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Abstract: There has been on-going interest in education for improved human-environment relations and a recent resurgence in the use of a variety of contexts and encounters for these purposes, including those to be found outside the traditional school classroom. The curriculum making involved in these areas is more or less supported by discussions of epistemology and ontology. This article considers what Tim Ingold's account of 'dwelling' might have to offer in support of some of the kinds of curriculum making involved in improving human-environment relations. Ingold's work insists on a flat, continuous and processual ontology of dwelling and becoming. It also examines how this can be reconciled with development, growth, knowledge and skill, and the passing of capacities between generations. The article highlights implications for an understanding of curriculum making in general, and for revised understandings of place and agency therein, which bear particularly on environmental education.

Dwelling and Curriculum Making in Environmental Education

Introduction

> We do not superimpose meaning on a world ('nature' or 'physical reality') that pre-exists apart form ourselves, for to live we must dwell *in* the world, and to dwell we must already relate to its constituents. Meaning inheres in these relationships. (Ingold, 1993, p. 222)

Educators have for some time wished to encourage human-environment relations that are, however contested, more 'sustainable' or 'ecologically life-enhancing', or 'for' the environment or biotic community. The wider context of this article is curriculum making for these purposes. Although we will turn to it more precisely later in the article, 'curriculum making' in a commonsense view involves policy, implementation, practice, inputs, outputs, teachers, learners, local and wider contexts, and so on. So for human-environment purposes, curriculum making raises ontological and epistemological issues concerning place, materiality and agency.

This article's central contribution is to introduce into these discourses Tim Ingold's account of 'dwelling'. We describe those aspects of his account that we see as central to the consideration of curriculum making in general, and for human-environment relations in particular. The account rests on a flat and continuous ontology that rejects a range of dualisms, in particular the 'intentional world' assumption of mindful representation necessarily preceding action upon an exterior reality.

Ingold's writing is wide-ranging but has focused on these basic issues throughout, and is particularly informed by anthropology as well as philosophy. It offers insights not only into the nature of experience but also learning, skill and agency. At the same time, it gives greater ontological significance to the material and the other-than-human biota than either modernist or post-structural approaches would.

Our contention therefore is that the application in curriculum making of Ingold's account of dwelling is particularly (though not exclusively) significant for the purposes of developing human-environment relations

through education. The article concludes with some tentative steps towards just such an application.

Context

There has been international agreement on the need for educational responses to 'environmental issues' since at least the Tbilisi Declaration (UNESCO, 1977). We have seen the emergence of more international agreements that seek to make educational responses more 'mainstream'. For example, the World Commission on Environment and Development (World Commission on Environment and Development (WCED), 1987) introduced the need for education for sustainable development (Reid, 2002, p.74). There is now evidence of world-wide 'mainstreaming' of green concerns in educational policy and curricular reform (e.g. Shallcross et al., 2007, Lotz-Sisitka, 2006, Palmer, 1998, Tilbury et al., 2002).

Such approaches seek to reconfigure, disturb, change and improve our everyday ways of life and the relations between humans and their environments, through a variety of pedagogies in and beyond the formal classroom. So a part of the academic discourse about these educations focuses on the ontological and epistemological assumptions of the kinds of curriculum making involved. These discussions have included: concerns with the restrictive characteristics of modernist forms of knowledge-production (e.g. Stevenson, 1987, Huckle, 1996); the typing of 'positivist', 'interpretivist' and 'socially critical' epistemologies (e.g Robottom and Hart, 1993, Fien, 1993); the possibilities of post-structural approaches (e.g. Payne, 1997, 1999, Somerville, 2010); the merits and difficulties of combining a range of epistemologies in accounts of pedagogical practice (Bowers, 2008, Gruenewald, 2003).

The issue most pertinent to the present article is highlighted in Gough & Scott's tri-partite typology of models of learning for sustainable development, which they say are currently exemplified around the world (Gough and Scott, 2006, Scott and Gough, 2003). These models explore the relationship between learning and change. In so doing they illustrate how curriculum making might involve different assumptions about culture and nature (human-environment), epistemology and ontology.

Of particular interest is that the types involve different assumptions about whether society emerges from biogeophysical nature (Type 1), or is socially constructed (Type 2) (2006, p.272-273). In Type 1, awareness-raising

resulting from natural scientific enquiry leads directly to changed human behaviours. In Type 2 change arises from (possibly emancipatory) social-scientific insights into the social condition. However, the final type (3) proceeds from a "co-evolutionary" view of social-environmental relations, where each influences the other through non-linear feedback; and where the complexity, uncertainty, risk, and *inevitability* of change mean that learning is central *to* change and its management.

The ontological and epistemological foundations of Types 1 and 2 are relatively straightforward. Type 3, however, is more difficult matter. By identifying this type, Scott and Gough have incidentally highlighted the existence of a body of practice that remains philosophically relatively insecure.

In this article we draw on Ingold's account of 'the dwelling perspective' with a view to offering some grounding for this possibility of curriculum making built upon the inevitability and co-evolution of human-environment relationship. Our ultimate purpose in discussing these issues is to build (perhaps re-build) philosophical confidence in the pedagogical practices that seek to improve or change human-environment relations (whether these be found within school classrooms, in cross-curricular projects, organisation-wide approaches to the sustainable school, or more traditional approaches to fieldwork or 'nature study' or outdoor education).

The Dwelling Perspective

We will structure our account as a series of central ideas from Ingold's writings that we have selected as bearing upon the question of a pedagogy for human-environment relations. These are: ontological flatness, dwelling, learning as apprehending, attunement and enskilment, and agency.

Ontological 'flatness'

Tim Ingold has spent much of his time as an anthropologist looking at the interface between people and environment. However the project ultimately dissolves the implied duality. In *The Perception of the Environment* (Ingold, 2000) he has drawn on ecological psychology and the philosophical writings of Heidegger and Merleau-Ponty. He says these discourses share the view that the world becomes a meaningful environment through active inhabitation rather than formal, cognitive representation (Ingold, 2000, p.173). This rejection of an orthodox dualism also removes any such

dualism in "human-environmental relations" and emphasises the processual character of form:

> Organic life, as I envisage it, is active rather than reactive, the creative unfolding of an entire field of relations within which beings emerge and take on the forms they do, each in relation to the others. Life [is] the very process wherein forms are generated and held in place. (Ingold, 2000, p.19)

The term 'environment' is rendered relative in Ingold's work: there is no environment without the folding and enmeshment[1] that is the process of life. Organism and environment are an indivisible process. Organisms are not folded in on themselves and surrounded by 'environment'. Instead organisms are points of growth of environment, and whose relations are rhizoidal (Deleuze and Guattari are referred to explicitly); and the environment is better understood as a "domain of entanglement" (Ingold, 2006, p.13-14). Many other dualities are simultaneously rejected.

Ingold's argument here is pertinently captured in his view that environment should not be confused with 'nature' (Ingold, 2000, p. 20). For Ingold, the term 'nature' tends to evoke a nature-culture binary where nature must be seen as being both real (constitutive of culture, as a western scientist might see it) and constructed (within culture, as a western anthropologist might see it). However, as soon as it is admitted that this binary is itself a western cultural construction then an infinite regress emerges. The way out, according to Ingold is to avoid altogether the basic premise, which is that humans live in intentional worlds where some externality is grasped conceptually as a precondition of effective action (Ingold, 2000, p.41).

These ideas arise for Ingold out of an anthropological focus on hunter-gatherer livelihood, and it is of course problematic that he himself is writing from within a given culture. In response to this problem, he asks us not to compare western and hunter-gatherer cosmologies (which comparison invokes nature-culture binaries) but instead suggests that we

> follow the lead of hunter-gatherers in taking the human condition to be that of a being immersed from the start, like other creatures, in an active, practical and perceptual engagement with constituents of the dwelt-in world. This ontology of dwelling, I contend, provides us with a better way of coming to grips with the nature of human

> existence than does the alternative, Western ontology whose point of departure is that of a mind detached from the world, and that has literally to formulate it – to build an intentional world in consciousness – prior to any attempt at engagement. (Ingold, 2000, p.41)

In a temporal frame, one consequence of Ingold's account of life-process as co-evolution is the unification of history (culture) and evolution (nature) in a single ontological and epistemological process – the on-going emergence of human-environment. This resonates with the curriculum making assumptions of the third type of learning for sustainability that Gough and Scott (2006) identify (above), if only at the level of approximation that the type itself evokes.

Dwelling

We now turn to the issues of how, in such an ontology of process, Ingold handles person-environment engagement ('dwelling'), before then turning to the question of learning. The ecological anthropologies of Australian, Alaskan and Canadian hunter-gatherers' feelings, skills, sensitivities and orientations to other species, were important in the development of Ingold's thinking on person-environment engagement. As we will show, he draws on Heidegger's work on 'dwelling'. In later writings (e.g. Ingold, 2006) he tends to use the term 'inhabitation' but we will use 'dwelling' here.

Ingold argues that humans can be understood to 'dwell' in a way that does not involve pre-representing – let alone objectifying and separating – an environment before it can be dwelt-in. He refutes the need to create intentional worlds of significance as a prerequisite of action. His alternative, 'dwelling perspective' is philosophically founded upon Heidegger's (1971: 145-161) *Building, Dwelling, Thinking* (Ingold, 2000, p. 185-187). However while Heidegger argues that dwelling has been eroded by modernity, Ingold sees dwelling as the inescapable condition of existence (Jones, 2009, p.268).

According to Heidegger, it was too narrow an etymological understanding of dwelling which supports the claim that humans must build (plan, design and manufacture) *before* they can dwell (within the thus-built world). Heidegger's conception of dwelling was instead that it amounts to the whole process of living. Building – as with any other activity – is therefore a part of dwelling.

> ‘We do not dwell because we have built, but we build and have built because we dwell, that is because we are dwellers…. To build is in itself already to dwell…. *Only if we are capable of dwelling, only then can we build*.’ (Heidegger 1971: 148, 146, 160, *original emphases*). I take this to be the founding statement of the dwelling perspective. What it means is that the forms people build, whether in the imagination or on the ground, arise within the current of their involved activity, in the specific relational contexts of their practical engagement with their surroundings. Building, then, cannot be understood as a simple process of transcription, of a pre-existing design of the final product onto a raw material substrate. (Ingold, 2000, p. 186)

This is not only an argument about the construction in the architectural sense. Ingold is arguing that the process of dwelling by which an ant co-evolves with the environment of a tree is the same as that by which a human co-evolves with environment, whether tree or the skyscraper. Even if there are fleeting moments of design, or of apparent ‘product’, these do not lie outside the on-going process of human-environment co-evolution. For Ingold, dwelling is a perspective that treats the immersion of the organism-person in an environment or life-world as an inescapable condition of existence.

Although this goes some way to re-describing human involvement in inevitable human-environmental change, it does not describe learning as part of that change. Our account now turns to the issue of how growth or change is understood in this dwelling ontology.

According to Ingold the world ‘‘continually comes into being around the inhabitant, and its manifold constituents take on a significance through their incorporation into a regular pattern of life activity’’ (Ingold, 2000, p.153). Since organisms and environments are ‘coextensive’ the same may be said of the inhabitant. So organisms should be seen as points of growth that “issue forth through a world-in-formation” (Ingold, 2006, p.9), that are “are continuously coming into being as a part of the whole, while at the same time the whole too emerges:

> wherever growth is going on, organisms are coming into being, enfolding into their own constitution, and through their histories of

> becoming, the constellations of pathways within which they emerge (Ingold, 2003, p. 304)

Apprehending and Learning

Ingold's perspective on dwelling and growth rejects any need for intentional worlds and cognitive schemae to precede effective action. In terms of 'learning', it follows that the capacities of organisms are not passed between them through context-independent ideas or propositional knowledge. Neither would Ingold accept that such capacities are determined genetically, which would be to assert an ontological priority of form over process that would be similarly inconsistent with the dwelling perspective.

Instead, Ingold argues that organisms' capacities and knowledge are the 'emergent properties of developmental systems' (Ingold, 2000, p. 38). To 'know' is to apprehend – a kind of engaged, perception-as-action in the world – rather than to construct (Ingold, 2000, p. 42). Moreover, because the dwelling perspective begins from a continuous and flat ontological view of organism-in-environment – an ontological continuity between mind and body, self and other, and nature and culture – learning is not separated from knowledge. If to know is to apprehend, so to learn is to apprehend, and the passing of capacities between organisms is part of the relational processes of unfolding in which organisms-in-environment come into being.

'Curriculum making' is thus, in part, the making of the world into which the learner is born and grows:

> Knowing is indistinguishable from life activity of the organism-person in an environment that has itself been fashioned through the activities of predecessors and contemporaries. It follows that knowledge is perpetually generated rather than applied in practice. (Ingold, 2003, p. 302)

Ingold's theory of learning is therefore neither mentalist nor a narrow form of social constructivism. It is probably most readily grasped through his discussions of enskilment and attunement.

Attunement

Ingold offers the term attunement for the manner in which our perceptive powers are gained. Within a dwelling perspective, we are attuned (we may read here: we 'learn') through directly apprehending our environment.

Drawing on Gibson (1979) Ingold suggests that novices of a generation can be shown what is important by elders through an 'education of attention' (Ingold, 2000, p. 22). However this idea needs unpacked.

Ingold's approach is anthropologically informed as being a process of gaining perceptual capacity within environment, for example in the way a hunter develops capacity to discern prey. As explained above, this cannot be a capacity to compare evidence against a model, but is instead to generate *organism-environment relations in which meaning inheres*.

The inter-generational process of education is neither transmission nor enculturation, but more a combination of creation, or unfolding, and discovery:

> Placed in specific situations, novices are instructed to feel this, taste that, or watch out for the other thing. Through this fine-tuning of perceptual skills, meanings immanent in the environment – that is in the relational contexts of the perceiver's involvement in the world – are not so much constructed as discovered. (Ingold, 2000, p. 22)

Skill, Enskilment and Agency

In this flat and continuous ontology, then, the development of perceptual capacity is clearly not the development of efficiency in a loop of crossings between perceptions, mental constructions and actions. Action and apprehension are ontologically a "close coupling of bodily movement and perception" (Ingold, 2008, p.214).

Ingold's accounts of skill and enskilment most pertinently approach this ontological continuity of action and apprehension, or perception-as-action. He rejects the modern idea of skill as a *use* of the body and/or tool in the sense that implies separately an intentional agent and functional instrument. Instead, skill is again a *primary condition* of the relationality of craftsman, tools, materials and environment:

> In this sense the hands and eyes of the shoemaker, as well as his cutting tools, are not so much used as *brought into use*, through their incorporation into an accustomed (that is usual) pattern of dextrous activity. Intentionality and functionality, then, are not pre-existing properties of the user and the used, but rather immanent in the activity

> itself, in the gestural synergy of human being, tool and raw material. (Ingold, 2000, p. 352, original emphasis)

Skills, then, like apprehension co-evolve with the unfolding of the organism-environment. And as with apprehension, questions arise about how skills *arise* and how they are passed from organism to organism. Clearly these questions bear upon curriculum making. How is intergenerational learning is to be understood, for example in terms of how a novice hunter or craftsman learns skill:

> Traditional models of social learning separate the intergenerational transmission of information specifying particular techniques from the application of this information in practice… Now I do not deny that the learning of skills involves both observation and imitation. But the former is no more a matter of forming internal, mental representations of observed behaviour than is the latter a matter of converting these representations into manifest practice… Through repeated practical trials, and guided by his observations, he gradually gets the 'feel' of things himself … in this process, each generation contributes to the next not by handing on a corpus of representations, or information in the strict sense, but by introducing novices into contexts which afford selected opportunities for perception and action… (Ingold, 2000, p. 353-354)

Two further observations about skill in the dwelling perspective are worth making. The first concerns the importance of growth and development in understanding agency. According to Ingold, because of the ontological indivisibility of attentive perception and action, or apprehension, "all action is, to varying degree, skilled" (Ingold, 2008, p. 214). Skills are the only way organisms interact with environments:

> The skilled practitioner is one who can continually attune his or her movements to perturbations in the perceived environment without ever interrupting the flow of action (Ingold, 2008, p.214)

In the dwelling perspective these accounts of skill and enskilment have crucial implications for agency. Since agency requires skill, and skill requires enskilment (i.e. growth or development), growth and development are necessary for the development of agency. The effect of this move is to recognize oranismal agency, and to distinguish it from simple materiality,

while continuing to reject mindful intentionality as a pre-requisite of subjective action on an objective world (and all the dualities that would be thus-entailed).

A second observation that is worth making is that the above ecological approach to skill implies a particular understanding of human-environment relations. In it, *action in* the environment (doing) is not separate from, but intimately bound up in, perceptual *involvement with* the environment (Ingold, 2000, p. 353).

Both of these points seem particularly pertinent to curriculum making for environmental education, which is the context of this article.

Summary: the Dwelling Perspective

We have attempted to give an account of Ingold's dwelling perspective, to the extent that we think it bears on the question of curriculum making in the context of human-environment relations. It has roots in philosophy, eco-psychology and social anthropology, and it has critiques.

In summary, Ingold's account is ontologically 'flat' in the sense that a range of dualisms and attendant hierarchies are absent, and 'ecological' in the sense of being relational and process-oriented. Organism and environment are an indivisible process, an enmeshment in which people and other organisms are points of growth of environment, a dwelt-in world that rejects dualisms of nature/culture, history/evolution, mind/body and representation/reality.

Human knowledge of the world, the development of skill, and the 'teaching and learning' of these, are all achieved through embodied apprehension, attunement, and enskilment. Meaning inheres in the relationships that make up the unfolding organism-environment meshwork – 'the learner' inevitably both discovers and creates such relationships. The learner does this amongst the nexus of relationships that have unfolded around the dwelling 'teacher' or predecessor. The passing-on of knowledge or skills is itself part of the co-evolving field of relations, and 'educators' both inevitably co-evolve in these relations and draw 'learners' attention to them.

Dwelling, place and interconnection

To some extent Ingold resists ontological critique with the central tenet that the dwelling 'perspective' is not a competing cosmology but the primary condition of existence.

However for the purpose of this article concerned with curriculum making for environmental education, we must raise the established critique that dwelling connotes something overly 'local'. While the ontology focuses on organism/environment as indivisible relational process, it is less clear how *extensive* are these flows or relations. This issue seems relevant in the face of global environmental issues.

Geographers, who are also interested in how the concept of place can be retained in ontologies of continual relational unfolding, highlight the problem explicitly. According to Cloke and Jones (2001), dwelling can only be a useful concept if we can also account for how places are connected with other places through the way ideas, people and materials flow in and out of them (Cloke and Jones, 2001, p. 661). This is the interconnectedness with which we make sense of, for example, global climate change.

Their solution is to re-admit representation *alongside* apprehension, skill and practice (Cloke and Jones, 2001, p. 662). In as much as they attempt to resolve this ontological bifurcation, they argue that dwelling is both an embodied *and* mindful, imaginative embeddedness in environment (Cloke and Jones, 2001, p. 663). However that is to loosen the grip of Ingold's flat, continuous, processual ontology of becoming, and to re-muddy the waters that underpin some of the kinds of practices that might be identified under Gough and Scott's (2006) third, co-evolutionary, type of learning and change in human-environment relations.

Ingold himself responds to these issues of place and the interconnectedness of places. He posits the idea that interlaced trails in the domain of entanglement of relations can 'congeal'. These congelations can be read as places, though not by means of organisms' mindful constructions of them. Organisms become through their entanglement in them (Ingold, 2007) and perhaps apprehend the congealed nature of the relations through perception-in-action, as described in previous sections.

Consistent with this, Ingold notes that relationships between such congealed 'places' can be accounted for, including by a distinction between inhabitation (a revised term for dwelling) and 'occupation':

> From time to time in the course of history, however, imperial powers have sought to occupy the inhabited world, throwing a network of connections across what appears, in their eyes, to be not a tissue of trails but a bare surface. These connections are lines of occupation. (Ingold, 2007, p.)

Perhaps we can interpret this by suggesting that modernity is characterized by a relative abundance of lines of occupation. Nonetheless, the relational modalities that make up the ontology of dwelling cohere, whether the connections are local or global. Ingold's interest in the condition of existence is not freighted with politics in the way that 'local', 'global', 'place' and 'modernity' would otherwise be.

Curriculum Making as the Enactment of New Ways of Dwelling

Next we wish to draw upon our account of the concept of the dwelling perspective for what we have been calling curriculum making. We are interested in the potential of Ingold's work because of our interest in education that attends to human-environment relations. Some of the most interesting practices that might be gathered together in Gough and Scott's Type 3 (Gough and Scott, 2006) – particularly those that involve encounters with 'nature' – are in need of theoretical grounding. We are asking what the dwelling perspective – ontologically flat and continuous, fundamentally experiential – can offer curriculum making for human-environment relations.

We make two steps. Firstly, we more precisely explore the idea of curriculum making as the core singular process in the coming together of learners, educators, materials and places in order to generate knowledge through enskilled activity. This exploration of the possibility of curriculum making as a flat singular space for curriculum formation arises from the dwelling perspective outlined above.

Our contribution here is an extrapolation. Ingold has not said anything (to our knowledge) about curriculum making *per se*. However, as we have seen, he does consider knowing, learning, attunement, enskilment and agency. Our second, and concluding step, is to consider whether curriculum

making from the dwelling perspective offers points from which to work on the central concepts of 'place' and 'agency' in human-environment relations.

Education as 'Curriculum Making'?

The term curriculum making has a long lineage. For Schwab (1964) it was the 'commonplaces of education' that linked pupils, teachers, subjects and the sociocultural context together. For Grimmet and Chinnery (2009) it emphasizes the experiential as being in service of theorizing and conceptualisation.

While these emphases on the real world and practice resonate with dwelling in one sense, they explicitly impose intentional worlds of form upon an external reality (in the use of terms like 'curriculum', 'subject (discipline)', 'concept' and 'content'). In so doing, they do not account for pupils co-becoming as organism-environment, as the dwelling perspective does. They similarly fail in as much as they define teachers ('curriculum-makers') as guides to the acquisition of such pre-existent forms (of knowledge or skill).

Neither can we deploy purely subjectivist or intersubjective accounts of curriculum making that ignore the role of place, however political or processual. From a dwelling perspective, non-subject features of place (mountains, chalk-dust) are equally intimate parts of the process of organisms' becoming and attunement.

Instead of these approaches to curriculum making, a dwelling perspective offers a view of 'curriculum making' as a term to capture what is going on when people, places, materials and skills are engaged – coming together in curricular enactments. This singular view is based on a strong 'process' model. It challenges other models that see curriculum as being *both* product and process, cognitivist and embodied, or subdivisible into discernable categories and standard tropes such as 'official', 'hidden', 'observed' and 'curriculum-as-experienced' (e.g. Pollard and Triggs, 1997). In a dwelling perspective, the ontologies underpinning these distinctions are rejected.

Curriculum as 'Sense-making'?

Of course, many theorists have previously sought to connect school-based education with the wider view of lived experience (Pinar, 2004, Grumet, 1995). A curriculum, after Grumet, is not about selecting key facts to be transmitted or sequenced in a certain way, but is instead "the process of

making sense with a group of people, of the systems that shape and organize the world" (Grumet, 1995, p. 19).

However, from the perspective of Ingold's account of dwelling, "making sense" needs to be more carefully examined. Perception and action are combined in apprehension in this account. Knowing is coupled with moving in the world. 'Sense-making' *per se* is an insufficient term unless its ontological roots are addressed. In a dwelling account, sense-making is through apprehension and perception-in-action, attunement and enskilment, as opposed to mental modeling, construction and representation.

Conclusion

What are the purposes of introducing Ingold's ontology of dwelling to the domain of curriculum making? To see 'curriculum making' as the co-evolution and becoming of indivisible, processual organism-environments, is perhaps to see curricula in new ways. We now conclude by tentatively offering two starting points that are especially pertinent to education for human-environment relations. At minimum the dwelling perspective might offer a refreshed view of the role of place in education, in general, and the development of new agencies in particular, such as those of other species.

'Place' refreshed

One important consideration will be to recognise afresh how place plays a role in all educational processes, including in relation to official curriculums that are often understood to be universalist, or place-less. What kinds of interaction are possible between the universalist epistemology of official curriculum and the sorts of intrinsically uncertain, co-evolutionary human-environment learning that Gough and Scott (2006) allude to with their Type 3 (above)?

As Jones (citing Henaff) puts it, from a dwelling perspective we need to take "seriously the particularities of the sites, the unpredictability of circumstances, the uneven patterns of landscapes, and the hazardous nature of becoming" (Jones, 2009, p. 321). Curriculum policy and the official curriculum, then, must be seen as part of the enactment of new meanings that inhere in the relations that arise in mixes of teachers, pupils and places. Despite an official curriculum, different meanings will unfold in the (perhaps congealed) relations of the indoor classroom, or in museums, or in woodlands.

Such a theoretical position *might* lie behind the resurgence in educational policy that wishes to explore the possibilities of diverse learning contexts beyond the school boundary, including nature kindergartens, outdoor learning and forest schools. However, these approaches are often explicitly predicated on a differentiated or layered view of curriculum, such as differences between the prescribed, enacted, and experienced versions. It is sometimes possible to feel the grating of wholly different ontologies and epistemologies in these practices (Beames and Ross, 2010, 103-105).

Within a flat ontology of dwelling, curricula (including policies) are always more than representations; they are part of a single layer of reality found in the ever-evolving experienced curriculum. By this view 'curriculum making' and 'curriculum experiences' are not distinguishable, and bound to the places where education occurs.

New Agencies

Taking the above seriously also requires an accounting of how *other people, and other species, and their environments* are part of the curriculum making (as dwelling) process. Many new agencies are admitted that might otherwise be hidden in the way schools are represented: cut off from their cultures and from home environments at times. In a dwelling perspective: not only are pupils' enskilment and attunement involved with relations with the material; and not only are they involved in relations with the becoming of their 'teachers'; there are also other points of growth, which might include older people, farm animals, pets, trees and wild species.

Official curriculum policy developments that intend to involve more outdoor learning, or the wider community, can be understood as small shifts to relational, skill-based and attentive encounters between pupils, other people, other species and materials, as part of a wider view of curriculum-making. That is to say, new agencies are admitted by curriculum making as dwelling.

For Ingold, agency resides in the ability of an organism to enact a skill, as has been discussed above. Importantly, therefore, Ingold claims agency for living organisms over inanimate objects (such as sand or water), in contrast to other flat ontologies, such as Actor Network Theory (ANT) (Fenwick and Edwards, 2010), where 'agency' is distributed throughout. In the dwelling perspective, human agency is retained but emplaced within a wider view of organic agency of living things. By allowing such a 'voice' for the non-human, it provides some theoretical terms for an enriched politics of human-

environment relations.

In this article we have introduced Tim Ingold's account of dwelling to the extent that we think it pertains to environmental education. The latter has well-established ontological and epistemological debates surrounding much of its practice. But there are elements that have proven more difficult to ground theoretically – in particular, for example, those that insist on the experience of the outdoors to the ends of improving human-environment relations. We suggest that an exploration of dwelling ontology might help develop such a ground.

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[1] It is perhaps worth noting that Ingold's use of 'meshwork' is in part designed to distinguish his account ontologically from the 'network' appropriated by Actor Network Theory (ANT) (Ingold, 2008). In particular, he argues that ANT retains the notion of assemblages of relating 'entities', whereas for Ingold there are lines and flows and 'entities' are more completely relational in themselves.

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