Systemic Wisdom, The 'Selving' Of Nature, And Knowledge Transformation: Education For The 'Greater Whole'.

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Abstract

Considerations arising in the context of burgeoning concerns about the environment can provoke an exploration of issues that have significance both for environmental education in particular and education more generally. Notions of the 'greater whole' and 'systemic wisdom' that feature in some strands of environmental discourse are a case in point. It is argued that interpretations of these notions arising in currently influential scientific and systems thinking understandings of nature that attempt to overcome a corrosive separation of humankind and nature through a dilution or dismissal of the distinction between the human and non-human, self and other, require critical evaluation if they are not to bring their own dangers. Merleau-Pontian understandings of object constitution in a subjectively informed life-world and ideas of the 'selving' of natural things are drawn upon in developing a non-discursively grounded interpretation of systemic wisdom. The latter is taken to raise questions that have considerable transformative potential for conventional views of knowledge and its curriculum organisation.

Key words: nature, systems thinking, systemic wisdom, self, life-world, knowledge.

Introduction

In this paper I wish to broach some incipient concerns about a set of approaches to environmental issues that enjoy a good deal of prominence at the moment, and to explore some of the implications both for knowing nature and some current orthodoxies concerning knowledge in the context of education. The issues raised will be of particular relevance to those systems of state education (such as that of the UK) where understanding nature is conceived primarily in scientific terms (see Bonnett, 2004b) and where, more broadly, scientific and technological knowledge is accorded a high status in relation to that of the arts and humanities.

The 'greater whole' in environmental discourse

Within the sphere of environmental debate there are a number of views that, in different ways, place heavy emphasis on conceiving humankind primarily as a part of some greater whole or system. For example, this is a feature of 'deep green' and associated eco-centric philosophies such as that developed in Freya Matthews' *The Ecological Self* (1994). In this influential book she argues that as each individual is nested in a vast sustaining system whose flourishing is a *sine qua non* of their own flourishing, we should see the universe ('ecocosm') as our 'extended self' with which we therefore identify and love as ourselves, and of which our individual self is tributary – a localisation in which the ecocosm achieves self-awareness. And although rather different in other respects, this emphasis on the primacy of the whole is a

feature shared with Paul Taylor's *Respect for Nature* (1986) that emphasizes our oneness with 'the great community of life' in which there is a fundamental interdependence and therefore equality between all its members. It is also emphasized by those who adopt a radical systems thinking approach to environmental issues and education.

Clearly, invitations to reject or bridge a divide between man and nature that characterizes traditional occidental thinking offer an important perspective on addressing our current environmental predicament. The history of exploiting nature in ways that have deleterious consequences is often attributed in part at least to ignoring the reciprocity that exists between human well-being and certain states of nature. For some, the realisation of human-induced climate change and its anticipated consequences has been a rude awakening in this regard. Hence, undoubtedly, it is important to raise our appreciation of ideas of relatedness and interdependence between ourselves and the environment. We need thoroughly to understand this and to shape our actions in ways that truly reflect this understanding – in my view not now simply bio-physically, but also *meta*physically (Bonnett, 2004a). One of the things that I shall argue in this paper is that as we do this, what we count as knowledge, and the relative status we accord to different kinds of knowledge, will come up for reappraisal. This will be true particularly with reference to the motives that energise different kinds of knowledge, but also to our knowledge attributions more generally; for example, the tendency to elevate to the status of knowledge primarily those descriptions and interpretations that give power.

But playing into this area of debate are two reservations about this focus on the 'greater whole' in understanding ourselves and our situation. First, there is a concern about the way that this greater whole is characterized – for example, the impact of some of the metaphors used upon our conception of ourselves and the character of our responsibility towards nature and the environment. Second, there are issues concerning the degree of inclusiveness it is assumed to possess as an explanatory notion. As they provide a useful preface to exploring issues of knowledge transformation, I will take these reservations first, illustrating them by reference to some lines of thinking developed by the anthropologist Gregory Bateson, whose prototypal ideas first published some forty years ago continue to express much that is characteristic of systems thinking approaches.

In his *Steps to an Ecology of Mind* Bateson (2000) makes a good number of points concerning our relationship to a greater whole that, taken in themselves, possess a high degree of plausibility – and importance. For example, he makes the point that as 'parts' of the whole we can never be in a position to see the whole. Consciousness is always selective, working by a systematic sampling of the events and processes of the body and of what goes on outside according to its purposes. This means that it lacks *systemic* wisdom. To those who suggest that this has worked well enough so far, he draws attention to the addition of modern technology to the old system. Consciousness is now empowered to upset the balances of the body, society and the biological world – to 'wreck' the environment (ibid. p. 452). Thus this lack of systemic wisdom is now pathological. In a system portrayed as one whose elements are set to grow exponentially and are only held in check by resources and the curtailments that one growth career exerts upon another through various feed-back mechanisms, lack of systemic wisdom is always punished. Hence it is essential that

our narrow purposive view somehow be corrected. Bateson goes on to point out that this lack of systemic wisdom is particularly problematic in the face of two further considerations:

> 1) man's habit in the face of a changing variable is to change his environment rather than himself;
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> 2) the way that today the social scene is characterised by a large number of self-maximizing entities such as trusts, companies, political parties, unions, commercial and financial agencies, nations, etc., that have something like the status of (and therefore legal rights of) "persons", but that are precisely *not* persons and are not even aggregates of whole persons. They are aggregates of *parts* of persons – ideally precisely the narrowly purposive parts. Thus these social entities contribute to isolating conscious purpose from many corrective processes that might come out of less conscious parts of the mind (ibid. p. 452).

For me these are certainly pertinent points, and not least in their implicit acknowledgement of aspects of 'persons' that apprehend reality in less purpose-driven ways, but that have become peripheralised by an overweening instrumentality. But where I begin to feel uncomfortable is with the underlying way in which the greater whole and wisdom are construed. Basically, on Bateson's account the picture is one of the greater whole as a vast cybernetic system – a self-corrective information feedback system. And the individual mind is portrayed as a variable localised part of this system. As Bateson puts it:

> "My" mind – delimitation of an individual mind must always depend upon what phenomena we wish to explain: Obviously there are lots of message pathways outside the skin, and these and the messages which they carry must be included as part of the mental system whenever they are relevant.' (ibid. p. 464)

This notion of a 'message pathway' is employed to override the traditional distinction between the mental and the physical; all is pervaded by 'Mind'. As for the notion of individual consciousness:

> But what of "me"? Suppose I am a blind man, and I use a stick. I go tap, tap, tap. Where do *I* start? Is my mental system bounded at the handle of the stick? Is it bounded by my skin? Does it start halfway up the stick? Does it start at the tip of the stick? But these are nonsense questions. The stick is a pathway along which transforms of difference are being transmitted. The way to delineate the system is to draw the limiting line in such a way that you do not cut any of these pathways in ways that leave things inexplicable. If what you are trying to explain is a given piece of behaviour, such as the locomotion of the blind man, then, for this purpose, you will need, the street, the stick, the man; the street, the stick, and so on, round and round. (ibid. p. 465)

We get the picture, then, of mind as synonymous with cybernetic system – the relevant total information-processing, trial-and-error completing unit. And we know

that within Mind in the widest sense there will be a hierarchy of sub-systems, any one of which we can call an individual mind (ibid. p. 466)

For this 'cybernetic epistemology' the individual mind is immanent not only in the body, but also in pathways and messages outside the body – and there is a larger Mind of which the individual mind is only a sub-system whose identity varies with the phenomena to be explained. Bateson suggests that this larger Mind is comparable to God (for some maybe it *is* God), but is now strictly immanent in rather than transcendent to 'the total interconnected social system and planetary ecology' (ibid. p. 467). If Freud expanded the concept of mind inwards to include an unconscious, this expands it outwards. Both reduce the scope of the conscious self. For Bateson, such a perspective involves a humility tempered by the dignity of being part of something much bigger: a part, as it were, of 'God'. And it requires a new way of thinking that dissolves the traditional – 'pre-cybernetic' – notion of the self where the 'Myself' is an excessively concrete object different from the rest of 'mind' (ibid. p.468).

Why should such a characterisation be a cause of concern?

It seems to me that a range of serious problems attach to this cybernetic model of world and self, and the epistemology that flows from it. Here I will focus on some that have a direct bearing on the concerns of this paper. I will begin by raising, somewhat briefly at this stage, two closely interrelated reservations before considering a further one in more depth.

First, there is the seemingly unavoidable characterisation of mind as a computer, simply a 'sub-system', a 'total information-processing, trial-and-error completing unit'. Bateson constantly speaks in these terms, and with no sense of any loss involved to our understanding of either self or world. Yet in the context of our relationship to nature and the environment the determinism that this metaphor connotes is of particular concern since it ultimately undermines ideas of personal agency and conscience. If these are 'old chestnuts', in the current context they remain 'hot' ones, for it is hard to reconcile such determinism with calls for responsible behaviour towards the environment – or indeed with any personal understanding of the environment at all, if (as I think it must be) this latter is taken to occur in the context of practices undertaken by responsible agents capable of mortality and for whom, therefore, to follow Heidegger, 'their own being is an issue'. In other words, the computer metaphor radically revises the whole landscape of human understanding, dismissing some of its most salient features with no recognition of the losses incurred. Some of these will be visited presently.

The second, related, reservation concerns the characterisation of the mind as a series of transient localisations of the greater system. In the resultant blurring/attenuation/dissolution of self-other (nature) boundaries, what happens to: a) our sense of an enduring personal identity; and b) our sense of the otherness of nature and hence the character of our respect for it? As I have indicated, it is not my intention to develop these criticisms so expressed in any depth here. However, by way of setting a backcloth to issues that presently I will pursue more fully, it is worth pointing out that analyses of nature that hinge on its autonomy from human intention and its intrinsic mystery, and analyses of human consciousness (or its equivalent) that

centre on its distinction as the place where things show up with a certain kind of significance and degree of stability, are likely to be seriously discomforted by such a view. And while this may (or may not) be Bateson's intention, his is a view whose large consequences are hugely counter intuitive and need to be carefully examined. Again, this is something that Bateson conspicuously fails to do and some of the salience of the issues thus left unvoiced will appear in the analyses that follow.

I turn now to a reservation that I wish to develop in more depth: the invitation to construe nature primarily as an information system or flow.

Nature as information system

The issue at stake here is not that there are not certain insights to be gained from construing nature as a cybernetic system, but that these should be recognised as limited and as serving strictly limited purposes, rather than being set up as *the* most fundamental way of understanding nature, providing therefore the most appropriate orientation towards it. For example – and to put it rather crudely in the first instance – why privilege seeing a pond or hedgerow as an information system? Why endorse what can equally well appear as a scientisitic demotion of life-world experiences and attachments that can be a seminal source of care for nature? Knowledge, love and fulfilment in our relationship with nature grow precisely in this life-world; they are the achievement of an intimacy that develops dialogically between experiences over time. As George Eliot observes in *The Mill on the Floss*:

> We could never have loved the earth so well if we had no childhood in it – if it were not the earth where the same flowers came up every spring . . . the same hips and haws on the autumn hedgerows, the same redbreasts that we used to call 'God's birds' because they did no harm to the precious crops. . . These familiar flowers, these well remembered bird-notes, this sky with its fitful brightness, these furrowed and grassy fields, each with a sort of personality given to it by the capricious hedgerows – such things as these are the mother tongue of our imagination, the language that is laden with all the subtle inextricable associations the fleeting hours of our childhood left behind (Eliot, 1994, p. 38.).

Here a range of important issues is raised concerning the constitution of things in nature and our relationship to them that has radical implications for knowledge and the status accorded to different kinds of knowledge – particularly in terms of the twin hegemonies of intellectualism and abstraction that in various guises have received such a fillip from the overt successes of science.

Maurice Merleau-Ponty is one of a number of thinkers who developed a perspective that is diametrically opposed to the scientific systems approach and that reasserts the primacy of an individual's life-world over scientific abstraction. Returning to the question of things in nature, in *Phenomenology of Perception* (1962, Part 2, Ch. 3) Merleau-Ponty asks: what is it that constitutes the constancy of the thing – its reality? He criticises the scientific approach that sees a thing as defined in terms of its location and dimensions within an a priori spatial-temporal framework and whose appearances

are understood according to laws that relate them to how it would be perceived under a set of standard conditions – as, say when a diamond shape is interpreted as 'really' a square viewed from a certain angle, or a colour is seen as, say, 'really' black when because of lighting conditions it appears as grey by being intellectually interpreted – calculated – by reference to a set of 'pure' properties. On this view 'Reality is not a crucial appearance underlying the rest, it is the framework of relations with which all appearances tally' (ibid. p.300)

For Merleau-Ponty this is subject to two deficiencies: first, it is phenomenologically inaccurate; second, it begs the question as to how we come to have the idea of a determinate object in the first place. He observes that:

> Perceptual consciousness does not give us perception as a body of organised knowledge, or the size and shape of the object as laws; the numerical specifications of science retrace the outline of a constitution of the world which is already realised before [such] shape and size come into being. (ibid. p. 301)

Like Kant, science takes the results of this pre-scientific experience for granted. Far from its being the case that the thing is reducible to constant relationships, the later are based upon the self-evidence of the thing.

> For science and objective thought, an apparently small object seen a hundred yards away is indistinguishable from the same objects seen ten yards away at a greater angle, and the object is nothing but the constant product of the distance multiplied by the apparent size. But for me the perceiver, the object a hundred yards away is not real and present in the sense in which it is at ten yards, and I identify the object in all its positions, at all its distances, in all appearances, in so far as all the perspectives converge towards the perception which I obtain at a certain distance and with a certain typical orientation. This privileged perception ensures the unity of the perceptual process and draws into it all other appearances. For each object, as for each picture in an art gallery, there is an optimum distance from which it requires to be seen, a direction viewed from which it vouchsafes most of itself . . . a living body, seen at too close quarters, and divorced from any background from which it can stand out, is no longer a living body, but a mass of matter as outlandish as a lunar landscape, as can be appreciated by inspecting a segment of skin through a magnifying glass. Again, seen from too great a distance, the body loses its living value, and is seen simply as a puppet or automaton. The living body *itself* appears when its microstructure is neither excessively nor insufficiently visible, and this moment equally determines its real size and shape. (ibid. p. 302)

Thus, and very importantly:

> The constancy of forms and sizes in perception is therefore not an intellectual function, but an existential one, which means that it has to be related to the pre-logical act by which the subject takes up his place in the world. (ibid. p. 303 FN)

Here we have the kernel of the matter in terms of what systems thinking occludes: the centrality of a subjective being in the world. And thus, while any perception of a thing, a shape or a size etc, as real – that is, any perceptual constancy – refers back to the positing of a world and a system of experience, this latter is

> not arrayed before me as if I were God, it is lived by me from a certain point of view; I am not the spectator, I am involved, and it is my involvement in a point of view which makes possible both the finiteness of my perception and its opening out upon the complete world as a horizon of every perception. . . . (ibid. p. 304)

There is, too, another element of our perception of things covered over by science, illustrated by the following example:

> We shall not succeed in understanding perception unless we take into account a colour function which may remain even when the qualitative appearance has been modified. I say that my fountain pen is black, and I see it as black under the sun's rays. But this blackness is less the sensible quality of blackness than a sombre power which radiates from the object, even when it is overlaid with reflected light, and it is visible only in the sense in which moral blackness is visible. The real colour persists beneath appearances as the background persists beneath the figure, that is, not as a seen or thought of quality, but through a non-sensory presence (ibid. p. 305).

Thus in essence, the thing should be regarded as an 'inter-sensory entity' – including, now, the sensing of non-physical properties such as ambiance – in which we are intimately involved as embodied individuals. It is what is taken up by our gaze or our movement, as it were, ' . . . a question to which these things provide a fully appropriate reply' (ibid. p. 317). He goes on: 'what I call experience of the thing or reality . . . is my full co-existence with the phenomenon, at the moment when it is in every way at its maximum articulation (ibid. p. 318)'. It follows that natural perception is not a science and that to allow science to colonize our understanding of our most elementary relationship with the world and what binds us to it is to distort our apprehension of the 'antepredicative being to which our whole existence is polarized' (ibid. pp. 321-2).

Here then, we have a perspective that radically challenges the primordiality, and therefore in this case the validity, of the kind of systems approach advocated by Bateson and that dissolves the self in a cybernetic whole. And there is another 'self' put in jeopardy by the Batesonian view.

The 'selving' of nature

In one of his best known poems, *Binsley Poplars*, in which he laments the felling of a stand of poplars, Gerard Manley Hopkins (1979, p. 76) wrote:

> O if we but knew what we do
> When we delve or hew –

Hack and rack the growing green!
. . . .
After-comers cannot guess the beauty been.
Ten or twelve, only ten or twelve
Strokes of havoc unselve
The sweet especial scene . . .

Here we are invited to contemplate the 'unselving' of a natural thing. Is not the fascinating question of what this might mean simply rendered unintelligible on the cybernetic model? If so, this must count heavily against such a model, providing further illustration of its proclivity towards the occlusion of the particularity and sensuousness of nature that, for example, is celebrated in much art and literature. It seems to me that the notion of 'unselving' employed above is seminal to giving an account of things in nature. Elsewhere (Bonnett, 2008), I have put it this way. Clearly Hopkins' poplars were unselved in the obvious sense of being chopped down. But such 'physical' destruction is only one aspect of the unselving of a thing. The capacity of natural things to stand forth as the things that they are in their unique integrity does not consist primarily in some individual isolated objective existence. They are what they are in the context of an environment that they both constitute and are constituted by. But by 'environment' here I do not intend what ecologists and natural scientists often mean by the term: some sort of causal network or system in which organisms are nested and upon which they are biologically dependent. This is an abstraction, essentially an environment composed of functionaries. The key point is not that to extract living things from their natural environment will often result in physical harm both to themselves and others in the causal network – as, say, when a tree is removed to make way for a new road. It is rather that the tree, so displaced has been withdrawn from the unique place – 'especial scene' – that facilitates it in its occurring as the particular thing that it is. It has been withdrawn from, say, the play of sunlight on its limbs and leaves, from its movement in the breezes that stir at that spot, from the fall of its extending and diminishing shadow, from its posture in relation to its neighbours, from the sounds and sights of the birds that visit or inhabit it, from the dance of midges beneath its canopy as evening closes; that is to say from its unique and infinitely manifold contribution to the precise ambience of its neighbourhood. It upholds this neighbourhood – contributes to the unique and ever-changing qualities of its space – and is upheld by it. In other words it participates in a *place-making*, and is constituted as the thing that it is through this participation.

It is important to recognize here that such unselving can be performed in thought as well as in action – and perhaps even more insidiously. For example, consider what happens to our experience of the presence of the tree as it becomes entered into some database. Here, as it is accounted in terms of some pro forma, it is installed into a space where its being consists in a set of static objective properties that allow it to be called up at any time convenient. Thus constituted it can be brought it into an infinite range of relationships (for example those involved in processing it for some commodity) that are quite arbitrary from the point of view of its own living existence as previously described. In extracting it from its neighbourhood in which it is physically and metaphysically rooted, in intellectually possessing it, we annihilate it, often without noticing.

What is being affirmed in such an account – and what it is essential to affirm – is a respectful intimacy in knowing nature in which it is brought close, but in which at the same time its autonomy, otherness, is preserved. Nature conceived as some scientific system is at best highly partial and in many ways it misses the point altogether. Nature is not essentially an energy or information system, nor a deterministic causal network, nor an instantiation of abstract laws. All such intellectualistic description represents a systematisation that subverts our original experience of it. Notwithstanding the senses in which *concepts* of nature are social products that may vary over time, there is a certain constancy in our elemental *experience* of nature. Nature befalls us; it is forever nascent, inherently largely undisclosed and in living interplay. Involvement in the vital 'presencing' of nature is imbued with a sense of the withdrawn – of that from which the thing arises, of aspects out of view, of what was and expectancy of what is not yet. And the draw of this withdrawn can sometimes be more sharply felt than that which seemingly is immediately present before us. It makes a call upon our thinking, leading it on, constantly alerting it to the possibilities of an exploration of the unknown. Attendance to this is thinking in a demanding sense, and could be considered to provide a paradigm for the kind of thinking that education should cherish. For as we loose our sense of the withdrawn, so we loose touch with a latent reality that can refresh and inspire.

At this point it is important to note that the view of nature that I am presenting is not exclusively to be conceived in terms of a world of 'pure' entities in the sense of them being entirely innocent of human effects. Indeed, it is probably now true to say that with the global consequences of human activity there is no pure wilderness left, and that, in any case, often we find ourselves experiencing nature in the context of landscapes that clearly bear the imprint of the human hand. What, fundamentally, I have in mind when I speak of nature is not primarily some set of pristine entities, but a dimension of experience that to greater or lesser degree is present (if sometimes as withdrawn) in all perception. And key to this dimension of experience is an apprehension of the *self-arising* in things – those aspects of things that are rightly experienced as essentially non-artefactual, ever beyond human authorship; present from out of themselves (see, Bonnett, 2004a). This sense of the alterity of natural things in their sheer standing there means that they are inherently mysterious, in part withdrawn. On this view it is quite proper to speak of some entities as being more natural than others or as natural in differing respects, but rarely, if ever, as possessing no natural aspect or connection whatsoever. If the tree described above clearly reposes in an environment in which nature as the self-arising resonates strongly and is diminished as a natural thing when it is removed from this, ultimately even a piece of computer code functioning electronically is intelligible in part, and perhaps at several removes, only by reference to phenomena (such as electricity) whose elemental existence is understood as not simply a product of human ingenuity or will. To say this is neither to imply that nature as the self-arising is everywhere nor that 'literally' every entity displays a natural aspect. Rather it is to make the point that nature as the self-arising is deeply embedded in our over-arching form of sensibility, reference to which everything that we encounter has its being, is implicitly understood. To some degree nature in this sense – as a horizon of significance – participates in seemingly unpromising environments, though it may require a certain attunement to appreciate this and such attunement may be difficult to achieve and may easily be overridden by other aspects of a situation such that its impact within a life-world may be minimal. If, undoubtedly, some environments provide stronger invitations than others to

apprehend any natural aspect, it remains the case that all hold possibilities. Their realisation will depend on the quality of attentiveness shown, which in turn, in the educational context, may be conditioned by the kind of knowledge sought and the motives that energise it.

But none of this is to deny that the natural dimension can be very tenuous indeed in the life-world of certain individuals. Perhaps for some city dwellers it seems far-fetched to suppose that it could be otherwise. Their environment may be described as one of relentless artificiality, from the tarmac underfoot to the obliteration of the presence of the firmament by light and sound pollution, and to the diminution of the seasons and other natural rhythms – perhaps, even those of night and day – through other human interventions or dominant social habits. In such circumstances it may appear otiose to think of their life-worlds as in any meaningful sense portals to an appreciation of the self-arising. It is not, of course, that nature has no presence at all – rain or snow still fall, the granite kerbstones still have their own solidity, water still trickles, collects in puddles and reflects light in myriad ways, small-scale 'wild-life' may still be found under some stone or growing in some crevice – but it has no attractiveness and has become invisible. Concern and attention lie elsewhere. There are two things that I would like to say on the back of this kind of example. First, from an educational perspective there may well be strong reasons for giving those who lack them opportunities to experience elemental nature in contexts more conducive to attentiveness and where it is more immediately engaging. On occasion money may be better spent on field trips than, say, on upgrading computers. Second, and more fundamentally from the perspective of this paper, however nature is to be encountered, ultimately this only occurs authentically in the context of the individual's life-world – this latter now taken in the sense used by Merleau-Ponty sketched above. It is only in relation to this that nature can appear as it is. Only through such immediate and sensuous engagement with the particularity and manifold suchness of things rather than abstraction and intellectual models is the reciprocity of the awareness of the self-arising and the enrichment of the life-world to be achieved. This is the chief burden of previous argument.

Knowledge transformation

One of the important issues that environmental concern foregrounds is the need for systemic wisdom of the world. Potentially this has large implications for how we should understand knowledge in an educational context. But before such implications can be explored, the character of this wisdom requires examination. What is to be meant by 'systemic'? How we construe this will be conditioned by our sense of the way things are – the greater whole in which we take ourselves to be embedded – and our relationship to this. On the view expressed in this paper the cybernetic/scientific model holds the danger of giving rise to a view of 'systemic' that is illusory and distorting because it privileges an understanding of things as constituted through *systematisation* – that is, through appropriation to a super-ordinate system that posits all as information, defined and in principle knowable, so much flowing data. This is not only inherently blind to the character of the occurring of natural things, it pretends to a comprehensiveness of understanding that would preclude it. It sets up our understanding of the greater whole as a set of discursive interrelations rather than as a lived ground out of which things stand forth, are experienced in their particular and

essentially mysterious arising – a 'selving' that in its autochthony expresses the immanent in the particular in what is revealed and withdrawn. A view that occludes this element of latency is naturally susceptible to a certain misplaced confidence in terms of what it takes to be the scope and depth of understanding that it can offer.

In all, it seems to me that considerations of the above kind that in various ways recognize the primacy of an antepredicative life-world in our experience of nature over scientific abstraction carry implications that could be regarded as transformative of a number of current knowledge-related orthodoxies in education. For example:

> 1) They point to a reaffirmation of the value of, and aspiration to refine, a non-scientific sensual/intuitive sensibility capable of being achieved through knowledge by acquaintance. Amongst other things, this draws attention to the subtle and extensive contribution of bodily engagement to knowledge.
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> 2) They raise the question of a conception of systemic wisdom that is appropriate to a 'greater whole' that is organically rooted rather than the product of an application of discursive categories.
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> 3) They re-orientate the approach to knowledge frequently taken in education from what is essentially a demonstration or pursuit of the known to an attentiveness to the unknown.
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> 4) The above points suggest a need for a mental re-orientation in relation to knowledge generation that would displace the traditional stance of interrogator of nature by that of listener and responsive-responsible actor – and therefore a need spiritually to prepare ourselves for the reception of knowledge through a suspension of the currently prevalent motive for mastery.
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> 5) They point to a genuinely non-instrumental knowledge, de-coupled from power in the self-referential sense.

Overall, such considerations affirm the notion of a constantly emergent rather than pre-specifiable curriculum. This would be relevant not only as a key strand in environmental education, but also as an element in education more broadly as it attempts (as it should do) to develop a systemic wisdom of the human situation that is rooted in learners' life-worlds. While, in the case of environmental education, this does not deny a certain place to some sort of systematic *introduction* to what may be identified as a range of perspectives, ideas and information essential to understanding key general aspects of our current environmental predicament, potentially it has large implications for how generally knowledge needs to be understood and organized in educational contexts. For example, it raises questions of the following kind. To what extent should knowledge be configured so as to be stored and accessed through narratives that root it in lived experience as against through abstract systematic disciplines? (And in the case of the former, *which or whose* narratives should be privileged?) Should knowledge be configured as exclusively the product of human agency and ingenuity or in part as a receptiveness to what is offered by other forms of agency involved in the occurring of things? How is the enrichment of the life-worlds of learners through personal encounter with the self-arising best achieved in differing circumstances? What would be the character of learning and teacher-pupil

relationships that aspire to such emergent knowledge? How is an emergent curriculum to be reconciled with the legitimate educational aim of introducing pupils to what Michael Oakeshott (1972) has referred to as a civilised inheritance of enduring traditions of thinking that may lie beyond the compass of their current life-world preoccupations?

To pursue such questions is to pursue an agenda that could be radically transformative of many current knowledge orthodoxies in education and their resulting pedagogies.

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