ENVIRONMENTAL EDUCATION AND THE ISSUE OF NATURE

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Abstract

Much official environmental education policy in the UK and elsewhere makes scant reference to nature as such, and the issue of our underlying attitude towards it is rarely addressed. For the most part such policy is preoccupied with the issue of meeting 'sustainably' what are taken to be present and future human needs. This paper considers a range of issues posed by this anthropocentric approach and will explore the view that environmental education -- indeed *any* education -- worthy of the name needs to bring a range of searching questions concerning nature to the attention of learners, and to encourage them to develop their own on-going responses to them. It is argued that our present environmental predicament not only provides an exciting opportunity to re-focus education on the issue of our relationship to nature, but positively requires the exploration of this issue for its long term resolution. Extensive implications for the curriculum and the culture of the school are raised.

Key words: environment; education; nature; sustainable development

It is difficult to think of a set of issues more important now to the welfare of humankind than those concerning the environment. Problems of climate change, pollution, and the depletion of natural resources are now only too familiar -- as is the putative remedy of 'sustainable development'. And the curricula of many national education systems -- at least in their rhetoric -- are attempting to address this area of concern, particularly, but not exclusively, those nations that were signatory to Agenda 21 of the 1992 Rio Earth Summit. And while there is considerable variation in detail of the curricula approaches taken to environmental education, it remains the case that 'sustainable development' is a key orientating idea. In this paper I wish to raise some critical questions about this orthodoxy along the lines that it can incline us to pay too little attention to what I will argue to be the key issue for environmental education: our understanding of nature and our relationship to it. In particular, I will be concerned to address two interweaving issues:

1) the general issue of the meaning of 'nature' and its importance to education;

2) what taking nature seriously suggests for the aims and curriculum of environmental education.

In what follows I am keenly aware that the issues I have chosen to focus on have been extracted from an extensive web of interrelated concerns and perspectives. While clearly there is a larger story to tell, I hope to show that in the space available the strands that I have selected are indeed central to understanding the curriculum implications of our current environmental predicament.[1]

Education and nature

Much official educational policy -- including that which relates to the environment -- makes scant reference to nature. This is reflected, for example, in English National Curriculum documents where few references are made to nature as such as a focus of learning.[2] The relative invisibility of nature is perhaps nowhere better illustrated than by the case of science education, which is clearly taken to be the place where any understanding of nature is to be undertaken. For example, the learning objectives of the English National

Curriculum for 5--11 year olds (DfEE 1999) are preoccupied with learning 'investigative skills' and testing scientific ideas. This is very much in line with the priorities recently specified by a group drawn from 'the expert community' of science educators that centre on students learning the need for experiments to be replicated, the difference between causality and correlation, and how to present and write up findings (Collins et al 2001). While not denying a certain importance to such goals at one level, seen from the standpoint of elucidating the underlying spirit of science education they reflect a worrying banality, lacking any cognisance of science education as seeking to develop an appreciation of nature. A largely analytic/instrumental/invasive rationality dominates.

While it would be stretching the point to suggest that little has changed since Francis Bacon's advocacy of modern experimental science at its inception as needing to 'hound nature in her wanderings' and 'torture her secrets from her' (Capra 1982: 40--41) -- in more contemporary parlance we might speak of science as seeking to explain, predict and control aspects of nature -- it is sometimes still willing to intervene quite aggressively to achieve this. For example, it is prepared to subject organisms to laboratory conditions, kill them in order to dissect them, inject foreign (often toxic) substances to study their effects, etc. On the whole, this is all regarded as quite acceptable by the scientific community and many outside.

It is not impossible, therefore, to recognise echoes of Bacon's recommendations in much (but by no means all) science as currently practiced -- particularly when we acknowledge the volume of science funded by bodies whose underlying objectives are primarily commercial or military. And we can draw a vivid contrast with the scientist of yore as 'natural historian' and science education as 'nature study' -- a view recently belittled as mere 'stamp-collecting' because of its passivity. But given our current environmental situation, which in part has been fuelled by some two centuries of ascendancy of science of a more aggressive kind, the general demotion of the ancient motive of appreciation in studying nature must be open to question.

This apart, with our increased consciousness of environmental problems, the widespread ignoring of nature as a topic in itself is, at the very least, disappointing. Indeed in my view it represents a certain dereliction of duty. I will argue that environmental education in particular, and education in general, should have at their heart the ambition to bring a range of searching questions concerning nature to the attention of learners -- and to encourage them to develop their own on-going responses to them. I have in mind here questions such as: What is nature and what is our place in it? How can we know nature and what should be our attitude towards it? Against what criteria should humankind judge its progress/success/ flourishing in relation to the natural world? Such questions are educationally relevant because they represent important ways of articulating our understanding of the human situation and it seems to me that our present environmental predicament not only provides an exciting opportunity to re-focus education on them -- I say *re*-focus, because, of course there was a time, e.g. in the Eighteenth Century, when they would have been a natural part of education -- but also, I will argue, they are central to addressing that environmental predicament, itself.

However, any such refocusing will not come easily. The contemporary highly instrumental stance within Western society at large necessarily diverts attention from issues concerning the meaning of nature by simply ignoring them or by making them sound 'purely academic', esoteric, even frothy. And this stance is not without allies in academia, where raising such questions can be inhibited by denying the language in which they can be meaningfully articulated; for example, by dismissing 'nature' as simply a social construct that has no objective reality and is redolent with ideological bias (e.g. Giddens 1994, Haraway 1991).[3] Viewed from another standpoint, the effective proscribing of talk of 'nature' appears more as a form of what Lyotard once described as 'linguistic terrorism' (Lyotard 1984: xxiv). And, sadly, there are reasons for believing that the situation is not helped by the way that our current understanding of environmental issues has become orientated around the concept of sustainable development. I will pursue this a little further.

What is wrong with the idea of sustainable development?

I will not here rehearse its history, but for brevity will simply refer to the well-known and highly influential definition of sustainable development from the report of the Brundtland Commission (1988): 'a

development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

This is a very seductive notion as, on a generous interpretation, it seems to marry two highly desired goals: first, the idea of conserving those aspects of nature that are valued (i.e. in some sense 'needed') but that are currently endangered by human agency; second, the idea of accommodating ongoing human aspirations to 'develop', that is, in some sense to have more or better. But on such an interpretation criticisms concerning the extreme ambiguity of the term immediately arise. For example: precisely what is to be sustained, at what level and over what time span? Precisely whose needs are to be met, how are they to be prioritised and according to what criteria? And so forth. The problem is not that answers cannot be given to such questions, but that the definition does not do so, and that when they are provided they are highly contestable.[4]

As things stand, its ambiguity allows sustainable development, so defined, to be something that almost everyone can subscribe to without too much inconvenience, from enlightened captains of industry to eco-warriors. And trading on such ambiguities has enabled the rhetoric of some policy-makers and commercial enterprises to give the impression that they are concerned to do one thing -- such as sustain natural ecosystems - while in fact attempting something quite different -- such as sustain conditions for the continuance of their own, often narrowly defined, economic growth. Similarly, such vagueness also enables sustainable development to be interpreted into a set of practices that are reasonably congenial in almost *any* social/political context: in the UK, predominantly in terms of energy efficiency and recycling that are compatible with consumerism. Here there is relatively little talk of having less, and generally a continuing expectation of having more. Under current arrangements the health of our economy simply demands this. (Consider the Stock Market despondency that occurs when High Street sales falter.) One cannot help thinking that a certain sleight of hand is in play when the ultimately unsustainable assumption of continuous (material) economic growth is apparently brought into harmony with a much vaunted eco-friendliness. It seems to me that these are just some examples of very significant problems for the idea of sustainable development as a policy.

However, most serious of all from the perspective that I wish to develop in this paper, Brundtland-type definitions of sustainable development reflect highly anthropocentric and economist motives that lead to nature being seen essentially as a resource -- an object to be intellectually possessed and physically manipulated and exploited in whatever ways are perceived to suit (someone's version of) human needs and wants. That is to say: they are redolent with the general metaphysics of mastery that informs modernity and is precisely the root cause of our current environmental predicament. With humanistic hubris nature is constantly to be challenged, set in order, re-engineered, etc., to meet human needs -- and often, not even this, but merely human convenience. The underlying attitude is implicit in the metaphors sometimes employed to describe our achievements and aspirations: man conquered Everest, tamed the jungle, needs to manage the oceans, etc. Nature is frequently conceived as the terrain where frontiers are to be extended, boundaries overcome, its integrity penetrated -- which, of course, once invited the romantic reaction from Wordsworth that 'we murder to dissect'. And we start early in encouraging this hubris. For example, in children's literature the highly regarded author Philippa Pierce sometimes has portrayed animals as objects to satisfy human emotions.

But, seriously, why bother with the issue of nature as such? Why not just get on pragmatically, exercising a degree of enlightened self-interest? It seems to me that there are two main reasons for reviewing such an approach. First, precisely this attitude has led to many of what we now recognise to be serious threats to our physical well-being. While not for one moment wishing to deny the many benefits that some scientific activity has provided, such as potable water and anaesthetics, the remorseless assaults on nature that an underlying mastery motive energises are a heavy contributor to current environmental problems. And the implicit assumption that we can somehow 'manage' nature on an increasingly grand scale is false – we simply don't -- and never could -- know enough. Little surprise, then, that the history of attempting to do so is largely a history of unintended consequences. The example of the use of DDT and certain subsequent attempts at the biological control of pests provide vivid illustration of this.

The second reason is equally important. Acting extensively out of pragmatic self-interest embodies a

stymieing ignorance that brings a spiritual impoverishment that in turn diminishes our sense of ourselves and what it is to live well. It prevents us from seeking to know the world as it is, itself -- in its intrinsic value (celebrated in so much of our art and music)-- and therefore truly understanding our place within it. Humankind prides itself on its ability to think -- to rise above instinctive reaction and to see beyond what is immediate and to evaluate situations. In the light of its track record, it needs to think about itself and its actions, and perhaps to take seriously the previously mentioned questions concerning prevailing assumptions about what counts as flourishing and progress. With our now massive impact on the planet, these are questions that need addressing, but hubris and preoccupation with practical gain lead to them too rarely being pursued in ways that have outcomes commensurate with their importance. If, however, we allow them to stand, and in the context of environmental concern, such questions raise a key issue: What should be our underlying attitude towards nature?

The answer to this is far from straightforward. For example, one recurring suggestion is that we should learn to *love* nature. But in what sense does one love something that is completely indifferent to us -- that currently on the whole supports us, but may at some point destroy us either locally as with hurricane Katrina or eventually globally as when the Sun desiccates planet Earth or some chance asteroid strikes? What exactly is the appropriate attitude towards something that for the most part does not -- that is incapable -- of caring for us in the slightest? But perhaps framing the question in this holistic way is simply misguided, making unhelpful assumptions about the time span and level of generality with which we conceive nature. Surely, there are important distinctions to be drawn between individual events and organisms at one end of the spectrum and nature as a whole -- the great scheme of things -- at the other. It might be said that trying to lump such a variety of phenomena together under one overarching idea just brings obfuscation when thinking about what our relationship to nature should be. For example the love of one's dog is different to the love of one's garden, a tree or a landscape. It might be said that nature is not *one* thing and that, rightly, our attitude will depend upon the particular aspect we have in mind. So maybe we love our pets and hate the malaria bacillus? But arguably the rejection of holism here is itself a facet of an underlying instrumentalism -- loving only what we believe meets our needs and desires -- which in turn is an expression of the metaphysical mastery that has issued in an atomistic domination of nature. Furthermore, and just as importantly, it has also cabined our conception of what the world has to offer and who we are.

What is nature?

While not wishing to deny our ability to discriminate within the natural world, I would like to suggest that there is some virtue in holding onto a holistic sense of nature - but *not* now only in the prevalent ecological sense of a vast interconnecting system in which human beings are nested, rather in the sense of a key *quality* implicit in our experience of all things we perceive as natural. In our experience of them, we come across natural things as standing there independently of us -- i.e., as pre-eminently having their *own* being that we can affect but of which we are not the author. That is to say, we experience nature as 'self-arising'. This essentially non-artefactual quality of the standing forth from out of itself is a definitive feature of our experience of nature, whether it be a star, a mountain, or an amoeba. And this self-arising quality can stimulate us to find even the ability of harmful organisms to autonomously function and self-replicate a source of wonder. At this point it is perhaps important to note a distinction that can be drawn between the quality of our experience of nature and nature as a concept. Elsewhere (Bonnett 2004a), I have argued that concepts of nature (of which, there are of course a number) arise in the context of human practices and are part of a web that to some degree mediates all experience. Thus, as with all other concepts, we can say that they are socially produced. However, within this socially mediated experience we encounter nature as precisely *not* socially produced. Furthermore, I argue that this experience of nature as the self-arising is deeply constitutive of our form of sensibility. Our experience as human beings is absolutely founded on the assumption of an independently existing world, i.e., a world of which we are not sole author and that at some level and at any particular time we have simply to accept as given -- and of which, therefore, some things are true and some things are not. I argue that this intuition cannot be expelled from our form of sensibility -- nor can it seriously be treated as merely some optional description or (dead) metaphor, as Richard Rorty (1994) and some other postmodernists claim. Nature as the self-arising thus provides certain salient features of our idea of an underlying reality. In the space available I will focus on just two of these

and some of the issues they raise.

The first of these features I have already alluded to: nature's otherness, in the sense that we are not its author. Nature lies ever before and beyond our intentions, and while we can affect it in all manner of ways, we do not ultimately determine it. For example, in the case of our own bodies, which clearly can be affected by our choices and actions, we maintain (or destroy) our health by interacting with powers of which ultimately we are not the author and that are beyond our ability to transform. There is a nature, an order, recognised as external to our will with which we have to find a harmony, or at least an accommodation.

This relates very closely to a second feature, namely nature's epistemological mystery. Though in one sense something with which we may on occasion feel ourselves to be intimately involved, and therefore may be intimately known, as self-arising, nature is that which can never be fully known, intellectually possessed. It is composed of (expressed in) open, many-faceted things -- each with its own unique history and drawing towards its own open future, and capable of exhibiting an infinity of profiles and countenances, only some of which we will ever witness. This contrasts with defined objects of thought, whose being is exhausted by the characteristics of category membership that we devise and impose -- as when, say, we sum up a beech tree in terms of static objective properties such as leaf shape and colour, flower type, growth habit, etc (and which thus reckoned up, could readily be entered into some data-base), rather than see it as this unique thing whose limbs possess an unfathomable massiveness, yet that dance in the breeze, and whose colour and shape constantly change with every nuance of light and shade as night falls. Generalised causal explanations and scientific 'laws' say nothing about the sheer existence of natural things -- give no insight into the experience of their individual standing forth in their suchness and their ability to affect us in unique and never wholly predictable ways. As one commentator put it: 'Surprise is the general reaction of the attentive walker in natural space' (Joseph Grange 1997). And the appropriate response to self-arising nature then, is not to seek summative knowledge, but to allow a sense of the ineffable.

The Italian post-Enlightenment philosopher Giambattista Vico argued that man can only have full knowledge of things of which he is the author, for those who create something can understand it as mere observers of it cannot. Thus we are capable of having a more definitive understanding of ourselves and the human world than of nature, since we have an 'insiders' view. We know what it is like to be a human being in a way in which we cannot know what it is like to be a lion or a tree. With the latter, we are merely passive observers looking on from outside, capable only of 'dark speculation' about the inner lives or goals of what we see (and if indeed, there are any such goals); capable only of seeing the 'surfaces' of things and events that are essentially alien and mysterious. As he puts it: the laws of the natural world are knowable but not intelligible. (See Berlin 2000.) Thus, for example, one can know of the beliefs of another person or the practices of another culture yet they may remain unintelligible until some further explanation is given, communicated -- and even with this one may fail to achieve the kind of 'internal' understanding to which Vico refers. And, of course, in the case of non-human nature no such further explanation can be forthcoming. On this kind of account, the anthropomorphism that is so ubiquitous in our perceptions of nature destroys its sheer otherness, and a proper attitude to nature cannot simply be some kind of extension of a human ethic. Yet we can -- and often do -- have a sense of what would count as the well-being, even 'interests', of things in nature. Law professor Christopher Stone (1974) has argued that it is at least as plausible to allow that 'natural objects' have interests that can be legally represented as it is make this claim on behalf of a comatose person or a corporation.

How can we know nature?

Amongst other things, the motive of mastery that I have argued to be implicit in 'sustainable development' tends to reinforce the conventional curriculum attitude of regarding nature as most properly revealed through the prism of science, where the subjectivity of the knower is minimised in the process of coming to know. In contrast to this approach, on the account of nature that I am offering, what is needed is a kind of knowing in which personal, moral and aesthetic dimensions are embedded, i.e. a knowledge of things in which 'fact' and 'value' are not separated out because things are perceived in their life, wholeness and

inherent mystery. This suggests that we perhaps need to rehabilitate the notion of 'knowledge by acquaintance' into the curriculum, where the character of the acquaintanceship is akin to (but not identical with) the sense in which we may become acquainted with a person -- a direct, intimate, tacit knowledge that *affects* and is capable of engaging all the senses. In other words we seek an enriched, vitalised, sense of knowledge, something of the essential poetic character of which is suggested by Henry Thoreau:

> Live in each season as it passes; breathe the air, drink the drink, taste the fruit, and resign yourself to the influences of each. . . Open all your pores and bathe in all the tides of Nature, in all her streams and oceans, at all seasons. . . Grow green with spring, yellow and ripe with autumn . . . (Thoreau 1962, Vol. 1: 394--395).

Or again, as Merleau-Ponty (1962: 318) put it, in less metaphorical vein: 'what I call experience of the thing or reality – not merely of a reality-for-sight or for-touch, but of an absolute reality -- is my full co-existence with the phenomenon, at the moment when it is in every way at its maximum articulation'.

Undoubtedly science provides an important access to nature, but of a reductionist kind, and therefore there are reasons for not privileging the access it provides. For example, why should the knowledge of nature that it enables -- a knowledge ever increasingly articulated mathematically -- be regarded as 'truer' or more authentic than, say, the knowledge achieved through the experience of helming a sailing boat in which one is acutely alert to, and in harmony with, the subtle nuances of wave and breeze? -- Where one feels directly the sheer power and sublime delicacy of nature. The degree of mutuality with its object of such knowledge contrasts strongly with the disengagement both from its object and the subjectivity of the knower that is valorised by Western rationality. It asks us to reassert the value of a knowledge that is existentially embedded, to exhibit patience and humility in the face of that which is both 'other' and intimately felt, to employ a genuine attentiveness.

There are some resonances in this view with the position of John McDowell (1996) on the re-enchantment of nature --both in terms of the kind of thing nature has to be in order to constitute a source of validation of empirical beliefs and by implication what would be involved in knowing nature. The key point is a rejection of equating nature with the logical space in which science locates it -- a space of 'blind' universal laws. If experience were to be construed as made up of impressions -- 'impingements by the world on a possessor of sensory capacities' -- and this world is the world described by the natural sciences -- i.e. it is the logical space in which they function -- it is different in kind from the normative relations that constitute the logical space of reasons (where, for example, there is talk of one thing's being warranted, or correct, in the light of another). And if the logical space of reasons is sui generis as compared with the logical space of nature, it is impossible for experience to act as tribunal for empirical thinking and the idea of empirical thinking itself becomes incoherent. Hence McDowell agues that reason in the sense of the operation of concepts, goes all the way down to the level of our most primordial experience of things. There is no prior apprehension of a pre-conceptual 'given' upon which concepts then operate. How could they obtain a purchase or participate in an alien logical space? Concepts are involved in our apprehension of nature from the bottom up and nature is therefore no longer divested of everything normative.

It may seem that this account runs counter to my emphasis on the otherness of nature and its foundational role, nature as a 'given'. It is true that McDowell wishes to repudiate what he terms the 'myth of the given'. But here it is important to be clear about what is meant by 'the given'. If we mean by the given some sort of absolutely pristine sensory experience (such as was, for example, postulated by 'sense data theory' of G.E. Moore (1953), H. H. Price (1932) and A, J. Ayer (1940)) there is no more room for it in my account than in McDowell's. We are always in the world understandingly and even that favourite example of sense data theorists of isolated after images of coloured patches are always understood as occurring in a certain context and possessing a certain significance. To borrow a term taken from a different philosophical tradition, they -- and all experience -- are always had within some meaning-giving horizon. But this does not make the being of nature transparent, deny its inherent mystery in its self-arising. Quite the reverse. Mystery is only possible in the logical space where significances are in play. Mystery, too, is just such and so. Of course, this still leaves room for debate as to how developed, abstract, reifying and systematised concepts need to be, but the central point that nature occurs within, as I would put it, a form of sensibility that is shot through and through with human significances and is in that limited sense rational and a cultural

product has to be granted. Only on this premise can nature be apprehended at all, and so construed it is capable of possessing a rich founding and normative dimension. It can be rightly construed now as a 'given' in the sense that it is both not simply a product of our decision-making and choice -- as McDowell (1996: 10--13) concedes, there is an essential element of human passivity in our perception of it -- and that as an orientating idea, it is so deeply embedded in our form of sensibility that it is constitutive of our way of seeing and understanding the world both cognitively and affectively. It is not, for us, a disposable idea. Furthermore, by extricating it from the logical space of science it is made clear that the kind of unity and transcendence that nature possesses is precisely not, fundamentally, that of highly abstract laws and conceptual schemes in terms of which the natural sciences characterise it. The important curriculum implications of this argument will be explored presently. First, a further epistemological point needs to be made.

For a range of reasons, traditionally the canons of intellectual understanding have set the tone for formal education, but previous argument suggests that there is a need to re-evaluate the knowledge that we possess through bodily contact with the world. In feeling the resilience of this piece of grass underfoot, this piece of earth to the spade, this piece of wood to the chisel, in feeling the growing chill in the air and apprehending the brooding presence of storm clouds, we engage with the world less through a cognitive ordering and more through a receptive *sensing* that is less susceptible to abstract generalization and objectification. Here we have a form of acquaintanceship in which there is a knowing of the embodied by the embodied that, at its deepest level, apprehends the other in its alterity and not primarily as a vehicle or obstacle to satisfying our desires. Taken thus, it can be seen to constitute a kind of love. As Iris Murdoch once put it:

> 'Art and morals are, with certain provisos . . . one. Their essence is the same. The essence of both of them is love. Love is the perception of individuals. Love is the extremely difficult realization that something other than oneself is real. Love, and so art and morals, is the discovery of reality' (Murdoch, 1959: 51).

It strikes me that this idea of love/caring as itself a way of knowing is seminal. Both art and morals, involve a certain 'letting be' of the other that at the same time is a creative knowing. For reasons previously indicated, for us moderns, this requires a certain preparation of heart and mind to receive what is offered -- a suspension of the mastery motive and the adoption of an attitude that is neither an indifference nor a possessive desiring, but rather a dialogical openness that incorporates a sense of the well-being of things themselves. The self-arising cannot reveal itself to the eye that primarily seeks to organize, to manage, and to manipulate. Let me cite a negative illustration from the anthropologist Henry Sharp. In contrast to the other-orientated etiquette of the Chipeweyan Indian, he described White Canada's interaction with the non-human world in the following terms:

> White Canada does not come silently and openly into the bush in search of understanding or communion, it sojourns briefly in the full glory of its colonial power to exploit and regulate all animate being . . . It comes asserting a clashing causal certainty in the fundamentalist exercise of the power of its belief. It talks too loudly, its posture is wrong, its movement harsh and graceless; it does not know what to see and it hears nothing. Its presence brings a stunning confusion heard deafeningly in a growing circle of silence created by a confused and disordered animate universe. (Sharp 1988: 144--145)

Implications for the curriculum and the culture of the school

The general upshot of this line of argument is that we need to be concerned with a gradual change in how we apprehend the world at a fundamental level -- that is, we need to explore the possibility of a different metaphysical basis to education. And this immediately prompts a key question: what kinds of knowing and learning should education encourage? What should be their underlying spirit or attitude towards the world? The relevance of this issue is emphasized when we recall that the primary agendas of many traditional school subjects reflect a social history that was not only largely innocent of environmental problems, but whose underlying motives included the subordination and exploitation of nature. To hark back to the

example of science, it was not only Bacon, but other luminaries of the new science of the seventeenth century such as Descartes, Glanville and Boyle who advocated the mastery of nature as its prime goal. This both fed into and reflected the general anthropocentrism of Enlightenment humanism which came to modulate all areas of understanding. Thus it becomes important to ask what projects towards the world different kinds of knowledge and learning express. Clearly the defining qualities of nature as the self-arising elucidated above -- a fluid world of open, many-faceted things in constant, and often mysterious, interplay -- simply becomes invisible to an encounter preoccupied with intellectual (and material) possession achieved through the deployment of increasingly highly systematized and ossifying conceptual schemes. Self-arising facets of the world are simply occluded by teaching that has this orientation. The implications of this extend not simply to the propositional content of a subject area, but more essentially to the manner in which such content is held and explicated. The value of a more intimate, intuitive, non-logical style of encounter with the world needs to be acknowledged, one whose rigour derives less from adherence to superimposed rules upon experience and more from an open attentiveness to the things experienced. This will involve an attitude of participation, celebration and a willingness to be affected as contrasted with an overweening drive to disengage from the immediately present so as to set it to order, to control it, to be 'effective'. Here then, the issue of environmentally adequate knowledge and its curriculum organisation is raised: Should it be subject-based and if so, what kinds of subjects? Should it be a holistic, integrated curriculum, and, if so, according to what structural principles?

With regard to the latter, it has been argued that it would be a mistake to attempt to conceive of environmental education as some holistic cross-disciplinary element (Stables and Scott 2002). Erroneously this would imply that there is, as it were, some single environmental grand narrative to be conveyed. Instead, it should be developed from <u>within</u> the differing perspectives that existing school disciplines have to offer -- which has the further practical advantage that as we are not in a position to regenerate the education system (particularly teachers' expertise and attitudes) from scratch, we could build upon existing strengths. Such a view provokes a number of important responses.

To begin with, it must be granted that environmental education should not take the form of some totalising cross-curricula alternative to the disciplines. Not only would this carry with it the danger of a certain eco-fascism, it would overlook the fact that a concern with the self-arising -- as essentially mysterious -- can hardly be hived off into some discrete theme. Nor, especially, can it be given some detailed, pre-specifiable content. As previously argued, genuine openness to situations is not enhanced by seeking to impose all-embracing systematic conceptualisations. On the assumption that they express enduring strands of our form of sensibility -- and hence constitute part of the intellectual and cultural capital upon which we must ultimately draw in addressing <u>any</u> deeply rooted set of problems -- traditional subjects as conceived, say, in the Oakeshottian sense of on-going conversations, have, potentially, an important role to play. But there are certain caveats.

First, given the point made earlier concerning the historical social/intellectual milieu of traditional subjects, proper account will need to be taken of the danger of motives inherent in a discipline that may be covertly hostile to self-arising nature and, therefore, that have a propensity to construe environmental problems in a manner that veils their own contribution to them. Thus, an important area for investigation is opened up: <u>What motives and attitudes towards nature are implicit in different areas of the school curriculum?</u> I have referred to some versions of science in this regard, but equally one could ask this question of art, literature, design and technology, geography, history, religious education -- even, and especially, I have argued (Bonnett 2004a: 161--166), aspects of ICT -- <u>as they are taught in schools</u>. Second, there is raised the desirability of inviting pupils to locate the claims to knowledge made by the disciplines against a broader backcloth of metaphysical understanding. This might enable them to challenge, say, approaches to understanding the world that require them to conceive a local pond or hedgerow as essentially part of an abstract deterministic causal network, or energy flow, or information system, rather than, say, as sensuous things experienced as having an intimate place and value in their own life world. Disengaging them from their own intuitions of the real, encouraging them to feel that such knowledge of the world is inferior to an abstract disengaged approach, not only further separates them from what has been argued to be essential to our experience of nature, but also raises the danger of leaving them disaffected. Hence authentic discussion that celebrates differing languages for articulating environmental issues needs to be an important aspect of

the curriculum. Such discussion can be refined and extended by drawing upon the arts and humanities as much as the sciences. Indeed, as far as our relationship with nature goes, it is far from clear that Newton has as much to offer as Manley Hopkins. In curriculum terms, this particular example raises important questions about of the general character of English as a taught subject and the spirit in which literature is presented to pupils. Current emphases in the UK on a 'literacy' that for many takes the form of a routine of pre-specified exercises hardly encourages the kind of creative engagement with poetic language that would enable lived encounters with nature (or anything else).

Closely related to this, environmental education would need to include an (again, ultimately metaphysical) critical investigation into current social/economic practices -- to identify and evaluate the motives that energise them and the ways in which we are all, to some degree, implicated in them. As previous argument would suggest, I do not have in mind here some formal taught course, but rather an encouragement to students to reflect in this way on familiar experiences and practices, and issues that concern them -- supported, perhaps, by documented case studies where appropriate and an understanding of larger enveloping life contexts provided by literature and art. Taken altogether, the picture of the curriculum that arises is one of *emergent engagements*, whose unity is not the result of pre-formed interdisciplinary connections determined by academics distant from particular sites of learning, but the result of an evolving interplay of consciously felt demands arising from a receptive participation in the issues and listening to the call of the as yet unknown.

Finally, if education is to help pupils to live in such a way that they can flourish in an authentic -- that is, poetic -- relationship with the self-arising, it will need to help them to learn properly to love the self-arising in themselves, so as not to be prepared to sell themselves cheaply to a global economism that requires them to be ever on call to produce and ready to consume. Thus, in many ways the issue is not primarily one of formal curriculum content as of the general culture of the school (and, of course society). It is a matter of the underlying versions of human flourishing and the good life that are implicit in the ethos and practices of the school as a community and how they connect with life 'outside'. This ethos both invites direct participation in certain ways of going about the world and conditions the spirit in which the curriculum is taught and received. Only as it begins to reverberate to a different metaphysics can a space arise for those kinds of intimate experience of the presence of nature in which the power and subtlety of otherness and the elemental are felt and allowed to matter.

To conclude

The essence of my argument is that our environmental predicament is a crisis not simply of our physical survival, but of our spiritual survival -- that is, our understanding of what we are and how we should relate to the world around us. This is a crisis that is as much of human feeling as it is of the intellect; it is a crisis of our whole mode of sensibility. From this standpoint it is possible to draw two broad educational implications:

A) Environmental education must have two agendas:

> 1) a short term pragmatic agenda of damage limitation that would focus on the cautious but imaginative use of science and technology to monitor and help ameliorate undesirable outcomes of the impact of human behaviour on nature. This agenda is now being addressed.
>
> 2) a long term agenda of developing a sense of a right relationship with nature as the self-arising - this gradually, but increasingly, informing and orientating the more immediate agenda above. This, the most important agenda, is constantly peripheralized and subverted by the dominant metaphysics of our time that can only permit it as a façade, a public relations exercise. (See, for example, Bluhdorn (2000).)

B) Environmental education is much richer and more profound in its aspirations than the idea of sustainable development encourages. It is essentially concerned with an understanding and appreciation of the environment and the significance of the natural order, including our place in it. At the heart of this will be

an attempt to characterise, and develop in life, what should count as a right relationship with nature and thus a fuller understanding of what truly should count as human flourishing. Human well-being remains a central concern, but its interpretation is not restricted to the economic, and its achievement is understood as involving an understanding of our own nature and an appreciation of nature's value that truly transcends the instrumental.

Notes

1) I have attempted to explore further philosophical aspects of this story in Bonnett (2004a, 2004b). Also, lack of space has precluded reference to a range of other issues in the field. For an extensive general review of the research literature on environmental education, see Rickinson, M. (2001).

2) This strikes an interesting contrast with countries such as Norway where the core curriculum is described in terms of reflecting "the joy of nature" and that "Education should enkindle a sense of joy in physical activity and nature's grandeur, of living in a beautiful country, the lines of the landscape, and in the changing seasons". http://www2.udir.no/L97/L97_eng/ (accessed August 29 2006).

3) I have attempted to demonstrate the deficiencies and ultimate incoherence of this stance in Retrieving Nature, Ch. 4 (Bonnett 2004a). Also, see Soper (1995), Soule and Lease (1995).

4) I am grateful to John Foster at the University of Lancaster for suggesting to me that the problem here with sustainable development is not so much that it is ambiguous, as that it is indeterminate. It offers to posit a determinate baseline (e.g. for levels or values of critical natural capital), but because we construct the science on which the relevant metrics depend, and the social readings or interpretations of those metrics, the model never brings us up against any genuinely constraining limits. There is no fundamental distinction between the sustainability obligations we are under and the ones we are comfortable under. I think that this notion of the indeterminance of 'sustainable development' presents an interesting and very pertinent perspective. It is also one that chimes well with my general concern to (re-)establish a genuine encounter with the essential otherness of nature as the self-arising. To acknowledge this is not, though, in my view to dismiss important elements of ambiguity in the notion -- indeed, now, for example, in terms of how 'critical natural capital' is to be construed, 'critical' being relative to sets of needs that can be defined in a variety of competing ways.

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