Learning for the natural environment: The case against anthropocentrism

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Abstract: The world (Africa in particular) is in a progressive state of environmental crisis, caused by global warming, loss of biodiversity, human overpopulation, pollution, massive deforestation and desertification, urbanization and many other environmental problems and risk factors. For several commentators and theorists, part of the solution resides in the provision of pertinent and adequate education, including environmental education. The present paper briefly examines the history of environmental education, internationally and in South Africa, and some of its most prominent current trends and issues, before critiquing its general orientation. Arguing against what appears to lie at the heart of environmental education and literacy, namely anthropocentrism (ideas like "education for sustainable development"), the paper urges a radical rethinking of its central concerns and modus operandi, in terms of facilitating learning for the natural environment. In other words, in order to live up to its promise of contributing towards life beyond the twenty-first century, such learning must include the realization that nature matters in and for itself.

Key words: anthropocentrism; biocentrism; environmental education; sustainable development; sustainable use

> It isn't pollution that's harming the environment. It's the impurities in our air and water that are doing it.
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> —George W. Bush
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> Quite frankly, teachers are the only profession that teach our children.
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> —George W. Bush
>
> The world was not given to you by your parents, it was lent to you by your children.
>
> —Kenyan proverb

1. Introduction—The state of the planet

Arguably, one of the greatest challenges—if not the greatest—facing humankind at the beginning of the 21st century is the state of our planet, and coupled with this our relationship with the natural environment. Most, if not all, other concerns—however significant—are necessarily secondary in this regard. The human impact on the environment has been, and continues to be, enormous. Human population growth and advances in technological abilities continue producing previously nonexistent environmental problems. What is at stake here is nothing less than the survival of the earth in its present state, as being inhabitable, and therefore also human survival. At the very least, it is a matter of the quality and conditions of our lives, present and future. If this is correct, it follows that one of the greatest priorities—perhaps the greatest—of academic research, scientific, philosophical, educational and other, should be into how to arrest and possibly reverse the present decline.

There are difficulties, of course. The problem is not so much whether or not the diagnoses and prognoses are correct. Although doubts by certain scientists and some self-styled experts on climate change, etc. persist, both

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about the extent of the problem and about the time available for humankind still to react; others claim that global warming may not necessarily be bad thing (Stampf, 2007; Stampf & Traufetter, 2007; Traufetter, 2007), it would appear that George W. Bush and his advisors, too, fell into this camp. Substantial questions concern the description and definition of the approaches, and human beings should adopt in response to the environmental predicament/s. Further questions are raised about the metaphysical and ethical foundations of our concern for our planet. Should educational policy and practice, for example, be informed by a concern for nature and the environment for the (human) purposes? Or should we teach and learn for the natural environment and for itself? Interestingly, in their comparative study of different societies and cultures' textbooks, Boujemaa Agorram, Silvia Caravita, Adriana Valente, Daniela Luzi and Nicola Margnelli established that the conception of the relationship of humans in respect to nature was characterized in terms of viewing humans as owners of nature and environment in opposition with humans as guests of the earth together with other living beings (Agorram, et al., 2009, p. 30). They discovered that a fairly uniform approach to ecology and environmental problems appears to exist, irrespective of "cultural differences" (Agorram, et al., 2009, pp. 25-26), one that contrasts anthropocentric perspectives with less (or non-) anthropocentric views—even if the treatment of "ecology (tends to be) rather superficial and incomplete" (Agorram, et al., 2009, p. 25).

It is not the purpose of this paper to present an empirical account of the state of the earth. Facts around climate change, global warming, greenhouse gas emissions, extinction of species etc. are well known, and findings continue to be publicized and updated (for example, Andrew Goudie's account of the human impact on the natural environment, now in its 6th edition; Goudie, 2006. See also White, 1996; De Beer, Dreyer & Loubser, 2005; Gore, 2006; Connor, 2007). For the purpose of this introduction, the author wantss to highlight briefly some of the implications for Africa, and South Africa in particular, before turning his attention to environmental education.

Involved in the recent drafting of the fourth assessment report by the United Nations Intergovernmental Panel on Climate Change (IPCC) were Guy Midgley of the South African National Botanical Institute, Pauline Dube (University of Botswana) and Colleen Vogel (University of the Witwatersrand) (reported in Grant, 2007, p. 5). Their representative presence and participation were significant for a particular reason. Even in the judgement of global warming denialists like Josef Reichholf (Stampf & Traufetter, 2007), the prospects for Africa are dire: Africa is the most vulnerable to climate change. Southern Africa, in particular, faces imminent food and water shortages (Grant, 2007). South Africa has the third highest level of biodiversity in the world (De Beer, Dreyer & Loubser, 2005, p. 4). If, as seems to be a foregone conclusion (Reichholf, 2007), the southern part of Africa is going to "dry up", the implications for biodiversity will be severe. Desertification and deforestation constitute substantial threats to biodiversity (De Beer, Dreyer & Loubser, 2005, p. 4). In addition, South Africa, with the strongest economy on the continent, accounts for more than half of Africa's electricity consumption while the country's cheap, dirty coal is the fuel driving development in the subcontinent. It would appear that South Africa's obsession with a six percent growth rate is out of step with its obligation to curb greenhouse gas emissions.

> It is, therefore, of the highest importance to counteract "the unreasoned use and … wasting of natural resources, … pollution" and "environmental degradation" and to bring about people's awakening (to) these problems …. Education in general, and environmental education in particular, has a significant role in this awakening. It is also a factor of education (for) citizenship (Agorram, et al., 2009, p. 26).

According to Pretoria academics Josef de Beer, Johann Dreyer and Callie Loubser:

> Education is one of the most effective catalysts of change, according to Pretoria academics Josef de Beer, Johann Dreyer and Callie Loubser (De Beer, Dreyer & Loubser, 2005, p. 27).
>
> Society should undertake to educate the people of today to change their ways and to educate younger generations to have respect for nature (ibid.).
>
> Human ideologies require modification. Anthropocentrism needs to give way to ecocentrism as the dominant view of the world. If humans are able to see themselves as part of nature, they will also respect forests (for example) as living communities, not only as resources to be exploited (De Beer, Dreyer & Loubser, 2005, p. 27).

Strangely enough, no mention is made in the discussion of poverty, here as elsewhere, of the problem of overpopulation in this regard. If poverty means people cannot afford to take proper care of the environment or live an environmentally aware life, and if poverty is caused in part by overcrowding and reckless (or, at best, unthinking) procreation, it is clear where education should begin.

2. A brief history of environmental education

From a relatively simple and narrowly conceived concern for conservation or with human-environment relationships (approximately 60 years ago) to a more sophisticated interpretation or acceptance of multiple levels and layers of concern (spanning ethics, politics, culture and sociology), environmental education has become a complex professional field embracing ecological knowledge and understanding (Irwin & Lotz-Sisitka, 2005, pp. 35-36). The first phase of the more sophisticated or nuanced understanding yielded a definition of environmental education that reflected a scientific, rational, linear and developmental view of education. Later, it was replaced by one that included a stronger focus on social critique and social change (Irwin & Lotz-Sisitka, 2005, p. 37).

Pat Irwin and Heila Lotz-Sisitka point out that there is early evidence of environmental education in China, India, Egypt, Greece and—according to oral records—sub-Sahara Africa (ibid.). They refer to the Industrial Revolution as the chief cause of the alienation of human beings (what about Cartesian dualism?)—which also propelled a new wave of environmental concern in Europe and America (Wordsworth, Thoreau, Darwin, Kropotkin and Audubon). The importance of an understanding of the natural environment in a child's education, long acknowledged by indigenous people the world over, was famously recognized by Rousseau, and later by Pestalozzi and Emerson. In 1874 Ernst Haeckel coined the term "ecology" ("the study of our home"—from Greek oikos: "home"), which was prominently embraced by Scottish professor of botany Patrick Geddes. Environmental education landmarks of the 20th century were Rachel Carson's book *Silent Spring* (1962) and the establishment of the International Union for the Conservation of Nature and Natural Resources (IUCN) and the World Wildlife Fund (WWF). Milestones in the development of environmental education on a global scale were the 1972 UN Conference on the Human Environment held in Stockholm, as well as the 1977 Conference on Environmental Education in Tbilisi (Georgia, then USSR) (Irwin & Lotz-Sisitka, 2005, pp. 39-40).

Since the Rio Earth Summit in 1992, the development of environmental education has been widely influenced by the notions of sustainable development and, in particular, "education for sustainability", with many educators advocating that environmental education should, in fact, be focused primarily on achieving the goals of sustainable development (Irwin & Lotz-Sisitka, 2005, pp. 42-43). The notion of sustainable development, first articulated in the 1987 Bruntlandt Report for the World Commission on Environment and Development (WCED), has received global support. Sustainable development is defined as "development that meets the needs of present generations without compromising the ability of future generations to meet their needs" (WCED, 1987, p. 43; Irwin & Lotz-Sisitka, 2005, pp. 43-47; Odora Hoppers, 2008, p. 29).

Tellingly, the spirit here is clearly anthropocentric. Only the needs of humans (present and future) are mentioned, not the needs of nonhuman beings or the value of ecosystems and the environment. A similar spirit informs the Kenyan proverb cited at the beginning of this paper: "The world was not given to you by your parents, it was lent to you by your children" (Stewart, 2004, p. 137).

> In the African context, Catherine Odora Hoppers, indigenous knowledge systems (IKS) specialist and former University of Pretoria scholar, the relationship with, and to nature, human agency, and human solidarity, for instance, underpins the knowledge system and the human existence around it. Relationships between people hold pride of place, expressed in the various philosophies across Africa and best captured by the African concept of Ubuntu—a human-trophic philosophy … (Odora Hoppers, 2008, p. 30).

Ubuntu is an explicitly anthropocentric idea that has conceptual equivalents (botho or hunhu, to mention just two) in many other African languages and cultures. Muntu umuntu ngabantu (or motho ke motho ka batho) means "A human being is human because of other human beings", and also "I am because we are"—where "we" signals not only the collective but also (and especially) membership of the human species. Therefore, the environmental and ecological concern expressed by appeals to ubuntu, by definition, can not be a concern for the environment (the nonhuman biosphere) in and for itself. It is valued only either because human beings are part of it, or because it constitutes a (set of) resource(s) for (present or future) human beings to draw on.

A significant development linked to the Rio Summit was the development of a Treaty on Environmental Education for Sustainable Societies, which was adopted at a plenary meeting by the International Forum of NGOs and Social Movements. Amongst others, the NGO forum principles emphasize "the value of indigenous knowledge and skills, and recognize the socially constructed nature of knowledge" (both of which are contentious principles; I return to this point below), as well as the need to promote cultural, linguistic and ecological diversity, principles that understandably became popular in South African environmental education processes after 1994 (Irwin & Lotz-Sisitka, 2005, pp. 44-45). While many educators agree that the agenda of sustainability should be furthered by education, some educators have begun to question the instrumental rationality adopted by much of the education for sustainability "doctrine", and the assumptions that sustainability provides an adequate conceptual framework for education (Irwin & Lotz-Sisitka, 2005, p. 46).

> The Environmental Education Association of South Africa (EEASA), established in 1992, was regarded with considerable suspicion. From its inception, EEASA promoted the idea that the people of southern Africa have many interests in common, particularly on environmentally related issues, than those which have often been used to create divisions between them. Most significantly, it has argued that: "We share one environment and the better we share it and collectively care for it, the better quality future all of us are likely to have" (Irwin & Lotz-Sisitka, 2005, pp. 48-49).

In the transformation of South Africa, following the 1994 elections, environmental issues and environmental education have become intimately entwined with human rights and social justice issues, as well as ecological and biophysical issues (Irwin & Lotz-Sisitka, 2005, p. 53). The *1995 White Paper on Education and Training* set the scene for ongoing environmental education curriculum development work: "… environmental education, involving an interdisciplinary, integrated and active approach to learning, must be a vital element of all levels and programmes of the education and training system, in order to create environmentally literate and active citizens and ensure that all South Africans, present and future, enjoy a decent quality of life through the sustainable use of resources" (Department of Education, 1995, p. 18). Again, the anthropocentrism of this focus is noteworthy.

3. Education for sustainability

Alluding to the definition provided in the Bruntlandt Report (WCED, 1987), Lesley Le Grange and Callie Loubser acknowledge that the meaning of sustainable development as "development that takes place in such a way that it does not compromise the needs of future generations" (Le Grange & Loubser, 2005, p. 114) has been criticized for its anthropocentrism. Yet, they claim, "sustainable development is not a monolithic entity, and a more nuanced understanding of the concept could incorporate values such as interspecies equity, e.g. that all living organisms have the right to being treated decently and to be protected from cruelty" (ibid.: for a "more nuanced understanding"; Bonnett, 2003, chapter 9; Wals, 2007).

After distinguishing between two alternative conceptions of sustainable development, conservative and radical, Le Grange and Loubser contend that these should not necessarily be seen as discrete categories but rather as opposite ends of a continuum (Le Grange & Loubser, 2005, p. 114). It is this tension between conservation needs on the one hand and development needs on the other that constitutes the beginning of environmental education's association with sustainability (Le Grange & Loubser, 2005, p. 115). For some, the authors say, sustainable development is the ultimate goal of environmental education: hence the phrase "environmental education for sustainability":

> For others, sustainable development encompasses specific objectives that should be added to those of environmental education, thus the expression "education for environment and sustainable development". For still others, environmental education inherently includes education for sustainable development, thus rendering the distinction between the two meaningless (Le Grange & Loubser, 2005, p. 116).

Le Grange and Loubser fail to interrogate critically these different conceptions. There is, clearly, a distinction between "education for the environment" and "education for sustainable development"—at least as the latter is commonly understood, that is, from an anthropocentric perspective. It comes as no surprise, then, that the authors should claim that different conceptions of environment, education and sustainability should coexist (Le Grange & Loubser, 2005, p. 117). They do acknowledge the "dangers in uncritically accepting a plethora of concepts that we use in environmental education", before reiterating their view that there should be an appreciation of the diversity of meanings and usage of the concept of sustainability, but also that such meanings should be (re)clarified within specific sites and discourses of environmental education (ibid.). Sustainability, they claim, is a polysemous concept. Its diversity of meanings should be celebrated and continuously (re)clarified …, so that sustainability (sustainable development) becomes a reflective social process rather than a fixed idea (Le Grange & Loubser, 2005, p. 120).

This strikes me as a somewhat anemic move, as trying to invoke an unfeasible compromise. Surely, this cannot mean that all meanings, uses and applications are equally valid. Some are legitimately criticized as worth rejecting, not least because of an underlying, unargued presumption in favour of anthropocentrism. Take the study of environmental education and training the Human Sciences Research Council (HSRC) undertook in 1997, amongst the key findings of which was the following: "Definitions of environmental training had progressed from an association with nature conservation to a more people- and industry-based perspective" (Lotz-Sisitka, 2005, pp. 166-167). If this constitutes progress, the future is indeed bleak. And if this definition is to be celebrated, rather than critically interrogated, it is even bleaker.

While "sustainable development" and "sustainable use" are arguably oxymorons, sustainability might nonetheless be used as a benchmark, regarding our (human) impact on the planet—not taking out more than we put in, so to speak. This indicates a kind of banking model, but perhaps (in the absence of a more appropriate term)

"sustainability" will have to do.

4. The case against anthropocentrism

Is pollution (e.g. from coal-burning stoves) bad because children in relevant areas suffer more from asthma and chest colds than children elsewhere (De Beer, Dreyer & Loubser, 2005, p. 2)? Or is it bad in itself? If an anthropocentric response is given, then one is unlikely ever to get beyond fighting the symptoms.

Stellenbosch philosopher and environmental ethics specialist Johan Hattingh provides a discussion of anthropocentric perspectives, in which he makes a distinction between the following value positions: ruthless development and exploitation, resource development and conservation, and wilderness preservation—for human benefits and enjoyment of unspoilt nature, recreational, aesthetic and the like (Hattingh, 2005, pp. 74-81). Although the last looks like non-anthropocentrism, the value of nature and the environment is entirely instrumental. The problem here is that their values depend entirely on human recreational and aesthetic benefits. Should human preferences change? There would be no axiological basis for concern.

In ecocentric value positions, by contrast (Hattingh, 2005, pp. 82-89), life in general and ecosystems as wholes are accorded intrinsic value—value in and of themselves, regardless of how humans can benefit from them. As humans evolved and developed, so did their values—through interaction with the land. According to Aldo Leopold, we are therefore not the sole authors of our values. The shift mapped here is one from a focus on relations between individuals (the decalogue) via that on the integration of individuals into society (the Golden Rule) and integration of social organization to the individual (democracy) to a focus on the relation of human individuals to animals, plants and the land (Leopold's Land Ethic) (Hattingh, 2005, p. 82).

In his discussion of so-called radical value positions (deep ecology, ecofeminism, social ecology, and bioregionalism—all of which might also be termed radical environmentalism), Hattingh perceives an emphasis on incisive, definitive and fundamental transformation, in order to address the root causes of our environmental problems (Hattingh, 2005, pp. 89-93). According to Hattingh, the practical consequences between this three-way split between anthropocentric, ecocentric and radical value positions is that they have no shared vision (but they do, arguably!), no unified voice and no common public language to communicate effectively with public decision makers and policy formulators (Hattingh, 2005, p. 94). Hattingh considers this the problem of ethical monism in environmental ethics—while its advantages are theoretical coherence and internal consistency, it is problematic when it comes to the formulation of practical policy proposals (ibid.). Hattingh proposes what he calls environmental pragmatism, acknowledgement and acceptance of the coexistence of theories and value positions, until a comprehensive environmental ethic emerges. I submit that this, like Le Grange and Loubser's, is a rather pale proposal. By the time such an ethic is imminent that it may already be too late.

5. Learning for the environment

According to Dreyer and Loubser (2005, p. 127), there is still no clarity on how environmental education should be implemented in the formal education system. "History has shown", they argue, "that the environment is usually low on the political agenda of governments"—which "usually rely on their education system to achieve their political ideals" (Dreyer & Loubser, 2005, p. 135). Nonetheless, there appears to be increasing recognition of environmental progress at government and education department level.

Citing EE link's principles of environmental education[1], Dreyer and Loubser list the following principles of environmental learning:

(1) Environmental learning is based on knowledge, which is needed to study and solve environmental problems and to address environmental challenges;

(2) Environmental learning should develop the skills needed to study and solve the environmental problems and to address environmental challenges;

(3) Environmental learning should include the affective domain, specifically the attitudes, values and commitments needed to ensure a sustainable society (Dreyer & Loubser, 2005, p. 138).

Apart from its inherent anthropocentrism, a further worrying feature of this kind of approach is its constructivist paradigm (Irwin & Sisitka, 2005, pp. 44-45; Schulze, 2005, p. 60). UNISA environmental education research expert Cheryl Le Roux also refers to this as "post-positivism": Post-positivists suggest that truths and meanings are relative to the individual standpoint and that different individuals and groups will have competing, but equally valid, goals and interpretations of the world (Le Roux, 2005, p. 180). Are these suggestions also "relative to the individual standpoint"? And are the goals and interpretations of Hattingh's "ruthless developer" (Hattingh, 2005, pp. 74-76) equally valid, i.e. as valid as those who caution against environmental degradation? Le Roux (2005, p. 180) states that the post-positivist paradigm accepts values and perspectives as important considerations in the search for knowledge …. Post-positivism challenges conventional assumptions about knowledge and subjectivity.

According to the epistemological and moral paradigm I defend here, a realist accepts values and perspectives but maintains a viable position for judging dubious claims and problematic practices, something the constructivist/post-positivist arguably has no recourse to.

A similar response might be given to Pauline Chinn, Chinese-American science-education researcher, from a family with roots in Hawaii from the late 19th century (Chinn, 2008a, p. 7). Chinn defends an approach connecting sustainability-oriented, indigenous knowledge, practices and values to science knowledge and practices (Chinn, 2008a, p. 3), in response to the dominant, anthropocentric culture (Chinn, 2008b, p. 41) of mainstream science (Tobin, 2008)[2]. Apart from the worry that emphasis on "traditional", "local" or "indigenous knowledge" errs in some fundamental respects (all attributable to misconceptions about what "knowledge" actually is or involves; Horsthemke, 2008a; Horsthemke, 2008b), there is the additional concern that mainstream scientists, industrialists and politicians are likely to listen even less, if warnings about the state of the planet are couched in what they would consider "crackpot science". One might (indeed, should) acknowledge the significant contributions by native Hawaiians, indigenous Americans, Aboriginal and San communities to fundamental ecological sanity and clear-headedness without committing to any kind of epistemological relativism or eulogy of what often amounts to little more than superstition[3].

[1] Retrieved from http://www.eelink.net/principlesofenvironmentaleducation.html.

[2] By contrast, Catherine Odora Hoppers endorses the definition of Indigenous Knowledge Systems (IKS) … as the sum total of the knowledge and skills that people in particular geographic areas possess, and that enable them to get the most out of their natural environment (Odora Hoppers, 2008, p. 29; emphasis added). Unlike Chinn's invocation of "indigenous knowledge", Odora Hoppers's account is anthropocentric—and explicitly so. The same spirit also pervades the latter's concluding statements: The protection, development and promotion of IKS will … help to improve livelihoods and economic well-bring of local communities by ensuring equitable and fair benefit sharing by local communities in the utilisation of the nation's resources (Odora Hoppers, 2008, p. 34).

[3] An example is contained in Chinn's reference to a cultural landscape where gods dwelt (Chinn, 2008b, p. 41; Horsthemke, 2008b). Similarly, Odora Hoppers's claim, IKS holds that there are sacred places that have to be avoided and must be conserved (Odora Hoppers, 2008, p. 30), signals superstition rather than eco-awareness.

An alternative proposal that might be advanced here, then, is not environmental learning under this description, but rather learning for the environment. The former is close to learning about the environment for the sake of human beings and their benefits—which is unlikely to yield fundamental changes. The latter, on the other hand, alludes to the consideration that the environment matters in and for itself. While this way of learning might be argued to acknowledge the environment's intrinsic value or moral status, I am content to proceed more cautiously. Rather than asserting that everyone (every natural existent) has intrinsic value or moral status, I would want to argue, hypothetically, that if human beings do, paradigmatically, then (for reasons of consistency and coherence) these considerations must be extended beyond the species boundary of homo sapiens (While present space does not permit making a comprehensive case for the kind of biocentrism I have in mind, I wish to direct the readers' attention to the Appendix, for a brief overview of the architecture of moral status.). Dreyer and Loubser state, quite plausibly—before they resort to sustainability talk, learners should acquire values such as an appreciation of the resilience, fragility and beauty of the environment, and the interdependence and importance of all life forms (Dreyer & Loubser, 2005, p. 139). I submit that these values are not obviously culturally relative but —on the contrary—transcultural, and co-extensive with learning active engagement and participation in the real world and for the environment.

Environmental education so reconceptualized encompasses both learning for the environment, nature and animals and learning for learners, insofar as it produces in them a sense of empowerment and autonomy, a sense that one's contribution matters, of being able to make a difference. The kind of realist and biocentric pedagogy envisaged here has additional implications for learning. It gives new meaning to the idea of human freedom—which is not expressed in terms of being free to develop and subjugate anything that can be developed and subjugated, but rather in terms of humans being freed from the (historical) role—and frequently perceived function—of more or less ruthless developer and subjugator. "Learning for the natural environment" takes the anti-discrimination argument to its next logical and practical level. It is not only anti-sexist, anti-classist and anti-racist—it is also anti-speciesist[4].

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[4] To test the logic of the sustainable use argument, why do we not apply it to human beings? Why do we not, in order to counteract overpopulation, regulate reproduction, and practice sustainable harvesting of embryos, even of orphaned infants and the mentally handicapped? Why do we not cull industrialists and others who are responsible for pollution, or recycle perpetrators of serious crimes, using their body-parts to preserve good life that would otherwise cease? There are clearly serious moral injunctions against these sorts of practices. The problem is that these injunctions are generally assumed not to apply beyond the species boundary, i.e. to pertain only to homo sapiens. I have argued elsewhere that this conception of morality, and of who or what matters morally, is deficient in that it is speciesist—the analogy being with sexism and racism (Horsthemke, 1993, chapter 5).

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(Edited by Max and Lily)

Appendix:

The architecture of moral status (adapted from Horsthemke, 1993)

Primary moral status—directly morally considerable	Secondary moral status—indirectly morally considerable
All living organisms	All non-living natural/environmental entities that enable the existence of living organisms

<table>
<tr><td colspan="2">Moral subjects</td><td>Moral objects</td><td>Moral objects</td></tr>
<tr><td colspan="2">All organisms with a central nervous system, who are the subjects of a life that can be better or worse for them: humans, more complex animals</td><td>All organisms lacking subjectivity/individuality: simpler animals, plants</td><td>Soil, air, water, rocks, minerals, sand, ozone layer, the sun, etc</td></tr>
<tr><td>Moral agents</td><td>Moral recipients</td><td>Moral recipients</td><td>Moral recipients</td></tr>
<tr><td>All individuals capable of acting on principle/ reconsidering their motives, who can be held morally accountable</td><td>All individuals lacking, but who can be harmed/ benefited by, moral agency</td><td>All organisms lacking subjectivity/individuality who can be harmed/ benefited by, agency (the actions and omissions of agents)</td><td>All inanimate natural/environmental entities at the receiving end of agency (the actions and omissions of agents)</td></tr>
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