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Bringing Things to Life: Creative Entanglements in a World of Materials

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Introduction

In his notebooks the painter Paul Klee repeatedly insisted, and demonstrated by example, that the processes of genesis and growth that give rise to forms in the world we inhabit are more important than the forms themselves. 'Form is the end, death', he wrote. 'Form-giving is movement, action. Form-giving is life' (Klee 1973: 269). This, in turn, lay at the heart of his celebrated 'Creative Credo' of 1920: 'Art does not reproduce the visible but makes visible' (Klee 1961: 76). It does not, in other words, seek to replicate finished forms that are already settled, whether as images in the mind or as objects in the world. It seeks, rather, to join with those very forces that bring form into being. Thus the line grows from a point that has been set in motion, as the plant grows from its seed. Taking their cue from Klee, philosophers Gilles Deleuze and Félix Guattari argue that the essential relation, in a world of life, is not between matter and form, or between substance and attributes, but between *materials* and *forces* (Deleuze and Guattari 2004: 377). It is about the way in which materials of all sorts, with various and variable properties, and enlivened by the forces of the Cosmos, mix and meld with one another in the generation of things. And what they seek to overcome in their rhetoric is the lingering influence of a way of thinking about things, and about how they are made and used, that has been around in the western world for the past two millennia and more. It goes back to Aristotle.

To create any thing, Aristotle reasoned, you have to bring together form (*morphe*) and matter (*hyle*). In the subsequent history of western thought, this hylomorphic model of creation became ever more deeply embedded. But it also became increasingly unbalanced. Form came to be seen as imposed, by an agent with a particular end or goal in mind, while matter – thus rendered passive and inert – was that which was imposed upon. The critical argument I wish to develop is that contemporary discussions in fields ranging from anthropology and archaeology to art history and material culture studies continue to reproduce the underlying assumptions of the hylomorphic model even as they seek to restore the balance between its terms. My ultimate aim, however, is to overthrow the model itself, and to replace it with an ontology that assigns primacy to processes of formation as against their final products, and to flows

and transformations of materials as against states of matter. Form, to recall Klee's words, is death; form-giving is life. My purpose, in short, is to restore to life a world that has been effectively killed off in the pronouncements of theorists for whom, in the words of one of their more prominent spokespersons, the road to understanding and empathy lies in 'what people do with objects' (Miller 1998: 19).

My argument has five components, each of which corresponds to a key word in my title. First, I want to insist that the inhabited world is comprised not of objects but of *things*. I have therefore to establish a very clear distinction between things and objects. Secondly, I will establish what I mean by *life*, as the generative capacity of that encompassing field of relations within which forms arise and are held in place. I shall argue that the current emphasis, in much of the literature, on material agency is a consequence of the reduction of things to objects and of their consequent 'falling out' from the processes of life. Indeed, the more that theorists have to say about agency, the less they seem to have to say about life; I would like to put this emphasis in reverse. Thirdly, then, I will claim that a focus on life-processes requires us to attend not to materiality as such but to the fluxes and flows of *materials*. We are obliged, as Deleuze and Guattari say, to follow these flows, tracing the paths of form-generation, wherever they may lead. Fourth, I shall determine the specific sense in which movement along these paths is *creative*: this is to read creativity 'forwards', as an improvisatory joining in with formative processes, rather than 'backwards', as an abduction from a finished object to an intention in the mind of an agent. Finally, I shall show that the pathways or trajectories along which improvisatory practice unfolds are not connections, nor do they describe relations *between* one thing and another. They are rather lines *along* which things continually come into being. Thus when I speak of the *entanglement* of things I mean this literally and precisely: not a network of connections but a meshwork of interwoven lines of growth and movement.

Objects and things

Sitting alone in my study as I write, it may seem obvious that I am surrounded by objects of all sorts, from the chair and desk that support my body and my work, to the pad on which I write, the pen in my hand and the spectacles balanced on my nose. Imagine for a moment that every object in the room were magically to vanish, to leave only the bare floor, walls and ceiling. Short of standing or pacing the floorboards, I could do nothing. A room devoid of objects, we might reasonably conclude, is virtually uninhabitable. In order to make it ready for any activity, it has to be *furnished*. As the psychologist James Gibson argued, introducing his ecological approach to visual perception, the furnishings of a room comprise the *affordances* that enable residents to conduct their routine activities there: the chair affords sitting, the pen writing, the spectacles seeing, and so on. Rather more controversially, however, Gibson extended his reasoning from the interior space of the room to the environment in general. He asks us to imagine an *open environment*, 'a layout consisting of the surface of the earth alone' (Gibson 1979: 33). In the limiting case – that is, in the absence of any objects whatever – such an environment would be realised as a perfectly level desert, with the cloudless sky above and the solid earth beneath, stretching in all directions to the great circle of the horizon. What a desolate place that would be! Like the floorboards of the room, the surface of the earth affords only standing and walking. That we can do anything else besides depends on the fact that the open environment, like the interior room, is ordinarily cluttered with

objects. 'The *furniture* of the earth', writes Gibson, 'like the furnishings of a room, is what makes it livable' (1979: 78).

Let us now leave the seclusion of the study and take a walk outside, in the open air. Our path takes us through a woodland thicket. Surrounded on all sides by trunks and branches, the environment certainly seems cluttered. But is it cluttered with *objects*? Suppose that we focus our attention on a particular tree. There it is, rooted in the earth, trunk rising up, branches splayed out, swaying in the wind, with or without buds or leaves, depending on the season. Is the tree, then, an object? If so, how should we define it? What is tree and what is not-tree? Where does the tree end and the rest of the world begin? These questions are not easily answered – not as easily, at least, as they apparently are for the items of furniture in my study. Is the bark, for example, part of the tree? If I break off a piece in my hand and observe it closely, I will doubtless find that it is inhabited by a great many tiny creatures that have burrowed beneath it and made their homes there. Are they part of the tree? And what of the algae that grow on the outer surfaces of the trunk or the lichens that hang from the branches? Moreover, if we have decided that bark-boring insects belong as much to the tree as does the bark itself, then there seems no particular reason to exclude its other inhabitants, including the bird that builds its nest there or the squirrel for whom it offers a labyrinth of ladders and springboards. If we consider, too, that the character of this particular tree lies just as much in the way it responds to the currents of wind, in the swaying of its branches and the rustling of its leaves, then we might wonder whether the tree can be anything other than a tree-in-the-air.

These considerations lead me to conclude that the tree is not an object at all, but a certain gathering together of the threads of life. That is what I mean by a thing. In this I follow – albeit rather loosely – the argument classically advanced by the philosopher Martin Heidegger. In his celebrated essay on *The Thing*, Heidegger was at pains to figure out precisely what makes a thing different from an object. The object stands before us as a *fait accompli*, presenting its congealed, outer surfaces to our inspection. It is defined by its very 'over-againstness' in relation to the setting in which it is placed (Heidegger 1971: 167). The thing, by contrast, is a 'going on', or better, a place where several goings on become entwined. To observe a thing is not to be locked out but to be invited in to the gathering. We participate, as Heidegger rather enigmatically put it, in the thing' thinging in a worlding world. There is of course a precedent for this view of the thing as a gathering in the ancient meaning of the word as a place where people would gather to resolve their affairs. If we think of every participant as following a particular way of life, threading a line through the world, then perhaps we could define the thing, as I have suggested elsewhere, as a '*parliament of lines*' (Ingold 2007a: 5). Thus conceived, the thing has the character not of an externally bounded entity, set over and against the world, but of a knot whose constituent threads, far from being contained within it, trail beyond, only to become caught with other threads in other knots. Or in a word, things *leak*, forever discharging through the surfaces that form temporarily around them.

I shall return to this point in connection with the importance, which I discuss later, of following flows of materials. For now, let me continue with our walk outside. We have observed the tree; what else might catch our attention? I stub my foot on a stone lying on the path. Surely, you will say, the stone is an object. Yet it so only if we artificially excise it from the processes of erosion and

deposition that brought it there and lent it the size and shape that it presently has. A rolling stone, the proverb says, gathers no moss, yet in the very process of gathering moss, the stone that is wedged in place become a thing, while on the other hand the stone that rolls – like a pebble washed by a running river – becomes a thing in its very rolling. Just as the tree, responding in its movements to the currents of wind, is a tree-in-the-air, so the stone, rolling in the river current, is a stone-in-the-water. Suppose then that we cast our eyes upwards. It is a fine day, but there are a few clouds. Are clouds objects? Rather oddly, Gibson thinks they are: they seem to him to hang in the sky, while other entities like trees and stones lie on the earth. Thus the entire environment, in Gibson's words, 'consists of the earth and the sky with objects on the earth and in the sky' (Gibson 1979: 66). The painter René Magritte cleverly parodied this view of the furnished sky by depicting the cloud as a flying object floating in through the open door of an otherwise empty room. Of course the cloud is not *really* an object but a vaporous tumescence that swells as it is carried along in currents of air. To observe the clouds, I would say, 'is not to view the furniture of the sky but to catch a glimpse of the sky-in-formation, never the same from one moment to the next' (Ingold 2007c: S28). Once again, clouds are not objects but things.

What goes for such things as trees, stones and clouds, which may have grown or formed with little or no human intervention, also applies to more ostensibly artificial structures. Consider a building: not the fixed and final structure of the architect's design but the *actual* building, resting on its foundations in the earth, buffeted by the elements, and susceptible to the visitations of birds, rodents and fungi. The distinguished Portuguese architect Alvaro Siza has admitted that he has never been able to build a *real* house, by which he mean 'a complicated machine in which every day something breaks down' (Siza 1997: 47). The real house is never finished. Rather, for its inhabitants it calls for unremitting effort to shore it up in the face of the comings and goings of its human inhabitants and non-human inhabitants, not to mention the weather! Rainwater drips through the roof where the wind has blown off a tile, feeding a fungal growth that threatens to decompose the timbers, the gutters are full of rotten leaves, and if that were not enough, moans Siza, 'legions of ants invade the thresholds of doors, there are always the dead bodies of birds and mice and cats'. Indeed not unlike the tree, the real house is a gathering of lives, and to inhabit it is to join in the gathering, or in Heidegger's terms, to participate with the thing in its thinging. Our most fundamental architectural experiences, as Juhani Pallasmaa explains, are verbal rather than nominal in form. They consist not of encounters with objects – the façade, door-frame, window and fireplace – but of acts of approaching and entering, looking in or out, and soaking up the warmth of the hearth (Pallasmaa 1996: 45). As inhabitants, we experience the house not as an object but as a thing.

Life and agency

What have we learned from throwing open the windows of the study, leaving the house and taking a walk outside? Have we encountered an environment that is as cluttered with objects as is my study with furniture, books and utensils? Far from it. Indeed there seem to be no objects at all. To be sure, there are swellings, growths, outcrops, filaments, ruptures and cavities, but not objects. Though we may *occupy* a world full of objects, to the occupant the contents of the world appear already locked into their final forms, closed in upon themselves. It is as though they had turned their backs on us. To *inhabit* the

world, by contrast, is to join in the processes of formation. And the world that thus opens up to inhabitants is fundamentally an *environment without objects* or, in short, an EWO. Describing the tree, the stone, the cloud and the building, I have sought to give an account of life in the EWO. Recall that for Gibson, an environment devoid of objects could be nothing but a featureless and perfectly level desert. Only when objects are added, whether laid out on the ground or hung up in the sky, does an environment – in his terms – become liveable. How, then, do we arrive at such a contrary conclusion, namely that an environment populated with objects can be occupied but *not* inhabited? What mark the difference between Gibson's view and our own? The answer lies in our respective understandings of the significance of surfaces.

It is by their outward surfaces, according to Gibson, that objects are revealed to perception. Every surface, as he explains, is an interface between the more or less solid *substance* of an object and the volatile *medium* that surrounds it. If the substance is dissolved or evaporates into the medium, then the surface disappears, and with it the object it once enveloped (Gibson 1979: 16, 106). Thus the very objectness of any entity lies in the separation and immiscibility of substance and medium. Remove every object, however, and a surface still remains – for Gibson the most fundamental surface of all – namely the *ground*, marking the interface between the substance of the earth below and the gaseous medium of the sky above. Has the earth, then, turned its back on the sky? If it had, then as Gibson correctly surmised, no life would be possible. The open environment could not be inhabited. Our argument, to the contrary, is that the world of the open *can* be inhabited precisely because, wherever life is going on, the interfacial separation of earth and sky gives way to mutual permeability and binding. For what we vaguely call the ground is not, in truth, a coherent surface at all but a zone in which the air and moisture of the sky combine with substances whose source lies in the earth in the ongoing formation of living things. Of a seed that has fallen to the ground, Paul Klee writes that 'the relation to earth and atmosphere begets the capacity to grow … The seed strikes root, initially the line is directed earthwards, though not to dwell there, only to draw energy thence for reaching up into the air' (Klee 1973: 29). In growth, the point becomes a line, but the line, far from being mounted upon the pre-prepared surface of the ground, contributes to its ever-evolving weave.

There could be no life, in short, in a world where earth and sky do not mix and mingle. For an impression of what it means to inhabit such an earth-sky world we can return to Heidegger. In an admittedly florid passage, he describes the earth as 'the serving bearer, blossoming and fruiting, spreading out in rock and water, rising up into plant and animal'. And of the sky, he writes that it 'is the vaulting path of the sun, the course of the changing moon, the wandering glitter of the stars, the year's seasons and their changes, the lights and dusk of the day, the gloom and glow of the night, the clemency and inclemency of the weather, the drifting clouds and blue depth of the ether'. Moreover one cannot speak of the earth without already thinking of the sky, and vice versa. Each partakes of the essence of the other (Heidegger 1971: 149). How different this is from Gibson's account of earth and sky as mutually exclusive domains, rigidly held apart at the ground surface, and populated with their respective objects: 'mountains and clouds, fires and sunsets, pebbles and stars' (Gibson 1979: 66)! In place of Gibson's nouns denoting items of furniture, Heidegger's description is replete with verbs of growth and motion. In the earth's 'rising up', as Heidegger puts it, in that irrepressible discharge of substance through the porous surfaces

of emergent forms, we find the essence of life. Things are alive, as I have noted already, because they *leak*. Life in the EWO will not be contained, but inheres in the very circulations of materials that continually give rise to the forms of things even as they portend their dissolution.

It is through their immersion in these circulations, then, that things are brought to life. You can demonstrate this by means of a simple experiment, which I have carried out with my students at the University of Aberdeen. Using a square of paper, matchstick bamboo, ribbon, tape, glue and twine, it is easy to make a kite. We did this indoors, working on tables. It seemed, to all intents and purposes, that we were assembling an object. But when we carried our creations to a field outside, everything changed. They suddenly leaped into action, twirling, spinning, nose-diving, and – just occasionally – flying. So what had happened? Had some animating force magically jumped into the kites, causing them to act most often in ways we did not intend? Of course not. It was rather that the kites themselves were now immersed in the currents of the wind. The kite that had lain lifeless on the table indoors had become a kite-in-the-air. It was no longer an object, if indeed it ever was, but a thing. As the thing exists in its thinging, so the kite-in-the-air exists in its flying. Or to put it another way, at the moment it was taken out of doors, the kite ceased to figure in our perception as an object that can be set in motion, and became instead a movement that resolves itself into the form of a thing. One could say the same, indeed, of a bird-in-the-air, or of the fish-in-the-water. The bird *is* its flying; the fish its swimming. The bird can fly thanks to the currents and vortices that it sets up in the air, and the fish can swim at speed because of eddies set up through the swishing of its tail and fins. Cut out from these currents, they would be *dead*.

This is the point at which we can tackle – and, I hope, bury once and for all – the so-called 'problem of agency' (Gell 1998: 16). Much has been written on the relations between people and objects, guided by the thought that the difference between them is far from absolute. If persons can act on objects in their vicinity, so, it is argued, can objects 'act back', causing them to do or allowing them to achieve what they otherwise could not (see, for example, Gosden 2005, Knappett 2005, Henare, Holbraad and Wastell [eds] 2007, Latour 2005, Miller [ed] 2005, Tilley 2004, Malafouris and Knappett [eds] 2008). Yet in the very first theoretical move that sets things aside in order to focus on their 'objectness', they are cut off from the flows that bring them to life. We saw this with the kite. To think of the kite as an object is to omit the wind – to forget that it is, in the first place, a kite-in-the-air. And so it seems that the kite's flying is the result of an interaction between a person (the flyer) and an object (the kite), which can only be explained by imagining that the kite is endowed with an internal animating principle, an agency, that sets it in motion, most often contrary to the will of the flyer. More generally, I suggest that the problem of agency is born of the attempt to re-animate a world of things already deadened or rendered inert by arresting the flows of substance that give them life. In the EWO, things move and grow because they are alive, not because they have agency. And they are alive precisely because they have not been reduced to the status of objects. The idea that objects have agency is at best a figure of speech, forced on us (Anglophones at least) by the structure of a language that requires every verb of action to have a nominal subject. At worst it has led great minds to make fools of themselves in a way that we would be ill-advised to emulate. In effect, to render the life of things as the agency of objects is to effect a double reduction, of things to objects and of life to agency. The source of this reductive logic lies, I believe, is none other than the hylomorphic model.

Materials and materiality

When analysts speak of the 'material world', or more abstractly, of 'materiality', what do they mean (Ingold 2007b)? What sense does it make to invoke the materiality of stones, trees, clouds, buildings or even kites? Put the question to students of material culture, and you are likely to get contradictory answers. Thus a stone, according to Christopher Tilley, can be regarded in its 'brute materiality', simply as a formless lump of matter. Yet we need a concept of materiality, he thinks, in order to understand how particular pieces of stone are given form and meaning within specific social and historical contexts (Tilley 2007: 17). Likewise, archaeologist Joshua Pollard explains that 'by materiality I mean how the material character of the world is comprehended, appropriated and involved in human projects' (Pollard 2004: 48). We can recognise in both pronouncements the two sides of the hylomorphic model: on the one side, brute materiality or the world's 'material character'; on the other, the form-bestowing agency of human beings. In the concept of materiality the division between matter and form is reproduced rather than challenged. Indeed the very concept of material culture is a contemporary expression of the matter-form of hylomorphism. When Tilley writes of 'brute materiality', or archaeologist Bjørnar Olsen (2003: 88) of 'the hard physicality of the world', it is as if the world had ceased its worlding, and had crystallised out as a solid and homogeneous precipitate, awaiting its differentiation through the superimposition of cultural form. In such a stable and stabilised world, nothing flows. There can be no wind or weather, no rain to moisten the land or rivers running through it, no 'rising up' of the earth into plant or animal, indeed no life at all. There could be no things, only objects.

In their attempts to rebalance the hylomorphic model, theorists have insisted that the material world is not *passively* subservient to human designs. Yet having arrested the flow of materials they can only comprehend activity, on the side of the material world, by attributing agency to objects. Pollard, however, sounds a note of dissent. Concluding an important article on 'the art of decay and the transformation of substance', he points out that material things, like people, are *processes*, and that their real agency lies precisely in the fact that 'they cannot always be captured and contained' (Pollard 2004: 60). As we have found, it is in the opposite of capture and containment, namely discharge and leakage, that we discover the life of things. Bearing this in mind, we can return to Deleuze and Guattari, who insist that whenever we encounter matter, 'it is matter in movement, in flux, in variation'. And the consequence, they go on to assert, is that 'this matter-flow can only be *followed*' (Deleuze and Guattari 2004: 451). What Deleuze and Guattari here call a 'matter-flow', I would call a *material*. Accordingly, I recast the assertion as a simple rule of thumb: to *follow the materials*. The EWO, I contend, is not a material world but a world of materials, of matter in flux. To follow these materials is to enter into a world that is, so to speak, continually on the boil. Indeed, rather than comparing it to a giant museum or department store, in which objects are arrayed according to their attributes or provenance, it might be more helpful to imagine the world as a huge kitchen, well stocked with ingredients of all sorts.

In the kitchen, stuff is mixed together in various combinations, generating new materials in the process which will in turn become mixed with other ingredients in an endless process of transformation. To cook, containers have to be opened, and their contents poured out. We have to take the lids off things. Faced with the anarchic proclivities of his or her materials, the cook has indeed to struggle

to retain some semblance of control over what is going on. Perhaps an even closer parallel might be drawn with the laboratory of the alchemist. The world according to alchemy, as art historian James Elkins explains, was not one of matter that might be described according to the principles of science, in terms of its atomic or molecular composition, but one of *substances* which were known by what they look and feel like, and by following what happens to them as they are mixed together, heated or cooled. Oils, for example, were not hydrocarbons but 'what rose to the surface of a pot of stewing plants, or sat dark and fetid at the bottom of a pit of rotting horseflesh'. Alchemy, writes Elkins, 'is the old science of struggling with materials, and not quite understanding what is happening' (Elkins 2000: 19, 23). His point is that this, too, is what painters have always done, in their everyday work in the studio. Their knowledge was also one of substances, and these were often little different from those of the alchemical laboratory. Painter's size, for example, was made from horses' hooves, stags' antlers and rabbit-skin, and paint has been mixed with beeswax, the milk of figs, and the resins of exotic plants. Pigments were obtained from a bizarre miscellany of ingredients, such as the small reddish insects that were boiled and dried in the sun to produce the deep red pigment known as carmine, or the vinegar and horse manure that was mixed with lead in clay pots to produce the best white paint.

As practitioners in the EWO, the cook, the alchemist and the painter are in the business not so much of imposing form on matter as of bringing together diverse materials and combining or redirecting their flow in the anticipation of what might emerge. The same could also be said of the potter, as archaeologist Benjamin Alberti suggests in a fine study of ceramics from Northwest Argentina dating from the first millennium AD. It would be a mistake, Alberti argues, to assume that the pot is a fixed and stable object, bearing the imprint of cultural form upon the 'obdurate' matter of the physical world (Alberti 2007: 211). On the contrary, evidence suggests that pots were treated like bodies, and with the same concern: namely, to compensate for chronic instability, to shore up vessels for life against the ever-present susceptibility to leakage and discharge that threatens their dissolution or metamorphosis. As parts of the fabric of the EWO, pots are no more stable than bodies, but are constituted and held in place within flows of materials. Left to themselves, however, materials can run amok. Pots are smashed; bodies disintegrate. It takes effort and vigilance to keep things intact, whether they be pots or people. The same is true of the gardener, who likewise has to struggle to prevent the garden from turning into a jungle.

Modern society, of course, is averse to such chaos. Yet however much it has tried, through feats of engineering, to construct a material world that matches its expectations – that is, a world of discrete, well-ordered objects – its aspirations are thwarted by life's refusal to be contained. We might think that objects have outer surfaces, but wherever there are surfaces life depends on the continual exchange of materials across them. If, by 'surfacing' the earth or incarcerating bodies, we block that exchange, then nothing can live. In practice, however, such blockages can never be more than partial and provisional. The hard surfacing of the earth, for example, is perhaps the most salient characteristic of what we conventionally call the 'built environment'. On a paved road or concrete foundation, nothing can grow, unless provisioned from remote sources. Yet even the most resistant of materials cannot forever withstand the effects of erosion and wear and tear. Thus the paved surface, attacked by roots from below and by the action of wind, rain and frost from above, eventually cracks and crumbles, allowing plant growth through to mingle and bind once again

with the light, air and moisture of the atmosphere. Wherever we choose to look, the active materials of life are winning out over the dead hand of materiality that would snuff it out.

Improvisation and abduction

By restoring things to life I have wanted to celebrate the creativity of what Klee called 'form-giving'. It is important, however, to be precise about what I mean by creativity. Specifically, I am concerned to reverse a tendency, evident in much of the literature on art and material culture, to read creativity 'backwards', starting from an outcome in the form of a novel object and tracing it, through a sequence of antecedent conditions, to an unprecedented idea in the mind of an agent. This backwards reading is equivalent to what anthropologist Alfred Gell has called the *abduction of agency*. Every work of art, for Gell, is an 'object' that can be 'related to a social agent in a distinctive, "art-like" way' (Gell 1998: 13). By 'art-like', Gell means a situation in which it is possible to trace a chain of causal connections running from the object to the agent, whereby the former may be said to index the latter. To trace these connections is to perform the cognitive operation of abduction. From my earlier critique of the double reduction of things to objects, and of life to agency, it should be clear why I believe this view to be fundamentally mistaken. A work of art, I insist, is not an object but a thing, and as Klee argued, the role of the artist is not to reproduce a preconceived idea, novel or not, but to join with and follow the forces and flows of material that bring the form of the work into being. 'Following', as Deleuze and Guattari point out, 'is not at all the same thing as reproducing': whereas reproducing involves a procedure of *iteration*, following involves *itineration* (Deleuze and Guattari 2004: 410). The artist – as also the artisan – is an itinerant, and his work is consubstantial with the trajectory of his or her own life. Moreover the creativity of the work lies in the forward movement that gives rise to things. To read things 'forwards' entails a focus not on abduction but on improvisation (Ingold and Hallam 2007: 3).

To improvise is to follow the ways of the world, as they unfold, rather than to connect up, in reverse, a series of points already traversed. It is, as Deleuze and Guattari write, 'to join with the World, or to meld with it. One ventures from home on the thread of a tune' (2004: 344). Life, for Deleuze and Guattari, issues along such thread-lines. They call them 'lines of flight', or sometimes 'lines of becoming'. Critically, however, these lines *do not connect*. 'A line of becoming', they write, 'is not defined by the points it connects, or by the points that compose it; on the contrary, it passes between points, it comes up through the middle … A becoming is neither one nor two, nor the relation of the two; it is the in-between, the … line of flight … running perpendicular to both' (ibid.: 323). Thus in life as in music or painting, the movement of becoming – the growth of the plant from its seed, the issuing of the melody from the meeting of violin and bow, the motion of the brush and its trace – points are not joined so much as swept aside and rendered indiscernible by the current as it sweeps through. Life is open-ended: its impulse is not to reach a terminus but to keep on going. The plant, the musician or the painter, in keeping going, 'hazards an improvisation' (ibid.: 343).

The thing, however, is not just one thread but a certain *gathering together* of the threads of life. Deleuze and Guattari call it a *haecceity* (ibid.: 290). But if every thing is such a bundle of lines, what becomes of our original concept of 'environment'? What is the meaning of environment in the EWO? Literally, an

environment is what *surrounds* a thing, yet you cannot surround anything without wrapping it up, converting the very threads along which life is lived into boundaries within which it is contained. Instead let us imagine ourselves, as did Charles Darwin in *The Origin of Species*, standing before 'the plants and bushes clothing an entangled bank' (Darwin 1950 [1859]: 64). Observe how the fibrous bundles comprising every plant and bush are entwined with one another so as to form a dense matt of vegetation. What we have been used to calling 'the environment' reappears on the bank as an immense tangle of lines. Precisely such a view was advanced by the Swedish geographer Torsten Hägerstrand, who imagined every constituent of the environment – humans, animals, plants, stones, buildings – as having a continuous trajectory of becoming. As they move through time and encounter one another, the trajectories of diverse constituents are bundled together in diverse combinations. 'Seen from within', wrote Hägerstrand, 'one could think of the tips of trajectories as sometimes being pushed forward by forces behind and sometimes having eyes looking around and arms reaching out, at every moment asking "what shall I do next"?' The entwining of these ever-extending trajectories, in Hägerstrand's terms, comprises the texture of the world – the 'big tapestry of Nature which history is weaving' (Hägerstrand 1976: 332). Like Darwin's entangled bank, Hägerstrand's tapestry is a field not of interconnected points but of interwoven lines, not a network but what I shall call a *meshwork*.

Network and meshwork

I have borrowed the term 'meshwork' from the philosophy of Henri Lefebvre. There is something in common, Lefebvre observes, between the way in which words are inscribed on a page of writing, and the way in which the movements and rhythms of human and non-human activity are registered in lived space, but only if we think of writing not as a verbal composition but as a tissue of lines – not as *text* but as *texture*. 'Practical activity writes on nature', he remarks, 'in a scrawling hand' (Lefebvre 1991: 117). Think of the reticular trails left by people and animals as they go about their business around the house, village and town. Caught in these multiple entanglements, every monument or building is more 'archi-textural' than architectural. It too, despite its apparent permanence and solidity, is a haecceity, experienced processionally in the vistas, occlusions and transitions that unfold along the myriad pathways inhabitants take, from room to room and in and out of doors, as they go about their daily tasks. This goes back to Pallasmaa's observation that our architectural experience is primarily verbal rather than nominal. As the life of inhabitants overflows into gardens and streets, fields and forests, so the world pours into the building, giving rise to characteristic echoes of reverberation and patterns of light and shade. It is in these flows and counter-flows, winding through or amidst without beginning or end, and not as connected entities bounded either from within or without, that things are instantiated in the world of the EWO.

The distinction between the lines of flow of the meshwork and the lines of connection of the network is critical. Yet it has been persistently obscured, above all in the recent elaboration of what has come to be known, rather unfortunately, as 'actor network theory'. The theory has its roots not in thinking about the environment but in the sociological study of science and technology. In this latter field, much of its appeal comes from its promise to describe interactions among people (such as scientists and engineers) and the objects with which they deal (such as in the laboratory) in a way that does not concentrate agency in human hands, but rather takes it to be distributed around

all the elements that are connected or mutually implicated in a field of action. The term 'actor-network', however, first entered the Anglophone literature as a translation from the French *acteur réseau*. And as one of its leading proponents – Bruno Latour – has observed in hindsight, the translation gave it a significance that was never intended. In vernacular usage, inflected by innovations in information and communications technology, the defining attribute of the network is connectivity (Latour 1999: 15). But *réseau* can refer as well to netting as to network – to woven fabric, the tracery of lace, the plexus of the nervous system or the web of the spider.

The lines of the spider's web, for example, unlike those of the communications network, do not connect points or join things up. They are rather spun from materials exuded from the spider's body and are laid down as it moves about. In that sense they are extensions of the spider's very being as it trails into the environment (Ingold 2008: 210-11). They are the lines along which it lives, and conduct its perception and action in the world. Now the *acteur réseau* was intended by its originators (if not by those who have been misled by its translation as 'network') to be comprised of just such lines of becoming. Their inspiration came, in large measure, from the philosophy of Deleuze and Guattari. And these authors are quite explicit that although the value of the web for the spider is that it catches flies, the line of the web does not *link* the spider to the fly, nor does the fly's 'line of flight' link it to the spider. These two lines rather unfold in counterpoint: to the one, the other serves as a refrain. Ensconced at the centre of its web, the spider registers that a fly has landed somewhere on the outer margins, as it sends vibrations down the threads that are picked up by the spider's super-sensitive, spindly legs. And it can then run along the lines of the web to retrieve its prey. Thus the thread-lines of the web lay down the *conditions of possibility* for the spider to interact with the fly. But they are not themselves lines of interaction. If these lines are relations, then they are relations not *between* but *along*.

Of course, as with the spider, the lives of things generally extend along not one but multiple lines, knotted together at the centre but trailing innumerable 'loose ends' at the periphery. Thus each should be pictured, as Latour has latterly suggested, in the shape of a star 'with a center surrounded by many radiating lines, with all sorts of tiny conduits leading to and fro' (Latour 2005: 177). No longer a self-contained object, the thing now appears as an ever-ramifying web of lines of growth. This is the *haecceity* of Deleuze and Guattari, famously likened by them to a rhizome (Deleuze and Guattari 2004: 290). Personally, I prefer the image of the fungal mycelium (Rayner 1997). Whichever image we prefer, what is crucial is that we start from the fluid character of the life process, wherein boundaries are sustained only thanks to the flow of materials across them. In the science of mind, the absoluteness of the boundary between body and environment has not gone unquestioned. Over fifty years ago, the pioneer of psychological anthropology, A. Irving Hallowell, argued that 'any inner-outer dichotomy, with the human skin as boundary, is psychologically irrelevant' (1955: 88), a view echoed by the anthropologist Gregory Bateson in a lecture delivered in 1970, in which he declared that 'the mental world – the mind – the world of information processing – is not limited by the skin' (Bateson 1973: 429). Much more recently, philosopher Andy Clark has made the same point. The mind, Clark tells us, is a 'leaky organ' that will not be confined within the skull but mingles with the body and the world in the conduct of its operations (Clark 1997: 53). More strictly, he should have said that the skull is leaky, whereas the mind is what leaks! Be that as it may, what I have tried to do here is to return to

Bateson's declaration and take it one step further. I want to suggest that it is not just the mind that leaks, but things in general. And they do so along the paths we follow as we trace the flows of materials in the EWO.

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