Ecology and Environmental Education

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A Backdrop: The Emergence of Environmental and Ecological Issues as Matters of Educational Concern

While there is a longstanding tradition of attending to the environment in the sense of the natural world in education in the West – for example in the 'nature study' that was once prominent in early years education – it was the rising sense of all not being well in this natural world that led to a more focussed and urgent attention being given. This paralleled the environmentalism that awoke in the 1940s (e.g. Leopald 1949) and burgeoned in the 1970s onwards where the extent of the disastrous impact of human action on the natural environment was becoming recognized, accompanied by foreboding concerning the implications of this for the future of humanity. The effects of large-scale anthropogenic environmental pollution (including climate change), depletion of natural resources, habitat destruction and species extinction, all were becoming only too apparent. As something that increasingly confronts citizens of the twenty-first century, it became clear that this situation was one that education needed to address. The term 'environmental education' appears first to have arisen in official language at a meeting of the International Union for Conservation of Nature and Natural Resources held in Paris in 1948.

What form such environmental education should take remains a matter of ongoing debate, but it soon became clear that the implications of responding to what became termed our 'environmental crisis' were very extensive, threatening to impinge not only on everyday lifestyles, but potentially on the economic bases of Western society and its political institutions. Antipathies between finite and rapidly diminishing natural resources and the idea of perpetual economic growth are not hard to discern, while one commentator (Ophuls 1977, p. 3) alerted us to a threat to

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the idea of liberal democracy resulting from so-called ecological imperatives that arise from the perceived seriousness and urgency of our environmental situation encouraging the establishment of an authoritarian technocracy. Resonances of this latter antipathy are reflected in the school context in a tension between an approach that focuses on modifying behaviour in ways that have been officially prescribed as environmentally friendly and a fear of bypassing students' personal understanding and critical evaluation of underlying issues (that might lead to a rejection of some of this behaviour) (Jensen and Schnack 1997). Clearly, serious pedagogic issues are raised here.

In tandem with the awakening concern over the state of the environment was the rise of the science of ecology. At its kernel ecology postulates and explores the biophysical interdependence of all living things as communities of organisms embedded in their environment. In turn, such local 'ecosystems' are considered to be nested in more general regional and global systems that ultimately constitute our planetary ecosystem or 'ecosphere'. Here, a holistic systems thinking approach to environmental issues is advocated – a central point being that the organism and its environment are often considered to be an integral system that constitutes an indissoluble ecological unit. Hence through the interactions of such units with each other within a shared environment with its numerous feedback systems, the conditions of the existence of each is ultimately a product of the interplay of all such units. Exploring what are taken to be the implications of such radical interdependencies for human attitudes and behaviour led to the rise of 'ecologism' and 'Deep green' perspectives that locate humanity firmly within these biophysical systems. These found general expression in, for example, the work of Arne Naess (1989) and James Lovelock (1979), and philosophical exposition in, for example, Freya Matthews (1994) and Paul Taylor (1986).

While the above account sketches the emergence of the topic as an educational concern in more recent times, it is worth noting that there were important historical antecedents for seeking to bring education into close relationship with the natural environment. In one sense the idea of environmental education goes back at least as far as Rousseau who in *Emile* advocates learning through direct observation and physical activity in nature in the early years of a child's life. Through such experiential (as opposed to abstract) learning nature becomes Emile's teacher. This more positive affiliation with nature in which pleasurable acquaintanceship, relatively unfettered curiosity and a sense of wonder feature strongly remains an important counterpoint to an environmental education that is focused on redressing anthropogenic ills in nature and that can emit a somewhat repressive ethos with its emphasis on self-restraint, and sometimes guilt (Louv 2010; Postma and Smeyers 2012).

This positive attitude is found in the long tradition of outdoors education that views engagement with the natural world as character-building in terms both of developing physical dexterity and aesthetic sensibility, and also the self-reliance required in dealing with the exigencies that occur unbidden in the natural environment. The ways in which late-modern culture tends existentially to distance itself from nature, and what he takes to be the moribund effects of this, are developed by Louv (2010) in his notion of 'nature deficit disorder'. This theme, that previously

had received powerful expression in the views of the Romantics, raises the issue of our relationship with nature as one of considerable educational significance. To recall Wordsworth's famous lines:

> Getting and spending, we lay waste our powers,
> Little we see in nature that is ours,
> We have given our hearts away, a sordid boon!

Here, he articulates what he sees to be a diminution of human being that is occurring with an increasing preoccupation with the mercantile and the instrumental – both of which, arguably, have gained the ascendance in the thinking that informs many areas of public education since his time. David Orr (1994) makes the point that environmental concern raises not simply problems *in* education, but the problem *of* education – that is, conventional Western education that increasingly focuses on producing students who are effective operators in a global market economy premised on perpetual growth. For Orr, students so equipped, lacking 'ecological literacy', perpetuate – indeed render ever more rapacious – an economic system that is a heavy contributor to our current environmental predicament in terms of the strain placed on our planetary ecosystem. This then raises a general point concerning the character of the aims of environmental education: they are not necessarily such as to sit comfortably within or alongside existing taken for granted educational practice.

Reflecting the anthropocentrism implicit in conventional education, when large-scale environmental concerns arose, initially the educational response tended to be scientific and technocratic (Robottom 2005).The emphasis was placed on the dissemination of what was regarded as relevant scientific information and the modification of behaviour designed to serve long-term human self-interest, such as recycling and reduction of energy consumption. This top-down "environmentalism" (Elliott 1999) came to be contrasted with more democratic approaches that attempted to root environmental education in the everyday experience of students and their local communities.

A good example of this latter approach arose out of the 'action research' movement: the long-running OECD *Environment in Schools Initiative* that attempted an 'ecologization' of schools by placing environmental issues at the heart of the curriculum. The underlying aim was not the acquisition of pre-specified subject organized knowledge, but critically reflective environmental action framed in the context of students' own life-worlds and understandings. In this context students became as much generators of knowledge as recipients. This approach was viewed by those involved as radically 'transgressive' in the way that it disrupted many boundaries that structure conventional education, such as those between childhood dependency and adult responsibility, knowledge users and knowledge producers, knowing and acting, facts and values. It was argued that the inherently complex, contextualized, frequently controversial, and often piece-meal occurrence of environmental issues in real-life situations precludes a traditional school curriculum and requires students to participate in shaping "the social and economic conditions of their existence in society" (Elliott 1999).

This highly dynamic model of environmental education provides a powerful example of the extent to which environmental education has the potential to impact upon conventional views of pupils, teachers and educational institutions.

Harking back to an earlier point concerning the significance of the idea of nature to the topic of environmental education, another important influence on the ways in which environmental issues became viewed, both generally and in the particular context of education, has been the rise of postmodernism and poststructuralism. Views emanating from these broad cultural/philosophical movements led to a fundamental questioning of traditional and scientific understandings of nature: its status as an external reality, a given, was heavily undermined by claims that, rather, nature is socially constructed. Hence, with regard to the burgeoning domain of socio-cultural studies, Ursula Heise observes:

> More broadly, the basic goal of work in cultural studies for the last 20 years has been to analyze and, in most cases, to dismantle appeals to 'the natural' or the 'biological' by showing their groundedness in cultural practices rather than facts of nature. The thrust of this work, therefore, invariably leads to skepticism about the possibility of returning to nature as such, or of the possibility of places defined in terms of their natural characteristics that humans should relate to. (Heise 2008, p. 46)

This has radical implications for the character of environmental education both from the point of view of the significance of experience located in natural settings and the status of scientific ecology. In addition, issues arise from the cultural relativizing of the values that run through the identification of environmental problems and appropriate responses in international contexts.

Finally, there is another cluster of ideas concerning the scale and locus for considering environmental issues: ideas of the global, the local and 'place'. While not necessarily in conflict, the emphasis that each of these invites can produce significant tensions as when, for example, global 'solutions' that are based upon abstract international knowledge come up against local traditions based upon intimate acquaintanceship with a particular locale.

Indigenous Perspectives

The account that I have given so far has reflected what might loosely be termed a Western perspective. In very general terms there are perhaps two alternative perspectives that should be acknowledged: 'Eastern' and those arising from indigenous cultures. With regard to the former, certainly it would be as wrong to assume a homogeneity of view as it would be to claim it in the case of the West, but there are examples where a distinctive orientation can be found: for example, Daosism's emphasis on a life that reflects the flow of nature in its creative spontaneity. Undoubtedly, there is much to be gained from an engagement with Eastern approaches. Heesoon Bai (2012) has drawn on Asian philosophies to develop an approach to moral aspects of environmental issues, and notions of 'mindfulness' have been employed to extend our understanding of perception of the natural world and what it has to offer (Pulkki et al. 2016). While such contributions are beginning

to make their presence felt in environmental education debate in the West, indigenous perspectives have long been acknowledged as offering a radical alternative that deserves attention.

An analysis of traditional ecological knowledge provided by Reid et al. (2002) notes that such knowledge has a number of salient features. It is the result of an historical continuity in resource use practices built up over generations living in close contact with natural systems. It is unique and local, having developed around the specific conditions of a group of people indigenous to a particular biogeographic area and therefore contrasts with the international knowledge generated by universities, multinational business corporations, etc. It is dynamic in nature, bearing the imprint of an ever-ongoing responding to the minutiae of local change and is integrative of the life of the community, forming the basis for natural resource management, agriculture, food preparation, health care, education and so forth. Importantly, it is handed down by cultural transmission, often orally and through ritual, thus reflecting the knowledge of the body as well as the mind. These features resonate with a recent "insider" description of North American indigenous cultures given by Four Arrows (2016), who adds an acceptance of life's mysteries and learning from virtues claimed to be observable in nature, such as generosity and courage.

This account of the indigenous perspective is nicely illustrated by, but also in part extended by, the sub-Saharan African concept of *ukama*. Lesley Le Grange (2012) describes this concept as referring to a sense of relatedness to the entire cosmos and as embodying an inseparable oneness between both past, present and future generations and with the natural world. Here nurturing the self is inextricably bound up with both one's social community and community with nature (often expressed in terms of identity and kinship) such that healing/development in one results in healing in all three dimensions, so suffering too is transversally witnessed in all three dimensions. On this view care for non-human nature is built into the notion of human dignity.

Overall, the high degree of identification with the local natural world and regarding it as a source not merely of material sustenance, but of wisdom and spiritual sustenance – and therefore as a key player in the process of education – is something that, arguably, needs to be reinstated in educational debate. As, also, is the importance placed on knowledge derived from first-hand experience and intimate acquaintanceship compared with that deduced from 'objective' abstract theory. One consequence of postmodernism is that we can no longer feel confident in simply dismissing without further reflection views that can be marginalized and made to look archaic by particular high-status ways of thinking in the West.

Environmental Education, Sustainability and the Philosophy of Education

Approaches to understanding the topic in philosophy of education can be considered to have been structured in two ways: first, by some key orientating ideas that have permeated education with regard to the environment; second, by broad

philosophical perspectives or 'methodologies' adopted as ways of explicating and evaluating these ideas and for identifying the educational issues that they raise. In what follows I will outline the most influential ideas that have emanated from environmental concern in education, indicating the kinds of philosophical analysis to which they have been subject or that they have invited. I will give something of the history of the debates that have arisen and identify ongoing issues.

Perhaps the most longstanding environmental notion in education is that of not simply learning about the environment, but learning *through* and *in* the environment by direct observation and physical activity, that emanated from Rousseau. This received philosophical scrutiny in the long established topic of learning through free experience that constituted an important part of the larger debate over child-centred education that arose in the 1960s and 1970s. Robert Dearden's analytic critique of the notion is a characteristic example of this kind of work. It sought to reveal the limitations of the approach in educational terms – for example, that experience unstructured by a teacher would be a chancy and inefficient way of achieving educational goals, and that the acquisition of abstract concepts, that by their very nature cannot simply be directly observed, would require a level of instruction (Dearden 1968, Ch. 6). Nonetheless, the value of relatively unfettered direct experience has continued to have its adherents in education. It remains an important element in the advocacy of the Forest School movement, wild pedagogy and outdoor learning in general (see, for example, Payne and Wattchow 2009; Jickling 2015). And certainly contemporary interest in embodied learning and criticisms of the Cartesian dualism that is taken to structure experience in terms of separated subject and object domains remains a legacy that has claimed the attention of philosophers of education (see Bai 2009; Barnacle 2009; Doddington and Hilton 2007).

However, with the previously mentioned narrowing of focus in environmental education onto what are perceived as environmental problems, without doubt, the ideas that have received most attention in the literature have been those of 'sustainable development' and 'sustainability'. I consider each of these in turn.

The term "sustainable development" was first introduced in *The World Conservation Strategy* (IUCN et al. 1980) and perhaps received its most influential articulation with the publication in 1987 of the report of the World Commission on Environment and Development, *Our Common Future* (Brundtland Commission 1987). Here sustainable development was defined as "a development that meets the needs of the present generation without jeopardising the ability of future generations to meet their needs". This definition was consolidated as an educational concern at the Earth Summit Conference held in Rio de Janeiro in 1992, attended by delegates from over 170 countries and whose centre-piece agreement was *Agenda 21* (UNCED 1992) which included the proposal to introduce 'sustainable development' into the educational programmes of signatory nations. Thus it found its way (at least notionally) into the core curriculum of many nations, giving rise to the idea of education for sustainable development. It was lent further impetus by the decision of the UN General Assembly in December 2002 to launch the Decade of Education for Sustainable Development 2005–14. The strong appeal of this notion derives from the appearance of combining two desiderata: development in the sense

of having more or better, and sustainability in the sense of maintaining what is valued (including this development). It is precisely this appearance that has received critical attention by philosophers of education.

For example, it has been argued that in the context of modern Western culture the attempt to meld the idea of sustainability with the idea of development results in an oxymoron (Shiva 1992; Bonnett 2002) that frequently serves to authenticate or veil practices that are far from 'green'. In the Western context, development frequently becomes equated with economic and material growth. Here, nature is viewed exclusively as a resource to be exploited and this instrumentalism is necessarily incompatible both with what is taken to be a core meaning of sustainability – preserving things in their own nature – and with living within nature's economy rather than one that is imposed and destructive of this (Shiva 1992). Amongst other things, it is claimed that it is precisely the attitude of focussing on anthropocentric values and what become ever expanding human 'needs' that lies at the heart of the Brundtland definition of sustainable development that has led to our current environmental predicament. With increasing technological power and the previously mentioned economic pressures characteristic of a free market system, there has developed an unprecedented aggressiveness towards the natural world (such as huge scale deforestation and the decapitation of mountains for coal extraction), which excludes the potentially moderating effect of being open to intrinsic values in nature. Helen Kopnina (2012) has explored how as the idea of sustainability becomes applied to an increasing range of anthropocentric desiderata there is a loss of focus on nature.

The nature, power and consequences of this anthropocentrism continue to receive attention in the philosophy of environmental education and are a matter to which I will return. For the moment, it is worth noting that it is frequently seen as representing the opposite pole to the influential eco- or bio-centrism espoused by 'deep green' theorists who place the integrity and value of the natural world (of which humanity is conceived to be one part) as the central consideration. This seeks to combat the great divide between humanity and the rest of nature that historically has dominated Western thinking – from the Greek and Judaic thought that saw nature as profane or put there to serve humankind, to the rationalism of Aquinas that elevated man above nature in the Great Chain of Being, and Descartes' radical separation of man from mechanical nature through his possession of an incorporeal mind. When nature is projected as a vast machine ultimately constituted of inert atomic particles whose motion is the result of a variety of external mechanical forces, it is set up for classical experimental science to extract its laws and "secrets" without restraint – for example, by highly interventionist and invasive experimental methods – especially when joined by an Enlightenment vision of unimpeded human progress (Merchant 1992).

In contrast to the interpretation of sustainability that occurs when it is recruited to the idea of sustainable development, 'sustainability' has re-emerged as a critical response to the domination of the latter in educational policy and practice. It has been argued that there is much to be gained if we move the focus from trying to formulate a grand policy implicit in the idea of sustainable development to attending to the qualities of a frame of mind – or way of being – that constitutes sustainability

as an outlook (Bonnett 2002; Postma 2006). Once established, this frame of mind would enable individuals to respond to environmental issues in a way that expresses a deeper sense of sustainability, as and when need arose in their everyday lives. This is taken to counter the aggressive anthropocentrism found in the most influential formulations of the policy approach and circumvents some serious epistemological and ethical problems inherent in the latter, such as the frequent inadequacy of our current state of knowledge to predict long-term outcomes in the context of the scale and complexity of natural systems, and the differing cultural and geographical perspectives on what the most pressing problems are and what would count as acceptable solutions. In addition, the idea of sustainability as a frame of mind has led to some interesting arguments that are taken to go to the heart of education as a whole because they raise issues concerning the character of human being, its relationship with nature, and the broad socio-cultural factors that shape and influence this. For some, the true character of the environmental crisis is not only – or even chiefly – material, but deeply spiritual (Ashley 2006; Bonnett 2007). It is a matter of how we conceive our relationship with the natural world and our place in the cosmos. Arguments of this kind have been taken to have fundamental implications for our understanding of education, pedagogy, and the character and culture of educational institutions.

Previously it was noted that the reality and authority of traditional ideas of nature have been heavily criticized from socio-cultural and poststructuralist perspectives. Far from being an underlying given, 'nature' is posited as socially constructed, culturally and historically variable, and ideological – frequently incorporating or authenticating suspect power relationships (Haraway 1991; Stables 2001). However, a number of counterarguments have arisen in response to this growing orthodoxy. From a phenomenological perspective, it has been pointed out that while our concepts of nature – in common with all other concepts – have been socially produced, we *experience* nature as something that precisely is *not* socially produced. Rather, it is quintessentially non-artefactual. In this sense, nature is transcendent and "self-arising" (Bonnett 2004; Crist 2008). Furthermore, it is claimed that phenomenological analysis reveals such self-arising nature to exhibit a number of key properties that include: otherness, epistemological mystery, integrity, agency, normativity and intrinsic value. Clearly, this portrayal of nature conflicts not only with poststructuralist accounts, but also with those of classical physical science, and debate over the plausibility of each continues. But if the phenomenological account of nature is taken seriously, a number of issues arise that have important educational implications. For example, if nature is conceived as transcendent and normative, if knowing it involves participating in the "being" – living presence – of things (Abram 1997; Bonnett 2015), this demands a modality of perception that is fully multi-sensory, bodied as well as cerebral, and open to an integrity and values that are intrinsic. It valorizes more directly engaged ways of being towards the world – ways that involve many potentialities for openness of our being as a whole. Hence environmental education informed by a concern for nature becomes something that should condition the idea of education itself. For example, it would involve attending to the development of the whole person as an embodied, sensual, emotional, willed, as

well as intellectual being. Education becomes ontological in the sense of having a concern for the nature of a person's being and what a person is becoming.

In addition, by exhibiting a concern for the pupil as a self that is always a self in relationship with its environment, some have seen this to raise afresh and in a forceful way the issue of "place": the importance of locale to the significance of action, our sense of identity and our sense of responsibility towards the environment (see, for example, Gruenewald 2009; Ontong and Le Grange 2014). It has been noted that nothing we do is unplaced. In this sense humans are always and already geographical beings (Casey 1997). This has led to an exploration of the application of notions of "cultural density" and "habitus" to natural and other learning environments (Waite 2013). In a recent discussion of place-conscious education, David Greenwood (2013) speaks of the need for a "decolonization" of places such that the often contestable nature of the dominant beliefs and motives that inform our perceptions of them can be revealed, enabling us to re-inhabit them in a deeper and more open manner.

Related to these issues is that of the significance for moral education of sensibility to normativity in our experience of nature. By affirming knowledge by acquaintance in which all the senses are in play including sensitivity to integrity, agency and values present in the natural world, such a position invites exploration of an idea of moral education that founds the idea of moral agency on that of poetic receptiveness. In doing this it intimates an enlarged sense of moral agency: one that is less pre-occupied with the model of an autonomous rational agent (e.g., Bowers 2012) and that seeks to sensitize us to possibilities of an enabling passivity on our part that properly recognizes the contribution of non-human agency to the character of the places in which we live. Clearly, this presents a radical challenge to the traditional conception of ethics that holds moral obligation to exist only within a social contract between rational agents.

Extending this theme, questions of the following kind arise: What responsibilities do we have to non-human nature? What responsibilities do we have to future generations? Regarding the first of these questions, recently Peter Kemp (2015) has argued that humans and animals are equal partners as corporeal beings but not as temporal beings, and that as humans alone *conceive* of love and care as a state of being they are responsible in a general sense for the welfare of animals. On the second question Dirk Willem Postma (2002) has explored a number of issues that arise for Rawlsian liberal morality from the impossibility of there being reciprocity with future generations, and also the difficulties that such anthropocentric theory has in properly comprehending environmental issues because of its focus on the private sphere.

In more general terms, these issues connect with work that has been done on the question of what constitutes being "green" and the creation of "green" citizens in a liberal democracy (see, for example, Bell 2004). C. A. Bowers (2002) has argued that there is a pressing need to address the socio-political consequences of current values and practices. He has developed the notion of an 'eco-justice' pedagogy that has three main foci: (a) to develop an awareness of the environmental racism and class discrimination involved in the way that the deleterious environmental impacts

fall disproportionately on ethnically and economically marginalized groups; (b) the recovery of non-commodified aspects of community through a reversal of an ever-increasing dependency on meeting life's daily needs through consumerism rather than through self-reliance within the family and within networks of mutual support within communities; (c) to develop a sense of responsibility towards future generations and a corresponding self-limitation by an expansion of non-consumptive relationships and opportunities to develop personal talents and to enrich the community. Bowers claims that central to this enterprise is the identification of root metaphors embedded in language that shape the way that we engage with the world: currently, metaphors that underlay the industrial revolution such as 'individual' and 'linear progress'. He argues that these systematically undermine the value of tradition and therefore the intergenerational knowledge and continuity that are necessary for ecological wisdom and are so central to indigenous perspectives. Also they conflict with the root metaphor underlying an eco-justice pedagogy which is 'ecology' and that 'foregrounds the relational and dependent nature of our existence as cultural and biological beings'.

This is one example of a broad concern for the curriculum and culture of schools that has been awakened by environmental issues (see, also Chapman 2007). Others include how understandings of nature that focus on the spontaneous being of natural things in their otherness have led to foregrounding dialogical learning/pedagogy and the idea of a curriculum of emergent engagements rather than one of prespecified connections determined by academic disciplines (Foster 2002; Bonnett 2007). Somewhat in tension with this, Stables and Scott (2002) have defended a discipline-based approach to environmental education. They argue that it would be a mistake to attempt to conceive of environmental education as some holistic cross-disciplinary element, implying, as it would, that there is, some single totalizing environmental grand narrative to be conveyed. Here there is the danger of an eco-fascism that would subvert the integrity of the disciplines.

However, it has been claimed that the atomistic understanding encouraged by a traditional curriculum inevitably both externalizes relevant factors and lacks cognisance of the greater whole: it is unable to convey its organic nature. In his influential *Steps to an Ecology of Mind* Gregory Bateson (2000) argues that what is desperately required is a systemic wisdom that transcends the narrow purposive frameworks through which consciousness selectively samples events and processes. But how is the greater whole to be understood? What are the appropriate metaphors? Debate on this has considered numerous candidates that include: a created realm, a blind causal system governed by abstract laws, an energy or information system, a domain of dialogical encounters attended by mystery, Gaia. The helpfulness of any or some combination of these remains a matter of ongoing debate – as does the dilution of the boundary between self and other that some of these views expound (see, for example, Matthews 1994).

Yet in many ways, concerns are raised most powerfully for the culture of the school – for example if "success" is portrayed in terms of the values of market production and consumption, and the sense of community embraces only humankind (Bowers 1995). It seems clear that if we are to enable pupils to address the causes

of environmental problems rather than the symptoms, we must engage them in those kinds of enquiry that reveal the dominant underlying motives, metaphors and interpretations that are in play in society and invite them to participate in shaping practices that are informed by the understandings that emerge. Here the focus moves to an examination of the underlying versions of human flourishing and the good life that are implicit in the ethos of the school as a community and how they connect with life more generally.

Conclusion: Emerging Issues

A number of the views considered in this chapter suggest that ultimately the topic of ecological and environmental education will require an examination of motives that are inherent in our most fundamental ways of thinking about ourselves and the world – that is to say it will involve *metaphysical* considerations. Some of the most significant concerns of this kind are briefly outlined below.

One important issue to arise is the disclosure of the extent of scientism in education and an examination of its impact both on our ability to think both about environmental issues and the nature of human being (Abbs 2003, Ch. 2). The incompatibilities of pre-specification, modularization and micro-management with free exploration of the environment and an emergent curriculum raise deep philosophical questions regarding the enervating influence of scientism in education. This influence has been understood as an expression of a growing "metaphysics of mastery" that seeks to set up everything to be on call for the exercise of the human will (Bonnett 2013).

Another radical line of argument is that because of the intentional, ecstatic, and therefore *environmental* nature of consciousness, there is an important sense in which human being is ineluctably involved in sustainability. Drawing on Martin Heidegger's portrayal of reflective consciousness as the place where things *occur* – show up, are beheld – it follows that they show up most fully – are most themselves – when the receptivity of such consciousness is as open as possible. This is to say that it is the essence of consciousness to allow things to be, and in this sense to *sustain* them (Bonnett 2004). A frame of mind that enables things to presence in the richness of their manifold being (which includes their inherent otherness and mystery) is itself enriched and receives inspiration. Such allowance of things themselves was portrayed by Iris Murdoch (1959) as a form of love that lies at the heart of human flourishing. It seeks actively to listen for and discern the call of individuals in their otherness – which will include the difficult task in the age of the metaphysics of mastery of clearing an appropriate space for things to occur in this way. Considerations of this kind have led to an exploration of the character of educational institutions as places that promote deep cultural change through their location, architecture, culture and ethos (e.g. Blenkinsop 2012).

Overall, it is clear that pursuing the issues that are raised by environmental concern leads to broad issues of considerable educational importance. Perhaps one of

the most fundamental of these arises from the radical challenge to anthropocentrism implicit in much environmental debate and that has resulted in questioning the cluster of ideas that constitute the modernist humanism that has been so influential in educational thinking. Consider, for example, the high profile given to rational autonomy as an educational aim and the high status given to abstract disciplines that either objectify reality or instrumentalize it, or both. It has been claimed that we now live in a period of 'post-ecologism': a simulation in which beneath widespread green rhetoric, unsustainability is inherent and is tacitly accepted. Here "the discourse and policies of ecological modernisation and sustainable development function to simulate the possibility and desirability of environmental justice and integrity without genuinely aiming to address, let alone reverse, the fundamental unsustainability of late-modern society" (Bluhdorn 2002, p. 66). This covert attitude, consistent with the metaphysics of mastery, represents another reason for exploring the possibilities of a post-humanism in which non-anthropocentric impulses and a more intimate and attentive relationship with the natural world is valorized.

Finally, there is now a growing interest in the idea that philosophy of education itself needs to be "ecologized" (see, for example, Jickling and Stirling 2017; Affifi et al. 2017). Philosophical examination of environmental concern and environmental education discloses profound issues that invite us to review a range of ideas and assumptions about the nature of knowledge, learning and human well-being – and hence, education as a whole. In the light of this it is argued that the philosophy of education needs more fully to recognize the significance of ecological and environmental perspectives and their implications both for the topics that receive attention and the kinds of thinking used to address them.

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