THE ATMOSPHERE

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Atmosphere is a word that readily falls from the lips of meteorologists, on the one hand, and aestheticians, on the other. They seem, however, to mean very different things by it. I have also been trying to figure out what the word means, since I am increasingly convinced that it holds the key to the way we, as living, breathing beings, embrace and are embraced by the world around us. For me, the word first popped up in connection with my initial and rather tentative attempts to grasp the experience, and the meaning, of the sky. For it seemed to me that to see the sky – or better, to see *in* it, in its light – you have to be on the ground. That is to say, the sky unfolds within the phenomenal world of an inhabitant whose abode lies on or in the earth. I took the atmosphere, by contrast, in what I understood to be its scientific sense as a gaseous envelope that surrounds the earth conceived not as the ground of being but as the planet. Like the planet itself, then, this atmosphere is only visible from a point of view located in outer space, as the first satellite photographs of the earth taken from space revealed (Ingold 2011: 99-114).

I ended up, then, with a contrast between what I called the 'earth-sky' world of phenomenal experience, and the planetary earth with its enveloping atmosphere, as described by science. The former might be described, from the point of view of an inhabitant, as an unbounded *sphere* comprised of the two hemispheres of earth, below, and sky above, meeting along the great circle of the horizon (Gibson 1979: 66). The latter, by contrast, is commonly imagined, and modelled, as a solid *globe*, on the hard, exterior surface of which are supposed to live what have now become its exhabitants – characters who, far from dwelling within the world, at its very centre, have been expelled to its periphery (Ingold 2000: 209-218). To this contrast I aligned the distinction between weather and climate: thus weather is a phenomenon of the earth-sky world, whereas climate is global; the one is celestial, the other atmospheric; the one experienced, the other measured and recorded. Subsequently, however, I found myself having to resort to the concept of atmosphere in quite another connection: it was to find the best way to describe the experience of what Gilles Deleuze and Félix Guattari (2004: 523-51) call *smooth space*. This was to invoke the concept in an affective rather than a meteorological sense. But it forced me to ask what is the difference, and the relation, between these senses, whether one

is literal and the other figurative, or whether they point to something more fundamental from which both can be derived.

In what follows, I shall first consider how the concept of atmosphere acquired its 'scientifically correct' sense in the history of meteorology. I shall then turn to the way in which the concept has been mobilised in the field of aesthetics. At first glance, these two usages – respectively scientific and humanistic – appear mutually exclusive. On closer examination, however, it turns out that their opposition is founded in a presumption shared by both sides, namely that the material world – the world, as we say, of the 'concrete' – has already crystallised out from the fluxes of the aerial medium, leaving the latter effectively dematerialised. Air becomes an abstraction, a material absence, formerly described as 'ether' and latterly as 'space'. By bringing the air back into presence, I shall propose a sense of atmosphere that underwrites the opposition between the meteorological and the aesthetic, and that cuts to the heart of our perception of the world around us. I shall show that the perception of the aerial world – the world of flux and becoming that Deleuze and Guattari invoke with their notion of smooth space – is not only haptic, as they claim, but also atmospheric, and indeed that there is a complementarity between the atmospheric and the haptic that is as fundamental to life as that of breathing in and breathing out. To demonstrate this, I shall draw on some of the later writings of Maurice Merleau-Ponty.

The atmosphere of meteorology

Michel Serres (1995: 27) has noted that in French, the same word, *temps*, is used for both weather and time. The word comes, of course, from the Latin *tempus*, from which are derived both *tempo* and *tempest*. Yet a host of other weather-related words have a common root in a similar-sounding yet semantically quite different Latin term. This is the verb *temperare*, meaning 'to mix'. This gives us such weather words as *temperature* and *temperate*, but also words for human moods and dispositions such as *temper* and *temperament*. The blending of these different roots is indeed no accident, for the weather is a phenomenon of both time and mixture, and of both our affective lives and the aerial medium in which these lives are led.

The time of weather, claims Steven Connor, is a time without history, without direction or progression: 'pure fluctuation' (Connor 2010: 176). Yet in suggesting that it is also 'without pattern', Connor goes too far. There *is* a pattern to the weather, but it is one that is continually being woven in the multiple rhythmic alternations of the environment – of day and night, sun and moon, winds and tides, vegetative growth and decay, and the

comings and goings of migratory animals (Ingold 2000: 200, Lefebvre 2004). People who drew a living from land and sea had traditionally to be wise to such alternations, and to time their activities to coincide with the most propitious conjunctions of co-varying phenomena. For this reason, as Bronislaw Szerszynski observes, weather is an experience of time perceived not chronologically but *kairologically*: it lies, that is, not in the succession of events but in the attunement of attention and response to rhythmic relations (Szerszynski 2010: 24).

Beings that inhabit the earth, however, must also inhabit the air. Long neglected by thinkers whose overwhelming focus has been on the earthly grounding of dwelling (Heidegger 1971: 42), the air is not just an element we interact *with*, as we might with other things. It is the very medium that makes interaction possible. Without it, birds would plummet from the sky, plants would wither, and we humans would suffocate. 'Can man live elsewhere than in air?' asks Luce Irigaray (1999: 8). The question is of course a rhetorical one to which the answer, as soon as it is posed, is obvious. But if the medium is a condition of interaction, then it follows that the quality of that interaction will be tempered by what is going on in the medium – that is, by the weather (Ingold 2010: 126-7). It is in this sense that weather is about not only attunement but also admixture. Even as we breathe in and out, the air mingles with our bodily tissues, filling the lungs and oxygenating the blood, and in this metabolic mingling we are constituted not as hybrid but as *temperate* creatures. The weather, in short, 'is the very temperament of our being' (ibid.: 115). But by the same token, it is protean, unruly and aberrant. Like life itself, the weather will not be contained.

Yet in the science of meteorology, concerted attempts have been made to do just that. In its very name, this science attests to its origins in speculations about the meaning of diverse celestial portents, known originally and generically as 'meteors', as distinct from the 'weather-wising' of farmers and mariners preoccupied with more mundane and pragmatic matters of timing in the conduct of everyday tasks (Szerszynski 2010: 20-1). During the early modern period, as Vladimir Jankovic has shown, weather-wising coexisted with a meteorological fascination with aerial prodigies, read as signs of 'divine concern for the moral fate of mankind' (Jankovic 2000: 37). But in the wake of the industrial revolution, not only was the traditional wisdom of farmers and mariners sidelined, but meteorology was also transformed into a laboratory science, conducted by means of instruments and standardised units of measure. And the key concept of this science was atmosphere (Szerszynski 2010: 21). Conceived as a laboratory writ large,

scientists were able to treat the atmosphere as a space in which the vagaries of weather could be subjected to measurement and calculation, and understood in terms of known physical forces acting in accordance with the laws of nature.

In effect, as Szerszynski comments, in their measurements and calculations, scientific meteorologists 'brought the weather indoors, in an attempt to tame its material and semiotic unruliness, to subject it to a very particular kind of reading' – one that is 'narrowly technological' (Szerszynski 2010: 21). There is a sense, then, in which the atmosphere is the medium of an inverted world – a world that has, so to speak, been turned outside in. Kenneth Olwig, in a recent article in which he suggests replacing the earth of *geo*graphy with the air of *aer*ography, traces this inversion to the theatrical conceits of early modernity, in the seventeenth century, when the world began to be recreated on stage and viewed through a proscenium arch. This was literally a world brought indoors, and its meteorological effects had to be simulated by means of props and pyrotechnics. Referring to the masques of the pioneering scenographer and architect Inigo Jones, Olwig observes that whereas from classical Antiquity to Elizabethan times, plays were performed in settings where the actor's shadow would be cast on the ground by the light of the sun, Jones's theatre established 'an interiorized landscape in which the use of light and the structuring of space created an illusion of three dimensional space that shot from the black hole of the individual's pupil penetrating through to a point ending ultimately in ethereal cosmic infinity' (Olwig 2011: 526).

In this inversion, Olwig shows, air became *ether*: a kind of dematerialised, *as if* air that filled the simulated *as if* space behind the proscenium, where it was breathed not by the actors themselves but by the characters they impersonated. Yet what, from this theatrical perspective, was a turning outside in was, in another sense, an inversion in the opposite direction. For with the surface of the earth re-imagined as a stage on which, as Immanuel Kant put it, 'the play of our skills proceeds' (Kant 1970: 257), inhabitants whose abode had lain *in* a world of earth and sky were cast *out*, exiled to the outward surface of the planetary globe. They became exhabitants, living 'all around on the outside', to borrow from one recent characterisation of what is supposed to be the scientifically correct view of the matter (Vosniadou and Brewer 1992: 541). The British astrophysicist Arthur Stanley Eddington would describe this view as entailing 'something like a turning inside out of our familiar picture of the world' (Eddingon 1935: 40). It is to replace the earth beneath our feet with Earth the planet, and, by the same token, to replace the air we breathe with the

phantasmal ether. The air, once again, has been rendered immaterial, an abstraction, 'breathed' not by living beings but by the fictive exhabitants of the globe.

In his 2011 article, Olwig concentrates almost exclusively on the history of ideas surrounding the notion of ether. In this sense, the article is an introduction more to *aether*ography than to *aer*ogaphy. Today, of course, the notion no longer commands the attention it once did, having been largely supplanted by the notion of *space*. Yet old ideas die hard, and it seems that 'space' has filled the gap left by the demise of 'ether' with little or no change in the underlying logic. Olwig does however hold out the promise of a radically alternative approach that would undo the operation of inversion, at once taking the world out of the theatrical box and restoring its inhabitants to the fullness of earth and sky. This would be an aerography 'that allows people to cast their own shadows in the light of the sky's sun, and that does not encompass them within a controlled ideal structured ethereal space' (Olwig 2011: 529). Perhaps, then, we could once again release the weather from what Szerszynski (2010: 25) calls its 'technological incarceration' within the cosmic laboratory to which the science of meteorology has given the name 'atmosphere'.

The atmosphere of aesthetics

As I have already noted, however, there is a quite different sense in which the concept of atmosphere is commonly used, which makes no immediate reference to the medium, whether aerial or ethereal. It has to do with the evocation of feeling, and is roughly equivalent to what Walter Benjamin (2008: 22) called 'aura' and Ludwig Binswanger 'mood space' (*gestimmter Raum*). Drawing on Binswanger's precedent, in a treatise on *Human Space* first published in 1963, Otto Friedrich Bollnow set out to show how mood space is ontologically prior to any distinction we might draw between perceiving subject and perceived object. 'Mood', Bollnow wrote, 'is not something subjective "in" an individual and not something objective that could be found "outside" in his surroundings, but it concerns the individual in his still undivided unity with his surroundings' (Bollnow 2011: 217). Every space, Bollnow surmises, has its own atmospheric character that impinges on us and takes hold of our feelings: there are spaces of anxiety which seem narrow and hemmed in, limiting our room for manoeuvre, and spaces of optimism in which, to the contrary, everything easily gives way as if you were flying through the air. These are spaces of volatility.

More recently, Gernot Böhme has drawn directly on Benjamin's concept of aura to elaborate on an aesthetics centred explicitly on the concept of atmosphere. The aura of a

thing – for example an artwork – is like a haze that flows forth from it, and that can be 'breathed' by those who come within range. It is, says Böhme, an 'indeterminate spatially extended quality of feeling'. And this is precisely what he takes an atmosphere to be (Böhme 1993: 117-18). As an example of what he means, he asks us to imagine a blue cup. Its blue colour is not something (as Kant would have had it) that adheres to the cup, or that inheres within in it, as a thing wrapped up in itself. Rather, the cup's blueness radiates out into the surroundings. Atmospheres, Böhme argues, are spaces tinctured by the radiations or ecstasies of things as they pour themselves out into the affective environment (ibid.: 1993: 121). Like Bollnow, Böhme grants that atmospheres are neither subjective nor objective but in some sense intermediate between the two, between environmental qualities and human states. Yet he insists that they are not free-floating: they are not like a haze into which we might place both things and ourselves. On the contrary, it is from the coming together of persons and things that atmospheres arise: they are not objective yet they inhere in the qualities of things; they are not subjective yet they belong to sensing beings.

What is most striking about this conception of the atmospheric, however, is the complete exclusion of weather. It is true that in his discussion of 'mood space', Bollnow (2011: 218) refers in passing to the influence of weather conditions, noting in particular how they affect our perception of the closeness or distance of things. Yet the weather is just one of many possible influences, and is not constitutive of mood space *as such*. Böhme, for his part, makes no mention of weather at all, or even of the air. While people must have air to breathe, it seems that this fact – for Böhme – is entirely ancillary to the constitution of the atmosphere, which arises from their encounters with one another and with things. Comparing this notion of atmosphere with the one that comes to us from the science of meteorology, they seem to present us with complementary opposites. We have on the one hand a medium evacuated of all traces of mood or affect, and on the other a system of affects which seems to exist in a vacuum. Both meteorologists and aestheticians, from their respective sides, are inclined to claim that *their* particular sense of atmosphere is primary, and that the other's is merely metaphorical. Their complementarity, however, suggests that something more fundamental is at stake.

A hint as to what this might be comes from a recent study by Derek McCormack, focusing on the ill-fated expedition of the Swedish explorer Salomon August Andrée and his compatriots, who attempted to fly to the North Pole in a hydrogen-filled balloon. Noting the opposition between the two senses of atmosphere adduced above, respectively *meteorological* and *affective*, McCormack sets out to show how we might be able to bring

them together – that is to find a way of rethinking the atmosphere in a sense that is at once both affective and meteorological (McCormack 2008: 414). Thinking about balloon flight offers a way to do this, since it immediately reveals the atmosphere to be 'a set of dynamic and kinetic affects', in a world that is forever overtaking itself (ibid.: 418). The exclusion of air from the atmosphere of aesthetics, and its abstraction or dematerialisation in the atmosphere of meteorology, have together conspired to allow a certain view of the world to persist unchallenged. This is a world which has, as it were, concretised from the currents of the medium, and in which all that is material is locked into the solid forms of things (Ingold 2011: 23). Aesthetics finds the atmosphere in relations among these solid things – whether human or non-human, animate or inanimate. Meteorology finds it in the immaterial ether that surrounds them.

Yet in such a world, balloon flight would be inconceivable. How could a balloon fly in the ether? And how, without the hot air that fills it, could the balloon be anything more than a crumpled mass of material? The very form of the balloon only exists and persists through the countervailing forces of rising, expanding air and elastic fabric, and its displacement is thanks to the turbulence of the aerial currents into which it is launched. Even indoors, we swim in the air, as do fish in the water, responding at every moment to draughts set up in part through our own and others' actions. To see this, you need only hang a regular party balloon from the ceiling of a room filled with animated conversation. To produce the sounds of speech, air must be contrived to flow through the vocal chords. These flows, created by party-goers in their talk, stir up the air in the room, and cause the balloon to dance. To be sure, the indoor atmosphere is created by the coming together of people and things, but only because of their common immersion in the medium. In short, to transcend the opposition between the meteorological and the affective we need to refill the atmosphere with the material stuff of air. And that is at once to acknowledge that the world we inhabit, far from having crystallised into fixed and final forms, is a world of becoming, of fluxes and flows or, in short, a weather-world.

The atmosphere of smooth space

It is just such a world that Deleuze and Guattari have in mind when they speak of a space that, in their terms, is *smooth* rather than *striated*. Striated space, they say, is homogeneous and volumetric: in it, diverse things are laid out, each in its assigned location. Smooth space, to the contrary, has no layout. It presents, rather, a patchwork of continuous variation, extending without limit in all directions. The eye, in smooth space, does not look

at things but roams *among* them, finding a way through rather than aiming at a fixed target. That is to say, it mediates a perceptual engagement with the surroundings that is not *optical* but *haptic*. In the optical mode, it is as though the world were cast fully formed, in appearance but not substance – that is, as an image – upon the surface of the mind, much as it was once thought to be projected, through the pupil of the eye, onto the back of the retina. This kind of back-projection implies the detachment and distance of the seer from the seen. The haptic mode, by contrast is close range and hands on. It is the engagement of a mindful body at work with materials and with the land, 'sewing itself in' to the textures of the land along the pathways of sensory involvement (Ingold 2011: 132-3).

Now Deleuze and Guattari (2004: 543-4) are quite right to point out that the opposition between the optical and the haptic cross-cuts that between eye and hand: besides optical vision and haptic touch we can have optical touch as well as haptic vision. The gloved hand of the physician, for example, is clinically detached; whereas the eye of the scribe is caught up in the inky traces of his writing, as is that of the embroiderer in the threads of her fabric. But is the experience of smooth space fully encompassed within the haptic mode of engagement, as Deleuze and Guattari suggest, or does this just give us one side of the picture? For there do appear to be two sides, or aspects, to smooth space. On the one hand it emerges as a dense tangle of trails laid down by animate beings as they thread their ways through the world, rather as plants lay down their roots in the soil. These are lines of movement and growth – Deleuze and Guattari call them 'lines of becoming' (2004: 224-5) – which, while they follow no consistent direction, are continually responsive to environmental variations. It is in this vein that Deleuze and Guattari take the exemplary material of smooth space to be *felt* (ibid.: 525). Compared to linen, with its regular striations of warp and weft, felt is matted from a swirling morass of fibres which twist and turn in every which way. A haptic perception would follow these twists and turns, woven into the texture of the land just as they are bonded into felt.

Yet on the other hand, Deleuze and Guattari go on to describe the topology of smooth space as comprised not of lines or paths of movement at all but of the 'sonorous and tactile qualities' (ibid.: 528, 531) of wind and weather. Thus even as the peasant farmer striates the earth with his plough, creating a pattern of regular furrows, he works under the sky – 'participates fully in the space of the wind' (ibid.: 531) – and to that extent remains an inhabitant of the smooth. It is a space, they say, where winds howl, ice cracks and sand sings (ibid.: 421). This picture would certainly strike a chord with the Tlingit people of the northwest Pacific Coast, a massively mountainous region with some of the most active

glaciers in the world. According to their ethnographer, Julie Cruikshank (2005), the Tlingit believe that glaciers can listen. People should therefore be circumspect in their vicinity, lest they take offence and surge – with potentially disastrous consequences. The Tlingit are not, of course, so foolish as to think that glaciers have ears, or that it is possible to listen without them. Rather, the glacier listens because in the phenomenal world of the Tlingit it is disclosed not as an *object* of perception (as it might be, for example, for the western geologist) but as an all-enveloping experience of sound, light and feeling – that is, as an *atmosphere*. The glacier *is* its explosive, cracking sound (like thunder), its blinding white light (like lightning) and its icy feel (like the wind). In this atmospheric manifestation the glacier so saturates the consciousness of perceivers that when they listen, it is the glacier that listens through them, *in* its sound. Likewise when they look and touch, it is the glacier that looks and touches through them, *in* its light and *in* its feel.

In short, the experience of smooth space, in this atmospheric sense, *is* light, sound and feeling, not something that we obtain by their means. If the linear paths of haptic perception, like the fibres of felt, weave the texture of smooth space, then the atmosphere comprises the medium that makes such perception possible. There seems, then, to be an intimate relation, at the heart of smooth space, between the haptic and the atmospheric. How can this relation be understood? It is here that we can turn for help to Merleau-Ponty.

The atmosphere of the flesh

To live, we must breathe. But when we breathe, it is not just the body that takes air in, and lets it out, as though the mind could be left to float in the ether of the imagination. It is with our entire being, indissolubly body and soul, that we breathe. As Merleau-Ponty put it in his essay *Eye and Mind*, 'there really is inspiration and expiration of Being'. This is not to speak metaphorically. The words 'inspiration' and 'expiration', he insisted, have to be taken quite literally (Merleau-Ponty 1964: 167). And in this double movement, of action and passion, lies the essence of perception. Breathing the air, we also perceive *in* the air; it is not just that we would suffocate without it, we would also be struck senseless. Normally, we cannot see the air. Yet it is precisely because of the transparency of this life-sustaining medium that *we can see*. Moreover in its vibrations, air transmits sound waves, so that we can hear, and in the freedom of movement it affords, it allows us to touch. All perception, then, depends upon it (Gibson 1979: 16). In an airless, solidified world, perception would be impossible. Thus our very existence as sentient beings is predicated on our immersion in the weather-world.

To be sentient, for Merleau-Ponty, is to open up to a world, to yield to its embrace, and to resonate in one's inner being to its illuminations and reverberations. It is because we can see that we experience light, because we can hear that we experience sound, and because we can touch that we experience feeling. Bathed in light, submerged in sound and rapt in feeling, the sentient being rides the crest of the world's becoming, ever-present and witness to that moment when the world is about to disclose itself for what it is (Ingold 2011: 69). Thus in a sentient world there are no objects and subjects of perception; rather perception inheres in the creative movement of emergence, where 'things become things', as Merleau-Ponty put it, and 'the world becomes world' (Merleau-Ponty 1964: 181). To perceive things, then, is simultaneously to be perceived *by* them: to see is to be seen, to hear is to be heard, and so on. This reversibility, most obvious in the exemplary instance of two hands touching, was, for Merleau-Ponty, fundamental to all perception.

In conversation with Georges Charbonnier, the painter André Marchand observed that in a forest, he had often felt that it was not he who was looking at the trees. 'On some days', Marchand said, 'I felt it was the trees that were looking at me' (Charbonnier 1959: 143, see also Merleau-Ponty 1964: 167). The painter sees the trees; the trees see the painter – not, as Christopher Tilley explains in his work on landscape phenomenology, because trees have eyes, 'but because the trees affect, move the painter, become part of the painting that would be impossible without their presence' (Tilley 2004: 18). As an archaeologist, Tilley is particularly concerned with monuments of stone. To feel the stone, he reports, is to feel its touch on his hands: 'I touch the stone and the stone touches me' (ibid.: 17). Admittedly, the reversibility entailed here is not quite of the same order as in the case of two hands touching. For the stone, in itself, is not sentient. But this does not, in Tilley's view, invalidate his claim that he is indeed touched *by* the stone. Precisely because it affects him bodily and structures his awareness, the stone, he thinks, may be said to possess an agency of its own.

For according to Tilley, such things as trees and stones 'are sensible without being sentient' (Tilley 2004: 19). By this he means that they are as much a part of the phenomenal world as are human bodies and, as such, are already *with* perceivers, just as bodies are, in the very process of perception. They are, as Merleau-Ponty put it in posthumously published notes, of the same *flesh* (Merleau-Ponty 1968: 248-51). Thus the painter does not just observe the tree; he observes with it – with eyes that have already absorbed into their ways of looking the tree's looming phenomenal presence. And the archaeologist does not just touch the stone but touches with it – with hands that already

know hardness and softness, roughness and smoothness. As body, tree and stone are of the same flesh, my bodily seeing the tree is the way the tree sees through me, and my bodily touching the stone is the way the stone touches through me. Likewise, as we have already seen, if I were a Tlingit person, my listening to the glacier would be the way the glacier listens through me. Neither tree, stone nor glacier are in themselves sentient. But *immersed in sentience*, they can, as it were, double back so as to see, touch and hear themselves. In this 'coiling over', perceivers become one with what they perceive (Merleau-Ponty 1968: 140).

In Merleau-Ponty's key concept of the flesh, however, there remains a fundamental ambiguity. It clearly troubled him that the way in which the world penetrates the awareness of perceivers is *not*, in reality, the exact reverse of the way the latter perceive the world. For a self-sensing being, like a human, for one hand to touch another is precisely for the latter to touch the former. But the flesh of the world, Merleau-Ponty admitted, is not self-sensing. 'It is sensible and not sentient – I call it flesh nonetheless' (Merleau-Ponty 1968: 250). Under this one concept are subsumed, on the one hand, my being *with* stone, tree or glacier, and on the other, the stone's, tree's or glacier's being *with* me. The second kind of 'being with', we could say, is passionate. It is an inhalation of Being, an invasion of consciousness. But the first is expressed in activity, in a targeted movement of perception, launched – just as are spoken words – on the current of exhalation. The one gathers and draws in the medium in which I am immersed, holding it in tension like the pause of a held breath. The other releases the tension in issuing forth along a line of growth or becoming. The rhythmic alternation entailed here is comparable to that of the breast stroke in swimming, where the backward sweep of the arms and in-folding of the legs is followed by a forward thrust: the first is a movement of gathering or recollection, the second a movement of propulsion.

Here, finally, we find the answer to our question about the relation between the haptic and the atmospheric. Every living being, we have argued, stitches itself into the texture of the world along tightly interwoven lines of becoming. This stitching is haptic. But every living being, too, is necessarily immersed in an atmosphere. Is the flesh, then, texture or atmosphere? The answer is that it is, alternately, both. It is atmosphere on the inhalation, and texture on the exhalation. Texture and atmosphere are, if you will, two sides of the flesh, corresponding to the two senses of 'being with' distinguished above. And the living, respiring being is the site where atmospheric immersion is transformed into the growth of the texture along its proliferating lines. It is where the weather is turned into the

furrows of the ploughman, the wind into the wake of the sailboat, and the sunlight into the stems and roots of the plant. It is a transformation, indeed, that is fundamental to all animate life.

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