spreading across continents and in the process threatening the extinction of countless species due to their contribution to global ice ages, but at the same time acting as catalysts in the diversification of life on land.

If we were to construct a moral ecological narrative out of *The Emerald Planet* story, how would we interpret the role of humans on Earth and its implications for environmental ethics? Beerling's narrative suggests that Earth's most successful land organisms actively change their environment, which sometimes leads to their flourishing and sometimes to the destruction of the very conditions they need to survive. Beerling's evolutionary history is replete with episodes of radical change, extremes in climate, extinctions, and bursts of species diversification all in some way connected to the activities of plants. An environmental ethics founded on this interpretation of the evolution of life on Earth could argue for the continued spread of the human species on all habitable lands and support the increased human appropriation of natural resources, since this is

precisely what other species have done in Earth's history. However, the lesson learned from *The Emerald Planet* story is that the consequences of the flourishing of the human species might lead to the destruction of the conditions necessary for human life, but may also, in time, facilitate the diversification of life on Earth.

In sum, the moral of this story is that we would not be the first nor the last living organisms on Earth to cause large-scale ecological changes and rather than view such changes as morally questionable, we should acknowledge our duty to take responsibility and care for the consequences of our actions. Furthermore, to paraphrase Bruno Latour in *It's Development, Stupid! or: How to modernize Modernization* (2008), now is not the time to stop intervening, acting, and wanting at an ever increasing scale because of the unforeseen risks and impacts of human activities on Earth's ecosystem, but to learn to follow through with our actions and care for the unwanted consequences along the way. This means coming to terms with and taking care of the myriad imbroglios in which humans, non-humans, and technology have become intimately entangled.

Hence, *The Emerald Planet* story enables us to interpret evolution as the active transformation by species of the conditions of life on Earth. Rather than valuing units of evolution (e.g., organisms/species/ecosystems) or the unifying fluid of Hypersea, a new environmental ethics could focus on convincing people that humanity is pervasively and intimately connected to non-human nature through the use of technology and that rather than reject these imbroglios, they should give rise to ethical obligations and principles that guide how to look after, or take care of, the consequences of our actions. In the context of this third moral ecological narrative, both the loss of species and ecosystems and the creation of conditions for new species or ecosystems to evolve appear to be as it should be.

Interpretive Skills for Environmental Ethics

Which of these ecological narratives should structure a new environmental ethics? The decision cannot be answered by science, since these narratives are all scientific, plausible, and useful (e.g., they can be used to generate hypotheses). With no final arbiter on this question, readers might wonder if it makes sense to use ecological narratives to structure a new environmental ethics. Given the conflicting ethical values and principles that can be drawn from these three ecological narratives, the idea of having to accept only one of them to contextualize our origin, place, purpose, and environmental ethics seems arbitrary and unnecessary. Moreover, the question of whether there *should* be a plurality of ecological narratives (i.e., that the purpose of scientists and/or ethicists is not to convince us of a single unified narrative of nature) is mute, since this plurality is a phenomenon that appears throughout our history (Glacken 1976). In other words, pluralism in ecological narratives is a fact of existence with which we must contend. Indeed, this plurality represents a fundamental challenge for constructing universal moral ecological narratives in order to change people's environmental values and behavior, not to mention their identities, cultures, and traditions.

That is not to say that using ecological narratives is not useful or appropriate in environmental ethics, but rather that it should be supplemented by the development of interpretive skills in environmental ethical reasoning. For individual environmental decision-making in everyday life as well as for complex, large-scale environmental decision-making involving multi-cultural stakeholders, there is a need to interpret facts, values, principles, actions, and their consequences in relation to a particular dilemma. The application of environmental ethics to environmental decision-making requires at least the following three interpretive skills:

- Discerning which facts (i.e., ecological and other) and values (i.e., ethical and other) are relevant to the particular individual or collective environmental decision-making dilemma;
- Interpreting relevant ethical principles for the situation at hand;
- Evaluating the results of the action given the relation between means and ends structuring the decision-making situation.

These interpretive skills should remind readers of early American pragmatism of John Dewey's *Theory of Valuation*. For Dewey the process of valuation is an inquiry: it requires considering what should be done to resolve a particular conflict of interests by using both factual information and ethical guidelines (Dewey 1939). But Dewey was not solely interested in finding better and more efficient means to achieve ends (resolution of problems), but in inquiring about the ends themselves in relation to factual conditions and values (Putnam 2002, 97).

In addition, the interpretive skills I suggest are pragmatic in the sense that they sidestep intractable problems in moral philosophy and applied ethics: which moral theory is right and how can we be sure that the application of a chosen moral theory (i.e., its associated ethical values or principles) consistently results in good and right actions? Indeed, the three interpretive skills I suggest imply that ethical values and principles do not provide self-evident rules for action, but require interpretation to be appropriately applied in particular contexts.

In summary, Holmes Rolston has done a tremendous job of constructing a grand moral ecological narrative and demonstrating how to apply his environmental ethics to contemporary environmental issues. It does not follow that in actual decision-making situations individuals would interpret his environmental ethics or the ethics of "following nature" in the same way he would (Klenk 2008). They would almost certainly have to contend with a plurality of competing environmental ethics and ecological narratives. Pluralism requires us, therefore, to acknowledge the need for and develop practical skills in interpretive ethical reasoning to learn how and when to apply relevant and compelling environmental ethics to actual environmental dilemma.

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Note

1. “Lake Vostok: Russian scientists drilling into 'alien' Antarctic lake buried for 20m years.” Mail Online. *Dailymail.co.uk*. Retrieved 5 April 2012.

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