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Making sense of stewardship: metaphorical thinking and the environment

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This paper sketches the fundamental characteristics of metaphorical language which enable it to subserve not only the shaping of particular discourses, but also crucial aspects of our powers of enquiry and understanding. It argues that without metaphorical creativity we cannot make adequate sense of the more complex and open-ended aspects of our experience. This is illustrated from the way in which we deploy the closely related key environmental metaphors of 'stewardship' and 'natural capital', including the more specific 'real option' sub-version of the latter idea reported on by other contributions to this Special Issue. But a condition of making such thinking operational and socially productive is the development of a genuine learning society.

Logical fission

Interest in metaphor as a linguistic or rhetorical phenomenon goes back to Aristotle, who characterised it as a process of 'giving the thing a name that belongs to something else' (Aristotle, 1928). Metaphor, that is, has been recognised from the beginning as presenting an appearance of logical perversity. To produce a statement of the form 'A is B' in circumstances where it is blatant that A is *not* B (the standard form of metaphor) seems bound to be perverse, given that all logic and analytic semantics depends on taking such statements as inherently adapted to the communication of *truths*. But, on the other hand, metaphor is quite central to human communication—think how very little you can say, even in the most ordinary contexts, without relying on it. How should we account for this tension between logical oddity and communicative power?

Metaphor involves a kind of logical fission: it splits the atom of standard truth-functional statement to release the internal energies of polysemy (the nuclear multiplicity of meaning). Consider, for a worked example, Aneurin Bevan's famous description

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of Hugh Gaitskell as a 'desiccated calculating machine'; or, as he might more modernly have said: 'Hugh is a computer'. There is a fairly clear if not finally bounded range of predicates standardly attributed when we say of something that it is a computer. It is:

> …amazingly fast at processing information;
> …reliable in performing repetitive routines;
> …a material embodiment of rationality;
> …an impersonal, bland, functional-looking item;
> …able to rehearse only pre-programmed routines ('rubbish in, rubbish out');
> …a tool to serve given purposes;
> …a sophisticated piece of electronics;
> …running software almost inevitably designed by the Microsoft Corporation;
> …requiring mains or battery power;
> ….

The blatant falsity of the statement that Hugh, or any person, *is* something possessing all these attributes, as it were splits the standardly associated clutch of predicates apart. Some of them seem to fly off loose and get ignored, while others recombine as indeed applying to Hugh, but in a way which is much more vivid, resonant, emphatic and suggestive than anything normally achieved by strictly literal communication. He is, at the focus of our attention, amazing with figures and the processing of information—swift, accurate, unhindered by emotion; but also, less definitely realised, there is the sense that in various computer-like ways this efficiency has something both more and less than human about it. This is an open-ended signifying process—it is up for determination by the various forces operating on the given context which of these predicates, in what kind of combination, get brought more or less focally into the frame. And it is always liable to release complex semantic (and hence, psychological and social) energies—as here, in the dualling of scathing criticism with a degree of reluctant admiration.

Brutally summarising a very voluminous literature, one may say that there have been (roughly) two main lines of explanation of the processing of significances which can be observed to happen in such an example. The first of these, and certainly the mainstream model, is the *predicative* account. According to this, we apply various semantic or pragmatic processing rules, determined by broad principles of communicative relevance, to identify the range of predicates both focally and 'penumbrally' applied to a subject by the use of a metaphorical expression in a particular context. (In effect, we think: Well, the speaker can't have meant what he *said*, but he must have meant *something* or he wouldn't have uttered—so what salient implications of the metaphorical comment-term are being highlighted here in respect of what salient features of the topic or metaphorical subject?) The set of predicates identified (however open-textured and open-ended a set) is then taken as being communicated in an essentially literal way: the metaphor does its fissile work of blatantly false assertion, but leaves us at the end of the process with a payload of different, and differently organised, but literally intended, truth. (See Sperber & Wilson, 1986, for an extremely well-grounded presentation of this approach.)

The second kind of explanation might be called the *enactive* (for a classic version, see Richards, 1936; more recently, Cooper, 1986). On this account the initial work of the metaphor in generating implications is broadly similar, but is never completed in the way just described, because what is being communicated consists in the metaphorical activity itself—the point of which is the exploratory realisation of some domain of interest. In just the same way, the point of a picture, poem or piece of music is not to give us a message or a particular experience, although these forms can nevertheless be found revealing, insightful, thought-provoking or moving—they can be charged with meaning even when they don't *tell* us anything. Understanding a metaphor is not a passage from recognition of *prima facie* falsity to identification of *secunda facie* truth, but the holding together of two centres of attention, which between them enact significance. That is, we attend (an active learning process) to exemplary Hugh on the model offered by the idea or image of a computer. To see this as just a way of getting truths about Hugh misses the point, like seeing a portrait as a less accurate form of photograph (which is not to say that part of the point of a portrait isn't representational). Our being prompted with truth-claims such as 'Hugh is amazingly fast and efficient at calculation' is not the goal at which the process is directed, but a way of capturing one kind of sense-making upshot which it can yield. (Note that we can't avoid metaphor in describing what is going on here—nor, come to that, in the other kind of account either.)

We are encountering a very fundamental feature of the human project of understanding the world, when we recognise that the predicative account can explain some of our uses of metaphor (routine or so-called 'dead' metaphors) quite adequately, and *part* of the point of *all* of our uses of it—but we can't give a full picture of the sense-making role of figurative language without turning to the enactive kind of account. No account of this role that isn't fundamentally of this second kind will suffice. I can do no more for present purposes than just assert this, lacking scope here to defend the claim through the necessary arguments in philosophy of language—the basic point is that it looks as if there can be no predicative account which does not tacitly presuppose an understanding only explicable on the enactive account (Foster, 1988). Clearly, questions about the way our thought engages constructively with the real, and about our relations to the modes of understanding that we call artistic, or interpretive or humane, as opposed to scientific, are involved. This is already a good enough reason for seeing how these issues play out in terms of our dealings with some key environmental concepts. But I hope, too, that some of the justification for making this claim about the relation of the two kinds of account may emerge from the consideration of specific examples.

Stewardship

A *locus classicus*—at any rate in mainstream thinking—for the idea that we (the present human generation) are stewards of the planet, is the 1990 UK Government White Paper *This common inheritance* (UK Government, 1990). In terms inspired by, and in

places directly echoing, Mrs Thatcher's road-to-Damascus speech to the Royal Society in 1988, it states that:

> the ethical imperative of stewardship…must underlie all environmental policies…It is mankind's duty to look after our world prudently and conscientiously…we do not hold a freehold on our world, but only a full repairing lease. We have a moral duty to look after our planet and hand it on in good order to future generations. That is what experts mean when they talk of 'sustainable development'…We must put a proper value on the natural world…In order to fulfil this responsibility of stewardship…we must base our policies on fact not fantasy, and use the best evidence and analysis available…we must act responsibly and be prepared to take precautionary action where it is justified. (p. 10)

All this is familiar, and (despite the woodenly earnest civil-service rhetoric) sufficiently compelling. But what is its basis? For we are evidently not *literally* 'stewards of the planet'—and not just because few in the advanced world now believe that God has entrusted it to us. In the full literal signification of the term, 'X is a steward' implies:

> …X is *responsible* for looking after something;
> …*on behalf of* someone else Y who owns it;
> …and in respect of his care of which he can (at least in principle) be *held to account* by or on behalf of Y.

That is, in the first place, we can only literally be stewards on behalf of someone who owns whatever it is we are taking care of for him or her. But if we try to think of the next, or any subsequent, generation as owning the planet, then it will seem wholly arbitrary why it should be them and not us who do so (the only difference being temporal position in the procession of human generations, which can hardly count here). And by precisely the same token, if we are to be thought of as stewards just because we don't own the planet, then nor does any other generation. Since no generation owns the planet, the idea of literal stewardship must simply drop out. It should be apparent, too, that exactly the same point can be made about the old Green slogan which expressed this idea of stewardship long before it got into government white papers—'We do not inherit the Earth from our parents, we borrow it from our children'. Unless our children actually own the Earth, which there is no more reason to think of their doing than of our already doing (in which case, inheritance would after all be the appropriate relation), nobody is really borrowing anything from anybody.

Just as evidently, and more seriously, there is no 'holding to account' possible even in principle on this kind of stewardship model. All that can happen, on any particular occasion of our making a decision with implications for futurity, is that we try to stand in for successor generations and hold ourselves to account on their behalf—try to govern our actions by some sense of what they could reasonably expect from us. This can certainly be done, and done in a serious attempt to take, as it were, a back-bearing from the future on present conduct. We can try to act responsibly towards future generations by making thoughtful judgements about, for instance, how much loss of the natural world they might be likely to see as a fair exchange for how much enhanced technological capacity. Nor need there be anything casual or perfunctory

about this—we can really try to see such matters from their perspective. But we are, too, necessarily the only judges of how far we have succeeded. And holding oneself to account in this way isn't being held to account, any more than locking oneself in a room and pocketing the key is imprisoning oneself, however firmly one intends to stay put.[1] There is no way in which our basic judgements here can be challenged, except by ourselves—and that is, ultimately, a matter of having only our own best judgement to go on. But if that is the case, then there can be no genuinely constraining accountability in the frame.

For all that, the stewardship metaphor is undeniably a powerful one, appealing to a deep sense of the unprecedented responsibility which ever-extending technological capacities place on the present human generation. Suppose now that we seek to cash this out on the predicative model of metaphorical understanding. What kind of responsibility do we acknowledge ourselves as literally having when we acknowledge the force of the idea? In the absence of any actual accountability relation, this comes down to the thought that there is some objectively measurable quantum of something which we are constrained to transmit with at least an undiminished numerical value. Here, inevitably, the idea of resources for the project of human betterment ('development', or material progress) comes in to fill the gap. Such a project makes no sense except as intergenerational—the very nature of our humanness, our inextricable involvement with both our ancestors and our descendants, precludes its being concerned with the present generation only. So the idea of handing it on as a going concern seems implicit in it, and our scientific cast of mind readily suggests that there are now clearly specifiable, and in principle quantifiable, ecological and environmental conditions of its being a going concern.

This, of course, is the way 'sustainable development' is now very widely understood. But it can be seen, on reflection, to miss a crucial *depth* in the metaphor of our stewardship. (This is a separate argument from anything which might be objected to the interpretation on its own terms, as regards for instance the genuineness of the supposed objective constraint.) For someone could think the peculiarly modern project of continuous human betterment empty and illusory, and nevertheless find the stewardship metaphor compelling. It is perfectly possible to view that set of modern human ambitions with the cold irony of Eliot's chorus from *The rock* (Eliot, 1963, 171), even without invoking Eliot's religious reference-point:

> O weariness of men who turn from GOD
> To the grandeur of your mind and the glory of your action,
> To arts and inventions and daring enterprises,
> To schemes of human greatness thoroughly discredited,
> Binding the earth and water to your service,
> Exploiting the seas and developing the mountains,
> Dividing the stars into common and preferred,
> Engaged in devising the perfect refrigerator,
> Engaged in working out a rational morality,
> Engaged in printing as many books as possible,
> Plotting of happiness and flinging empty bottles,
> ....

And it is evident that one deep source of that irony is the sense that a responsibility in respect of 'earth and water', seas, mountains and even stars, has been ignored or travestied. Furthermore, we can imagine our having *succeeded* in the development project, our having achieved an eco-friendly utopia, and yet having still betrayed our stewardship. Suppose technological inventiveness had enabled us to create a society in which we could go on enjoying most, or even many, of the characterising features of present western civilisation—the megalopolitan living, the alienated patterns of work and social interaction, the abolition of distance, the electronically mediated intersubjectivity—with no derogation from the level of resources or ecosystem services available to successor generations into the foreseeable future. Would that achievement mean we had established a sustainably developing society? Surely something essential to the idea—something, for which the stewardship metaphor reaches, about the nature of our embodied relation to the earth—would have been lost under those conditions, however long such a civilisation could (at least in theory) survive.

These complexities of feeling and understanding suggest that our stewardship of the planet is one of those fundamental human recognitions which can't just be *thought*, but have to be lived in their contradictions to be properly grasped. This is where the enactive understanding of metaphorical signification comes into its own. Seeing ourselves as stewards is seeing the earth as held in trust for the next generation, and yet at the same time as belonging to no generation; the thought of our descendants' holding us to account is counterpointed by the recognition that they can only do this as, in some sense, ourselves. In such a mode of thought-engagement, we permanently re-enact our enworldedness as a life-form with an enormous pull on our natural environment, and yet a kind of compensatory vital species-consciousness. Through the metaphorically-prompted dynamic exploration of these complex relations to the natural world, we get closer to an awareness of our responsibilities in this arena which makes the *Common Inheritance* rhetoric seem utterly jejune. Think of Lara in *Doctor Zhivago*, breathing in the air which carries 'all the smells of the huge countryside':

> For a moment she rediscovered the meaning of her life. She was here on earth to make sense of its wild enchantment and to call each thing by its right name, or, if this were not within her power, then, out of love of life, to give birth to heirs who would do it in her place. (Pasternak, 1958, 89)

This won't do for policy, nor carry weight in even the most enlightened boardroom; but the stewardship metaphor will fail—will, indeed, seriously mislead us in practice—unless it is taken also at that human depth. The kind of intergenerational obligation we really do have is to handle problems of ecological systems and resources in *that* spirit *as well as* in the spirit of 'capital equipment for the human project'.

Natural capital, sustainability and exploratory meaning

We can make the same kind of point—at bottom, I think, it is really just the same point—about the natural capital metaphor itself. The full literal range of attributes

conveyed by the root metaphor 'Nature (natural resources/the natural world) is capital' is something like:

> …a stock;
> …depletable;
> …capable of being built up by investment;
> …used instrumentally within a production process;
> …yielding a flow of benefit (to humans) through that process;
> …created for the purposes of contributing thus to production;
> …capable of being variously managed/configured with a view to improving that flow of benefit;
> …not exhausted in a number of iterations of the production process;
> …a reservoir of value over time;
> …the sum of which is related to the present value of the benefit flow.

The minimum set of such attributes conveyed as true by the metaphor if we interpret it predicatively might be: a depletable stock instrumental in producing a flow of benefits to humans, capable of being managed or mismanaged to affect that flow, and valuable as a function of the benefits thus produced. We need this much, it would seem, to get any grip via the 'capital' idea on the notion of environmental sustainability—of an identifiable quantum of environmental-ecological stock which should be maintained over time as a matter of active policy.

If we take it in this way, however, the familiar problem with distinguishing strong from weak sustainability seems to follow inevitably. Once you have literalised the upshot of the 'capital' metaphor for nature even just to this extent, any attempt to construct such a principled distinction must fail; since if you are thinking of something as capital at all, you are minimally thinking of it as something the *point* of which is its contribution to the production of a flow of benefits. As Alan Holland has noted, weak sustainability says that the various forms of capital (and in particular, manufactured and natural capital) may be inter-substituted where they can be (that is, where such substitution preserves the value of the benefit flow). Now if strong sustainability says just that there are cases where they can't—that there are benefits, such as climate regulation, for which we have to depend wholly on natural capital—there is no tension at all between these positions. That we can't preserve benefit flow by substitution where as a matter of fact we have no adequate substitutes to hand, is not only not incompatible with weak sustainability, it is actually a corollary of it (Holland, 1997). But what strong sustainability proponents surely wanted to capture was the thought that at any rate some of the natural world is indispensable to us in a much more resistant sense—there are not just *aren't* but *couldn't be* any anthropogenic substitutes for it. The point is then: if this is supposed to be a *practical* impossibility, it remains an empirical matter to discover how far it actually extends—there is nothing here to inhibit us from pushing out the boundaries of substitution of natural by man-made capital as far as our technological ingenuity allows, so long as we are careful to ensure that substitution and not derogation is what is in fact going on. This seems to run strongly counter to the spirit and intention, if not to the letter, of the strong sustainability position. But if it is supposed to be a *logical* impossibility, it seems to be in

contradiction to the instrumentality inherent in the very idea of capital, insofar as we take its core attributes as applying in any sense literally to nature. You can't consistently take the basic point of something to be the production of benefits, while denying that it could be substituted for by anything else which would produce the same benefits just as effectively. So either strong sustainability collapses into weak, or we are precluded from thinking of the relevant aspects of nature in that way at all.

In short, the operational grip on environmental issues offered us by the model of nature as capital comes at the price of downplaying or misrepresenting some key respects in which our relation to it is radically *unlike* our relation to any capital stock. But of course, paying that price means configuring that grip in ways with which we can't really remain comfortable for very long. To avoid that dilemma, we need to be able to think (cogently enough to inform action) both that nature in its relevant aspects *is* capital, and that it *isn't*.

Again, the enactive-heuristic understanding of metaphor is vital here. It is only by reading the metaphorical signification of 'natural capital' enactively that we can deal flexibly and responsively with the complexities of this domain. Running our attention to nature on the model of 'capital' involves seeing where it does yield true(-ish) predicates and also where it seems to cancel these predicates out—a counterpoint of applicability and contrast as between the (actually strikingly different) ideas of the natural world and of economic capital. We hold in mind both that nature matters as yielding us a benefit stream, and that its value cannot be captured in that way; that it serves as a stock, investment in which can improve that flow of benefits, and that intervention in it *considered* as 'investment' can actually change the products—because it changes their human meaning—to such an extent that questions of increased or decreased flow become unaskable. (Genetic modification offers a very clear instance here: the human meaning of the GM tomato can represent so radical a transformation of earlier relationships that it is seriously indeterminate how far we can talk of improvements, say of packageability or keeping qualities, in 'the same product'—and thus how far the model of a transition between natural and cultivated capital can apply to the gene pool.) That is, there will be some kinds of engagement between our economic activities and the natural world where the idea of the latter as capital will be illuminating and helpful in an operationalisable way, and others where to try and operationalise our dealings with nature on that model will be positively harmful. The boundaries between these kinds of engagement will not be fixed, nor readily specifiable in advance, and they may shift in respect of particular natural characteristics in response to changes in both our attitudes and our technical powers. 'How far will thinking of this *as* capital take us, and in what directions?' is always the crucial, open-ended question.

Just the same line of exploratory questioning, it must be emphasised, informs the attempt to understand natural capital value on a 'real options' paradigm, as described in a number of contributions to this Special Issue. To do this is in effect to take one particular and comparatively novel inflection of the general 'capital' model as (perhaps) capturing the force of the core metaphorical idea better than standard versions. A real option is a feature of the structure or organisation of a capital asset

which embodies the opportunity to make a future decision about how the asset is to be used, contingent on relevant circumstances and information at that future time. This concept comes originally from financial markets, but has been applied in recent innovative thinking to physical assets too (Amram & Kulatilaka, 1999). Thus the basic forms of real option can be seen in:

- capital equipment that can function to the same purposes in different ways, or can be turned without significant adaptation to different future purposes, as required;
- technological R & D platforms that can support various different possible future applications;
- stock that can be liquidated, or its value otherwise realised, under different sets of future circumstances.

The common element is that properly valuing the given asset depends on seeing it as rational to accept—indeed, to welcome—uncertainty about the relevant future and its contingencies, rather than trying (as on the standard discounted-cash-flow model of capital value) to diminish it as far as possible.

Again at this level, however, we have to recognise that natural resources and systems considered as embodying real options display this commonality in complex and contradictory ways. The value of self-stabilising ecosystems and self-regenerating life-forms which continually reproduce their own capital availability is indeed something like the value of a real 'option to wait', embodied in (for instance) development land with an undeveloped rental value—and yet also importantly unlike, insofar as the values there are created entirely by our economic and social structures, whereas ecosystemic value in an obvious way underpins all such arrangements. Similarly, we can see such freely regenerating natural assets as a stock on which we have a permanently renewed option to liquidate, as and when substituting it by human-made capital will genuinely maximise value; or we can see them, insofar as they are stores of 'information' (such as gene banks), as systems platforms supporting the permanent possibility of new technological applications. But while we are seeing natural capital in these ways we must not lose sight of the equally fundamental characteristic of such regenerativity—that it is not something we have made, but something we have somehow been *given*. And of course, underlying this is a feature of ecological assets in which they are unlike any 'capital stock' whatever, whether embedding real options or not—the fact that under appropriate conditions of use they can avail us *without depreciating* into an indefinite future. With the perhaps-to-be-favoured sub-metaphor as with the background capital metaphor, therefore, it is always a matter of exploring the idea-complex enactively, creatively and open-endedly, if we are not to be misled and ultimately betrayed by our own best insights.

Making metaphor operational: the learning society

But how are we to get any kind of operational or policy *purchase* through this kind of exploratory questioning?

There are many uses of words, the significance and life-availing force of which consists wholly or principally in their *telling* us things—their expressing belief-claims or knowledge-claims or value-claims about the world. But this is not the case with all uses of words. We have always known that it isn't the case with songs, poems or stories for instance—nor, on the above argument, is it the case with many of our creative-exploratory uses of metaphor to negotiate some of the central complexities of living relationship in which we are enmeshed. We know pretty well how to handle words and ideas used in the way of telling; we test their communication in a variety of ways for truth or persuasiveness; and those which pass these tests we use both to direct our attention to further truth-possibilities or value-possibilities, and to organise and legitimate action. And there is considerable scope here for system, routine, agreed goals, planning, assessment (even, sometimes, numerically expressed assessment)—all the features so essential for public policy-making in a huge, impersonal, liberal-democratically multiform and bureaucratically-governed polity. But how could we engage the exploratory-creative use of words and ideas with the mechanics of such a polity?

This is where the concept of a *learning society* is so important. A genuinely learning society is one structured around the creativity and open-endedness of our constant grapple with emergent meanings. This is of course going to be a matter not just of formal arrangements but of the whole web of relations between experience, life-energy and personal circumstance which such arrangements both reflect and make possible (Foster, 2002). An important test of such a learning society, we can now say, would be its not developing an inherent tendency to fetishise its major metaphors, to rigidify their exploratory-creative character into a simulacrum of science or social science. A learning society is one which does not automatically try to turn its heuristic parallels and paradoxes into parameters.

That is a key condition, it must be emphasised, for making practically operationalisable *human sense* of concepts like natural capital. If natural resources can be seen as a capital stock, and one which we are currently depleting (either in direct physical terms or in terms of its ecological capacities), then we will obviously want to know by how much we are depleting it as against levels needed to maintain sustainable levels of such key 'benefit stream' components as human health, biosphere stability and basic economic functions, and what the policy implications (including costs and timescales) would be of halting or reversing that depletion. This will not hand us any simple algorithm for policy determination—there will still be crucial trade-offs to negotiate within the sum of things we want or need to do. To the extent that we have this kind of knowledge, we shall certainly be in a better position to make such trade-offs intelligently. 'Intelligence', however, will not simply reflect our familiarity with the relevant science (physical, biological or economic). It will also be a matter of responsiveness to the semantic forces in play around the use of the 'capital' idea in the given context. If we see nature as capital just *here*, what aspects of our awareness of it do we have actively to suppress? At what epistemic and attitudinal cost? If we allow these aspects into consciousness, what does that do for the claimed scientific rigour of the parametrisation of the issues that we are being offered?

To make good choices, we need a society able to negotiate the flux of such semantic forces. That means, in terms of the present discussion, a society through whose institutions and practices the enactive understanding of metaphor is widely fostered and deployed. In building the relevant frameworks, we might even suggest, a society would be investing in relevant social capital which maximised epistemic real option value. For a powerful organising metaphor like natural capital, structuring our understanding in heuristically rich and fruitful ways, could easily be seen (rejigging our conceptual apparatus only a little) as a *real learning option*—its value for sustainability not a matter of its pinning things down to a manageable model, but of its opening creatively into an uncertain future.

The relevant frameworks include, as far as formal systems go, at least:

- Schooling that encourages children to recognise and develop their conceptual and linguistic creativity in all its forms (that is, takes the humanities, especially art and literature, with real seriousness).
- Schooling and tertiary education that, in respect of environment and sustainability issues in general, brings these modes of sense-making to bear in as explicit and focused a way as it does science.
- Formal educational and lifelong learning arrangements that, specifically in relation to natural capital and other central sustainability concepts, study and explore them in the historical, conceptual and imaginative round as well as in their scientific dimensions.

Informally, they require at least:

- Institutions (policy-making and executive) that build in reflexivity—not just recalibrating targets in the light of experience, but continuously revising the interpretive frameworks which give meaning to these targets. (We might call these *intelligent* institutions, but not just in terms of information-processing facilities—they would be institutions that could both hear the past and make imaginative leaps into the future.)
- Processes of policy consideration, formation and validation that are radically dialogical, to meet not just the democratic but the epistemic, and still more glaringly the imaginative and emotional deficits in the current armoury of social decision-making.

In a society thus framed (and of course, I have offered the merest outline sketch), operationalising sustainability would depend as much on the human sense we make of natural capital as it would on processes of shaping and deploying the idea as a working tool. But it is surely clear that neither can be done properly without the other. In summary, that is, these considerations about how we think metaphorically are not aside from, still less distractions from, the central business of sustainability. Since humans live in meaning, it is a condition of sustainable human life that we make an ongoingly habitable human-natural sense of ourselves. That means that our capacity to live as social beings from the full of our natural endowment for meaning-negotiation must be cultivated in deliberate relation to the material-ecological conditions of life.

We must not attend to these conditions in ways that enforce on us a distorted, merely partial sense of what we are—to do so would not enable us to sustain human life, however long it enabled the gene-stream flowing through *Homo sapiens* to go on surviving on, or even dominating, the earth. Humans cannot flourish as humans by using anything less than their full, naturally given endowment of intelligence in the construction and negotiation of the human world. It is only when we model nature as natural capital within the metaphorically creative context of a learning society, that what we thereby get to grips with could *be* a sustainable human future.

Note

1. For reasons why rational scientific prediction is not an answer to this point, see my other paper in this Special Issue, p. 116.

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