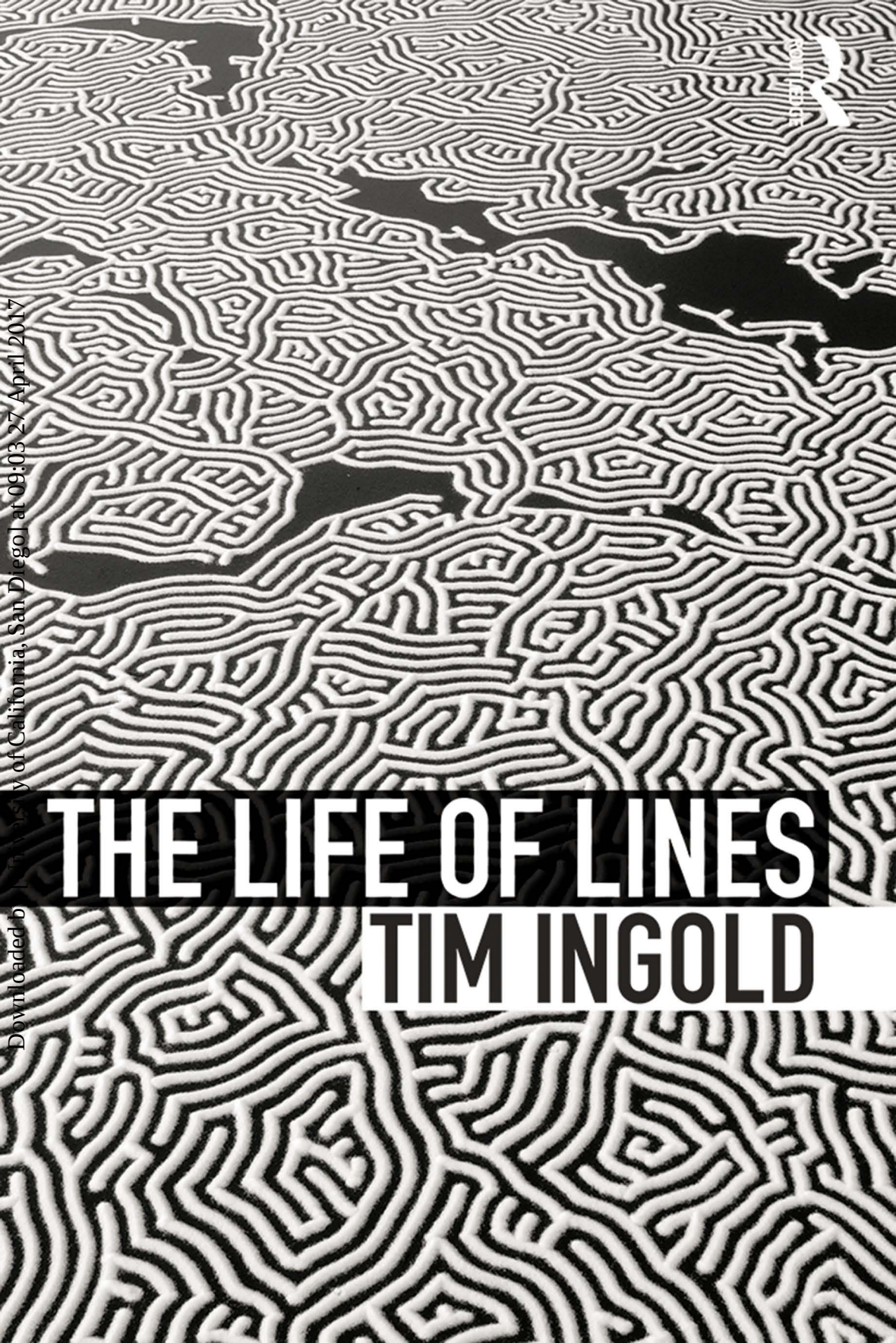

The Life of Lines

> 'In *The Life of Lines* Ingold develops a philosophical and ecological anthropology that is at once expansive, integrative, and inclusive. His poetic narrative interlaces bodies, minds, landscapes, topographies, and perceptions in a correspondence of lines. Taking us on a journey through movement, knots, weather, atmosphere and surfaces, he guides us to a critical conclusion: to human is a verb.'
>
> Agustín Fuentes, *University of Notre Dame, USA*

To live, every being must put out a line, and in life these lines tangle with one another. This book is a study of the life of lines. Following on from his groundbreaking work *Lines: A Brief History*, Tim Ingold offers a stunningly original series of meditations on life, ground, wind, walking, imagination and what it means to be human.

A world of life is woven from knots; not built from blocks as commonly thought. Ingold shows how knotting underwrites both the way things join with one another – in walls, buildings and bodies – and the composition of the ground and the knowledge we find there.

To study living lines we must also study the weather. To complement his linealogy, Ingold develops a meteorology that seeks the common denominator of breath, time, mood, sound, memory, colour and the sky. This denominator is the atmosphere.

Finally, Ingold carries the line into the domain of human life. For life to continue, he argues, the things we do must be framed within the lives we undergo. In continually answering to one another, these lives enact a principle of correspondence that is fundamentally social.

This compelling volume brings our thinking about the material world vividly back to life. While anchored in anthropology, the book ranges over an interdisciplinary terrain that includes philosophy, geography, sociology, art and architecture.

Tim Ingold is Professor of Social Anthropology at the University of Aberdeen, UK. His books for Routledge include *Lines: A Brief History* (2007), *The Perception of the Environment* (reissued 2011), *Being Alive* (2011) and *Making: Anthropology, Archaeology, Art and Architecture* (2013).

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The Life of Lines

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Preface

1 January 2014: feeling a bit depressed by the relentless passage of time, as I often do on New Year's Day, I cheered myself up by writing in my notebook: 'Today I am going to get back to work on *The Life of Lines*.' Then I went for a walk in the hills and thought about it. And that was that. Life intervened, as it always does, in the form not of opportunities to write my lines, but of the incessant demands of academic employment. I had been meaning to complete the book for years, and had been accumulating bits and pieces of writing with a view to putting them all together once a suitable moment would arrive. But it never did. Days, weeks and months ticked by, and I was still no closer to composing the book than when the year began.

Indeed almost seven years had elapsed since I first ventured into print on the subject of lines. My book *Lines: A Brief History* was published in 2007. Yet even before the ink was dry on the manuscript, I already knew that I would have to write some sort of sequel. Not knowing exactly what it would be about, I filed it in my head as *Lines 2*. All I knew was that it would have something to do with lines and the weather. For I had found, rather to my surprise, that thinking about lines always brought thoughts about the weather in its wake, and vice versa. Why was that, I wondered? Perhaps it only proved that I had completely lost the plot. Any level-headed reader, for whom the idea that an anthropologist can study lines is hard enough to swallow, would surely conclude that to take off into the atmosphere is to go completely off the rails. What business has an anthropologist encroaching on territory that rightfully belongs to the science of meteorology, or maybe to students of aesthetics? These doubts nagged at me too, and yet the idea of a unified field of linealogy and meteorology would not let me go.

An opportunity to contribute to the inspirational series of seminars that anthropologist and ex-architect Trevor Marchand convened at the School of Oriental and African Studies in London, in 2007, and to the subsequent volume, provided me with an excuse to begin to set my thoughts on paper, and a Professorial Fellowship funded by the UK Economic and Social Research Council for the three years 2005–8 afforded me a window of time to do so. Chopped up, redistributed and enlarged, much of the material from that paper, which was called 'Footprints through the weather-world',

has found its way into this book, particularly in the first and second parts. Two subsequent developments, however, led me to realise that the issue of lines and the weather would have to be part of a wider investigation.

One of these was a call issued by the Leverhulme Trust, in 2013, for proposals for a programme of research on the theme of 'the nature of knots'. With my interest in lines, this was not a chance I could pass up, and with colleagues from the University of St Andrews and University College London I set about designing a programme under the title of 'Knotting Culture'. Though the proposal eventually fell by the wayside, I have the Leverhulme Trust to thank for more than setting me thinking about the knot, as a principle of coherence, in ways that laid the foundations for the first part of this book. For after three punishing years as Head of the School of Social Science, here at the University of Aberdeen (2008–11), the Trust's award of a Major Research Fellowship for the following two years, 2011–13, gave me the breathing space I needed to develop my ideas. The long book that I had originally intended to write during the Fellowship, which would have been called *Bringing Things to Life*, became two shorter books instead. The first, *Making*, was completed in 2012 and published in the following year. The second is the book now in your hands.

The other development that has borne fruit in this book, especially in the third part, was the result of a fortuitous set of circumstances all of which had something to do with walking. One was hearing the writer Andrew Greig read from his work at the Festival of Walking, Writing and Ideas, held at the University of Aberdeen in August 2012. Among those present in the audience was the artist, writer and curator Mike Collier, from the University of Sunderland. In the following year, Mike organised a wonderful exhibition at Sunderland on the theme of walking, and a conference to go with it, both entitled Walk On. It was a privilege for me to be invited to contribute to the conference, and I have reworked the paper I wrote for it, called 'The maze and the labyrinth: walking and the education of attention', into several chapters of this book. The other crucial circumstance was attending another conference on walking, held in September of the same year (2012) to conclude the Sideways Festival, in which a group of hardy souls had spent a month walking the length and breadth of Belgium, along its lesser known tracks and trails. I had not been among them, but at the conference a talk by the philosopher of education Jan Masschelein, whom I had never encountered before, made me sit up. The ideas about walking and education that he was putting forward were – to my ears at least – quite revolutionary, and they have done much to shape my subsequent thinking, not least in this book.

Two other things have happened in the past year, 2013–14, which have greatly facilitated the writing of this book. First, we had the pleasure of hosting the mathematician and science educator Ricardo Nemirovsky, from San Diego State University, as a visiting fellow in our Department of Anthropology at Aberdeen. Ricardo and I ran a reading group, attended by a number of other colleagues, doctoral students and postdoctoral fellows in

the Department. From this I learned a huge amount, most particularly from Ricardo's gift of being able to explain the most arcane of philosophical texts, which to me had been incomprehensible, in terms that not only made perfect sense but also allowed me to see in them possible solutions to many of the problems that both he and I were wrestling with.

Secondly, I was invited to spend the spring of 2014 as a Fellow of the International Research Institute for Cultural Technologies and Media Philosophy (IKKM), at the Bauhaus University, Weimar. In practice, other duties in Aberdeen prevented me from spending more than three separate weeks at the lovely Palais Dürkheim where the Institute is based. Nevertheless, the writing of this book became my project for the IKKM Fellowship, and it was during my first stay there that I wrote my initial outline for work as a whole, which I presented as a lecture. The next morning, 22 May, at breakfast in the tiny flat in the centre of Weimar – in an ancient building that had once been home to the Secretary of Johann Wolfgang von Goethe – the structure of the book suddenly came to me. It would consist of a lot of short chapters rather than a few long ones, and would progress from knots and knotting, through the question of the relation between lines and the weather with which the whole project had commenced, to education and walking the labyrinth. In a matter of minutes, I had sketched out in my notebook the structure and given provisional titles to the thirty chapters. This structure survived, almost intact, into the final version.

By the summer of 2014, then, I had before me a pile of written or semi-written papers, amounting in volume to about half a book, a plan in a notebook, an outline of the work, and little else. My wife and I had also booked three weeks in the little old farmhouse in northern Karelia where we have so often stayed over the past thirty years. In 2010, I almost finished my collection of essays, *Being Alive*, while staying there, and in 2012 I had done the same with *Making*. There is something about that place. Would it work its magic again? Well, it did. All it needed was loving company, fresh air, a simple table, a wooden bench, uninterrupted hours and no more distraction than the sound of aspen trees passing the wind to each other, the song of birds and the busy ministrations of assorted insects. As in 2010 and again in 2012, I returned to Aberdeen with a book which needed only loose ends to be tied, of the kind for which access to a library is essential, and of course an ever-lengthening list of personal and academic debts.

Indeed, besides those whom I have already mentioned, there are more people to thank for their support and inspiration than I can possibly list. Here are just a few, in no particular order: Lorenz Engell and Bernhard Siegert, co-directors of the IKKM, for their warm hospitality; Kenneth Olwig for conversations on space, aerography and the theatre; Lars Spuybroek for his brilliant insights into the sympathy of things; Thomas Schwarz Wentzer for introducing me to the work of Ramon Llull; Susanne Kuechler for her writing about knots; Agustín Fuentes for daring to open a dialogue between

anthropology and theology; Mikkel Bille for pointing out my limited grasp of the German-language literature on atmospheres (for which I can only offer my apologies); Jen Clarke for urging me to explore the strange world of object-oriented ontology; Elishka Stirton for forcing me to confront the question of colour (which until then I had done my best to avoid on account of its sheer intractability); Cristian Simonetti and Mike Anusas for great ideas about surfaces and much else; Philippe Descola for travelling in the opposite direction to me (he is escaping from philosophy into ethnography, I'm escaping from ethnography into philosophy, we meet in the middle where things get interesting); Maxine Sheets-Johnstone for never letting me forget the importance of movement; Elizabeth Hallam for helping me think about the meanings of making and growing; and, last but not least, everyone in the KFI team whom I have not already mentioned.

To explain, KFI stands for Knowing From the Inside, and it is the acronym for the project I am currently leading, for the five years from 2013 to 2018, with the generous support of the European Research Council. We are working across the boundaries of anthropology, art, architecture and design to try to find a new way of doing things in the arts, humanities and social sciences which could be more open, more speculative and more experimental than what we are used to. Now that this book is off my hands and launched into the world, that will be the next challenge!

I would like to conclude with three irrevocable facts about myself. First, I am a man. Second, I will never be able to reconcile myself to the grammatical abomination of using 'they' as a third-person singular, gender-neutral alternative to 'he' or 'she', or to the alternative 'he or she', which in most situations sounds as though it has rolled straight off the tongue of a bureaucrat. For these reasons, throughout what follows I use the third-person pronoun more or less consistently in its masculine form, unless the context demands otherwise. This is of absolutely no significance for my argument, however, and readers are welcome to substitute the feminine form if they wish. The third fact about myself is that I am the proud grandfather of a grandson, Zachary Thomas Ingold, and a granddaughter, Rachel Stephanie Raphaely-Ingold, to both of whom this book is dedicated.

Tim Ingold
Aberdeen, January 2015

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Part I

Knotting

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1 Line and blob

We creatures are adrift. Launched upon the tides of history, we have to cling to things, hoping that the friction of our contact will somehow suffice to countervail the currents that would otherwise sweep us to oblivion. As infants, clinging is the first thing we ever did. Is not the strength in the newborn's hands and fingers remarkable? They are designed to cling, first to the little one's mother, then to others in its entourage, still later to the sorts of things that enable the infant to get around or to pull itself upright. But grown-ups cling too – to their infants, of course, lest they be lost, but also to one another for security, or in expressions of love and tenderness. And they cling to things that offer some semblance of stability. Indeed there would be good grounds for supposing that in clinging – or, more prosaically, in holding on to one another – lies the very essence of sociality: a sociality, of course, that is in no wise limited to the human but extends across the entire panoply of clingers and those to whom, or that to which, they cling. But what happens when people or things cling to one another? There is an entwining of lines. They must bind in some such way that the tension that would tear them apart actually holds them fast. Nothing can hold on unless it puts out a line, and unless that line can tangle with others. When everything tangles with everything else, the result is what I call a *meshwork*.[1] To describe the meshwork is to start from the premise that every living being is a line or, better, a bundle of lines. This book, at once sociological and ecological in scope and ambition, is a study of the life of lines.

This is not how either sociology or ecology is normally written. It is more usual to think of persons or organisms as blobs of one sort or another. Blobs have insides and outsides, divided at their surfaces. They can expand and contract, encroach and retrench. They take up space or – in the elaborate language of some philosophers – they enact a principle of territorialisation. They may bump into one another, aggregate together, even meld into larger blobs rather like drops of oil spilled on the surface of water. What blobs cannot do, however, is cling to one another, not at least without losing their particularity in the intimacy of their embrace. For when they meld internally, their surfaces always dissolve in the formation of a new exterior. Now in writing a life of lines, I do not mean to suggest that there are no blobs in

Figure 1.1 Blob and line.
Above, two blobs merging into one; middle, two lines corresponding; below, blob putting out a line.

the world. My thesis is rather that in a world of blobs, there could be no social life: indeed, since there is no life that is *not* social – that does not entail an entwining of lines – in a world of blobs there could be no life of any kind. In fact, most if not all life-forms can be most economically described as specific combinations of blob and line, and it could be the combination of their respective properties that allows them to flourish. Blobs have volume, mass, density: they give us materials. Lines have none of these. What they have, which blobs do not, is torsion, flexion and vivacity. They give us life. Life began when lines began to emerge and to escape the monopoly of blobs. Where the blob attests to the principle of territorialisation, the line bears out the contrary principle of deterritorialisation (Figure 1.1).

At the most rudimentary level, the bacterium combines a prokaryotic cell with a wisp-like flagellum (Figure 1.2). The cell is a blob, the flagellum a line: the one contributes energy, the other motility. Together, they conspired to rule the world. To a great extent, they still do. For once you start looking for them, blobs and lines are everywhere. Think of the growth of tubers along the tendrils of a rhizome. Potatoes in a sack are but blobs; in the soil, however, every potato is a reservoir of carbohydrate formed along the thread-like roots, and from which a new plant can sprout. The tadpole, from the

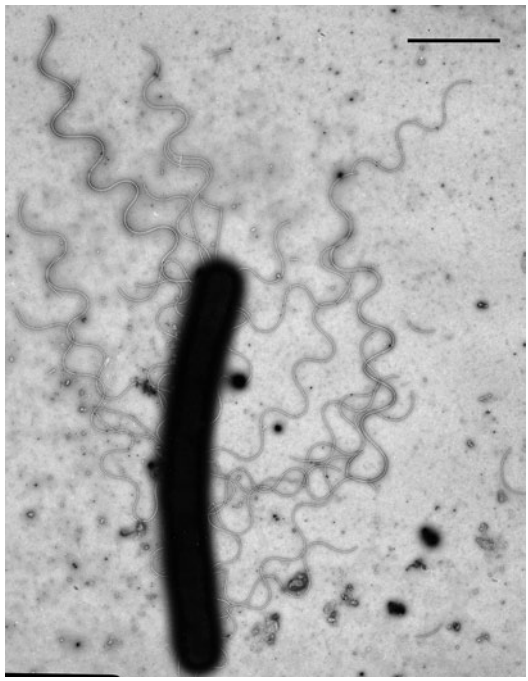

Figure 1.2 Transmission electron micrograph of the bacterium *Vibrio parahaemolyticus*. The rod-shaped cell body is 0.5–0.75 microns wide and on average around 5 microns in length. The flagella are about 20 nanometres in diameter. The size bar at the top right of the picture indicates 1.5 microns. Image courtesy of Linda McCarter and the University of Iowa.

moment when it wriggles free from its globular spawn, sports a linear tail. The silk-worm, a blob-like creature that, in its short life, expands in volume by a factor of ten thousand through the voracious ingestion of mulberry leaves, spins a line of the finest filament in the construction of its cocoon. And what is a cocoon? It is a place for the larval blob to transform itself into a winged creature that can take flight along a line. Or observe that consummate line-smith, the spider, whose blob-like body is seen to dangle from the end of the line it has spun, or to lurk at the centre of its web. Eggs are blobs of a kind, and fish turn from blobs to lines as they hatch out and go streaking through the water. The same is true for nestling birds as they take to the air. And the foetal blob of the mammalian infant, attached to the interiority of the womb by the line of the umbilical cord, is expelled at birth only to reattach itself externally by clinging digitally to the maternal body.

And people? Children, as yet unfettered by the representational conventions of adulthood, often draw human figures as blobs and lines. The blobs endow them with mass and volume, the lines with movement and

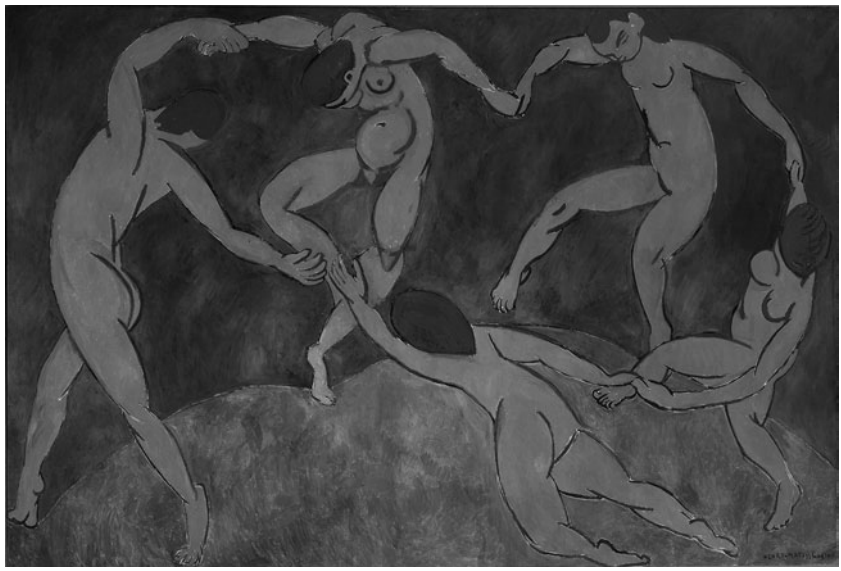

Figure 1.3 Henri Matisse, *Dance* (1909–10).
The State Hermitage Museum, St Petersburg. Photograph © The State Hermitage Museum; photo by Alexander Koksharov.

connection. Or take a look at this celebrated painting by Henri Matisse, *Dance* (Figure 1.3). Matisse had a very blob-like way of depicting the human form. His figures are voluminous, rotund and heavily outlined. Yet the magic of the painting is that these anthropomorphic blobs pulse with vitality. They do so because the painting can also be read as an ensemble of lines drawn principally by the arms and legs. Most importantly, these lines are knotted together at the hands, to form a circuit that is perpetually on the point of closure – once the hands of the two figures in the foreground link up – yet that always escapes it. The linking of hands, palm to palm and with fingers bent to form a hook, does not here symbolise a togetherness that is attained by other means. Rather, hands *are* the means of togetherness. That is, they are the instruments of sociality, which can function in the way they do precisely because of their capacity – quite literally – to interdigitate. For the dancers, caught up in each other's flexion, the stronger the pull, the tighter the grasp. In their blob-like appearance, Matisse gives us the materiality of the human form; but in their linear entanglement, he gives us the quintessence of their social life. How, then, should the social be described?

One way of putting it would be to say that this little group is both more and less than the sum of its individual parts. It is more because it has emergent properties, most notably a certain *esprit de corps*, that can come only from their association. It is less because nothing in particular has prepared them for it. The association is spontaneous and contingent. Thus while every

one of the dancers trails his or her personal biography, much of this is lost or at least temporarily held in abeyance in the exhilaration of the moment. Social theorists have taken to using the word *assemblage* to describe such a group.[2] As a concept, the assemblage seems to provide a convenient escape from the classical alternatives of having to think of the group either as nothing more than an aggregate of discrete individuals or as a totality whose individual components are fully specified by the parts they play within the context of the whole. Yet just as much as the alternatives it displaces, assemblage-thinking rests on the principle of the blob. In place of five little blobs or one big blob, it gives us five blobs that have partially run into one another while yet retaining something of their individuality.[3] But whether the parts add up to the whole or not, what is missing from the additive logic is the tension and friction that make it possible for persons and things to cling. There is no movement. In the assemblage, it is as though the dancers had turned to stone.

The theory of the assemblage, then, will not help us. It is too static, and it fails to answer the question of how the entities of which it is composed actually fasten to each other. The principle of the line, by contrast, allows us to bring the social back to life. In the life of lines, parts are not components; they are movements. We should draw our metaphors, perhaps, not from the language of the construction kit but from that of polyphonic music. The dance of Matisse's painting would be called, in music, a five-part invention. As each player, in turn, picks up the melody and takes it forward, it introduces another line of counterpoint to those already running. Each line answers or co-responds to every other. The result is not an assemblage but a roundel: not a collage of juxtaposed blobs but a wreath of entwined lines, a whirl of catching up and being caught. Not for nothing did the philosopher Stanley Cavell come to speak of life as 'the whirl of organism'.[4] This is an image to which we shall have occasion to return. First, however, we need to take a lesson from a contemporary compatriot of Matisse and one of the founders of modern social anthropology: the ethnologist Marcel Mauss.

Notes

1 I have elaborated on the concept of meshwork elsewhere (e.g., Ingold 2007a: 80–2; 2011: 63–94).

2 See, for example, the 'assemblage theory' of philosopher Manuel DeLanda (2006). 'The autonomy of wholes relative to their parts', DeLanda argues, 'is guaranteed by the fact that they can causally affect those parts in both a limiting and an enabling way, and by the fact that they can interact with each other in a way not reducible to their parts' (2006: 40).

3 A recent contribution from anthropologist Maurice Bloch (2012: 139) offers a particularly clear illustration of this partial melding. Bloch actually adopts the word 'blob' as a generic term to cover what other theorists bring under such labels as 'person', 'individual', 'self' and '*moi*', and even provides a series of

diagrams to show how the blob might be depicted. It looks like a solid cone with a sub-conscious core at the base, rising towards a tip of consciousness, over which hovers a halo of explicit representations (Bloch 2012: 117–42).

4 See Cavell (1969: 52). I am grateful to Hayder Al-Mohammad for drawing my attention to this reference.

2 Octopuses and anemones

Textbooks define ecology as the study of the relations between organisms and their environments. Literally surrounded by its environment, and enclosed within its skin, the organism figures according to this definition as a blob. Wrapped up in itself, it takes up space within a world. It is territorial. Sometimes, organisms of the same species cluster together in great numbers, as in the formation of coral, or in the nests and hives of so-called 'social' insects. What is often known as a 'colony' of conspecifics may be regarded either as an aggregate of discrete organisms or as a single superoganism: it is either lots of little blobs or one big blob. And it was on the foundation of this ecological notion of the superorganic that the discipline of sociology was established by its principal architects: Herbert Spencer in Britain and Émile Durkheim in France. For Spencer, the social superorganism was an aggregate of little blobs: that is to say, a plurality of individuals of the same species, human or non-human, joined by mutual self-interest. It was modelled on the operations of the market. In the market, it is what changes hands that matters, and not the hands themselves. The handshake seals a contract, but is not a contract – an actual binding of lives – in itself. Durkheim, for his part, launched his version of sociology on the back of a polemical critique of the Spencerian market model, above all in the pages of his manifesto for the new discipline, boldly entitled *The Rules of Sociological Method* and published in 1895. Society, for Durkheim, was one big blob.

There could be no lasting contracts, Durkheim argued, without some kind of warrant that would underwrite the union of otherwise fissile individuals. And this warrant must be sacrosanct; it must lie beyond the reach of individual negotiation. Thus the Durkheimian superorganic was no mere multiplication of the organic; it was, rather, *above* the organic, situated on an altogether different plane of reality. In a famous passage in the *Rules*, Durkheim argued that a plurality of individual minds, or 'consciousnesses', is a necessary but not sufficient condition for social life. In addition, these minds must be combined, but *in a certain way*. What, then, is this way? How must minds be combined if they are to produce social life? Durkheim's answer was that 'by *aggregating* together, by *interpenetrating*, by *fusing* together, individuals give birth to a being, psychical if you will, but one which constitutes a psychical

individuality of a new kind'. In a footnote he added that for this reason it is necessary to speak of a 'collective consciousness' as distinct from 'individual consciousnesses'.[1] Aggregation, interpenetration and fusion, however, mean different things, and in listing them one after the other, Durkheim effectively gives us three answers rather than one. So which answer is the right one? Is it by the aggregation of minds, their interpenetration or their fusion that the consciousness of the collective is formed? Or are these supposed to represent three stages, in a process that culminates in its emergence?

Aggregation and fusion, as we have seen, rest on the logic of the blob. Both presuppose that the mind of the individual can be understood as an externally bounded entity, closed in on itself, and divided off both from other such minds and from the wider world in which they are situated. In aggregation, minds meet along their exterior surfaces, turning every such surface into an interface separating the contents on either side. In fusion, these surfaces partially dissolve, so as to yield an entity of a new order – a whole that is more than the sum of its parts. Yet since, in the meeting of minds, that portion that an individual might share with others is instantly ceded to this higher-level, emergent entity, what is left to the consciousness of the individual remains exclusive to its owner. The whole may encompass and transcend its parts, but the parts have nothing, within them, of the whole. Interpenetration, however, is different. If we were to be strict in applying Durkheim's logic, then interpenetration vanishes on the instant when it appears. It is like an unstable state that immediately resolves into a new balance of aggregation and fusion. When our minds meet, when I join my conscious awareness with yours, that zone of interpenetration ceases at once to belong to either of us, and is lodged in an alien presence to which we both are held to account, namely 'society'.

Suppose, once again, that we seal our contract with a handshake: what changes hands belongs to you or to me; the handshake, however, would belong to society. From a Durkheimian perspective it would be the ritual expression of a superordinate mode of existence to which we are both beholden. Yet, surely, the hands that clasp yours, and that you feel at the very heart of your being, are still my hands: I remain fully connected to them, in body and mind. And so it is for you too. This was precisely the burden of one of the most celebrated texts in the early twentieth century history of the then nascent discipline of social anthropology, namely the *Essay on the Gift*, published in 1923–4 by Durkheim's leading disciple, Marcel Mauss.[2] Though ostensibly written in homage to his mentor, Mauss in fact dealt a blow to the entire Durkheimian paradigm from which it never fully recovered. For what he succeeded in demonstrating, in this essay, was the possibility of interpenetration as a durable condition. He showed how the gift I give to you, and that is incorporated into your very being, remains fully conjoined to me. Through the gift, my awareness penetrates yours – I am *with* you in your thoughts – and in your counter-gift, you are *with* me in mine. And so long as we continue to give and receive, this interpenetration

can carry on or perdure. Our lives are bound or drawn together as literally as two hands clasping.

In this, of course, Mauss had only rediscovered what our distant predecessors already knew. Was it not precisely in such binding that the term 'contract' finds its etymological origin (from *com*, 'together', plus *trahere*, 'to draw or pull')? That is what Matisse's dancers are doing, pulling together, and responding to one another as they whirl around. I shall call their movement one of *correspondence*. And to pick up from the conclusion to the foregoing chapter, social life lies not in the accretion of blobs but in the correspondence of lines. This argument, however, both undercuts the logic of part–whole relations by which the whole is understood, as by Durkheim, to be more than the sum of its parts, and challenges the assumption that consciousness – of any kind or any level, individual or collective – can be regarded as wrapped up in itself. For minds and lives are not closed-in entities that can be enumerated and added up; they are open-ended processes whose most outstanding characteristic is that they *carry on*. And in carrying on, they wrap around one another, like the many strands of a rope. A whole that is made up from individual parts is a totality in which everything is articulated or 'joined up'. But the rope is always weaving, always in process and – like social life itself – never finished. Its parts are not elementary components but ever-extending lines, and its harmonies reside in the way each strand, as it issues forth, coils around the others and is coiled in its turn, in a counter-valence of equal and opposite twists which hold it together and prevent it from unravelling.[3]

Not that this prevented Mauss from advocating research into what he called 'total social phenomena'. Their totality, however, is quite unlike that of the whole which is more than the sum of its individual parts. It is not additive but contrapuntal. Like that of Matisse's roundel, it is a totality in movement, and this movement, far from advancing towards a conclusion, is self-perpetuating. To witness this totality, Mauss declared, is to see things as they *really are*: 'not merely ideas and rules, but also men and groups and their behaviours. We see them in motion as an engineer sees masses and systems, or as we observe *octopuses and anemones in the sea*.'[4] In the extensive critical literature that has grown up around *Essay on the Gift*, this beautiful, oceanic metaphor – which I have highlighted here for emphasis – has been almost completely ignored. Yet it is both profound and central to what Mauss had to say. Real-life human beings, he insisted, inhabit a fluid reality in which nothing is ever the same from one moment to the next and in which nothing ever repeats. In this oceanic world, every being has to find a place for itself by sending out tendrils which can bind it to others. Thus hanging on to one another, beings strive to resist the current that would otherwise sweep them asunder. Observe octopuses and anemones in the sea. They do not aggregate, and they do not fuse. They do, however, interpenetrate. Their many tendrils and tentacles interweave to form a boundless and ever-extending meshwork.

Possibly, that is what Durkheim always had in mind. It may be why he spoke of interpenetration even though his way of reasoning about parts and wholes immediately cancelled it out. Perhaps the discursive resources at his disposal, above all due to his interminable argument with Spencer's economism, forced him into a rhetoric that he would have rather avoided. Faced with an opponent who insisted that there was nothing more to the social whole than its individual parts, to whose interests alone it was subservient, what else could Durkheim do than to put the argument in reverse? Even today, the forces that would reduce minds to built-in, interactive modules continue to command the mainstream, in disciplines ranging from psychology to economics, and we have continually to argue the contrary case, for a more open-ended and holistic understanding of conscious awareness.

We should, however, resist the temptation to equate holism with finality or completion. The meeting of minds weaves a whole rope, but so long as life goes on, there must always be loose ends. Among people on land as among the creatures of the sea, lines are put out to fasten on or capture what they can. Thus with the octopuses and the anemones, we embark upon an ecology that is no longer the study of the relations between organisms and their environments, and with their human counterparts we are no longer bound to the sociological study of superorganisms. Rather, both ecology and sociology merge in the study of the life of lines. Like the octopuses and anemones, mere blobs above water but writhing bundles of lines beneath the waves, in the study of social phenomena – as Mauss concluded in the same passage – 'we see groups of men, and active forces, *submerged in their environments and sentiments*'.[5] I mark these words for future reference, since they will be central to my theme in the second part of this book, on the relation between lines and the atmosphere.

Notes

1 See Durkheim (1982: 129 and 145 fn. 17, my emphases).
2 *Essai sur le don* (Mauss 1923–4). The essay was subsequently translated into English by anthropologist Ian Cunnison and published under the title *The Gift* (Mauss 1954).
3 In Ancient Greece, the term 'harmony' referred to the way things were held together by the tension of contrary forces, as in joining planks in shipbuilding, the suturing of bones in the body and the stringing of the lyre. I am grateful to César Giraldo Herrera for drawing this to my attention.
4 Mauss (1954: 78, my emphasis). In the original French, the passage reads as follows: 'Dans les sociétés, on saisit plus que des idées ou des règles, on saisit des hommes, des groupes et leurs comportements. On les voit se mouvoir comme en mécanique on voit des masses et des systèmes, ou comme dans la mer nous voyons des pieuvres et des anémones' (Mauss 1923–4: 181–2).
5 Mauss (1954: 78, my emphasis). 'Nous apercevons des nombres d'hommes, des forces mobiles, et qui flottent dans leur milieu et dans leurs sentiments' (Mauss 1923–4: 182).

3 A world without objects

How, then, should we describe the interweaving – the interpenetration – of the constituent lines of the rope, of the lifelines of particular beings in the cord of social life? One possible answer would be to think in terms of knots. In the knot, writes the novelist Italo Calvino,

> the intersection between two curves is never an abstract point but is the actual point where one end of a rope or cord or line or thread either runs or turns or is tied above or below or around itself or around another similar item, as a consequence of very precise actions carried out by practitioners of a range of crafts, from the sailor to the surgeon, the cobbler to the acrobat, the mountaineer to the seamstress, the fisherman to the packer, the butcher to the basket-maker, the carpet-maker to the piano-tuner, the camper to the chair-mender, the woodcutter to the lace-maker, the bookbinder to the racquet-maker, the executioner to the necklace-maker … .[1]

It comes as no surprise that Calvino begins his list of practitioners with the sailor, nor is it any accident that the language of knots and knotting pervades every aspect of life at sea, since it is here that finding a place and holding fast in a fluid medium presents its greatest challenges. Knots fasten the rigging of the ship, hold it at anchor, are used to measure speed, and in the past were sold to sailors as magical means to release the wind. But knots are also the fundamental elements of woven structures such as nets and baskets (Figure 3.1). Writing in the middle of the nineteenth century, in a treatise on the origins and evolution of architecture, Gottfried Semper asserted that the knotting of fibres in net-making and basketry was among the most ancient of human arts, from which all else was derived, including both building and textiles. '*The beginning of building*', Semper declared, '*coincides with the beginning of textiles.*'[2] On the side of building, knotting evolved from the plaiting of sticks and branches to more elaborate techniques for constructing the frame of the house. And on the side of textiles, according to Semper, basketry and the plaiting of fibres led to techniques of weaving, to woven pattern, and thence to the knotted carpet.

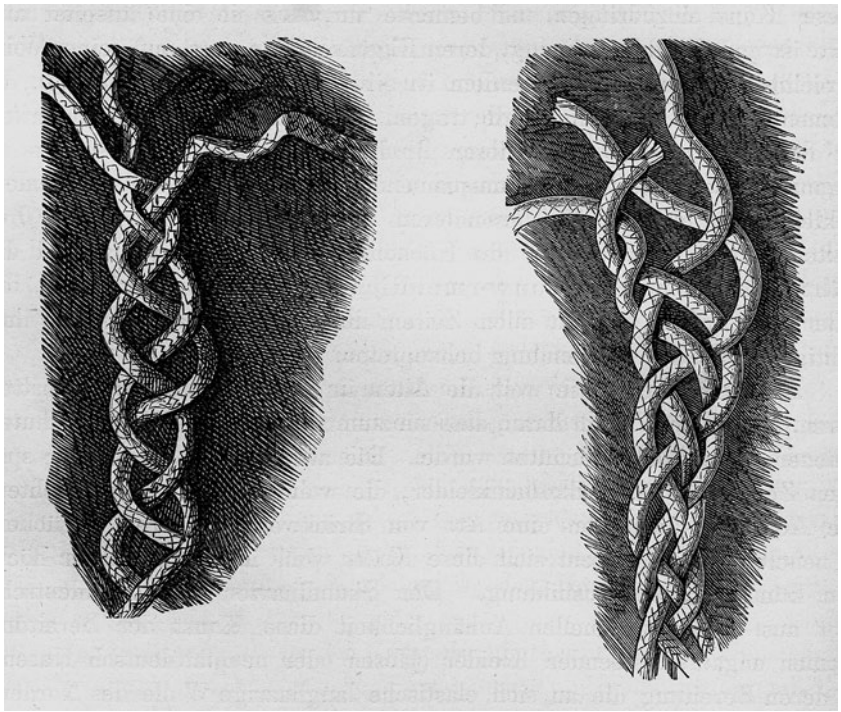

Figure 3.1 From knot to weave.
Two drawings from Gottfried Semper, *Der Stil in den Technischen und Tektonischen Künsten oder Praktische Aesthetik, Vol. I, Textile Kunst*. Munich: Friedrich Bruckmanns Verlag, 1878, p. 172. © University of Aberdeen.

I shall return to Semper in what follows. My more immediate purpose is to suggest that in a world where things are continually coming into being through processes of growth and movement – that is, in a world of *life* – knotting is the fundamental principle of coherence. It is the way forms are held together and kept in place within what would otherwise be a formless and inchoate flux. This applies as much to forms of knowledge as to material things, whether made like artefacts or grown like organisms. In the recent history of modern thought, however, knots and knotting have been largely sidelined. The reasons for this are to be found in the power of an alternative set of closely linked metaphors. These are the *building block*, the *chain* and the *container*. Though increasingly challenged in fields ranging from particle physics and molecular biology to cognitive science, these metaphors still retain much of their appeal. They lead us to think of a world which is not so much woven from ever-unspooling strands as assembled from pre-cut pieces. In this vein, psychologists continue to speak of the building blocks of thought and of the mind as a container equipped with certain capacities for acquiring epistemic content, linguists speak of the semantic content of words

and of their enchainment in syntax, biologists often refer to the DNA of the genome in rather similar terms, both as a genetic chain and as a plan for assembling the building blocks of life, while physicists, in their explorations of the chain reactions of sub-atomic particles, aim to discover nothing less than the most fundamental building blocks of the universe itself.

However, a world assembled from perfectly fitting, externally bounded blocks could harbour no life. Nothing could move or grow.[3] Thus the block-chain-container and the knot represent mutually exclusive master-tropes for understanding the constitution of the world, predicated on philosophies, respectively, of being and becoming. The challenge before us, in our exploration of the life of lines, is to consider how a reversion to the knot, after a period during which blocks, chains and containers have remained the paramount figures of thought, could impact on our understanding of ourselves, of the things we make and do, and of the world we live in. To help frame our questions, we might best begin by determining what a knot is *not*. Specifically:

- *The knot is not a building block*. Blocks are assembled into structures; knots are bound or tied into nodes or nodules. Thus the order of the block is explicate, in that each is joined to the other by external contact or adjacency; the order of the knot is implicate, in that the constitutive strands of each knot, as they extend beyond it, are bound into others.
- *The knot is not a chain*. Chains are articulated from rigid elements or links, and retain their connections even when tension is released. Yet they have no memory of their formation. Knots, by contrast, are not articulated and do not connect. They have no links. Nevertheless they retain within their constitution a memory of the process of their formation.
- *The knot is not a container*. Containers have insides and outsides; in the topology of the knot, however, it is impossible to say what is inside or outside. Rather, knots have interstices.[4] Their surfaces do not enclose but lie 'between the lines' of the materials that make them up.

Admittedly, if the knot is neither a building block, nor a chain, nor a container, the same might equally be said of the blob. Deep down, we might argue, every blob is its own thing and cannot be changed for any other; moreover, it is irreducible to elementary, molecular or atomic components from which all things could be said to be made. It is therefore not really a block, and it is not built from blocks. Nor, since it is fundamentally in itself, can it be enchained with other blobs in any direct sequence of cause and effect. Take a lump of copper and a lump of tin. Copper is copper and tin is tin, and there is no way the two lumps can have direct access to each other save by meeting and melding in their interiority, where the relation between them immediately becomes constitutive of a new lump, of bronze, with its own irreducible and inscrutable essence. Maybe it is the same with you and me: if we enter into a relationship, does that not bring into existence

something new that is neither you nor I, but into which we have both yielded something of our respective selves? Furthermore, a blob is a blob, irrespective of the innumerable aspects that it may reveal at one time or another to our perception. It does not therefore contain these aspects. If anything, it is contained *by* them, hiding in the depths that its surface appearances conceal.

All three possible properties of the blob – that it is not a building block, chain or container – are brought together in what has recently come to be known, in philosophical circles, as 'object-oriented ontology'.[5] With the three rotund O's of its acronym – OOO – this is indeed an ontology of the blob, with a vengeance! It is, however, an ontology that is profoundly out of touch with life. OOO presents us with the ghost of a world in which all that has once lived, breathed or moved has receded deep into itself, collapsed into innumerable, jagged and impervious pieces. It is timeless, motionless, inert: a fossil universe. One of the justifications for OOO advanced by its proponents is that it allows things to exist, to be themselves, without either 'undermining' or 'overmining' them. To undermine something is to claim, for example, that it is nothing but a specific combination or arrangement of the same elements that you will find in everything else. To overmine it is to claim that what we think to be an object is no more than an appearance in the theatre of consciousness. We can surely agree that both undermining and overmining are rampant in the contemporary sciences and humanities, and I have no wish to defend either.

It is not the case, however, that the only avenue of resistance to such 'minings' is by resort to a blobular ontology. I do not deny that there are blobs in the world – indeed, as we have seen, the combination of blob and line is a near-universal characteristic of life-forms. But it is equally the case, almost universally, that these blobs put out lines or swell from them, or are embedded in a linear matrix. It is by their lines that they can live, move and hold on to one another. Shorn of lines, blobs atrophy, collapse in on themselves; lineless, they reduce to 'objects'. That is precisely why every actually occurring blob is not – or not just – an object, why there is always more to it. An ontology of the line allows us to dispense with objects without undermining them, and without overmining them. '*All things equally exist, yet they do not exist equally*': so runs the oft-repeated mantra of OOO.[6] But we say: things do not just exist; if they did, then they would indeed be but objects. The thing about things, however, is that they *occur* – that is, they carry on along their lines. This is to admit them into the world not as nouns but as verbs, as goings-on. It is to bring them to life. And it is also to admit into the world such meteorological phenomena as sunshine, rain and wind.[7] Lives, as Mauss showed for human persons, can meet in their interiority and yet continue along their own paths, submerged in their atmospheres of sentiment. They can tie themselves into knots. The world of things, I propose, is a world of knots, a *world without objects*, or, in short, a WWO.

Notes

1 From an essay entitled 'Say it with knots', first published in 1983. See Calvino (2013: 62).
2 See Semper (1989: 254, emphasis in original). Semper's treatise, *Style in the Technical and Tectonic Arts or Practical Aesthetics*, was published in two volumes in 1861 and 1863.
3 See Ingold (2013a: 132–3).
4 On the notion of interstices, see Anusas and Ingold (2013).
5 One of the leading advocates of this approach is Graham Harman. See, for example, Harman (2011).
6 See Bogost (2012: 11, emphasis in original).
7 To illustrate how objects allegedly withdraw into themselves such that they can have no immediate access to each other's essence, Harman gives us the example of rain and a tin roof. 'Rain striking a tin roof does not make intimate contact with the reality of the tin any more than the monkeys on the roof or the impoverished resident of the tin-roofed shack are able to do' (Harman 2011: 174). Two pages later, he asserts – without the slightest attempt at justification – that 'time does not exist simply because only the present ever exists' (2011: 176). But in a world without time, rain could not fall: indeed, since rain *is* the falling of drops, there could be no such thing as rain at all; only drops suspended in mid-air. No wonder they make no contact with the tin of the roof! Philosophers are supposed to help the rest of us think more clearly and precisely, but it sometimes seems that their minds are more addled than most. Where they go, it may be best not to follow, lest we become lost in the long grass.

4 Materials, gesture, sense and sentiment

What, then, would a world be like that is knotted rather than assembled, enchained or contained? One possible vision of the WWO comes from the writings of Japanese architect Akihisa Hirata. He describes how an Alpine view of pleated mountains swathed in clouds, shot through with beams of sunlight, led him to think of an entangled order in which mountains and clouds draw one another into configurations that cause ever further tangles, yielding a scene of life imbued with unalterable complexity.[1] Is there a connection between thinking-through-knotting and this understanding of the inhabited world as the interpenetration of earth and sky, with its crumples, creases and folds, rather than as a solid globe, surrounded by its gaseous atmosphere, upon the outer surface of which the architectures of the built environment are erected?

There can, of course, be no knots without the performance of knotting: we should therefore commence with the verb 'to knot' and view knotting as an activity of which 'knots' are the emergent outcomes. Thus conceived, knotting is about how contrary forces of tension and friction, as in pulling tight, are generative of new forms. And it is about how forms are held in place within such a force-field or, in short, about 'making things stick'.[2] Accordingly, our focus should be on forces and materials rather than form and content. Knotting, then, registers in a number of domains of thought and practice by which patterns of culture are sustained and bound into the interstices of human life. These include: the *flows and growth patterns of materials*, including air, water, cordage and wood; *bodily movement and gesture*, as in weaving and sewing; *sensory perception*, especially touch and hearing, perhaps more than (but certainly not to the exclusion of) vision; and *human relationships* and the sentiment that infuses them. I take these domains to be on a par ontologically: that is, none is more fundamental or more derivative. Thus our task is not to explain any one in terms of any other, nor should we treat knotting in any one as literal and in any other as metaphorical. Rather, the question is one of how to translate from domain to domain.

To begin with materials: it is important here to note a second sense in which knots and knotting may be understood. In this sense, a knot is formed whenever the materials of growing life-forms wrap around each

other so as to form a lump or nodule. This is most obvious with the growth of trees, though it may be extended to concretions or swellings in animal tissues, and even, by analogy, to rocky outcrops of similar conformation and texture. The tree-knot is a whorl in the grain that develops as the material of an expanding trunk or limb envelops that of an emergent branch. Since the branch is simultaneously growing, the material of the knot is compressed into a hard core. Though knots are what hold the tree together, in their density and distortion of the grain they also present the greatest challenge to the carpenter. And this may offer a clue to the relation between knots of the first kind and those of the second. The latter are formed in a process of enlargement and differentiation, in the extrusion of material along lines of growth. The former, however, entail the manipulation of lines – fibres, threads, cords or ropes – that are *already grown*. Knot-tying of this kind is by no means exclusive to humans: weaver-birds do it in constructing their nests, as do certain apes, at least when raised in proximity to humans.[3] Nevertheless, Semper may have had a point in tracing the origins of technicity to the capacity to form knots in one sense and to slice through them in the other – that is, in the complementarity of weaving and carpentry, textiles and woodwork – finding etymological support for this belief in the cluster of words derived from the Greek *tekton*, allegedly related to the Sanskrit *taksan* referring to carpentry and the use of the axe (*tasha*). Ultimately, as the philologist Adolf Heinrich Borbein observes, the tectonic would become 'the art of joinings'.[4]

What it actually means to join things is a theme I reserve for the next chapter. However, with regard to bodily movement and gesture, our second register of knotting, the critical aspect is that the knot is *tied*. Tying always involves the formation of a loop, through which the tip of the line is then threaded and tightened. The choreography of looping is of particular interest because of the way in which an arching or circular gesture that gathers in or retrieves the material simultaneously creates an opening through which it can be further propelled, in a rhythmic alternation that bears comparison with the beating heart and heaving lungs of the living body. Topologically, the human heart (in Latin, *cor*) is a tube in the form of a knot, as is the French horn (also *cor*). In the body, the heart-knot alternately gathers the life-sustaining, arterial flows of blood and propels them onwards, just as the inhaling lungs gather the air into a vortex through which we then breathe out. And the breath of the body corresponds in turn to the sonorous, melodic line which issues from the knotted tubes of the horn when it is blown or from the vocal cords when people sing. Several voices, layered in correspondence, make up a chorus or a choir. *Cor*, *cord*, *chord*, *chorus* and *choir* all share the same root meaning of the knot. We are back with the roundel of Matisse.

How, then, does knotting register in sensory perception? One answer, perhaps, is as music. For what is music, if not the synergy of gestures of performance, currents of air and vibrating cords, and correspondent sounds

that touch the heartstrings of emotion? As I shall show in a later chapter, sounds and feelings – considered as qualities of experience – do not go from point to point but loop and twist around one another, as much as do the lines of choral polyphony or of a roundel dance. And if the forms of music and dance are knots of sound and feeling, why should we not regard architectural forms as knots of light? The builders of medieval cathedrals, who crowned their saints with halos while sounding their praises with the ringing of bells and garlanding their images, would certainly have understood this. For them, the halo, the ring and the wreath, respectively seen, heard and felt, were of a kind. They would have understood, too, that untying as well as tying registers in perception, nowhere more than in a storm with its thunder, lighting and wind, but also in the dwelling where the fire of the hearth binds the circulations of affectivity and nourishment, and, in a reverse movement of unbinding, releases them to the atmosphere as smoke, dispersed in the wind.[5] There has long been a close association, especially in seafaring communities, between knots and the wind. To untie a knot is to let loose the wind. One knot releases a light breeze, the second a moderate one. Untie the third, however, and all hell will break loose.[6] Tying and untying, then, lie at the core of the relation between the hearth and the wind, or, more broadly, between society and cosmos.

Finally, in the field of human relationships, knotting is symptomatic of the binding of lives in relations of kinship and affinity. The children of a union, 'knit together', as the biblical psalm has it, in the same 'womb', are like lines that eventually go their separate ways, only to tie themselves with lines extending from other knots, thus spreading the mesh of kinship far and wide.[7] These life-historical lines are, by the same token, lines of feeling or sentiment, whose rooting for one another rests upon what social anthropologist Meyer Fortes called 'the axiom of amity'. For Fortes, 'kinship is equated with amity, and non-kinship with its negation'.[8] Perhaps the tragedy of kinship is that its lines, bound at source, can only grow apart; its promise lies in the discovery of other lines to bind with, and the new life that issues from them. Togetherness breeds otherness, amity alienation, and vice versa. But the binding can also be political. It lies, as philosopher Hannah Arendt has it, in the reality of 'men's acting and speaking *to* one another', in that in-between wherein they find their *inter-ests*, and in which is woven 'the "web" of human relationships'.[9] The precise nature of a between-ness that is in the midst of things – that is, the between-ness of the knot rather than that of a liminal halfway house *en route* from means to ends – is a matter to which I return in the penultimate chapter of this book. Our more immediate concern is with the question of how, in tying the knot, lives or materials might be 'joined'.

Notes

1 See Hirata (2011: 15–17).
2 For this idea, I am indebted to anthropologist Karin Barber (2007).

3 See, for example, Herzfeld and Lestel (2005).
4 Cited in Frampton (1995: 4).
5 On this, see Ingold (2013b: 28).
6 See Ingold (2007b: S36–7, fn. 8).
7 Psalms 139, verse 13.
8 Fortes (1969: 110, also 219–49).
9 Arendt (1958: 182–3, emphasis in original).

5 Of knots and joints

Carpentry is otherwise known as joinery, the carpenter as a joiner. But what is a join, and what does it mean to join things? Here I want to argue that the dominant metaphors of block, chain and container, which I introduced earlier, have led to a fateful equation of joining with *articulation*. They lead us to imagine a world comprised of rigid elements (or blocks) that are linked externally (or en*chained*) side-to-side or end-to-end. Whatever is not hard or solid is confined to (or *contained* within) the interior of these elements. Interiorities cannot therefore mix or mingle. They can only fuse in the constitution of compound elements, in which any trace of joining immediately disappears. This was exactly Durkheim's argument concerning the constitution of society. Individuals may articulate with one another through external contact, as they do in the marketplace, but society is seamless.

Surely, however, articulation is not the only way to join things. Another way is to tie them together in some kind of knot. Here, the things to be joined must be linear and flexible. They meet not face-to-face, on the outside, but in the very interiority of the knot. And they are joined neither end-to-end nor side-by-side but in the middle. Knots are always in the midst of things, while their ends are on the loose, rooting for other lines to tangle with. Tying and articulation, then, look like two ways of joining that rest on precisely opposite principles. And the carpenter? What principle does he adopt? You would think, at first glance, that he must opt for articulation. After all, whoever heard of knotting beams or planks of wood? Of course it is possible to sew together adjacent planks by means of flexible withies or roots, as is attested by some prehistoric techniques of boatbuilding.[1] But you cannot knot one plank with another. This, surely, is where the craft of carpentry differs from that of basketry. The basket-maker works with flexible saplings rather than solid wood, and weaves the strands in and out so that they always overshoot their points of contact. But the carpenter, for example in building a frame for a house, joins his solid timbers end-to-end, end-to-side or side-to-side. With the basket, the countervailing tensile and compressive forces of bent withies lend rigidity to the whole structure; with the house-frame, the principal pressure-points are in the joints themselves.

Given these evident differences between carpentry and basketry, how could one possibly argue that the carpenter's joint is a species of knot? Yet this was the argument proposed by Gottfried Semper in his treatise of 1851, *The Four Elements of Architecture*. We have already seen how Semper viewed carpentry and textiles as complementary practices within the overall field of the tectonic arts, with the knot as the most elementary operation common to both. Fascinated by etymology, Semper found support for his ideas in the affinity of the German words for knot (*Knoten*) and joint (*Naht*), both of which appear to share the Indo-European root *noc* – whence *nexus* and *necessity*.[2] What is at stake here – as Semper was well aware – is more than just a question of technique. Rather, it touches on the more fundamental question of what it means to make things. The carpenter and the weaver are equally driven by the imperative of making, and for both, there can be no making without joining. However, the necessity of the knot is not a brittle one that allows for freedom only in the spaces left between, but a supple necessity that admits to movement as both its condition and its consequence. That is to say, it is not the necessity of predetermination, whose antonym is chance, but a necessity born out of commitment and attention to materials and to the ways they want to go. Its antonym is negligence.

In this regard, the carpenter's joint is absolutely *not* an articulation. For in it, as in the knot, materials offer themselves to one another on the inside, yet without losing their identities in the composite whole. In cutting a mortise and tenon, for example, one piece is made ready to receive the other, such that their subsequent interpenetration, hidden away in the interiority of the joint, is an enduring condition. Indeed, Semper's argument regarding the joint, in the field of material relations, runs parallel to what Mauss had to say about the gift, in the field of social relations. Just as the hand I offer you in greeting remains fully mine, so the tenon cut in one piece, and that is offered to the mortise cut in the other, remains fully with the first even as it is received into the second. So it is too with the constituent lines of the knot. As with the latter, we might say that the pieces of timber are joined, but not joined *up* (Figure 5.1). For the adverb 'up' connotes a finality that is belied by the ongoing life of the thing. It is no more joined up than used up. On the contrary, it carries on. And as it carries on, its joints or knots establish relations not of articulation but of *sympathy*. Like lines of polyphonic music, whose harmony lies in their alternating tension and resolution, the parts possess an inner feel for one another and are not simply linked by connections of exteriority.

It is precisely because these parts are bound in sympathy – through interstitial differentiation rather than external accretion – that I refrain from using the term 'assemblage' for the whole comprised of them. This whole is a correspondence, not an assemblage, the elements of which are joined not 'up' but 'with'. Whereas the agglutinative accretions of the assemblage are 'and … and … and', the differential sympathies of the correspondence are 'with … with … with'. As the design theorist Lars Spuybroek explains,

Figure 5.1 Joining timber.
This photo, taken in British Columbia, Canada, illustrates one way of joining beams at the corner in traditional log-cabin construction. © Alex Fairweather / Alamy.

sympathy is a 'living with' rather than a 'looking at', a form of feeling-knowing that operates in the interstices of things, in their interiority. It is, Spuybroek writes, 'what things feel when they shape each other'.[3] In both carpentry and textiles, the form of a thing does not stand over it or lie behind it but emerges from this mutual shaping, within a gathering of forces, both tensile and frictional, established through the engagement of the practitioner with materials that have their own inclinations and vitality. Having established that both knot-tying and joining are instances not of articulation but of sympathetic union, respectively bringing together flexible and rigid lines, the stage is set for recognising all sorts of intermediate cases in which knotting and joining, and rigid and flexible lines, may be combined. Think of the ship's masts and its rigging, the goal-posts and the net of a football pitch, the fisherman's rod and line, the archer's bow and bowstring, the weaver's loom and warp-threads or, more gruesomely, the hangman's gallows and noose. Perhaps the most outstanding example, however, is the human body, a complex of knots and joints par excellence, whose members must be in sympathy if the person is to remain alive and well.

I have already observed that the heart is a knot. The bones, however, meet at the joints. The parallel between well-joined wood and stone in the construction of temples and well-joined limbs in the body of the warrior – the one conferring resistance against violent weather, the other resistance against the violence of enemies – was a recurrent theme in Homeric poetry. The same verb *ararisko*, 'to join', commonly used for both, was one of a host of words based on the Indo-European root **ar*, from which are also derived not only the warrior's 'arms' and the builder's or maker's 'arts' (in Latin, *armus* and *ars*), but also 'article' and, of course, 'articulate'. As we have seen, the suite of words derived from that for the joiner's art, *tekton* – including the Latin *texere*, 'to weave' – originally converged upon much the same meaning.[4] But for the poets and philosophers of classical Greece and Rome, the articulation of joints in the well-tempered body had yet to take on the anatomical significance familiar to us today. It was associated more with ideals of beauty, poise and fortitude. Only much later did the joint come to mark a point of attachment and separation between discrete body parts, whether that body be of the animal on a butcher's slab or of the human on a dissecting table. And only in this anatomical apprehension, as a corpse, did the body come to figure as a totality assembled from components. This is an apprehension, however, that is divorced from life. For the living being, the joint – which, like the rest of the skeleton, was never assembled but has rather grown with the person to whom it belongs – is not so much an exterior connection of rigid elements as an interior condition of correspondent movement, bonded on the inside by means of a linear mesh of ligaments (Figure 5.2).

Before leaving this matter of the join, it is necessary to add one further remark, which concerns its opposite: separation. An articulated structure, comprised of enchained elements, can readily be taken apart, as happens, for example, with wagons in a railway shunting yard. As the wagons are uncoupled, so the freight train is *disarticulated*. Likewise, bones that have been assembled in the forensic laboratory can subsequently be disassembled. But from all I have argued up to now, it should be clear that the separation of elements that have been joined in sympathy cannot be understood in these terms. For it is not just a matter of cutting an external connection: something has to give from the inside. This bears on the question of memory.

Comparing the chain and the knot, I have already noted that the chain has no memory. When you release the tension in a chain and let it fall to the ground, it comes to rest in a disordered heap. But if you untie a knotted rope, however much you try to straighten it, the rope will retain kinks and bends and will want, given the chance, to curl up into similar conformations as before. The memory is suffused into the very material of the rope, in the torsions and flexions of its constituent fibres. So it is, too, with timbers that have been joined. They may be pulled apart, and used in other structures, but will nevertheless always retain a memory of their former association. When we say that, in separating, something has to give from the inside, we

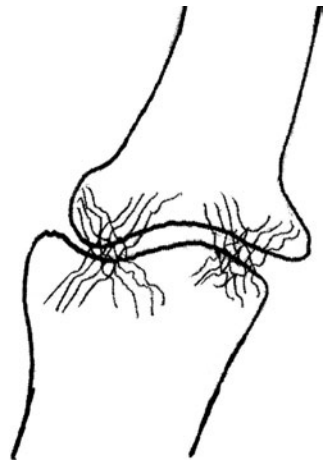

Figure 5.2 Bones and ligaments.
In this drawing, from his *Beiträge zur bildnerischen Formlehre* (1921/2), the painter Paul Klee shows how the bones of a joint are bonded with ligaments. Thanks to their embedding in the linear matrix, the blob-like osseous elements can form a flexible and sympathetic union. Zentrum Paul Klee, Bern, reproduced by permission.

mean that it is necessary to forget. An articulated structure, since it remembers nothing, has nothing to forget. But the knot remembers everything, and has everything to forget. Untying the knot, therefore, is not a disarticulation. It does not break things into pieces. It is rather a *casting off*, whence lines that once were bound together go their different ways. Thus it is with siblings in the family: having grown up together, their leaving home is not a disassembly but a dispersal, a shaking out of those lines of interstitial differentiation otherwise known as relations of kinship. And in the knot of the navel, every one of us retains a memory of that originary moment when we first came into the world, only to be cast off with a cut.

Notes

1 Apart from willow and roots or bast, some ancient boats were sewn with yew. See McGrail (1987: 133–5).
2 Here I have drawn on the authoritative review of Semper's work by Kenneth Frampton (1995: 86).
3 See Spuybroek (2011: 9).
4 On this parallel, see Giannisi (2012), and for its etymological correlates, see Nagy (1996).

6 Wall

The four fundamental elements of architecture, according to Semper, were the earthwork, the hearth, the framework and the enclosing membrane. To each of these he assigned a particular craft: masonry for the earthwork; ceramics for the hearth; carpentry for the framework; and textiles for the membrane. His overriding concern, however, was with the relation between the base of the building – the earthwork – and its frame, and thus between masonry and carpentry. In more technical terms, this is to draw a distinction between *stereotomics* and *tectonics*.[1] We have already encountered tectonics, from Greek *tekton*, a term that originally signified carpentry but subsequently expanded in its range of reference to embrace the 'art of joinings' in general. Stereotomics also has its roots in classical Greece, from *stereo* (solid) and *tomia* (to cut): it is the art of cutting solids into elements that fit snugly together when assembled into a structure like a tower or a vault. Such heavyweight blocks are held in place simply by the gravitational force bearing down on those beneath and ultimately on foundations. In tectonics, by contrast, linear constituents are fitted into a frame that is held together by joints or bindings. One might think, for example, of the frame of a boat that has still to be covered with planks or skins, or the beams of a roof that has still to be thatched, slated or tiled. For Semper in his day, and now for us, the key question is about the balance – or the relative priority – of stereotomics and tectonics in the making or building of things.

In tectonics, as we saw in the foregoing chapter, the knot or the joint is the root principle of construction. In stereotomics it is the heap. And whereas the heap gravitates towards the earth, a structure that is knotted or joined is typically suspended or elevated in the air. The architectural historian Kenneth Frampton has highlighted how these 'dialogically opposed modes of construction' point respectively to 'the affinity of the frame for the immateriality of the sky and the propensity of mass form not only to gravitate toward the earth but also to dissolve into its substance'.[2] The sky and what goes on in it will be our theme in the second part of this book. Midway between earth and sky, however, lies the ground, and at this point I want to return to a question I raised a short while ago, but have yet to answer. What is the relation between thinking-through-knotting and our understanding of the ground? How might this understanding be altered, were

we to replace the architecture of the building block and the container, in which the interior is remodelled as a simulacrum of the exterior space, with the architecture of an earth-sky world that would re-establish the house as a knot in the fabric of the ground, where the stereotomic foundations meet the tectonic roof? To make a start in answering these questions, I shall focus on a structure of near universal distribution, but one which in some ways confounds the distinction between stereotomics and tectonics: namely the *wall*. Is the wall assembled or woven? Is it heaped or joined? Is it of the earth or of the air?

We tend to think of walls as made of such solid materials as mud, brick or stone, and of wall-builders as masons or bricklayers. Ancient walls, having collapsed back into the earth from which their materials were once drawn, are often scarcely visible, and it may take a trained archaeological eye to detect their presence in the landscape. But perhaps we do not see the walls of old because they were not originally made from such solid and durable stuff at all, but rather from relatively lightweight and perishable organic materials which would in time have literally melted into air, through exposure to the atmosphere and its effects. That indeed would have been Semper's view, for he was convinced that the first walls were plaited from wicker, and used as pens to keep domestic animals in, or as fences around fields and gardens to keep wild animals out. Following his thesis that both building and textiles shared a common origin in the plaiting of sticks and branches, he concluded that the first 'wall-fitters' (*Wandbereiter*) were weavers of mats and carpets, noting in his support that the German word for wall, *Wand*, shares the same root as the word for dress or clothing, *Gewand*.[3] Admittedly, the earthwork that comprised the foundations of a building could rise up into the fabric of the building itself, to form solid walls or fortifications of rock and stone. But Semper was careful to distinguish between the massiveness of the solid wall, indicated by the word *Mauer*, and the light, screen-like enclosure signified by *Wand*. In relation to the primary function of the *Wand*-wall, to enclose a space, Semper believed that the *Mauer*-wall played a purely auxiliary role, to provide protection or support. The essence of wall-building, then, lay in the joining or knotting of linear elements of the frame, and the weaving of the material that covered it. Even with the addition of stone walls and fortifications, wall-building for Semper never lost its character as a textilic art.

Semper's treatise on *The Four Elements of Architecture*, on first publication, was not well received. Leading figures in the histories of art and architecture lined up to ridicule it. Indeed, the idea that building could be a practice of weaving akin to basketry seemed as strange to Semper's contemporaries, in the middle of the nineteenth century, as it does to many readers today. It takes a bold intellect to question it. One such was the eccentric philosopher of design Vilém Flusser. Writing in the final decades of the twentieth century, Flusser reminds us that for any structure that would afford some measure of protection from the elements, such as a tent, the first condition is not that it

should withstand the force of gravity but that it should not be swept away by the wind. This leads him to compare the wall of the tent with the sail of a ship, or even the wing of a glider, the purpose of which is not so much to resist or break the wind as to capture it into its folds, or to deflect or channel it, in a way that serves the interests of human dwelling.[4] What if we were to follow Flusser and commence our understanding of walls by thinking about, and with, the wind: by flying kites rather than building with blocks?

Rather like Semper before him, Flusser distinguishes two kinds of wall (corresponding to *Wand* and *Mauer*): the *screen* wall, generally of woven fabric, and the *solid* wall, hewn from rock or built up from heavy components. Without going into the question of relative antecedence, this for Flusser is the difference between the tent and the house. The house is a geostatic assemblage of which the elements are held firm by the sheer weight of blocks stacked atop one another. The force of gravity allows the house to stand, but equally can bring it tumbling down. Within the cave-like enclosure formed by the four solid walls of the house, Flusser argues, things are possessed – 'property is defined by walls'. The tent, by contrast, is an aerodynamic structure that would likely lift off, were it not pegged, fastened or anchored to the ground. Its fabric screens are wind walls. As a calming of the wind, a locus of rest in a turbulent medium, the tent is like a nest in a tree: a knot where people, and the experiences and sentiments they bring with them, come together, interweave and disperse in a way that precisely parallels the treatment of fibres in fabricating the material from which the tent's screen walls are made. Indeed, the very word 'screen' suggests, to Flusser, 'a piece of cloth that is open to experiences (open to the wind, open to the spirit) and that stores this experience'.[5] Notice how different this is, however, from the screen or 'white wall' of cinematic projection, which, in the ideal case, is perfectly featureless and homogeneous in texture, and utterly insensitive to the images that play upon its surface. This is a contrast to which I shall return in Chapter 20.

As house is to tent, then, and as the containment of life's possessions *over and against* the world is to the knotting or binding of life-paths *in* the world, so is the closure of the solid rock wall to the openness of the windblown screen wall. 'The screen wall blowing in the wind', Flusser writes, 'assembles experience, processes it and disseminates it, and it is to be thanked for the fact that the tent is a creative nest.'[6] Of course, like all sweeping generalisations, this is far too crude, and any attempt to classify built forms in these terms would immediately collapse under the weight of exceptions. There are tents that incorporate rock walls, and houses whose walls are screens. One has only to think, for example, of the screen walls of the Japanese house. Paper-thin and semi-translucent, these walls defy any opposition between inside and outside, and cast the life of inhabitants as a complex interplay of light and shadow. The traditional Japanese house, as Frampton has observed, belonged to a world that was woven throughout, from the knotted grasses and rice straw ropes of domestic shrines to *tatami* floor-mats

and bamboo walls.[7] Indeed, in its commitment to the tectonic, Japanese building culture stands in stark contrast to that of the western monumental tradition with its emphasis on stereotomic mass.

The general contrast between the geostatics of the rock wall and the aerodynamics of the wind wall remains, however. Independently of Flusser, but drawing directly on the pioneering work of Semper, Frampton takes us back to the foundational distinction between stereotomics and tectonics, and to the question of the balance between them. Traditions of vernacular building around the world reveal wide variations in this balance, depending on climate, custom and available material, from buildings – such as the Japanese house – in which the earthwork is reduced to point foundations while walls as well as roofs are woven, to traditional urban dwellings in North Africa where stone or mud brick walls arch over to become roof vaults of the same material, and in which brushwork or basketwork serves only as reinforcement. In the former case the stereotomic component, and in the latter case the tectonic component, is reduced to a minimum. In some instances, materials are transposed from the one mode of construction to the other, such as where stone is cut to resemble the form of a timber frame, as in the classical Greek temple.[8]

What, then, should we make of an ordinary brick wall? The bricklayer, to be sure, is a master of the block, piling row upon row in such a way that they press evenly and in equilibrium on those beneath and ultimately on the foundations. But he is also a master of the line, whose principal instruments, besides the trowel, are string and the pendulum bob. A stereotomic perspective on the wall would lead us to perceive neatly stacked bricks, and to regard the mortar as merely filling the gaps between them. But a tectonic perspective would reveal the wall to be a complex but continuous bonded fabric of mortar, in which it is the bricks that serve as gap-fillers. So is the wall a well-balanced heap of bricks or a finely woven fabric? Is it stacked or bonded? Clearly it is both. In the wall and its construction, the stereotomic and tectonic arts meet and merge. But then, what happens to the ground? One can point to the wall's many functions, of spatial enclosure, protection and defence. But what becomes of the ground amidst the thickness of the wall? Is it still present, as the stereotomic model suggests, serving as a foundation – albeit concealed – upon which the entire structure finds support? Or does the wall establish a kind of fold in the ground, between the outward-facing surfaces of which the materials of the earth well up and bond into the fabric of the brickwork as if through a fissure? In what follows, I shall show that a tectonic model, based on the principle of the knot, leads inexorably to the latter conclusion.

Notes

1 On this distinction, see Frampton (1995: 5).
2 See Frampton (1995: 7).

3 See Semper (1989: 103–4).
4 See Flusser (1999: 56).
5 Flusser (1999: 56–7).
6 Flusser (1999: 57)
7 Frampton (1995: 14–16).
8 Frampton (1995: 6–7).

7 The mountain and the skyscraper

What is the difference between a mountain and a skyscraper? To build a skyscraper, you must first establish a solid foundation, an infrastructure, upon which the entire edifice will rest. Then you will need a crane. The crane is a machine in the original sense of the term: an instrument for lifting heavy weights. And it embodies a simple but very basic principle, namely, that in order to build a structure *up*, it is necessary to drop the components *down*, from on top. Thus the crane has to be higher than the maximum height of the building. In any rapidly growing, urban metropolis, the forest of cranes is the first sight that greets the visitor. Each crane is employed in picking up components from the ground of the building site, lifting them to a height above the level to which the construction has reached, and dropping them down again so that they can be placed atop the components that are already in place. These components are of course the building blocks of the structure, and they are generally fashioned elsewhere and brought to the site ready-made. When it is finished, the skyscraper stands as the concrete embodiment, reinforced with steel and clad in glass, of the abstract geometric principle of pure verticality. And the ground of the site – cleared of debris, and from which everything of structural significance has now been lifted off – is by the same token levelled to conform as closely as possible to the ideal of the purely horizontal.

In the contemporary world, the 'skyscraper model' – if we may call it that – has come to dominate the way in which mountains, particularly of a more iconic or spectacular kind, have come to figure in the popular imagination. We tend to think that the mountain is something like a skyscraper, which has been miraculously forged by nature without the assistance of cranes. Indeed, in many ways the mountain has become an extension of the metropolis. Climbing the highest mountains, like scaling the outsides of skyscrapers, is considered a job for specialists, stuntsmen and cranks; often the same people do both, using similar gear. For them, mountainsides are glass windows, and their precipitous faces 'walls'. What matters is their verticality, quantified as height above sea-level. That is why mountains are defined by their summits, and not by the great heaving mass of rock of

which the summit just happens to be the highest point. And it is why mountaineers have to reach the summits in order to claim to have climbed them. Ordinary residents, however, take the lift, or its montane equivalent, the funicular or cable car. They are pulled up. At the top, they can enjoy the view, or perhaps an expensive restaurant meal, in a glass-enclosed panopticon that is completely insulated from the exterior. Such mountaintop facilities will have been built on the same principle as the skyscraper, by dropping materials from on top. However, since no crane yet constructed is big enough to overtop an alp, the lifting and dropping will have been done by means of a helicopter.

Real mountains, of course, are not built like skyscrapers, however much we might like to pretend that they are. They are not constructed from blocks but emerge from the tectonic movements of the earth's crust. Their very forms, though they may seem eternal relative to the span of human life, are but evidence of work in progress – work that was never started, and will never be finished. Every mountain range, in effect, is a perpetual building site. The geological and meteorological forces at work in mountain-building are many and various, and this is not the place to review them. The general point I want to make is that every mountain is a fold in the ground, not a structure that is placed upon it. Within the fold, the material of the earth is thrust upwards, perhaps – in the case of volcanic activity – even to erupt. For want of a better term, I shall call this the 'extrusion model' (Figure 7.1). Whereas with the skyscraper model, components are dropped down from above upon a base, in the extrusion model they surge up into the structure from beneath. Here, the ground is raised up by the swelling of the earth, much as the skin is raised by a boil. Thus ground is ground, however steep or precipitous, and the climber remains in contact with it, regardless of whether he is walking, clambering or abseiling, whether on the slopes or at the summit. Indeed, if we think of the mountain in terms of the topology of the ground rather than pure verticality, then the summit loses much of its allure, for it is no more than a patch of ground that, incidentally, is higher than those around it.

Nowadays, many hilltops are being put to other uses, as sites for the generation of electrical power. Among both supporters and detractors of these developments, there is a widespread feeling that the ubiquitous wind-turbines strike an incongruous presence in the landscape. Could this be because they bring to a head the incompatibility between the skyscraper and extrusion models of building? To support a turbine, it is necessary to prepare a concrete foundation with a level surface that is sunk deep into the ground. The turbine is then mounted upon the surface. But the ground all around it is not an infrastructure; it is a fold. Observing the turbine, it is as though we have to entertain two quite different conceptions of the ground, and indeed of the hill, simultaneously. In order to obviate the contradiction, we would have either to think of the hill, too, as an edifice mounted upon the surface of the earth (and it is possibly because we think of iconic mountains in this

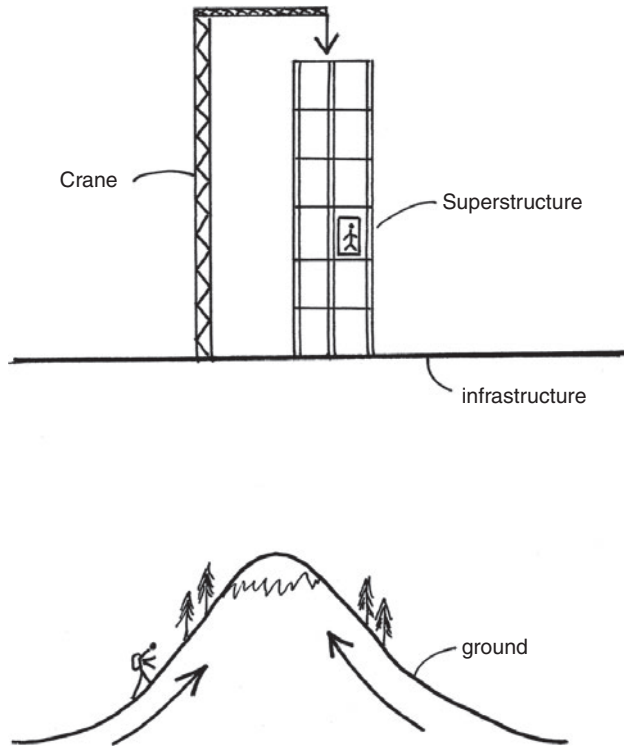

Figure 7.1 The skyscraper model (above) and the extrusion model (below).

way that we do not find the same incongruity in the construction of a restaurant and viewing facility atop an alp), or to think of turbines as having somehow grown from the hill itself, like a forest of tall trees, thus belying the manner of their construction.

How can it be, then, that the hill or the mountain rises from the ground, yet *is* ground? We ended the last chapter with the same dilemma in regard, however, to a human-built structure, the wall. How come that the wall is both raised upon the ground and yet partakes of it? In his *Difference and Repetition*, we find the philosopher Gilles Deleuze grappling with the same question. His point is that in becoming different, one thing may seek to distinguish itself from another without the latter's distinguishing itself from the former. Thus a streak of lightning shows up against the night sky, but the sky does not show up against the lightning. The distinction is unilateral. And this is how it is too, suggests Deleuze, with the ground and the line. The line, he writes, distinguishes itself from the ground 'without the ground distinguishing itself from the line'.[1] It is like lifting up a sheet to form a crease. We register the line of the crease, we see it as something that has an existence of its own, and yet the crease is still *in* the sheet. It is not as though the sheet had parted company with the crease and sunk back into flat homogeneity,

leaving the crease-line, as it were, high and dry. What the crease is to the sheet, the fold – whether in the form of mountain or of wall – is to the ground.

But if this extrusion model applies as well to the wall as to the mountain, then could it also be applied to the skyscraper? Let us listen in to an imaginary conversation between the skyscraper and the ground. Says the skyscraper: 'Look, I am finished. See how high I stand, straight up in the air. You, ground, are infrastructure; I am superstructure. I am over and above you; you are beneath me. You may be my rock of support, but without me, you would be but a desert, devoid of any form or feature that you could call your own.' To which the ground responds: 'You may think you are finished, but indeed, you are much mistaken. For whence do you think the materials have come from which you are made – the concrete, the steel, the glass? And do you think they will last forever in the forms in which they are presently cast? These materials have come from the earth, and it is to the earth that they will eventually return. I yield them to you, but only on sufferance. For they remain of my flesh, my substance. Thus have I risen into your very fabric.' The ground, here, speaks with the voice of the tectonic, and in the language of the line.

Perhaps the last word, however, should go to the wall, a fold in the skin of the land that has so absorbed the earth into its substance that it is wracked by the same tectonic forces, causing it to strain and buckle at the joints where its members, in their give and take, offer themselves to one another. The strength of the dry-stone wall, as Lars Spuybroek observes, lies in its *settlement*[2] – a settlement that is reached not only in the weighing of stone on stone, in their contact or 'touching together', but in the stones' collective settlement with the very ground from which they were originally wrested. This settlement, moreover, is not once and for all but has continually to be renegotiated. The ground heaves and the wall answers with its heft: it is a process of correspondence. The poet Norman Nicholson, writing of his native English Lake District, a region of fells and mountains straddled by centuries-old stone walls raised for the purposes of animal husbandry, writes thus of them:

> A wall walks slowly
> At each give of the ground,
> Each creak of the rock's ribs,
> It puts its foot gingerly,
> Arches its hog-holes,
> Lets cobble and knee-joint
> Settle and grip.
> As the slipping fellside
> Erodes and drifts,
> The wall shifts with it,
> It is always on the move.[3]

Notes

1 See Deleuze (1994: 29).
2 Spuybroek (2011: 153–5).
3 These lines make up the third stanza of Norman Nicholson's poem 'Wall', in Nicholson (1981: 15–16). Reproduced courtesy of the author and publisher (Faber & Faber).

8 Ground

Human beings are terrestrial creatures; they live on the ground. That much appears at first glance to be obvious. But what *is* the ground? As a first approximation, we might suppose that it is a portion of the surface of the earth that is evident to the senses of an upright body. 'To my senses', wrote the philosopher Immanuel Kant, the earth appears as 'a flat surface, with a circular horizon.' This surface, for Kant, lies at the very foundation of human experience: it is 'the stage on which the play of our skills proceeds [and] the ground on which our knowledge is acquired and applied'.[1] Everything that exists and that might form the object of our perception is placed upon this surface, rather as properties and scenery might be set upon the stage of a theatre. Beneath the surface lies the domain of formless matter, the physical stuff of the world. And above it lies the domain of immaterial form, of pure ideas or concepts, which the mind is said to bring to the evidence of the senses in order to organise the piecemeal data of experience into a systematic knowledge of the world as a whole – knowledge which Kant imagined to be arrayed as if on the surface of a sphere, at once continuous and finite in extent. With his feet firmly planted on the level ground and his mind soaring in the sphere of reason, the Kantian subject was above all a seeker after knowledge.

It was in the political economy of Karl Marx that the subject was subsequently put to work, through a process of labour that saw the earth turned into an instrument of his purpose. The earth, Marx declared, is 'the most general instrument of labour … since it provides the worker with the platform for all his operations, and supplies a field of employment for his activity'.[2] More simply put, we need the ground to stand on: an apparent statement of the obvious which, like most such statements, hides a multitude of complications. Take away the ground, and the earth beneath, and would our worker be left like a man who has lost his tools? Or would he be lost to all existence? There can be earth without human beings, but can there be humans without earth? And if earth is necessary for human existence, then could we not equally say that human beings are the earth's most general instrument, since they provide the means by which its bounty is recovered? Do people produce upon the earth, or do they assist, like midwives at a

birth, in harvesting what the earth has itself produced?[3] Passing over these complications for now, let it suffice to note that what for Kant had been a stage became, for Marx, the equivalent of a production platform, not merely furnished but materially transformed through human activity. Yet the ground still appears as a *substratum* for such activity, an interface between the mental and the material where the sheer physicality of the world comes hard up against the creativity of human endeavour.

More than a century later, the psychologist James Gibson returned to the significance of the ground in his pioneering work on the ecology of visual perception. He begins, again, with what sounds like a truism: 'The *ground* refers, of course, to the surface of the earth.'[4] There is much in common between Gibson's understanding of this surface and what both Marx and Kant had to say about it. For Marx's idea of the instrumental or use-value of the earth, Gibson substitutes the notion of *affordance*. In Gibson's theory, the affordance of a thing is what it lets an animal do (or conversely prevents it from doing) in the context of its current activity, and it is before all else what the animal perceives. Thus the ground surface is a substratum that affords support for a terrestrial biped or quadruped. It is 'stand-on-able, … walk-on-able and run-over-able'.[5] In the limiting case of what Gibson calls the 'open environment', void of content, the ground would be realized as a perfectly level plain, receding without interruption to the great circle of the horizon. That, as we have seen, was Kant's view as well.

There is one key difference, however. For in Gibson's thinking the ground has none of the metaphysical significance that it had for Kant or even Marx. It does not mark the boundary between the mental and the material or between conceptual reason and sensory experience; nor does it separate the consciousness of the labourer from the soil on which he works. It does not, in short, envelop the material world but rather comprises an interface, *within a world of materials*, between the relatively solid *substances* of the earth and the relatively volatile *medium* of the air. When Marx declared, in the *Communist Manifesto* of 1848, that 'all that is solid melts into air', he was referring metaphorically to the evaporation, in bourgeois society, of the 'fixed, fast-frozen relations' of pre-capitalist modes of production, and not to any process of nature.[6] For Gibson, by contrast, solidity is what distinguishes the substances of the earth from the gaseous medium above, a distinction that is revealed to perception as the ground surface. If the solid earth were to melt into air, then the ground would simply disappear.

With the earth below and the sky above, and supported on the ground, the Gibsonian perceiver is placed in the midst of the phenomenal world rather than banished to its exterior surface. He is, in that sense, an inhabitant. He has air to breathe, and a platform to stand on. Yet an open environment, comprising the ground surface alone, would not in itself be habitable. Arguing this point, Gibson compares the ground to the floor of a room. In an empty, unfurnished room one could stand, walk or even run on the floor, but do little else. In any inhabited house, however, the rooms are

cluttered with furniture, and it is this clutter that makes possible all the other, everyday activities that are carried on there (as well as hindering some activities like running about). Likewise, Gibson reasoned, a plain devoid of features, though it might afford standing and walking, would in all other respects be a scene of utter desolation. It could harbour no life, and could not therefore serve as an environment for any animate being. In Gibson's words, 'the *furniture* of the earth, like the furnishings of a room, is what makes it livable'.[7] Like the room, the earth is cluttered with all manner of things which afford the diverse activities of its innumerable inhabitants. There are objects, which may be attached or detached, enclosures such as caves and burrows, convexities such as hills, concavities such as hollows, and apertures such as cracks and openings. Indeed, it seems that any ordinary environment would be so cluttered up that its inhabitants would be unlikely ever to come directly into contact with the ground at all.

This result is deeply paradoxical. On the one hand, Gibson insists that the ground is 'the literal *basis* of the terrestrial environment', 'the underlying surface of support' and even 'the reference surface for all other surfaces'.[8] In that sense it should be fundamentally *there*, before all else. And yet, on the other hand, it is a surface that can only be arrived at through a process of abstraction and reconstruction: by excising every variation or particular from the environment of which it is a part, remodelling it as a piece of furniture or scenery, and then reconstructing the scene by imagining each piece placed on a pre-prepared and absolutely featureless floor. This, of course, exactly mirrors the logic of what we have called the skyscraper model, which produces pure, isotropic horizontality by treating even mountains as superstructures erected on a base. Difference, in this model, becomes bilateral: as features distinguish themselves from their ground, the ground distinguishes itself from its features: sheets from creases; foundations from walls; infrastructure from superstructure; land from mountains. All difference is thus detached, leaving its diverse fragments – what Gibson calls 'environmental objects' – scattered upon a barren ground like severed limbs on a battlefield. The barren and the fragments correspond to two aspects of indifference: to what Deleuze calls, respectively, 'black nothingness' and 'white nothingness'.[9] Fragments are indifferent to where they lie upon the barren: they could be anywhere. Conversely, the barren is indifferent to what rests upon it. Real difference, Deleuze argues, is in-between.

Here is another example. As a child I built a model railway, of which I was immensely proud. The most important part of the layout, however, was not the line but the landscape of hills and valleys through which it ran, made out of wire-netting, papier mâché and plaster, all of which rested on a plane sheet of softwood mounted on a wooden frame and legs. This sheet, known as the baseboard, was indeed an underlying surface of support and the very basis of my model. But it was completely hidden from view by the 'clutter' I had constructed on it. Had the miniature people and animals that I had placed in my landscape been capable of movement, they would not have

been walking across the ground of the baseboard but clambering over the scenery! It would have made no difference whether they were up on a hilltop or down in a valley, for both were part of the clutter. The mountaineer, obsessed with summits, treats the world in much the same way, as its own model, but this time at full-scale, calculating altitudes in relation to a base notionally fixed at sea-level. Thus all ground is above-ground, since the ground itself – the solid base on which all else is supposed to rest – turns out to be none other than the fluid ocean. Even this sea is an artifice, however, since real seas, as every mariner knows, heave and swell, their levels rising and falling with the tides.

At least we now know what the ground is not. It is not a stage, it is not a platform, it is not a floor, it is not a baseboard, and it is not the sea. What, then, *is* it?

Notes

1 Of these two quoted passages, the first comes from Kant's *Critique of Pure Reason* (1933: 606), the second from the introduction to his *Physical Geography* (1970: 257).
2 This remark comes from the first volume of *Capital* (Marx 1930: 173).
3 According to the doctrines of Physiocracy, advocated by François Quesnay and Anne-Robert-Jacques Turgot in the eighteenth century, the role of the farmer who works the land is to receive its substantive yield; while that of the artisan is to deliver the formal designs of humanity. It could be argued that Marx turned Physiocracy on its head by treating agricultural production as a species of manufacture. Anthropologists Stephen Gudeman and Alberto Rivera find echoes of the Physiocratic ideal in the ways contemporary peasant farmers in Colombia talk about their life and work. Life, for these farmers, is powered by the 'force' (*la fuerza*) or strength of the land. They say that the earth gives them their food; the role of humans is to assist it in bringing forth (Gudeman and Rivera 1990: 25; see also Ingold 2000: 77–88). I return to this question of producing and harvesting in the final chapter.
4 See Gibson (1979: 33, emphasis in original).
5 Gibson (1979: 127).
6 Marx and Engels (1978: 476).
7 Gibson (1979: 78, emphasis in original).
8 Gibson (1979: 10, 33, emphasis in original).
9 Deleuze (1994: 28).

9 Surface

What's the difference between the ground outside and the floor of a room? Those of us affluent enough to live in an urban apartment or suburban house, equipped with every modern convenience, tend to imagine that habitation can be contained. We live in a world turned outside in – what I shall call an inverted world – in which all that moves and grows, shines or burns, or makes a noise has been reconstructed within as a simulacrum or image of the exterior. Real living animals, from mice to spiders, are banished or eradicated to make way for their sculptural counterparts, ornamental plants are placed in pots, picture windows afford a view not unlike that which might be projected on a television screen, artificial lighting is engineered to simulate the rays of the sun, concealed radiators give off heat from invisible sources while an imitation coal fire, electrically lit, burns in the grate, and speakers, tastefully placed around the walls, emit recorded sound that could be wind sighing in the trees or waves breaking on the shore. The sound helps us to relax, as we fall asleep in beds placed on a floor that may be someone else's ceiling. Where the earth is, heaven knows – somewhere deep down that we would rather not think about, accessible only to the utility men who come in when something goes wrong and when the defences that hold our lives in containment have been breached. As we lie sleeping, burst pipes, leaky drains and the prospect of mice eating through electrical cables haunt our dreams.

This experience of containment influences our thinking about what it means to inhabit a world to an extent that even psychologists and philosophers, who are tasked with the investigation of such matters, are ill prepared to recognise. We are led to suppose, as we saw in the foregoing chapter, that the ground outside, like the floor, is a kind of baseboard or infrastructure on which all else stands: hills, valleys, trees, buildings, even people. We expect plants to grow *on* the ground, not *in* it, and imagine that animals scuttle over its surface – forgetting that they also burrow and nest. We treat the landscape as a view, and imagine that we see the world in pictures, optically projected into our minds as upon the white walls of the interior room. In this picture-landscape there is no weather: the wind does not blow, nor does rain ever fall. Clouds are forever arrested in their growth. Nowhere do

fires burn; there is no smoke. We talk about the sun as a celestial body, not as an explosion of light. We even suppose that when we go outside, the sounds we hear will be recorded, and call it 'soundscape'.

Our predecessors would not have thought like that. Long ago, many of them lived in caves. In some regions of the world they still do – or did until quite recently. In a cave, the floor is the earth itself; but then so are the walls and so is the roof. To inhabit a cave is to live *in* the earth, not *on* it, and to draw nourishment from it just as do the plants that grow in the vicinity and the animals that roam there, perhaps joining with humans in taking advantage of the shelter that the cave affords. From the mouth of the cave, as from our eyes, we see the world itself, not a picture of it. Sometimes, people painted on the walls of caves; but far from painting representations of the landscape, they painted themselves (or the ancestors or spirits into which they were transformed) *into* it, rather as they impressed the earth with their own footprints. Right at the kernel of the cave, the fire – in the hearth – was a source not just of warmth but of life itself. And sonically, the cave resounded with the noises of the atmosphere. Thus the cave was no more a container for life than our bodies are. We do not live inside our bodies, but – in breathing and eating – continually and alternately gather the world into ourselves and release ourselves into the world. How different would it be if we thought of our homes and of the terrains that we inhabit in the same way?

Let us imagine the walker: a real human being this time, rather than a miniature replica, making his way over real hills and through real valleys. These hills and valleys do not rest upon the foundation of the earth's surface, as the scenery of my model rested on the baseboard, but – like mountains and walls – are themselves folds of that surface. The walker treads the ground itself, experiencing its rising and falling in the alternation of close and distant horizons, and in the greater or lesser degrees of muscular exertion entailed in first toiling against, and then surrendering to, the force of gravity. First and foremost, therefore, he perceives the ground *kinaesthetically*, in movement. If we say of the ground of a hill that it 'rises up', this is not because the ground itself is on the move but because we feel its contours in our own bodily exercise.[1] Even if we view the hill from a distance, we sense its rise in the ocular movement of our focal attention as it scans the upward-sloping line of the horizon. Secondly, we have found that, far from comprising a featureless and perfectly level plane, the ground is a field of difference. That is to say, it appears *infinitely variegated*. These variations are not just of contour but also of substance, colouration and texture, for all that clutter that Gibson supposed to be placed upon the ground is actually intrinsic to its very constitution. Of course the surface can be observed at different scales, from close up to far away, and each will reveal different patterns, textures and grains. Whatever the scale of observation we adopt, however, it is liable to appear just as puckered, mottled and polymorphic.

In that sense the ground has a fractal quality, whence follows a third characteristic: it is *composite*. It is, if you will, the surface of all surfaces, matted from the interweaving of a miscellany of different materials, each with its own peculiar properties. An analogy might be drawn with a textile, whose surface is not the same as those of all the strands of which it is woven, but is nevertheless constituted by them. It is a mesh or matrix of lines. Caught in the matrix there may be blobs: bits and pieces like pebbles, twigs and cones that have broken off from the processes of their formation in rock and tree. In places, the ground may be more granular than textural, heaped up rather than knotted, as with sand dunes or stone shingle. But as we have repeatedly observed, a ground that was purely granular – all blobs and no lines – could harbour or nourish no life. And it is with regard to its nourishing life that we find the fourth and perhaps most critical characteristic of the ground surface, namely, that it is not pre-existent, a given foundation for everything else, but undergoes *continuous generation*. Recall that for Gibson, surfaces persist only to the extent that solid substances resist transformation into the gaseous state, or do not 'melt into air'. The presence of the surface, he thinks, is proof of the separation and immiscibility of substances and medium.[2] In the living world, however, the ground surface persists not in spite of reactions between substances and medium, but because of them. Indeed, it is through such reactions that the ground is formed in the first place.

Much of the earth's surface is swathed in vegetation. Delving into the earth, we find the tangle of vegetation becoming ever more densely packed, so that it is often impossible to determine with any precision where 'ground level' actually lies. What matters for the plant is that it should have access to solar energy, so that in practice the ground is not so much a coherent surface as a limit of illumination. The plant's growth is fuelled by a photosynthetic reaction which binds carbon dioxide in the air with moisture already absorbed into the soil from the atmosphere and taken up by the roots, releasing the oxygen which we and other animals breathe. When the plant eventually dies and decomposes, its material deposit adds to the layer of soil, rich in nutrients, from which further growth issues. In this sense the earth is perpetually growing over, which is why archaeologists have to dig to discover evidence of past lives.[3] But this growing over is not a covering, as if to place a seal, lid or manhole on what is going on beneath; nor is it a solidification, as if to lay a coherent foundation for future construction. In this regard the ground surface is neither superficial nor infrastructural, nor is it inert. It is, rather, *interstitial*.[4] Literally 'standing between' earth and sky, it is the most active of surfaces, the primary site of those reactions, of which photosynthesis is the most fundamental, on which all life depends. Wherever life is going on, earthly substances are binding with the medium of air in the ongoing formation of the ground.

Self-evidently, plants grow *in* the ground, not *on* it. Like Marx's observation that the earth provides a field of employment for human activity, this,

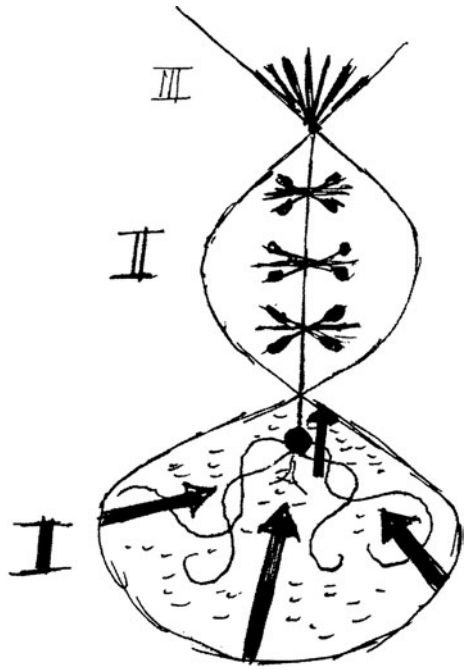

Figure 9.1 The three stages of plant formation.
Outlined in another drawing from Paul Klee's *Beiträge zur bildnerischen Formlehre* (1921/2). Zentrum Paul Klee, Bern, reproduced by permission.

too, is a statement of the obvious that hides a deeper truth, beautifully evoked by Paul Klee in the image of a seed that has fallen to the ground. 'The relation to earth and atmosphere', Klee writes, '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.'[5] As it grows, the germinal point – where once earth and sky had touched directly in the origination of a life – stretches out into a linear stem that now mediates their intercourse. Frayed at each end, the stem unravels into the soil below in the ball of the roots, and mingles with the air above in the floral crown. In a drawing in one of his sketchbooks, reproduced here as Figure 9.1, Klee depicted the three phases of plant growth as a standing wave with two harmonic points at each end of the stem. The accompanying notes describe the phases thus: 'I: Let the active forces be the soil in which the seed opens: The complex: soil, seed, nourishment, growth, roots, which produce the form; II: Rising into the light and open air the breathing organs form: one or two tiny leaves, and then more leaves and more leaves; III: Result, the flower. The plant is full grown.'[6]

In its three-fold constitution, the plant is simultaneously earthly and celestial. It is so, as Klee pointed out, since the commingling of sky and earth is itself a condition for life and growth. It is because the plant is *of* (and not

on) the earth that it is also *of* the sky. Or as philosopher Martin Heidegger put it, in his own inimitable language, the earth 'is the serving bearer, blossoming and fruiting, spreading out in rock and water, rising up into plant and animal'.[7] In short, thanks to its exposure to light, moisture and currents of air – to sun, rain and wind – the earth is forever bursting forth, not destroying the ground in consequence but creating it. It is not, then, the surface of the earth that maintains the separation of substances and medium, or confines them to their respective domains. It is rather its *surfacing*. By this I mean the engineering of the ground surface by coating it with a layer of hard and resistant material such as concrete or asphalt, as in road building or laying the foundations for urban development. The objective of such engineering is to convert the ground into the kind of surface that theorists of modernity always thought it was – level, homogeneous, pre-existent and inert.[8] It is to make the earth into a stage, platform, floor or baseboard, or, in a word, into an *infrastructure*, upon which the superstructure of the city can be erected.

Hard surfacing, I contend, is the definitive characteristic of the built environment. In such an environment, life is truly lived on or above the ground and not in it. Plants grow in pots, people in apartments, fed and watered from remote sources. Life and habitation are contained. The built environment, as Gibson said of environments in general, is cluttered with manifold objects whose only connection with any piece of ground is that they happen to have been set up on it. Were all the clutter removed, we would indeed be confronted with a scene of desolation. The hard-surfaced world, devoid of furnishing, is featureless and barren. Nothing can grow there. This is an extreme, however, that is never realised in practice, even in the most heavily engineered of environments. For unless it is constantly maintained and reinforced, hard surfacing cannot withstand the elemental forces of the sky and earth that erode it from above and subvert it from below. Eventually, it cracks and crumbles, and as it does so – as the substances beneath are exposed again to the light, moisture and currents of the air – the earth once more bursts into life, overwhelming human attempts to cover it up.

Notes

1 This apprehension is what the philosopher Gaston Bachelard (1964: 10–11) calls 'muscular consciousness'. See also Ingold (2000: 203–4).
2 See Gibson (1979: 22).
3 Ingold (2007b: S33).
4 Anusas and Ingold (2013).
5 Klee (1973: 29).
6 Klee (1973: 64).
7 Heidegger (1971: 149).
8 Ingold (2011: 123–5).

10 Knowledge

Earlier, I referred to Kant's statement that the surface of the earth is no less than 'the ground on which our knowledge is acquired and applied'. This leaves us with one more question. How does Kant's understanding of the ground affect his understanding of knowledge? Or, more to the point, how would our understanding of what knowledge is or could be – that is, our epistemology – be altered were we to substitute for the Kantian surface the kind of surface that we have sought to characterise in the foregoing chapter? Recall that for Kant, the surface of the earth is given to experience as a flat and uniform substratum upon which lie all things that might form the objects of perception. Placed at a particular point on this surface, the perceiver can acquire a more or less complete knowledge of things lying within the circle of the horizon. What he can never know, however, is how much more there is still to be known. Imagining himself in this predicament, Kant admitted that 'I know the limits of my actual knowledge of the earth at any given time, but not the limits of all possible geography.'[1] In such a situation there could be no possibility of systematic knowledge, no way of fitting what is known so far within an overall conception of the whole.

To explain how such knowledge nevertheless lies within the grasp of human reason, Kant drew a sophisticated analogy between the topology of the mind and that of the earth's surface. Let us suppose that our perceiver already knows, *a priori*, that – contrary to the evidence of his senses – the earth is not flat but spherical in form. His situation is then transformed. For, as the extent of the surface is finite and potentially calculable, he is able to estimate not only the limits of his present knowledge but also the limits of the entire, potentially knowable world. And if the knowable world is spherical, Kant argued, so likewise is the world of knowledge.

> Our reason is not like a plane indefinitely far extended, the limits of which we know in a general way only; but must rather be compared to a sphere, the radius of which can be determined from the curvature of the arc of its surface – that is to say, from the nature of synthetic *a priori* propositions – and whereby we can likewise specify with certainty its volume and its limits.[2]

Knowledge is thus arrayed upon the spherical surface of the mind, just as the objects of knowledge are arrayed upon the spherical surface of the earth.

Let us imagine a Kantian traveller.[3] Traversing the earth's surface, he picks up data from here and there, cumulatively fitting local particulars into nested conceptual frames of ever wider, and ultimately global, span. Thus, as he travels *across* the surface, his knowledge is built *up*, as a superstructure, upon the curved foundation of his reason. Reconstructing the world from the pieces he collects, the mind's hard but initially empty surface is furnished with content. The traveller is, in effect, a mental map-maker. And as is the rule in cartography, his observations are taken from a series of fixed points rather than *en route* from one place to another. His moves serve no other purpose than to carry himself and his equipment – that is to say, the mind and its body – from one stationary locus of observation to another. His ideal mode of travel, then, is transport.[4] In his observations he measures up the world *as if* it were a full-scale model, calculating lengths and altitudes in relation to an imaginary base at sea-level.

Perhaps this fictional scenario will suffice to show how closely linked is the Kantian conception of knowledge, and of the limits to knowledge, to certain presuppositions about the ground that we have explored in the foregoing. These presuppositions, as we have seen, are not realistic in practice and bear little relation to the lived experience of inhabitants. 'The ground', as philosopher Alphonso Lingis has written, 'is not – save for astronauts and for the imagination of astronomers – the planet, an object which viewed from the distance is spherical. We do not feel ourselves on a platform supported by nothing but feel a reservoir of support extending indefinitely in depth.'[5] For inhabitants walk; they thread their lines through the world rather than across its outer surface. And their knowledge, as I shall now show, is not built *up* but grows *along* the paths they tread. Recall that for Kant, the ground on which knowledge is acquired and applied is apprehended from a certain point, bounded by its horizon; this ground is uniform, homogeneous and fully laid out in advance. In the experience of the walker, by contrast, the ground is apprehended in the passage from place to place, in histories of movement and changing horizons along the way.[6] It is infinitely variegated, composite, and undergoes continuous generation. If this is what the ground of knowing is like, then what kind of knowledge results?

Consider first the factor of movement. For the walker, movement is not ancillary to knowing – not merely a means of getting from point to point in order to collect the raw data of sensation for subsequent modelling in the mind. Rather, moving *is* knowing. *The walker knows as he goes along*. Proceeding on his way, his life unfolds: he grows older and wiser. Thus the growth of his knowledge is equivalent to the maturation of his own person, and like the latter it continues throughout life. What distinguishes the expert from the novice, then, is not that the mind of the former is more richly furnished with content – as though with every increment of learning yet

more representations were packed inside the head – but a greater sensitivity to cues in the environment and a greater capacity to respond to these cues with judgement and precision. The difference, if you will, is not one of how much you know but of how well you know. Someone who knows well is able to *tell*, in the sense not only of being able to recount stories of the world, but also of having a finely tempered perceptual awareness of his surroundings. Sherlock Holmes, for example, was supremely knowledgeable in this sense. Though he liked to present himself as a master of deduction, his true skill lay in *abduction* – in the ability to draw an entire thread of antecedent events from the examination of, say, a single footprint.[7]

In short, whereas the Kantian traveller reasons over a map in his mind, the walker draws a tale from impressions in the ground. Less a surveyor than a narrator, his aim is not – as Kant would have it – to 'classify and arrange', or 'to place every experience in its class',[8] but rather to situate each impression in relation to the occurrences that paved the way for it, presently concur with it, and follow along after. In this sense his knowledge is not classificatory but storied, not totalising and synoptic but open-ended and exploratory.[9] Walking along, as architectural theorist Jane Rendell explains,

> provides a way of understanding sites in flux in a manner that questions the logic of measuring, surveying and drawing a location from a series of fixed and static viewpoints. When we walk we encounter sites in motion and in relation to one another, suggesting that things seem different depending on whether we are 'coming to' or 'going from'.[10]

This leads us to the second property of the ground surface to be considered: that it is infinitely variegated. If there were, in the walker's mind, a surface analogous to the surface of the earth, then it would not be that of a perfectly rounded globe but would rather be as wrinkled and puckered, at every scale, as the ground surface itself. Indeed, the convolutions of neural tissue in the brain would furnish a better analogy than the bulbous dome of the skull. We might even liken the brain – as do Gilles Deleuze and his long-time collaborator Félix Guattari – to a field of grass.[11] For reasons of their own, Deleuze and Guattari dislike trees. For my part, I think a better analogy could be drawn with a dense patch of woodland, where the ground itself is threaded with a tangle of roots, from which emergent trunks give rise to an equivalent tangle of branches and twigs in the canopy.

To be honest, though, I do not believe we need draw any analogy between mind and ground. For in truth they are one and the same. Far from being confined within the skull – the bulbous concavity of which is so readily likened to the global convexity of the planetary surface – the mind extends along the pathways or lines of growth of human becoming, just as do earthy roots and aerial foliage. Thus the ground of knowing – or, if we must use the term, of cognition – is not an internal neural substrate that *resembles* the ground outside but *is itself* the very ground we walk, where earth and sky

are tempered in the ongoing production of life. Walking along, then, is not so much the behavioural output of a mind encased within a pedestrian body as a way of thinking and knowing – an activity, according to Rendell, 'that takes place through the heart and mind as much as through the feet'. Like the dancer, the walker is *thinking in movement*. 'What is distinctive about thinking in movement', writes dance philosopher Maxine Sheets-Johnstone, 'is not that the flow of thought is kinetic, but that the thought itself is. It is motional through and through.'[12] The motional thought, however, runs along the ground. Thus the complex surface of the ground is inextricably caught up in the very process of thinking and knowing. It is part of what Andy Clark has called the mind's 'wideware': those essential supports for cognition that lie beyond the body and its brain.[13]

In this regard the ground is an instrument, not only in the blunt sense that we need it to stand on, but also in the sense that without it we would lose much of our capacity to know. If its variations were erased and covered over by a hard surface, we would still be able to stand and walk but could no longer know as we go along. Just as there is no seeing for the draughtsman confronting a blank sheet of paper, so there is no knowing for the walker on a surfaced earth. His walking would be reduced to the mere mechanics of locomotion, of getting from point to point. In reality, however, not only does the extended mind of the walker infiltrate the ground along myriad pathways, but also, and inevitably, it tangles with the minds of fellow inhabitants. Thus the ground comprises a domain in which the lives and minds of its human and non-human inhabitants are comprehensively knotted with one another. It is, as we have already seen, a composite, woven from diverse materials, and its surface, as it undergoes continuous generation, is that of all surfaces. By the same token, the knowledge that runs in the ground is that of all knowledges. Or, in a word, it is *social*. It is when it percolates the ground, tangling with the trails of other beings, and not on some transcendent surface of reason, that the work of mind enters the realm of the social.

Notes

1 Kant (1933: 606).
2 Kant (1933: 607–8).
3 Ingold (2000: 212–13).
4 Elsewhere (Ingold 2007a: 77–84), I have discussed the notion of transport, as a 'carrying across' from here to there, at greater length.
5 Lingis (1998: 14).
6 Ingold (2000: 227).
7 The concept of abduction takes pride of place in the theory of art and agency advanced by anthropologist Alfred Gell (1998: 13–16). Here he loosely follows the lead of the American pragmatist and founder of semiotics, Charles Sanders Peirce. Though Peirce's writings on the topic are famously obscure, what he seems to have had in mind is akin to what we might now call 'educated guesswork'. This is the procedure of the sleuth who, reading the material traces of an

extraordinary event, is led back to an initial circumstance, or set of circumstances, from which the observed results would follow as a matter of course.

8 Kant (1970: 257–8).

9 On the distinction between classificatory and storied knowledge, see Ingold (2011: 156–64).

10 Rendell (2006: 188).

11 See Deleuze and Guattari (2004: 17).

12 The passages quoted here are from Rendell (2006: 190) and Sheets-Johnstone (1999: 486).

13 The notion of 'wideware' is discussed in Clark (1998).

Part II
Weathering

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11 Whirlwind

I have become a linealogist: a student of lines. This is the oldest of subjects, indulged, albeit unselfconsciously, by everyone who has ever trodden a path, stitched a cloth, tracked an animal, recited a poem, drawn a trace or written a letter – that is, by practically everyone who has ever lived. Yet linealogy is also the newest of subjects, for working under that name, I may still be the only practitioner! The scope of the subject is wonderfully broad, for it includes walking, weaving, observing, singing, storytelling, drawing and writing. All take place along lines of one kind or another.[1] What I hope to convince you in the second part of this book, however, is that in becoming a linealogist, it is necessary to become something of a meteorologist as well. We have to study the weather. I have long felt that there must be some deep affiliation between lines and the weather: as deep as between walking and breathing, between weaving and the passage of time, between observation and temperament, between singing and resounding, between storytelling and the echoes of memory, between the traces of drawing and the colours of the painter's palette, and between writing on the page and portents in the sky which people used to read for what they might foretell. These portents, after all, were once called 'meteors', and it is from their study that our modern term 'meteorology' is derived. Thus where the linealogist asks what is common to walking, weaving, observing, singing, storytelling, drawing and writing, the meteorologist looks for the common denominator of breath, time, mood, sound, memory, colour and the sky (Table 11.1). This denominator, as I shall show, is what we call the *atmosphere*.

Just as my linealogy calls for a concept of the line that exceeds the narrowly geometric, however, so the meteorology that I need to complement it will require a concept of the atmosphere that likewise goes beyond the metrics of ambient geospace. There is indeed a connection between the reductions of mathematical geometry and of scientific meteorology. Both are premised on the logical operation that I have called 'inversion', by which the pathways of growth and movement along which life is lived are converted into boundaries within which it is contained.[2] While geometry compresses life into points and defines the line as the shortest distance between them, meteorology – in its modern scientific incarnation – maps masses into volumes and

Table 11.1 Linealogy and meteorology

Linealogy	*Meteorology*
walking	breath
weaving	time
observing	mood
singing	sound
storytelling	memory
drawing	colour
writing	sky

defines density as the ratio of one to the other. It is the operation of inversion that leads us to think of movement not as an issuing forth along lines of growth or becoming, but as the displacement of an already congealed mass or blob from point to point. In this, paths become orbits or trajectories, calculable from initial conditions and alterable only through outside intervention. And by the same token, pauses or moments of rest become states of equilibrium, held together not by an inner tension that grows ever more intense the longer it lasts, but by the balance of external forces.

Consider the movements of a storm (Figure 11.1). With its streaks of lightning and reverberations of thunder, the storm is a stunning exemplar of the indissoluble relation between lines and atmosphere. But the relation exists, too, in the way the storm moves. We might say that it strikes first here and then there, and the meteorologist might try to plot its course. But the storm is not a coherent, self-contained mass that displaces from point to point across the sky. It is, rather, a movement in itself, a 'winding up' that creates a point of stillness at its eye. As it winds up on its advancing front, it unwinds on the retreat. Might we not say the same of living things? The philosopher Henri Bergson argued that every vital being is cast like an eddy in the current of life. It is as though, in its development, it describes 'a kind of circle'.[3] In Matisse's painting, *Dance*, to which we have already referred, the five figures also describe a circle as they pound the earth. They whirl around. There could be no more powerful demonstration of Cavell's idea of life as 'the whirl of organism'! Like the storm, the organism-whirl is not an impervious blob, in the sense that I introduced at the start of this book, but the form of a movement.

It is of course the logic of inversion that leads us to imagine the living being that has thus spiralled in on itself as an externally bounded object, deceiving us into thinking that it is not so much a movement in itself as a container for life. This is like confusing the curling movement of your hand in drawing a circle, and the trace it leaves, with the perimeter of the completed figure.[4] Circles may lie inside or outside each other; they may touch or overlap. But in the whirligig world of organisms and storms, there are only coils or spirals, dynamically sustained formations in the current of life

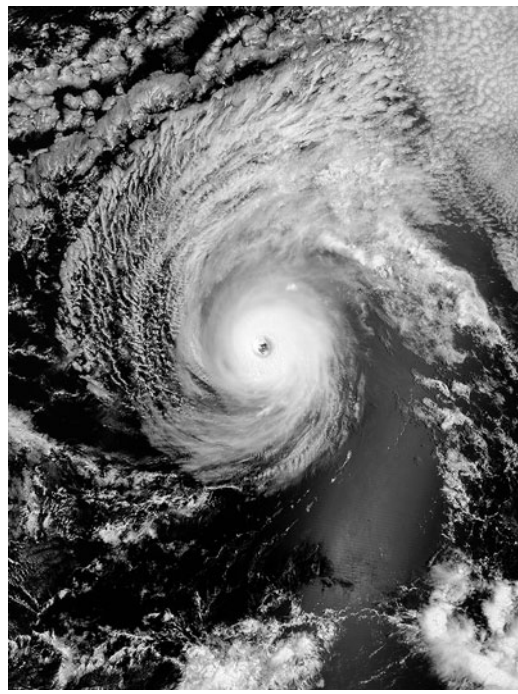


Figure 11.1 The storm from space.
Hurricane Iselle over the Pacific Ocean, 4 August 2014. NASA image by Jeff Schmaltz.

that continually run into and out of one another in the very processes of their generation and dissolution (Figure 11.2). Coils cannot overlap, but they can wrap around one another: they can *interpenetrate* – like octopuses and anemones, to recall the analogy of Marcel Mauss – in the medium of their environments and sentiments. And true to the analogy, we find such formations not only in the atmosphere and the ocean but also in the domain of 'men and groups and their behaviours', as Mauss put it, in the practice of what Claude Lévi-Strauss, in his monumental treatise *The Elementary Structures of Kinship*, called 'generalised exchange'.[5]

In its exemplary form, generalised exchange establishes lasting alliances between groups of men, related among themselves by ties of common descent, through offering and receiving the hands of women in marriage. A rule that men should marry women classified as daughters of their mothers' brothers, when implemented, makes it so that those to whom a group offers daughters in marriage, on the one hand, and those from whom it receives wives, on the other, are the same, generation after generation. Such exchange thus allows for the formation of circuits in which group A gives to group B, B to C, and so on around, until at last it is A that is on the receiving end. However, what classical anthropological literature depicts as the giving and

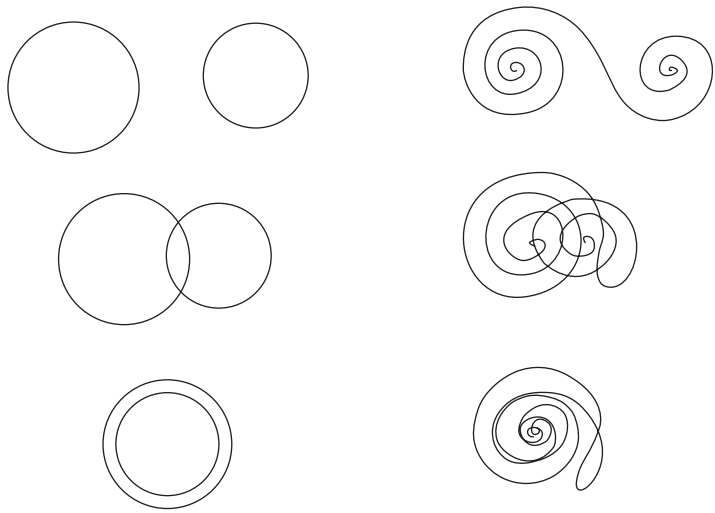


Figure 11.2 Overlapping circles and inter-running spirals.

receiving of daughters and wives, as though the women involved were mere objects of exchange, is far more than that, for the gift of each group to the next in the circuit is truly the reproductive impulse of life itself, given renewed momentum by every generation through which it passes, ensuring that the current never runs dry. This is not a matter of achieving social solidarity – as though with the closure of the circuit the structure were locked down and movement brought to a standstill – but quite the opposite. It is a matter of establishing a relation of correspondence between lines of descent which, in coiling around one another, make it possible for the movement to keep on going.

This exactly mirrors what is happening in the transfer of momentum from figure to figure in Matisse's depiction of the dance, or as melodic lines are passed from singer to singer in a choral round. Earlier, we compared social life to winding the strands of a rope. In terms of this analogy, generalised exchange establishes a winding mechanism which ensures that, like the rope – complete in section but longitudinally ever-extending – social life carries on. Now in rope-making, and more commonly in spinning, the winding mechanism is known as the *whorl*. When thread is spun from a distaff, the whorl is a disc attached to the spindle which endows it with sufficient angular momentum to maintain the constancy of the spin. In use, it whirls around (Figure 11.3). Thus in spinning and rope-making, as in social life, the whorl is *generative* of the line: whether the lines in question are ropes or threads, or lines of descent, there is a direct conversion of circulation into linearity.

But we can see this too in the growth of the tree, where branches emerge from the trunk. Here, whirl and whorl converge in knots of the second kind:

Figure 11.3 Spindle whorl.
This whorl, from northeast Scotland and probably dating from the Iron Age, is carved from slate. It is 32 mm in diameter, and 8.5 mm thick. From the collections of the Marischal Museum, University of Aberdeen. © University of Aberdeen.

namely, those that form in the grain of growing wood (Figure 11.4). The whorl of the tree-knot and the whirl of the storm do indeed bear an uncanny resemblance, which attests to similar forces in their creation. These are the forces of winding and unwinding. Indeed, the two senses of wind, as the movement of twisting or coiling and as air in motion, are as closely linked as whorl and whirl. The winding whorl of the rope-maker or spinster has its precise counterpart in the aerial whirlwind that accompanies the storm. Could it be to this parallel between the wind of whorl-spun thread on the spindle and the spiralling motion of the whirlwind that we should look to source the affiliation between lines and the weather? And might it be in the growth of the tree, whose knots are whorls whence branch-lines issue forth to mingle with the wind, that lineality is both rendered up to the atmosphere and draws from it?

Whorls are found in nature not only in tree-knots and whirlwinds, however. They are also found in the coiled shells of gastropods. And this leads me to introduce one more creature: the animal with a whorl on its back. At nightfall, after the storm has passed, you may witness legions of snails emerging from their daytime hiding places to feast upon the vegetation in your garden. Observe the snail as it makes its ponderous way along the ground. Depositing its rear upon the earth, it pushes its front body forwards

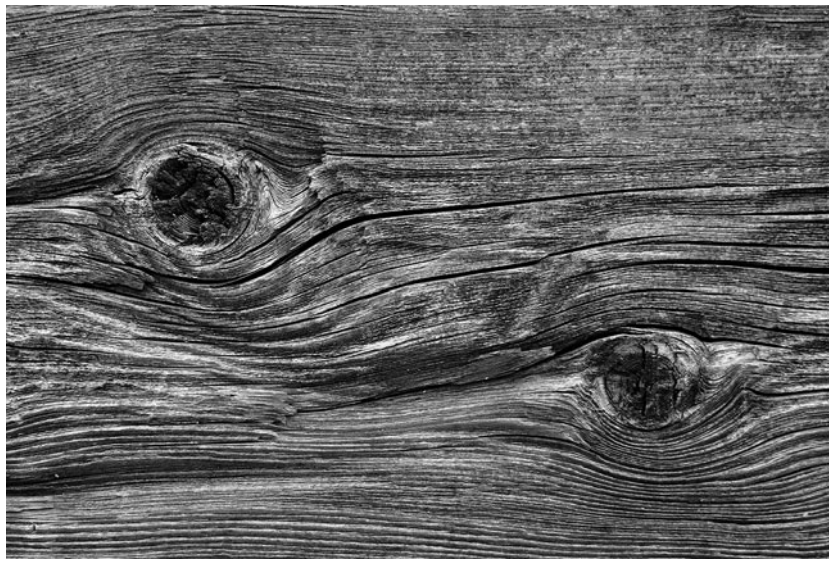


Figure 11.4 Tree-knots.
An old cracked wooden plank. © Digifuture.

against this posterior resistance. Then, depositing the anterior in its turn, it pulls up at the rear, repeating the cycle over and over again in graceful slow motion. Though storm and snail may operate at vastly different scales, in the principles of their operation they are not so different. As the storm winds and unwinds, leaving a trail – of destruction, if it is severe – across the surface of the earth, so the snail alternately pushes forth and pulls up, leaving its slime trails on the ground. This rhythmic, push-pull cycle seems to me to be fundamental to the life of most if not all animate creatures, our human selves included. Like the snail, in walking as in breathing we too must draw in if we are to issue forth. And likewise in the dance of social life, we must receive its reproductive impulse if we are to pass it on in the propagation of our lines.

Surveying the scene after the snails have done their work, likely consuming the vegetables in your beds, you can see their trails on surfaces such as paving stones. You cannot but admire the beauty of these trails, as they glint in the morning sun, even as you fume at the destruction of your crops. In movement every snail, having unwound itself from the interiority of its whorl-shell, has become a line, and in leaving its slime-trace on the ground, it has tangled with the lines of each and every other of its kind so as to form a visible meshwork. Perhaps the outstanding characteristic of these lines is that even when extended in what looks like a consistent direction, they are never perfectly straight. To make a straight line, it is necessary to connect two points, for example by means of a ruler, *prior* to advancing from one to

the other, using the edge as a jig to guide one's movements. But a living line, which must perforce find its way as it goes along, has continually to attend to its path, adjusting or 'fine-tuning' the direction of its advancing tip as the journey unfolds. Only after having reached a certain spot can it feign to have found the way there. To adopt the language of cultural historian Michel de Certeau, the line is tactical rather than strategic: its paths are 'wandering' or 'errant'.[6] To wander is to follow a course that is sinuous instead of straight. It is to *wind along*. What kind of trace, then, does it leave? This is our topic for the next chapter.

Notes

1 For an introduction to linealogy, see Ingold (2007a).
2 On inversion, see Ingold (2011: 68–70, 145–8).
3 Bergson (1911: 134).
4 See Ingold (2011: 147–8).
5 Lévi-Strauss (1969), see also Mauss (1954: 78).
6 See Certeau (1984: xviii–xix).

12 Footprints along the path

One could perhaps compare wandering to drawing: as the draughtsman traces a line with his pencil, so the wanderer – walking along – paces a line with his feet. Paul Klee had explicit resort to this comparison in his celebrated definition of drawing as 'taking a line for a walk'.[1] Subsequently, in his landmark work of 1967, *A Line Made by Walking*, sculptor Richard Long turned the metaphor into an actuality, creating a linear path in a grassy meadow by walking repeatedly up and down. Reviewing an exhibition of Long's work, Robert Macfarlane observes that the artist's 'legs are his stylus, his feet the nib with which he inscribes his traces on the world'. Walking becomes an act of inscription, of writing in the original sense of drawing a sharp point over a surface, of furrowing a track.[2] There are, nevertheless, important differences between walking and drawing which complicate the idea of path-making as a simple process of inscribing the ground.

For a start, the walker does not set out upon a blank sheet. In the case of drawing, suggests art historian James Elkins, the first mark 'is born in blindness'.[3] The draughtsman may begin with a figure in mind, or the outline of a shape, that he intends to realise on paper. Yet on the sheet before him there is initially nothing to see. Only as the picture evolves does blindness give way – though never fully – to vision, while the mental image correspondingly fades. The pedestrian is blind in a different way. It is not that he cannot see anything in the field of vision. On the contrary, since – as we have already seen – the ground is a fractal surface, there is no limit to the variety it offers to his inspection. What he cannot see, however, either in his mind's eye or on the ground, is the overall pattern or design traced by his movement. This is due to the factor of scale. *Relative to the expanse of his walking*, the pedestrian's eyes are simply too close to the ground. To see the designs, he would have to fly with the birds, as in some societies shamans are reputed to do. Indeed, the exceptional cases of walked figures, such as the Nazca lines of highland Peru, seem to be premised on the idea of a shamanic or god's-eye view.

Ordinarily, the wanderer is not a walker of shapes or outlines, and his vision unfolds at ground level, as he goes along, rather than from a superior and stationary vantage point. To put it the other way around: if drawing

were like ordinary walking, then the draughtsman's eyes would have to be located not in his head but somewhere near the point of his pencil. As philosopher Jacques Derrida observes, it would be 'as if a lidless eye had opened at the tip of the fingers … right next to the nail'.[4] For this reason, I believe it is misleading to compare the ground surface, as does the architect Francesco Careri, to a palimpsest upon which successive figures are superimposed, one upon the other. According to Careri, the surface of walking 'is not a white page, but an intricate design of historical and geographical sedimentation on which to simply add one more layer'.[5] Path-making, however, does not so much add another figurative layer to the ground surface as weave another strand of movement *into* it.

A further difference between walking and drawing hinges on the contrasting action potentials of the hands and feet. The hand, liberated in the course of anatomical evolution from the function of supporting the body, is free to manipulate an inscribing tool which can cut a groove or deposit a trace as a more or less enduring record of its gestures. Such inscriptions can appear as continuous lines. But the feet, bearing the full weight of the body, *impress* the ground rather than inscribing it. Although the movement of walking is continuous, each footfall makes a separate impression. For the path to appear along the ground as a continuous line it must be walked many times, or by many people, so as to iron out the incidence of individual treads. On many surfaces, the traces left by these treads are so subtle as to be barely visible. Sometimes they leave no trace at all. The ground of a footpath may be just as variegated as that of the terrain through which it winds, and can only be discerned because of the way passing feet have compressed the soil, created or altered patterns of plant growth, rearranged gravel or polished the surfaces of rocks and stones. No material need be added or scratched away.

For example, when Long made his famous line by walking the length of a meadow, we can only make it out thanks to the way grass stems bent and flattened by his footsteps caught the light. He has not cut the line with his boots, nor has material been deposited – as, for example, when lines are painted on grass to mark out a sports-ground. Another example comes from northern Namibia, where indigenous Akhoe Hai//om hunter-gatherers, according to their ethnographer Thomas Widlok, have unwittingly created paths through the desert, primarily between water-pans, in the form of lines of *mangetti* trees.[6] As they went on their way, people would chew the highly prized nuts of these trees, periodically spitting out the hard kernels from which new trees grew. And although the trees have a short life-span, once the path is made it is conducive to further use as the trees provide food in the form of nuts, shade from the hot sun and water that collects in the hollows of old trunks.

Inscriptions, then, are one thing; impressions another. This difference, in turn, invites some reflection on the phenomenon of footprints. One can read movement and direction from a footprint just as one can from an inscription – not, however, as the trace of a gesture, but rather as a record of

changing pressure distributions at the interface between the walking body and the ground. In attending to surface texture as well as outline, it is a reading that is as much tactile as visual. Distinct footprints are registered most clearly not on hard surfaces but on those which, being soft and malleable, are easily impressed, such as the surfaces of snow, sand, mud and moss, or – as Sherlock Holmes observed in the case of 'The crooked man' – a grassy lawn. 'There had been a man in the room', said Holmes, 'and he had crossed the lawn coming from the road. I was able to obtain five very clear impressions of his footmarks. … He had apparently rushed across the lawn, for his toe marks were much deeper than his heels.'[7] Yet precisely because soft surfaces do not readily hold their form, footprints tend to be relatively ephemeral. Snow may be covered by further falls or may eventually melt away; sand may be sculpted anew by the wind or washed by the tide; mud may be dissolved by the rain; and moss or grass may grow over again. Footprints thus have a temporal existence, a duration, which is bound to the very dynamics of the ground to which they belong: to the cycles of organic growth and decay, of the weather, and of the seasons. The ground, as we have seen, is matted from diverse materials. Footprints are impressed in the mat.

Although inscriptions and impressions register differently in the surfaces they mark, they have in common that they are the traces of a moving body as it goes along. In this regard they are equally opposed to another species of mark that I call the *stamp*, made by imposing a ready-made design from above on a hard surface. In the field of writing, for example, this is what distinguishes the work of the printer from that of the scribe, or the press from the pen. As the ancient metaphor of the text implies, the lettering hand of the scribe or calligrapher leaves a trail of ink in its wake just as does the shuttling hand of the weaver of tapestries in laying the weft.[8] The printer, by contrast, imposes a composition pre-assembled from discrete typographic elements, and set in the galley, upon a uniform and resistant surface made ready to receive it. To the modern author of printed works, according to Michel de Certeau, the page appears as a blank space awaiting the imprint of a composition of his own design.[9] Certeau compares the author to the colonial conqueror who confronts a territory, exorcised of all ambiguity and erased of its past, as a surface on which to rewrite history. By setting his stamp upon the ground, the conqueror stakes a claim. This is precisely what Friedrich Engels had in mind when he declared that in the course of its historical transformation 'man alone has succeeded in impressing his stamp on nature'. He was referring to the imprint of a human design – 'premeditated, planned action directed towards definite preconceived ends' – upon a surfaced world.[10] Here, the surface is configured as an interface between the mental and the material: intentions already engraven in the mind are stamped on the solid earth.

But footprints are not stamps. They differ from stamps in their texture, in their temporality and in their embeddedness in the ground of habitation.[11]

The designs of footprints are not ready made, nor are they imposed from above *upon* a hard surface. They are, rather, made as a human being or other animal walks or runs along, *in* a surface that is soft, pliable or absorbent. Thus whereas the stamp connotes immobility and omnipresence, footprints register emplaced movement. Far from staking a claim, the indigenous inhabitant leaves footprints in the ground as clues to his whereabouts and expectations, and for others to follow. While a trained eye and touch can read much from a single footprint, even more can be read from a series of prints. Such a series, observed in sequence, comprises a track. If the same track is trodden often enough, the many individual prints merge into a continuous path. One cannot, then, read individual movements from a path, but only those commonly or collectively made. Footprints are individual; paths are social.

Notes

1 Klee (1961: 105).
2 Macfarlane (2009).
3 Elkins (1996: 234).
4 Derrida (1993: 3).
5 Careri (2002: 150).
6 Widlok (2008: 60).
7 From *The Memoirs of Sherlock Holmes*, by Sir Arthur Conan Doyle (Doyle 1959: 146).
8 Ingold (2007a: 68–71).
9 Certeau (1984: 134–5).
10 These passages are quoted from Engels (1934: 34 and 178).
11 See Ingold and Lee Vergunst (2008: 7–8).

13 Wind-walking

Elsewhere, in an initial foray into linealogy, I suggested that lines come in two principal kinds: traces and threads. Traces are formed on surfaces; threads are strung through the air. My argument was that these two manifestations of line are readily inter-convertible. In the formation of surfaces, threads are converted into traces; in their dissolution, traces are converted into threads.[1] Is the path, then, a trace or a thread? Tom Brown is a tracker from New Jersey who learned his skills as a boy following a chance meeting with an old Apache scout by the name of Stalking Wolf. A track, Brown tells us, is a temporary thing:

> Unless the mud goes hard and turns gradually to stone, tracks do not last. They fade, and as they dry, the wind sweeps them relentlessly level to ease its way across the ground. Tracks exist at the interface where the sky drags along the surface of the earth. They exist for a relatively brief time in a narrow level *near the surface of the ground* where the wind and the weather move across, changing the temperature and building information into the track. Wind pushes the tracks flat; rain tries to wash them away.[2]

Brown's intuition, which I have highlighted, that tracks exist not on the ground surface but near it resonates with our characterisation, in the first part of this book, of the ground as a surface that itself undergoes continual formation within an unstable zone of interpenetration in which the substances of the earth mingle and bind with the medium of air. These blending reactions, as we have seen, are fundamental to all life. But if that is so, then we should surely acknowledge that the track or path is as much an aerial phenomenon as a terrestrial one. Formed by creatures – human or non-human – that must perforce breathe the air as they walk the ground, it is not only impressed in the earth but suspended in the currents of wind and weather that, dragging the earth's surface, conspire to erase it. Looking for a way to express this essential ambiguity of the track, as at once terrestrial and aerial, Brown evidently found it by splitting the difference. 'Near' the ground surface, it is not quite of the earth and not quite of the air. How, then, can a

path be *of* the earth and *of* the air at one and the same time? How can it both wind along and be felt in the wind?

Recognising that the path passes through a world of substances and medium in constant interchange, where surfaces are perpetually forming and dissolving, we should perhaps answer that it is neither trace nor thread but rather 'thread becoming trace' or 'trace becoming thread'. Among Khoisan hunter-gatherers of southern Africa, according to ethnographer Chris Low, hunters are connected to their prey by threads of scent – the smell of the animal wafted through the air. Not only is the environment riddled with such scent-threads; they also percolate people's awareness, in which they are said to make a ringing sound. In tracking an animal whose scent is wafted towards you, it is essential to move *against* the wind, lest the animal be alerted to your intentions. Thus you start at the end of the thread and gradually wind it up, leaving the trace of your movement behind you as you advance on your quarry.[3] In this instance, thread becomes trace. Among the Aboriginal people of Yarralin, in the Australian Northern Territory, the converse transformation occurs, from trace to thread, as tracks left by ancestral Dreamings on the earth's surface, in the era of world creation, come to be perceived as *strings* akin to the long streaks that appear across the sky at sunset, or in forked lightning. Along these strings the dreaded *kaya* beings, mediators between earth and sky, are alleged to drop people to earth or to pull them up.[4]

If the path is at once a trace and a thread, both on the ground and in the air, so too the pedestrian body simultaneously walks and breathes. Exhalation follows inhalation as step follows step in a closely coupled, rhythmic alternation. To get a measure of the magnitude of the phenomenon we are dealing with, it is worth bearing in mind that an average human being breathes approximately fifteen litres of air per minute, and takes some ten thousand steps per day. There is more to breathing, however, than can be found by counting units of air, just as there is more to walking than counting steps. Nor is breathing just about exposure to currents of wind. The philosopher Gaston Bachelard gets to the heart of the matter by comparing the walker to a reed. Like the reed, the walker remains earthbound. Dynamically, however, the one is the *reverse* of the other. The reed bends over backwards in the wind, and its tip – where it makes contact with the ground – describes a circle. The walker, however, leans forwards, tilting against the current. 'His walking stick', writes Bachelard, 'pierces the hurricane, makes holes in the earth, thrusts through the wind.'[5] Thus what for the reed is a circle in the ground is for the walker an opening that affords passage, as much aerial as terrestrial (Figures 13.1 and 13.2). The stronger the wind, the more the aerial dimension prevails. Indeed, a strong wind can so overwhelm the senses as virtually to drown out the perception of contact with the ground. 'Around, up, above, what windwalks!' exclaimed Gerard Manley Hopkins in his poem 'Hurrahing in harvest'.[6]

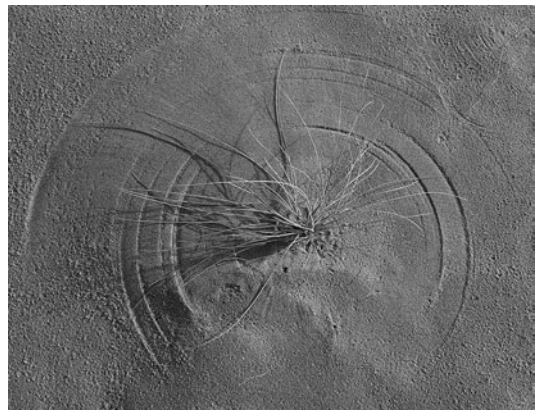


Figure 13.1 Wind-blown dune-grass describing circles in the sand.
Photographed on the dunes at Balmedie, near Aberdeen, Scotland, February 2012.

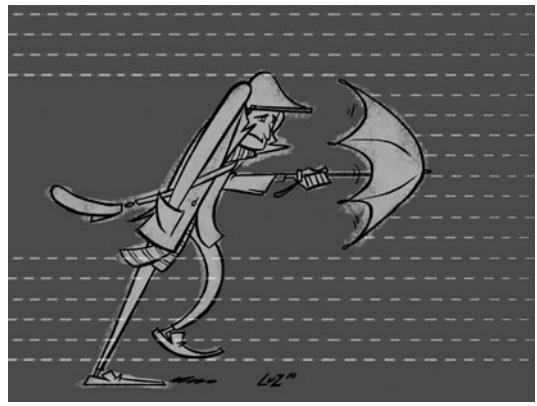
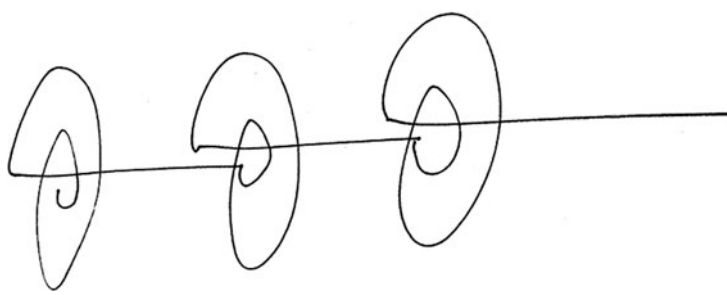


Figure 13.2 'Me walking home today'.
Sketch by Mike Luzzi, reproduced courtesy of the artist.

Submerged in the air like a swimmer in water, the wind-walker's every inhalation forms a vortex in the wind's passage as it sweeps past, and every exhalation is like an invisible stick which thrusts through the opening created thereby. 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 impulse: the first is a movement of gathering or recollection, the second a movement of propulsion. Remember the snail – it does the same, in its own way! But breathing in and out also resembles the gesture of tying the knot, already described in Chapter 4. Here too, the sweeping, circular movement that retrieves the line

creates an opening through which it can then pass. In a world without objects, the breath is a kind of aerial knot, tied by the organism in the turbulent wind, binding it to others in precisely the kind of intimacy that is denied by an object-oriented ontology. As Peter Sloterdijk has observed in his philosophical reflections on the life-bestowing moment of inspiration, 'the one breathed on is by necessity an ontological twin of the breather. The two are bonded by an intimate complicity.'[7] Breathing is the way in which beings can have unmediated access to one another, on the inside, while yet spilling out into the cosmos in which they are equally immersed.

Like the knot, the breath is neither a block, nor a chain, nor a container. Breaths cannot be assembled into structures, nor can they be concatenated. They are constitutive moments of an implicate order which joins things on the inside, in relations of sympathy, rather than externally through articulation. As with footsteps, breaths do not follow one another like beads on a string; rather, the dying of each breath prepares the birth of the next. It is by breathing that we remember: inhalation is recollection. And finally, the breath is not a container. Thus to 'take a breath' is not to bottle up a unit volume of air or to remove it from circulation. It is, rather, to receive it prior to passing it along, as singers receive and pass on their lines in a choral motet. Critically, however, the movements of taking breath and giving it out, though mutually conditional, are not at all the reverse of one another: this is a point of considerable significance to which I shall return (see Chapter 17). For the present, let it suffice to give a foretaste of what's to come not by taking breath but literally by *drawing* breath or – as Klee might say – by taking a line for a breather.



In this drawing of three successive breaths, every whirl is a taking in of air, and every extended line a letting out that passes from behind and through the eye of the whirl, on its way to the next. In taking a line for a breather, however, just as in taking it for a walk, it is not just the body that undergoes rhythmic exercise, 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 philosopher Maurice Merleau-Ponty wrote, in his essay 'Eye and mind', 'There really is inspiration and expiration of Being.'[8] This,

Merleau-Ponty insisted, is not to speak metaphorically. The words 'inspiration' and 'expiration' have to be taken quite literally. And in this double movement of action and passion, he thought, 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, though sometimes we can – as in the mist, or in rising smoke from fires and chimneys, or in light snow when flakes, in their feathery descent, pick out the delicate tracery of aerial currents. 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.[9] In an airless, solidified world, perception would be impossible. Thus our very existence as sentient beings is predicated on our immersion in a world without objects, a weather-world.

Notes

1 Ingold (2007a: 39–71).
2 Brown (1978: 6, my emphasis).
3 Low (2007: S75–7).
4 Rose (2000: 52–6, 92–5).
5 Bachelard (1983: 162).
6 Hopkins (1972: 27).
7 Sloterdijk (2011: 44).
8 Merleau-Ponty (1964: 167).
9 Gibson (1979: 16).

14 Weather-world

'Can man live elsewhere than in air?' asks philosopher Luce Irigaray.[1] Short of strapping on a reserve supply in a tank, as astronauts and deep-sea divers do, the answer is 'obviously not'. Nevertheless, a certain tendency, to which I have already alluded, to envisage the environment as a clutter of solid objects mounted on a baseboard has led many philosophers and theorists to suppress the aerial dimension of bodily movement and experience. In such fields as anthropology, archaeology and material culture studies, for example, it has long been conventional to think of the 'material world' as comprising the two broad components of *landscape* and *artefacts*.[2] Much attention has been paid to the ways in which people engage with the things of this world, to the apparent capacity of things to act back, and to the so-called 'hybrid agencies' that are formed when persons and things combine in the production of effects. In all of this, however, no-one has given a thought to the air. The reason for this omission, I believe, is simply that within the terms of accepted discourse, air is *unthinkable*. It cannot be thought because it is a contradiction in terms. For so long as it is assumed that all that is material is locked up in the congealed forms of the landscape and in the solid objects resting on its surface – or in what the archaeologist Bjørnar Olsen calls 'the hard physicality of the world'[3] – then air could only be matter that has escaped the bounds of materiality. We would be forced to conclude either that air does not exist, or that it is actually immaterial and therefore superfluous to social and cultural life. And if that were so, then there could be no weather in the world.

This conclusion is not only contrary to experience but also patently absurd. To draw the limits of materiality around the surfaces of the landscape and artefacts would be to leave the inhabitants of the landscape and the users of artefacts in a vacuum. They would be unable to breathe. Nor could anything grow. Indeed, given its centrality to life and experience, the absence of weather from anthropological accounts of human ways of being and knowing is little short of extraordinary. This cannot be due to its neglect in our fieldnotes, since I am sure that the notes of most ethnographers are full of references to weather phenomena, as indeed mine are. I began my entry for every day of fieldwork in Finnish Lapland with a brief description

of what the weather was like. But when I came to sort and rearrange my notes, in the process that ethnographers rather grandly call 'analysis', these descriptions dropped out. I did not know what to do with them. My omission, then, was not one of observation. It lay more in the lack of any conceptual framework within which to accommodate anything as protean and temperamental as the weather. I doubt whether I have been alone in this. The difficulty, it seems to me, is that we cannot restore the weather to our conception of the material world, alongside the landscape and artefacts, without changing the whole way we think about this world, and about our relations with it. For we can no longer suppose that all such relations take the form of interactions between persons and things, or that they necessarily arise from the conjoint action of persons and things assembled in hybrid networks.

The air, after all, is not a person or a thing, or indeed an entity of any kind, and cannot therefore comprise part of any articulated assembly. It is, rather, quite simply, a *medium* which, as Gibson pointed out, affords locomotion, respiration and perception.[4] As such, the air is not an interactant so much as the very condition of interaction. It is only *because* of their suspension in the currents of the medium that things can interact. Without it, birds would plummet from the sky, plants would wither and we humans would suffocate. Even as we breathe in and out, the air mingles with our bodily tissues, filling the lungs and oxygenating the blood. 'With our heads immersed in the thickness of the atmosphere or our lungs and limbs engaged with the swirling winds', writes environmental philosopher David Macauley, 'we repeatedly breathe, think and dream in the regions of the air.'[5] Sloterdijk, for his part, calls the air a 'medial factor', insisting that 'it can never be defined in object terms'. For the new-born child taking its first breaths, to *be* is at once to be-in-the-air, to participate freely in the wealth of the aerial medium, and to experience a kind of respiratory autonomy. On no account, however, can the air be converted into an object that the child or anyone else can have a relationship *with*.[6] Thus the walker does not interact with the air as he sets his face to the breeze, but feels it as an all-enveloping infusion which steeps his entire being. It is not so much what he perceives as what he perceives *in*. Likewise, we see in sunlight whose shades and colours reveal more about the composition and textures of the ground surface than about the shapes of objects; we hear these textures in the rain from the sounds of drops falling on diverse materials; and we touch and smell in the keen wind that – piercing the body – opens it up and sharpens its haptic and olfactory responses.[7]

Now 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*. Such, indeed, is our experience. Philosopher Michel Serres has noted that in French, the same word, *temps*, is used for both weather and time.[8] The word comes, of course, from the Latin *tempus*, from which are derived both *tempo* and *tempest*. Time is weather, but it is

also weathering, as architectural theorists Mohsen Mostafavi and David Leatherbarrow point out in their treatment of the life of buildings.[9] In buildings as in life, weathering is what things and persons undergo on exposure to the elements. I will defer discussion of precisely what is meant by both 'undergoing' and 'exposure' to the third part of this book, where it will be our principal concern. Suffice it to say that weathering is formative – a 'continuous metamorphosis', as Mostafavi and Leatherbarrow call it – in which unending deterioration is also perpetual beginning.[10] It is from their exposure to weather that beings draw from the medium the inspiration, strength and resilience to carry on along their lines. Weathering brings out their grain or texture, allowing them to bind in sympathy. It is where the whirl of the elements is turned into the spinning of the line, and where the tempest gives birth to time.

This conversion, moreover, is irreversible, for the spin cannot be unspun into a whirl, nor can weather blow up from the weathered. Becalmed sailors who hoped that by untying a knot they could unloose the wind were bound to be disappointed. You cannot reverse the time of weather or weathering. This is not to say, however, that such time advances in any consistent direction. It is not progressive. In this regard, according to cultural historian Steven Connor, the time of weather is a time without history, 'pure fluctuation'.[11] But it is not, as Connor thinks, also 'without pattern'. There *is* a pattern to the weather, and indeed to weathering, but it is one that is continually 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. 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 covarying phenomena. For this reason, as environmental sociologist 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.[12]

Nowadays, of course, the ancient 'weather-wising' of farmers and mariners has been largely sidelined thanks to advances in predictive forecasting, and to the shift of productive and domestic activities into enclosed, architectural spaces within which such variables as temperature, illumination and humidity can be strictly controlled. In their timing, too, activities are no longer subject to the fluctuations of weather as they once were. The overwhelming ambition in the post-Renaissance history of architecture has been to keep the weather out. In making a mockery of reason, in its refusal to be contained, in its erosion of structure and its disdain for progress, the weather has long figured in the modern imagination as architecture's nemesis. Knocking on the doors and windows of buildings, and on their walls and roofs, it is categorically denied admittance. Yet in practice, of course, there is no avoiding it: the weather, as architectural historian Jonathan Hill argues, is as much a force of authorship in the ongoing formation of buildings as are

those who design, build and inhabit them.[13] Even the residents of the hypermodern city have to contend with the weather, despite their best efforts to banish it to the exterior of their air-conditioned, temperature-regulated, artificially lit and glass-enclosed buildings. We are all subject to its vagaries, to varying degrees.

In this sense the weather continues to comprise the ever-present undercurrent for our actions as we go along in the world. This sense is conveyed by a cluster of weather-related words all of which share the root meaning of *temper*. Although it sounds almost the same as *tempo*, 'temper' in fact has its source in a quite different Latin word, namely *temperare*, 'to mix'. This gives us not only such weather words as *temperature* and *temperate*, but also words for human moods and dispositions such as *temper* and *temperament*. With its twin connotations of blending (for example of pigment with egg in tempera) and fine-tuning (as with the well-tempered keyboard), the verb 'to temper' captures perfectly the way our experience of weather unifies our affective lives with the aerial medium in which these lives are led. By way of our immersion in the medium we are constituted, in short, not as hybrid but as *temperate* (and temperamental) beings. That a whole suite of etymologically cognate words should refer interchangeably both to the characteristics of the weather and to human moods and motivations amply demonstrates that weather and mood are not just analogous but, more fundamentally, one and the same. This unison of the affective and the cosmic is, as I shall now show, crucial to our understanding of the atmosphere.

Notes

1 Irigaray (1999: 8).
2 See Gosden (1999: 152).
3 Olsen (2003: 88).
4 Gibson (1979: 16).
5 Macauley (2005: 307).
6 Sloterdijk (2011: 298).
7 On sunshine and shadows, see Baxandall (1995: 120–5); on hearing ground surfaces in the rain, see Hull (1997: 26–7, 120); on touching in the wind, see Ingold (2007b: S29).
8 Serres (1995a: 27).
9 Mostafavi and Leatherbarrow (1993: 112).
10 Mostafavi and Leatherbarrow (1993: 16).
11 Connor (2010: 176).
12 Szerszynski (2010: 24).
13 Hill (2012: 2–3, 319–20).

15 Atmosphere

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. For meteorologists, the atmosphere is the gaseous envelope that surrounds our planet. Understood scientifically, this atmosphere is not quite the same as the air we breathe, or whose unruly fluxes we experience as wind and weather. For no more than the planetary earth, is it part of the world we actually *inhabit*. To inhabitants, the world is given not as a solid globe but as a manifold of earth below and sky above, and it is on or in the ground, where earth and sky mix and mingle, that their lives are lived. The atmosphere of meteorological science, by contrast, belongs to a picture of the world that can only be obtained directly from a point of view located in outer space, as the first photographs of the earth taken from satellites revealed.[1] For earthbound souls, it is a picture that is given back to us, assembled not only from remote imagery but also from instrumental measurements such as of pressure, temperature, wind-speed and humidity. Where the inhabited world of earth and sky has its *weather*, the global atmosphere has its *climate*: the one is experienced, the other measured and recorded. Regarded as such, however, the atmosphere is wholly removed from the sphere of affect. It plays no part in the moods and motivations of inhabitants, whether human or non-human. It is not something that we or any other creatures *sense*.

For aestheticians, on the other hand, atmosphere is all about sensory experience: it is a space of affect – or, in the words of one prominent exponent of atmospheric philosophy, Gernot Böhme, an 'indeterminate spatially extended quality of feeling'.[2] Yet so far as the philosophers are concerned, this atmosphere may as well be airless. You might say, as they do in Denmark, that candles placed here and there in a room, especially when lit, exude a quality of comfort or cosiness (*hygge*) which casts a magic calm on all those who come within their ambience.[3] Or you might speak of the atmosphere of suspense or expectancy cast by a dramatic performance on stage or screen. Geographers and architects have written extensively about the atmospheres of the spaces they either study or create.[4] They are interested in the people and things to be found there, in their relative dispositions and in

the feelings they evoke. They might be interested in the visual, acoustic and haptic qualities of these spaces. But for the most part, they appear to have no interest in the weather. The air and its turbulence are not on their radar. Thus while meteorology gives us a notion of atmosphere as a gas-filled domain evacuated of all traces of mood and affect, aesthetics gives us what looks like the complementary opposite, a system of affects that appears to exist in a vacuum. Both meteorologists and aestheticians, from their respective sides, are inclined to say that *their* particular meaning of atmosphere is primary, and that the other is merely metaphorical. Their complementarity, however, suggests that the two sides may have more in common than meets the eye.

This commonality, I believe, lies in the operation I have called 'inversion', of turning the world in on itself so that its lines and movements of growth become boundaries of containment. Both the science of meteorology and the philosophy of aesthetics are products of the modern era, and it was above all the operation of inversion that marked its onset. Michel Serres, for example, compares the world that is given to us – in which, when standing, we cast shadows by sunlight and, when seated, stylus in hand, we write our lines – and this same world comprehended as a scene which, through an optical back-projection by way of the black hole of the eye's pupil, is cast as though fully formed, in appearance but not substance – that is, as an *image* – in the interiority of the mind. 'Modernity begins', Serres writes, 'when this real world space is taken as a scene, and this scene … turns inside out – like the finger of a glove or a simple optical diagram – and plunges into the utopia of a knowing, inner, intimate subject. This black hole absorbs the world.'[5] The wandering shadow and the written line of the ever-composing, worldly being have here been surrendered to vectors of projection that serve to transmit the total composition from a now exteriorised world into the recesses of the mind.

Historical geographer Kenneth Olwig traces this inversion to the theatrical conceits of the early seventeenth century, when the world began to be recreated on stage and viewed through a proscenium arch. This was actually 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 the Elizabethan era, 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'.[6] In effect the arena of theatre, inherited from classical times, was turned *outside in*. Moreover, in this inversion, as 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. Thus Olivier the man breathes the air, but Hamlet the character breathes the ether. In a sense, ether was a solution to the paradox, previously noted, of matter that has escaped materiality. It allowed the conflation of materiality with solidity to persist. And even though the concept of ether is now considered obsolete, we are still living with the paradox. The only change is that 'space' has been substituted for 'ether', with no apparent change of meaning.[7]

Not only did early modern theatricals turn the celestial world of wind and weather into internally structured space, but also in the renascent endeavours of architectural design and city planning, again masterminded by the irrepressible Jones, the world of the theatre was re-inverted in such a way that the perspectival space of the interior was once more turned upon the outside.[8] In this, the scenic façades of the theatrical set became the exterior facial façades of the theatre building itself and of other similarly ostentatious buildings in its vicinity, while the stage on which the actors played their parts became the now hard-surfaced or paved streets of the city. But critically, this double inversion did not restore the world to how it was before. When the stage and its scenery were taken outside, the stage was still a stage, and the scenery still scenery. On this stage, and before this scenery, urbanites were expected, like actors, to perform their roles. In its fullest extent, the entire world became a stage: on it, as Kant was later to observe, 'the play of our skills proceeds'.[9] For Kant, it will be recalled, this stage comprises the surface of a solid sphere or globe. Thus through the double inversion effected by Jones and his contemporaries, 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 characterisation of what is supposed to be the scientifically correct view of the matter.[10] The British astrophysicist Arthur Stanley Eddington, writing in the 1930s, would describe this view as entailing 'something like a turning inside out of our familiar picture of the world'.[11] 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.

This, then, was the view of the world from which both the science of meteorology and the philosophy of aesthetics took their respective bearings. Recall that meteorology draws its very name from speculations about the meaning of diverse celestial portents, as distinct from the 'weather-wising' of farmers and seafarers preoccupied with more mundane and pragmatic matters of timing in the conduct of everyday tasks. During the early modern period, as historian 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'.[12] But in the wake of the industrial revolution, not only was the wisdom of agrarian and seafaring traditions marginalised, but meteorology was also transformed into a laboratory science, conducted by means of instruments and standardised units of measure.[13] And the key concept of this science was 'atmosphere'.

Having conceived the atmosphere as a laboratory writ large or – as happened with the space of the theatre – turned inside out, scientists were able to treat it as a domain 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'.[14] In this reading, not only was weather subsumed under climate, having been redefined for scientific purposes as its localised instantiations, but air also lost its standing as a constitutive element of the inhabited world of earth and sky – that is, as something that we humans and other beings *breathe*. It became mere matter in the gaseous state, filling the ethereal space of the doubly inverted Kantian cosmos.

But if, for the meteorologists, the atmosphere belongs to the world of insentient nature, for the aestheticians it was placed unequivocally on the side of human consciousness with its feelings, sensations and perceptions. Thus the two atmospheres, of meteorology and aesthetics, straddle the familiar divisions between nature and humanity, materiality and sensoriality, the cosmic and the affective. In the latter sense, 'atmosphere' is roughly equivalent to what the philosopher and literary critic Walter Benjamin called 'aura' and the psychiatrist Ludwig Binswanger 'mood space' (*gestimmter Raum*).[15] Drawing on Binswanger's precedent, in a treatise on *Human Space* first published in 1963, philosopher 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.' 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.[16]

More recently, Gernot Böhme has drawn directly on Benjamin's concept of aura to expound 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. To illustrate what he means, Böhme 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 is contained 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.[17] Like Bollnow, Böhme grants that atmospheres are in some sense intermediate between

environmental qualities and human states. They are nothing, he insists, 'without the sentient subject', and are 'perceived only in subjective experience', and yet 'the subject experiences atmospheres as something "out there", something which can come over us, into which we are drawn, which takes possession of us'.[18] They are not, then, free-floating, like a mist 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 almost complete absence of weather. It is true that in his discussion of 'mood space', Bollnow 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*.[19] As for Böhme, while he does at least acknowledge that the term 'atmosphere' originated with meteorology, referring to 'the earth's envelope of air which carries the weather', this is but a pretext for setting the aerial dimension to one side. For as he goes on to note, the metaphorical extension of atmosphere from the earth's air to moods that are 'in the air' has now become so routine, in all European languages, that the term's original significance has been all but forgotten. And Böhme, for his part, is happy to follow suit.[20] While people must have air to breathe, this fact – for Böhme – is entirely superfluous to the constitution of the atmosphere, which arises from their encounters with one another and with things. It is no wonder that Böhme finds the most precise and paradigmatic instances of atmosphere in the *stage set*, observing that 'the art of generating atmospheres mirrors the real theatricalisation of our life'.[21] The connection between the atmosphere of aesthetics and the doubly inverted world of modernity, in which all things are staged – politics, sport, the city, commodities, personalities, the self – could hardly be more explicit!

Of course, Böhme has every reason to speak of feelings, perceptions and sensations. But how – outside of the artificially remodelled simulacrum of the stage set – can any feelingful encounter take place between persons and things without there being air to breathe? The sphere of affect, it seems, has been entirely divorced from that of the meteorological. To reinstate the union requires nothing less than a second inversion that would *undo* rather than extend or externalise the operation of the first: an inversion that in turning the theatrical box inside out would restore the world's inhabitants to the fullness of earth and sky. This would yield what Olwig calls 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'.[22] Perhaps, then, we could once again release the weather from its 'technological incarceration' – the phrase is Szerszynski's – within the cosmic laboratory to which scientific meteorology has given the name 'atmosphere'.[23] In the un-inverted world of real life, as we have already seen,

immersion in the weather-world is a condition for – and not a consequence of – our existence as temperate, and therefore sentient, beings. In order to arrive at a concept of atmosphere that satisfies this condition, we need to find a sense of the term that is at once *both* affective and meteorological. And our first step in achieving this must be to reintroduce the element of air.

Notes

1 Ingold (2011: 99–114).
2 Böhme (1993: 117–18).
3 Bille and Sørensen (2007: 275–6).
4 For just a small sample of a flourishing literature, see Adey *et al*. (2013), Anderson (2009), Ash (2013), Augoyard (1995), Böhme (1998), Edensor (2012), Stewart (2011), Thibaud (2002). In addition, a new journal, *Ambiances: International Journal of Sensory Environment, Architecture and Urban Space*, was launched in 2013.
5 Serres (1995b: 80).
6 Olwig (2011a: 526).
7 See Olwig (2011b: 306).
8 See Olwig (2011b: 312–13).
9 Kant (1970: 257) – see Chapter 8 above.
10 Vosniadou and Brewer (1992: 541).
11 Eddington (1935: 40).
12 Jankovic (2000: 37).
13 Hill (2012: 150–1).
14 Szerszynski (2010: 21).
15 Benjamin (2008: 22), Binswanger (1933).
16 Bollnow (2011: 217).
17 Böhme (1993: 121).
18 Böhme (2013: 3).
19 Bollnow (2011: 218).
20 Böhme (2013: 2).
21 Böhme (2013: 6).
22 Olwig (2011a: 529).
23 Szerszynski (2010: 25).

16 Ballooning in smooth space

Comparing men and their behaviours with octopuses and anemones in the sea, Marcel Mauss observed that as the latter are submerged in the ocean, the former are 'submerged in their environments and sentiments'.[1] The observation was prescient, for, as we have since discovered, it is precisely in this union of environment and sentiment – or, as we would now say, of the cosmic and the affective – that we find the essence of the atmosphere, and, with it, the guiding preoccupation of the kind of meteorology, not strictly scientific but neither purely a subject of aesthetics, which I need to complement my linealogy.

This meteorology is the study of atmospheric phenomena, to be sure, but these are the phenomena of weather and not of climate, experienced but not measured, and registered in the tempering or attunement of human moods and motivations to fluxes of the medium, and in their mixture. And while we can readily identify the medium as air, this is not the air that physics or chemistry specifies by its molecular composition and that could exist perfectly well in the gaseous state without the presence of humans or any other beings to breathe it. It is rather the air that, when we breathe, carries our affective lives as they spill into the world around us. Air in this sense, like wind and weather, is experienced, not recorded. 'I can't breathe', says the suffocating man; 'give me air!' To be able to breathe again – that's what air is. Indeed, one might say that air is the underside of breathing, much as light is the underside of seeing and sound the underside of hearing. To be able to see, that is light; to be able to hear, that is sound. This is to define air, light and sound as atmospheric phenomena. With air, as I shall show in this chapter, and with light and sound, as I shall show in the chapters following, atmosphere is neither cosmic nor affective but the fusion of the two.

Where to begin? One way might be to think about balloon flight. Here I follow the example of geographer Derek McCormack, in a study that focuses on the ill-fated expedition of the Swedish explorer Salomon August Andrée and his compatriots, who attempted to fly a hydrogen-filled balloon to the North Pole. Noting the opposition between the two senses of atmosphere adduced in the last chapter, belonging respectively to meteorological science and the philosophy of aesthetics, 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. Balloon flight, he suggests, 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 never still but continually overtaking itself.[2] In the 'atmosphere' of scientific meteorology, it would be impossible to *fly* in a balloon. Sure, the science tells us that hot air rises, that hydrogen is lighter than other gases, and therefore that a balloon filled with heated hydrogen will have a strong inclination to lift. It will not tell us, however, what it feels like to fly. But conversely, aesthetics – while it might seek to characterise the 'mood space' of volatility – will not get a balloon off the ground. To simulate flight in the ethereal atmosphere of the theatrical stage set, you would have to hang the balloon from a scaffold.

In the real, inhabited world, the balloon affords an *experience* of flight – an experience in which sentient awareness can blend with the turbulence of the aerial medium in a way that is not possible at ground level. We need not go to such lengths, however, to realise that our affective lives are carried in the air, where they mix and mingle as much as they tangle in the paths we weave along the ground. Even indoors, we swim in the air, as do fish in water, responding at every moment to draughts set up in part through our own and others' actions. One way to see this is to 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 cords. These flows, generated 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 many people in a convivial space, but only because all partake of, and in turn lend momentum to, the circulatory currents of the medium. Another way to see the same thing is to blow soap bubbles. Blowing a bubble is like holding one's breath, but this is a breath that instead of being wrapped within the folds of the lungs, momentarily hangs in suspension while it floats beyond the body (Figure 16.1). There you can watch it – all the aspiration and suspense of a held breath caught within a translucent bubble – until it bursts, releasing its affective load into the surround. 'For the duration of the bubble's life', writes Peter Sloterdijk, 'the blower was outside himself, as if the little orb's survival depended on remaining encased in an attention that floated with it.'[3] But hopes must disperse as surely as each bubble bursts, only to be recouped with every following breath.

In short, to transcend the opposition between the meteorological and the affective – to make the meteorological affective and affect meteorological – we need to refill the atmosphere with the element 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: that is, a weather-world. 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

Figure 16.1 The atmosphere refilled with air.
A soap bubble suspended over the North Sea, photographed from Aberdeen beach during the British Science Festival, September 2012. Photo courtesy of Terence Farquharson.

striated.[4] 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, as we have already found in the case of theatrical inversion, it is as though the world were cast fully formed upon the surface of the mind, much as it was 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. The written lines of the scribe are haptic; the scenographer's lines of projection are optical.

Now Deleuze and Guattari 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 and haptic vision.[5] 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, what I have called a *meshwork*, 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' – 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*. 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.[6] 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' 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' – and to that extent remains an inhabitant of the smooth. It is a space, say Deleuze and Guattari, where wind howls, ice cracks and sand sings.[7] 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, 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.[8] 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*. One cannot come close to or inhabit a glacier without being overwhelmed by the explosive sounds of cracking ice, the blinding white light (which Tlingit people express as a kind of heat) and the damp chill in the air. This compound of qualities – of sonority, luminosity and palpability – comprises what the glacier *is*.

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. And so it is, too, with the agricultural peasant as he labours on his fields under the relentless sky: the wind rakes the earth through a body that is braced against it, the sun glares down on it through the peasant's wizened eyes and the rumbling thunder listens through his anxious ears. For Tlingit hunters, for European

peasants, indeed for all of us, the experience of smooth space in this atmospheric sense *is* feeling, light and sound, not something 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 the phenomenology of Merleau-Ponty.

Notes

1 Mauss (1954: 78, and 1923–4: 182) – see Chapter 2 above.
2 McCormack (2008: 414, 418).
3 Sloterdijk (2011: 17).
4 Deleuze and Guattari (2004: 523–51).
5 Deleuze and Guattari (2004: 543–4).
6 Deleuze and Guattari (2004: 525)
7 See Deleuze and Guattari (2004: 528, 531 and 421).
8 Cruikshank (2005).

17 Coiling over

Recall that for Merleau-Ponty, the essence of perception lies in the alternation of inspiration and expiration, of action and passion. To be sentient, in his view, 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.[1] 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'.[2] 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, in Merleau-Ponty's phenomenology, fundamental to all perception.

Yet surely not everything in the world, taken in itself, is sentient. Glaciers are not in themselves sentient, nor are trees, nor stones. How can the alleged reversibility of perception hold in a situation where a human, who is self-sensing, encounters a thing – such as a glacier, rock or tree – which is not? What about trees, for example? 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.'[3] This is, no doubt, an experience familiar to anyone who has walked in the woods, especially in the half-light of dawn or dusk. As for Merleau-Ponty, citing Marchand's observations with approval, it only goes to prove the point. 'Inevitably', he says of the painter, 'the roles between him and the visible are reversed.'[4] The painter sees the trees; the trees see the painter. This is not because trees have eyes, as archaeologist Christopher Tilley explains, referring in his work on landscape phenomenology to Merleau-Ponty's observations on this score. It is rather 'because the trees affect, move the painter, become part of the painting that would be impossible without their presence'.[5]

Being an archaeologist, and like so many of his profession, 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.' Precisely because it affects him bodily and structures his awareness, the stone, he thinks, may be said to possess an agency of its own.[6] Admittedly, the reversibility entailed here is not quite the same as that of two hands touching, or even of shaking hands with another person, where indeed each hand feels the other in its digital and palmar grip. Stones are simply not set up to register sensations as hands are. Nor, for that matter, are trees. Indeed, it is all too easy, under the rubric of touch, to confuse neurally enabled sensory perception with the physical pressure of surface-to-surface contact. In a world of objects, of lineless blobs, things could weigh upon one another, or against one another, and as they do – says philosopher Jean-Luc Nancy – it is as if their heft or mass wells up to their surfaces where the pressure of their contact is most intensely felt. The weight of bodies, Nancy writes, 'is the raising of their masses to the surface … it bubbles up'.[7] But if they are to touch but not actually to fuse, then these masses must nevertheless hold to their respective domains. There must exist a certain space between them, and an interface where they can meet. 'To touch', writes Graham Harman, after Nancy, 'is to caress a surface that belongs to something else' – to something whose mass must forever remain on the far side of an impervious boundary between the toucher and the touched.[8]

Ultimately, then, while in weight, objects meet and interact across their surfaces, in mass they recede into their remote and inaccessible depths.[9] It follows that in an object-oriented ontology, the archaeologist's caress as he runs his hands over the monument, short of actually turning him to stone, could only confirm its separateness and isolation. It is as though, on receipt of the archaeologist's attentions, the stone were to recoil into itself. Yet in truth, the stone is no mere object, nor is it lineless. Its surface is textured like a veil by dint of its long endurance of the atmospheric elements – thanks, that is, to its weathering. And it is this lined surface that greets the digits of the archaeologist's hands, and joins with them in the movement of feeling. We have already noted how the timbers of a roof (Chapter 5) or the stones of a wall (Chapter 7) can offer themselves to one another on the inside; how they can join 'with' rather than 'up', in sympathy rather than articulation. Thus we can surely allow a certain correspondence between the hand of the archaeologist and the stone he touches, even if the latter is not, strictly speaking, sentient as the former is. It is in this limited sense, then, that Tilley can claim that he is indeed touched *by* the stone.

Such things as trees and stones, he says, 'are sensible without being sentient'.[10] 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. The painter, we could say, 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

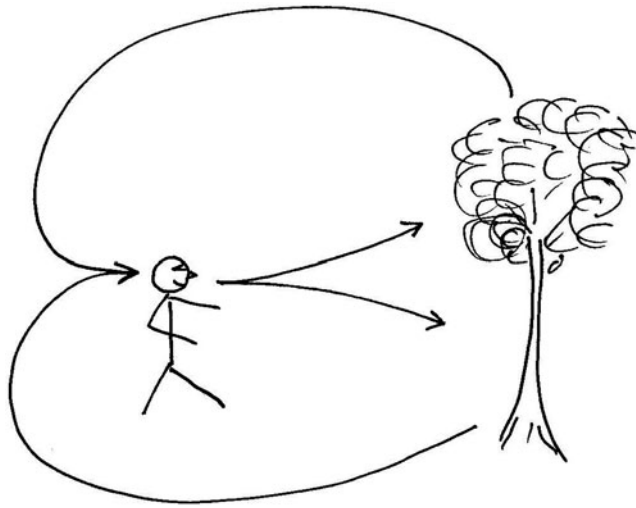


Figure 17.1 My being with the tree and the tree's being with me.
In this sketch, I observe the tree with eyes that have already absorbed its presence into their ways of looking. By way of these eyes of mine, the tree coils over and sees itself.

presence (Figure 17.1). And the archaeologist does not just touch the stone but touches with it – with hands that already know hardness and softness, roughness and smoothness. Tree and stone, in other words, are at once on both the hither and the far side of vision and touch, respectively. 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 saw in the foregoing chapter, 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 is in itself sentient. But *immersed in sentience*, each can, as it were, double back so as to see, touch and hear itself. In this 'coiling over' – to borrow an evocative phrase from Merleau-Ponty – perceivers become one with what they perceive.[11]

To express this unity of body, tree and stone, and indeed everything else that lies on both the hither and the far side and thus enters into the field of perception, Merleau-Ponty latterly adopted the notion of *flesh*.[12] Whatever is already with perceivers in the act of perception, he argued, is of the same flesh as their own bodies. In this key concept, however, there remains a fundamental ambiguity. Merleau-Ponty was clearly troubled by the thought 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, he admitted, is not self-sensing. 'It is sensible and not sentient', he wrote in a note to himself, only posthumously published, 'I call it flesh nonetheless.'[13] The

problem is that under this one concept are subsumed two quite different kinds of 'being with'. On the one hand, there is my being *with* stone, tree or glacier; 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, or of a bubble before it bursts. The other releases the tension in issuing forth along a line of growth or becoming (Figure 17.1). Earlier, in Chapter 13, we compared this alternation to the swimmer's breast stroke, in which the arms' backward sweep gathers in preparation for the forward thrust of propulsion. These alternating gestures, critically, are not the reverse of one another. As with the coil, they do not go back and forth but round and round, such that the second movement finishes the circuit initiated by the first while preparing for the cycle following. It does not, however, close the circuit, since a body that has recovered its initial position is nevertheless, spatiotemporally, *further on*.

Thus the living being, swimming in the atmospheric medium, alternately forges ahead along its lines of propulsion, and pulls up behind in its absorption of the medium. Inhaling the atmosphere as it breathes the air, on the outward breath of exhalation it weaves its lines of speech, song, story and handwriting into the fabric of the world. Out in front is an awareness that feels its way forward; bringing up the rear is the heaviness of a body that has soaked up the medium of its subsistence, rather as paper, for example, soaks up the ink to form a smudge after the pen has moved on. The movement of animate life, then, is held in the alternation between pushing out and pulling up, or in other words between anticipation and recollection. And here, finally, we find the answer to the question posed in the foregoing chapter: namely, how to understand the relation, at the heart of smooth space, between the haptic and the atmospheric, or, more simply, between lines and the weather? Every living being, we have argued, stitches itself into the world along the interwoven lines of the meshwork. But every living being, too, is necessarily immersed in an atmosphere. Is the flesh, then, meshwork or atmosphere? Is it to be compared to the felt of the tent or to the tactility and sonority of a world of wind and weather?

The answer I propose is that it is, alternately, both. Meshwork and atmosphere are, if you will, two sides of the flesh – dual aspects of the topology of the smooth – corresponding to the two senses of 'being with' that I have just distinguished. It is atmosphere on the inhalation, and meshwork on the exhalation. Outside the world of magic and make-believe, the torque of the coil is irreversible. That torque, as we saw in Chapter 14, is *time*. If the flesh of the world were haptic on the inhalation and atmospheric on the exhalation, then the propulsion of the haptic would turn to repair and the recollection of the atmospheric to release. This, in essence, is the story

of Aladdin and the lamp, where all it took was a restorative rub on the old lamp – a haptic gesture par excellence – to release the genie to the atmosphere. In the story, time runs backwards. In the real world, where time runs forwards, the living, respiring being is the site where atmospheric immersion is transformed into the haptic extension of the meshwork 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.

Notes

1 Ingold (2011: 69).
2 Merleau-Ponty (1964: 181).
3 Charbonnier (1959: 143).
4 Merleau-Ponty (1964: 167).
5 Tilley (2004: 18).
6 Tilley (2004: 17).
7 Nancy (2008: 93).
8 Harman (2012: 98).
9 Bogost (2012: 77).
10 Tilley (2004: 19).
11 Merleau-Ponty (1968: 140).
12 Merleau-Ponty (1968: 248–51).
13 Merleau-Ponty (1968: 250).

18 Under the sky

Let me return to those aspects or manifestations of the atmospheric that I introduced, under the heading of 'meteorology' in Chapter 11 (see Table 11.1). To recapitulate: these were breath, time, mood, sound, memory, colour and sky. Which have been covered, and which have still to be accounted for? I have already dwelt at length on *breath*, on inhalation and exhalation, and we should need no further reminding that while the lines of speech and song issue forth on the exhalation, the speaker or singer must periodically pause to inhale. In their notations, respectively verbal and musical, punctuation and rests would advise the performer on where to pause for breath.[1] There is, however, a strong inclination, at least in the verbal and musical arts of the western tradition, to denigrate the pause. Orators are taught to speak, vocalists to sing and flautists to play in such a way that any intake of breath and resulting interruption in the line is as imperceptible as possible. Just as action has always been prioritised over passion, doing over undergoing, so to pause is seen as a sign of hesitation, weakness or indecision. This will be my theme in the third part of this book, and I will not pursue it further here. That we habitually place the word 'articulate' before 'speech' or 'writing', as if every utterance or script were syntactically joined up from elements chained end to end, is ample proof of where conventional priorities lie. We tend to think of punctuation as the poor relation of writing, and of rests as the poor relation of melody, as though both were mere breaks and gap-fillers. Yet in truth it is the pause that lends both speech and song its atmospheric affect, without which it would be lifeless. Only a machine can speak or play without pause, in an articulation that is devoid of feeling.

From breath we moved on to *time*, in showing how the alternation of inhalation and exhalation marks a time that is both irreversible and kairologically attuned to the rhythms of the environment, enacted in the weather-wising of its inhabitants. Moreover, in the respiratory mingling of air with bodily tissues, human beings and other creatures that are wise to their surroundings are constitutionally not only temporal but temperate. And temperament is just another word for *mood* – that is, for the way the atmosphere pervades every pore of a living being and lends affect to its

actions. What, then, of *sound*, *memory*, *colour* and *sky*? Sound, as I shall argue presently, is the way we experience the reverberations of the atmospheric medium, just as skylight is the way we experience its illuminations. In its resounding, the body functions rather like an echo-chamber. In singing, or in playing a musical instrument, the melodic line is drawn *out* from the chamber, and given a particular inflection by the bodily gesture that enacts it. Likewise, the storyteller draws out the line of narrative from the echoes of memory. As sound is to melody, so memory is to story: the one gathers or recollects, the other feels its way forward. And so it is, too, in the relation between colour and the line. In the following chapters I shall show not only how colour invests the line with atmosphere, but how sound does also. But first, I offer some observations on the final term in our list of atmospheric phenomena, and by far the most mysterious, namely the sky.

In the first volume of his *Modern Painters*, the Victorian connoisseur and critic John Ruskin castigated the 'old masters' for the way they would paint the cloud-flecked sky. They would render it, he said, as something you could look *at* but not *through*. It was as though the sky had torn itself from the clouds that had formed as variations within its element, and had receded into a blue homogeneity – a great and distant dome – under which the clouds were suspended like separate bodies. With these painters, Ruskin wrote, 'you may indeed go a long way before you come to the sky, but you will strike hard up against it at last'. So accustomed are we to this painterly convention that we do not object, even though it is utterly confounded by the evidence of our senses. For what this evidence tells us is that the sky has no surface, that a vision once launched into it can plunge ever further without limit, and, moreover, that far from being of a homogeneous blue, it is a domain of infinite variation: 'a deep, quivering, transparent body of penetrable air' – that is how Ruskin describes it – 'in which you trace or imagine short falling spots of deceiving light, and dim shades, faint veiled vestiges of dark vapour'.[2] Perhaps we could say that the sky is the atmospheric analogue of the crumpled earth whose folds, while they rise up from the ground, remain as much *of* the ground as creases of a sheet remain *of* the sheet. Clouds, likewise, are moisture-laden folds of the crumpled sky. They are *of* the sky, not disconnected objects that hang *in* it. For the sky no more parts with its clouds, receding into hemispheric uniformity, than does the ground from its hills and mountains, only to sink back into a planar base.

Apropos the ground, in Chapter 8 I introduced the ecological approach to visual perception pioneered by the psychologist James Gibson. Recall that for him, the ground is just such a base, on which everything else is mounted like furniture on the floor of a room. And the sky? Gibson supposes that for someone standing on the ground, the sky would appear as a great hemisphere, meeting the ground at the circle of the horizon, in which objects such as clouds and celestial bodies are seen to float. I have enormous sympathy for Gibson's approach, largely because of his determination to understand how we perceive the world we naturally inhabit rather than the artificial world of

the research laboratory: a world, as he puts it, comprised 'of the earth and the sky with objects *on* the earth and *in* the sky, of mountains and clouds, fires and sunsets, pebbles and stars'.[3] But just as I have trouble with his notion of the ground as an isotropic surface that has detached itself from all its features and upon which they appear to stand, so, too, his idea of the sky as an empty hemispheric void, in which things like clouds are seen to hang, seems to fly in the face of what we know from experience. Indeed, there is an almost uncanny resemblance between the way Gibson thinks about the sky and the way the 'old masters' – at least in Ruskin's interpretation – painted it.

Clearly, Gibson has a problem with the sky, and it is one that he recognises himself. It all goes back to one of the most fundamental tenets of his approach, namely, that of all the possible things that can be seen, light is *not* one of them.[4] What we see, Gibson argues, are things *specified* by the light, not light as such. For example, as you walk around a solid piece of furniture like a table, the pattern of light reflected from its surfaces, as it reaches your moving eyes, undergoes continuous modulation. Underlying these modulations, however, are certain parametric constants; Gibson calls them 'invariants'. His contention is that these invariants are sufficient to fully specify the form and texture of the object seen. In this, he is out to refute an alternative view, long ascendant in the psychology of perception, that light is *all* that we see – that perceivers have nothing more to go on than sensations arising from the stimulation of photoreceptors in the retina – and therefore that it is left to the mind to contribute conceptual form to the raw material of sensory input. To perceive a table, for instance, it is necessary to pull from memory an image of 'tableness', and to apply it to the visual stimulus which is not, in itself, sufficient to specify the piece that stands before us.

I have no wish to mount a defence of this latter position: it has, in my view, been amply discredited. My concern is rather to bring out an assumption, apparently shared by both sides of the argument, *about what light is*. In Gibson's own words, it is 'photons or waves or radiant energy'.[5] Now whether we argue (with classical optics) that light is *all* we see, or (with the ecological approach) that we *never* see light, only patterns in the light, our understanding of light remains the same: it is the physical cause, of which retinal stimulation is the effect. As radiation, it is emitted from a source; as illumination, it lights up our world. Radiation, principally from the sun, becomes illumination by being scattered in all directions, by refraction through particles in the atmosphere (*sensu* meteorological science) and reflection from the mottled and textured surface of the earth. To the extent that the illumination converging on a point is structured, it carries information that specifies features of the environment. Unstructured light, however, specifies nothing: what we see, then, is emptiness. And this, according to Gibson, is precisely what happens when we gaze into the clear blue sky. On lifting one's gaze from the landscape, across the line of the horizon, to the sky, the structured light that specifies the opaque textures and surfaces of

the terrain from which it is reflected gives way to the unstructured light that permeates the sky, leading to the perception of a translucent void.[6]

We can now begin to see why the sky, for Gibson, appears so paradoxical. If you cannot see light but only what is specified by the light, and if the light of the sky on a clear day specifies absolutely nothing, then how can you see the sky? In reality, after all, the sky has no surface. It is not a magically radiant, blue-painted dome that encompasses our lives within some giant bubble. To the contrary, it is openness or transparency itself. Nothing is there. But how can we see the sky when there is nothing to see? Indeed, Gibson answers his own question, of how one might perceive 'a luminous *field* such as the sky', with this most enigmatic of responses: 'To me it seems that I see the sky, not luminosity as such.'[7] The sky is luminous, but to perceive the sky is not to perceive its luminosity! What, we might wonder, is left of the sky once its luminosity has been subtracted? We may as well be out on a pitch-dark night, and such, indeed, is the strange conclusion to which Gibson moves. The ambient light of the sky, he admits, is no different from ambient darkness: since it specifies nothing, there is nothing to be perceived. The illuminated sky of the day, like the blackness of the night, is emptiness itself.[8]

Now at much the same time that Gibson was wrestling with this problem, finding it hard if not impossible to distinguish between day and night, Merleau-Ponty was also reflecting on the mystery of the sky. I do not believe that Gibson and Merleau-Ponty ever met, but had they done so, and had their conversation turned towards the sky, they would doubtless have agreed that skylight cannot, in itself, be an *object* of perception. To contemplate the blue of the sky, Merleau-Ponty would have remarked, is not to be set over against it as a cosmic subject to cosmic object, nor is it to grasp it cognitively by assimilating the raw material of sensory experience to some abstract idea of blueness.[9] The sky is not an object of the physical universe, nor is it a concept in the mind of the observer. But the agreement of our two protagonists would have stopped there. While Gibson would continue to insist on separating the sky from its luminosity, Merleau-Ponty would respond that they are one and the same. To see the sky, Merleau-Ponty would say, is precisely to experience its luminosity from *within*. 'I am the sky itself as it is drawn together and unified', he declares; 'my consciousness is saturated with this limitless blue'.[10] The luminosity of the sky is thus not so much an illuminative scattering of radiant energy as an affectation of being. And it is precisely in this blending of the cosmic with the affective that the sky is constituted as a manifestation of atmosphere.

To grasp the sky's luminosity, however, we will need a different understanding of light, and in the next chapter I shall spell out what this is. Before we leave the sky, however, I should like to introduce one more voice to the conversation, besides those of the psychologist Gibson and the philosopher Merleau-Ponty. This belongs to the musicologist Victor Zuckerkandl. For Zuckerkandl is also enchanted by the experience of looking up at the sky,

and writes about it in words that could almost have been leafed from the pages of Merleau-Ponty. Gazing skywards, Zuckerkandl does not see a 'thing out there'. What he sees, he reports, is 'boundless space, in which I lose myself'. Nothing new in that! But here's the surprise. For even as Merleau-Ponty explains that contemplating the sky tells us all we need to know about what it means to *see*, Zuckerkandl declares that the experience he has – looking up at the sky – is precisely what it means to *hear*![11] What we see, of course, is pure luminosity, and what we hear is sonority. And just as to identify the sky with its luminosity requires an understanding of light quite different from that of classical optics, so to identify the sky with its sonority will require an understanding of sound that also differs from accepted wisdom in the science of acoustics. For science, both light and sound are energetic impulses that are emitted from a source and picked up by a recipient. Conventionally, their paths are diagrammed as straight lines connecting the two. In what follows I shall endeavour to show that if we think of light, and of sound, as phenomena of atmosphere, then in neither case is it emitted in straight lines from source to a recipient. It rather swirls around, very much like the wind, in the regions in-between them.

Notes

1 See Parkes (1992), also Ingold (2007a: 23–4, 95–6).
2 Ruskin (2004: 11–12). These lines are taken from the section entitled 'On the truth of skies' in Ruskin's *Modern Painters*, Volume 1, first published in 1843.
3 Gibson (1979: 66, emphasis in original).
4 Gibson (1979: 54).
5 Gibson (1979: 55).
6 Gibson (1979: 48–52).
7 Gibson (1979: 54, emphasis in original).
8 Gibson (1979: 52).
9 See Merleau-Ponty (1962: 214).
10 Merleau-Ponty (1962: 214).
11 Zuckerkandl (1956: 344). I have compared the arguments of Merleau-Ponty and Zuckerkandl at greater length elsewhere (Ingold 2000: 266–9).

19 Seeing with sunbeams

Imagine that you are out with Gibson on a dark night. Up above, stars twinkle in a cloudless sky, while at ground level electric lamps shine through the windows of nearby houses. You see starlight and lamplight, or so you declare. Gibson, however, responds that you do not. 'A single point of light in an otherwise dark field', he says, 'is not "light"; it specifies either a very distant source of light or a very small source, a luminous object.'[1] But how can light not be 'light', you ask? To be sure, the stars are very distant, and the lamps very small. We know that because of what astronomers have told us about stars, and because of what everyday life has taught us about lamps. We know, too, that stars do not land on the ground, and that houses do not take off into the sky. For all these reasons, we are unlikely to confuse lamps with stars. Nevertheless, we might be forgiven for confusing both lamps and stars with light. In the world according to Gibson, it transpires, the stars you witness in the heavens are but specks, 'specified' by the light you do not see. And the lamps you see in the houses are likewise mere bulbs which indicate – among other things – that people are at home to switch them on. In this world, stars hang in the sky but do not shine; lamps hang from ceilings but do not glow. The light is like a messenger that delivers stars and lamps to the doors of your perception, but magically vanishes at the moment you let them in.

In the year 1889, in the month of June, the painter Vincent van Gogh found himself in a situation much like the one I have just described, and he painted what he saw (Figure 19.1). The painting appeals to us precisely because it both chimes with our experience of what it *feels like* to be under the stars and affords us the means to dwell upon it – perhaps to discover depths in this experience of which we would otherwise remain unaware. Two things are immediately apparent. First, the night sky is not homogeneous, nor is it empty save for stars. It swirls with currents that resonate with the contours of the landscape which we can dimly make out in the light of a crescent moon. And secondly, the stars themselves are not inert specks in the firmament. On the contrary, they *pulse*. That is to say, their light is not merely received as a messenger – a vector of projection – that yields them up as objects of our awareness. Rather, we feel it from within, as an

Figure 19.1 The Starry Night (*De sterrennacht*), painted by Vincent van Gogh in June 1889.
Museum of Modern Art (MoMA). Oil on canvas, 29 × 36″ (73.7 × 92.1 cm). Acquired through the Lillie P. Bliss Bequest. Accession no.: 472.1941 © 2014. Digital image, The Museum of Modern Art, New York/Scala, Florence.

affect. Immersed in the swirling expanse, it is as though our minds and bodies are swept up in the flow, even as we remain rooted to one spot. Van Gogh, then, is not just painting stars. He is a star-struck painter: he sees, and paints, *with* their light. This is why the stars can be at once infinitely distant and yet touch the soul.

It is not that vision puts the stars within reach so that we might snatch them from the sky like apples from a tree. Nor do we throw out a line to rope them in. Rather, as Merleau-Ponty puts it, vision 'is the means given me for being absent from myself'. To stand in place and open one's eyes upon the night sky is not to extend one's being along a continuum, from near at hand to far away, but to find it split between two poles, one emplaced with the body, the other at large in the heavens, mingling with the stars and flitting like an agile spirit from one to another as the focus of attention shifts. And yet these two poles are really one, for at the termination of their fission, continues Merleau-Ponty, 'I come back to myself.'[2] We discover, perhaps to our astonishment, that the twinkling stars are our own eyes: that we don't just see them but see *with* them. For what van Gogh

paints is not the panorama of the sky in its totality, as it might be exhibited in a planetarium. His painting makes no claim to *represent* what he sees. It rather enacts, in line and colour, the birth of his vision, which, as it opens upon the cosmos, seems to explode like a shower of fireworks.

Wherever sensing meets the sensible, as Merleau-Ponty writes, or wherever our attention is let loose into the world, there is ignited a kind of spark.[3] The night sky glitters with a thousand such sparks, which will burn for as long as they glow in our own eyes. Some burn bright, others fade, and in the painting you can follow the unfolding of the painter's attention as it wanders from star to star. A moment ago, it was with the stars near the top of the canvas, but now it has lowered to one nearer the horizon which, at this instant, appears incandescent. This light, glowing white in the picture, is not the radiant energy of the physical universe, whether conceived as waves or photons, nor is it some disturbance or agitation of a consciousness imprisoned in that cavernous endocranial space behind the eyeballs. It does not travel in straight lines that connect a point source with a recipient. It is no more emitted from a source than it enters the eye. Rather, like a spark, it bursts from the fusion of the two poles of vision, respectively corporeal and celestial, in directions orthogonal to the line of their connection.

Every star, then, is not so much a hub from which rays of light fan out in all directions, as a pivot *around and between* which (and other stars) the light seems to swirl, in concert with the swivelling eyes. This swirling corresponds to the temporal movement of our attentiveness. So long as attention is focused on a particular star, the light revolves tightly around it, but as attention wanders so does the light. Here and there, the star-sparks have already faded, leaving only flaccid and decaying swirls. And that is exactly how van Gogh has painted them! The thought of the painting had long been on his mind, for, over a year before committing *The Starry Night* to canvas, in April 1888, van Gogh had written to his friend Émile Bernard that his aim was to realise, in his imagination and through his art, 'a more exalting and consoling nature than the single brief glance at reality – which in our sight is ever changing, passing like a flash of lightning – can let us perceive. A starry sky for instance – look that is something I should like to try to do.'[4] He could not have been clearer that his ambition was not to produce a quasi-photographic snapshot, as though one were looking *at* the cosmos from a fixed perspective, but rather to capture the temporal unfolding of a visual awareness that unites us *with* the cosmos in the very moment that it divides us from ourselves. Light, for van Gogh, was the outcome of this fission/fusion reaction. And so it is, too, for us.

Of course there could be no experience of light without the incidence of radiant energy, or without the excitation of photoreceptors in the retina, but as an *affectation of being* – as the experience of inhabiting an illuminated world – light is reducible to neither. Nevertheless this experience is entirely real. We cannot afford to dismiss it as an illusion, any more than we can write off the history of painting as an aberration caused by the

overstimulation of excessively susceptible minds.[5] Nor, on the other hand, can we deny the reality of blindness for the visually impaired. Light is real for the sighted, precisely because it is none other than the spark of vision itself – the birth of visual awareness as it opens up to the cosmos. Thus the painter stands forever at that sliding moment – rather like riding the crest of a wave – at which the world is on the point of revealing itself, such that the perpetual birth of his awareness is, concurrently, the perpetual birth of the world. It is as though, at every moment, his eyes were opening upon the world for the first time. And in this opening, the visual field – that is, the night sky in its entirety – is merged with the field of his attention. That is why the star, in our perception, sheds its light at once from the core of our being and from the furthest reaches of the cosmos. It simultaneously beams and beckons. It is in just this sense of both beaming and beckoning, or of uniting the affective with the cosmic, that light may be regarded as a phenomenon of atmosphere. In this specific sense, light is neither physical nor psychic. It is atmospheric. And in his painting, van Gogh has given us the atmosphere of the night sky. I know no better rendering of it.

Following your contemplation of the night in the company of Gibson, and a well-earned rest, you rise to discover that the sun is already up, and is shining brightly in an azure sky. Should you attempt to look at it, or at a glossy surface that reflects it, you risk being dazzled or even blinded by its brilliance. Gibson, determined to show that light is the one thing we do not see, acknowledges that this presents something of a challenge to his thinking. The glare and shine of the sun – 'are these not sensations of light as such?' he asks, only to answer his own question in the negative. No: what we perceive is a state akin to pain, arising from excessive stimulation of the eyes. This is a fact about the body, not about the world.[6] The fact about the world is that the sun is a round object suspended in the sky. As such, the sun is delivered to us by its light, but does not actually shine. We see the form and not the light. But Gibson's conclusion does not accord with your experience. For you, the sun doesn't just hang in the sky. It, too, both beams and beckons.

To witness the sun is to see by its own light, or, in the poetic language of Johann Wolfgang von Goethe, 'if the eye were not sun-like, it could not see the sun'.[7] By 'sun-like', Goethe did not mean to imply a relation of formal resemblance, as if to highlight the spherical form common to both suns and eyeballs. His point was rather that the same sun that shines in the sky (the beacon) also shines from our eyes (the beam). It is what we see *with*. Seeing with sunbeams is like feeling the wind: it is an affective mingling of our own awareness with the turbulence and pulsations of the medium in which we are immersed. For the wind, too, twists and turns, forming swirls and eddies. It may come from this or that direction, but the direction is not a point of origin, nor do I register its arrival as a tap on the cheek. Rather, it brushes by my skin on its way to nowhere, and I feel it as I do my own body in its posture and movement. I take it in and breathe it out again, creating an eddy in its flow. So it is, too, with beams of light (Figure 19.2).

Figure 19.2 The beam of light.
Detail from *The Hours of Mary of Burgundy* (Folio 132, verso), attributed to either Nicolaes Spierinc or Lieven van Lathem, and dating from c.1477. Note how the beam of light passes *through* the eye, in a swirling trajectory that has no point of origin or destination. Here, the beam is depicted as a thread, as is evident from the gesture of the lady's right hand, which pinches the thread between thumb and forefinger exactly as is done when spinning from a distaff with a drop spindle.

For this reason, beams are to be distinguished categorically from rays. Rays are emitted from a source and are conventionally depicted as straight lines. But beams curl around and within things; they are never straight. As the atmosphere to which they belong, beams inhabit the realms of the in-between. And like the wind, sunbeams get inside and saturate our consciousness to the extent that they are constitutive of our own capacity to see, just as the wind is constitutive of our capacity to feel. In this vein, Merleau-Ponty described the relation of sunlight to vision as a kind of symbiosis – a way 'the outside has of invading us', and our way 'of meeting this invasion'.[8] Where Merleau-Ponty wrote of symbiosis, however, I prefer the term *correspondence*. To see the sun, as Goethe had insisted, the eyes must already respond to its light. But conversely, the sun can only shine in a world with eyes capable of so responding. Eyes and sun thus co-respond.

In his *Bedeutungslehre* or 'Theory of meaning' of 1940, the Estonian-born biologist and founder of biosemiotics, Jakob von Uexküll, argued on these grounds that Goethe's insight was but half-formed. To complete it one should add the corollary: 'If the sun were not eye-like, it could not shine in any sky.'[9] Von Uexküll's contention was that the sky, and the sun as a

celestial light that illuminates the sky, can only exist in the phenomenal world of creatures with eyes. To be sure, were the sun to be conceived in a strictly physical sense, as an astronomical body rent by nuclear reactions, then it could perhaps be said to exist even if there were no creatures to see it, or in its light. This, indeed, was Gibson's ecological argument: namely, that light needs no eyes to exist; it only needs eyes to establish its *relevance*.[10] For von Uexküll, however, the sun in its shining was to be understood not as a physical entity but as a manifest presence in the world of phenomena. And in this sense, just as the eye, as Goethe had observed, can see only by virtue of its correspondence with the sun, so the sun we perceive in the sky, and that lights the world of our experience, can exist only through its essential correspondence with the eye.

With this, we can return to what I have called the *fission/fusion reaction* that drives all perception. Contrary to the Cartesian position – according to which the interior subject, at one with itself but divided from the cosmos, projects its meanings upon the data of sense – our conclusion, following Merleau-Ponty, is that the seer is inwardly at one with the cosmos but divided from himself. This conclusion can be readily verified by means of a simple experiment. Place one finger between your eyes and touch the hard surface of your forehead. Yes, you are definitely still there, and have not yet melted into the ether. But on second thoughts you are not so sure, for you are perplexed to find that in the visual field that finger strikes no surface but rather looms as a ghostly, intruding presence that casts its shadow in the void. How, you wonder, can you be here, in place and at home in your body, and at the same time inhabit an atmospheric world that returns the body to you as a spectre? In that existential doubt lies the engine of perception.

We have found that as the atmospheric product of a fission/fusion reaction, light obeys very different rules from those to which we are accustomed in the science of optics. For one thing, it does not travel in straight lines, as rays, but curls like the sparks of a fire or its wreaths of smoke. For another, it is neither emitted from a celestial source nor registered by receptors in the eye, but follows the temporal correspondence of the seer's attention as it roams the heavens. It is like the wind. As wind is in the body of the walker as he leans into it, thrusting with his stick, or as the thunder that announces an impending storm reverberates in his ears, or as stone – to revert to an earlier example – is in the archaeologist's hands, in fusion, the star or the sun is *with* me, in my eyes. If stone touches through hands that have become stone-like, and if thunder listens through thunderstruck ears, then so, too, the sun and the stars – coiling over – look through sun-like and starstruck eyes. But in fission, I have escaped from myself and am abroad in the cosmos, in among the elements. I am *with* them – with the sun and the stars, with wind and storm, with stone – while my body has become a ghost. The next step in my argument is to assimilate this alternation between fusion and fission, or breathing in and out, to one between colour and line.

Notes

1 Gibson (1979: 54).
2 Merleau-Ponty (1964: 186); see also Ingold (2000: 263).
3 Merleau-Ponty (1964: 163–4).
4 Cited in Soth (1986: 301). Not that van Gogh's first attempts were entirely successful. In *Starry Night over the Rhone*, painted in September 1888, he had bowed to convention by depicting each star as a dot from which short yellow streaks radiated out into a deep blue sky. It is conceivable, as historian of science Omar Nasim has suggested, that the artist subsequently became acquainted with the illustrations of spiral nebulae by Nicolas Camille Flammarion, a contemporary populariser of astronomy in France, and that these were the inspiration for the swirls of the later painting. Be that as it may, Nasim is surely right to say that van Gogh's depiction of the starry night had something in common with the reveries of Flammarion, in so far as it entailed 'an expansion of human imagination and perception, where the ordinarily near and the cosmically far are pictured in one view' (Nasim 2013: 118–21).
5 Ingold (2000: 265).
6 Gibson (1979: 55).
7 Goethe, in Luke (1964: 282).
8 Merleau-Ponty (1962: 317).
9 Uexküll (1982: 65).
10 Gibson (1966: 222).

20 Line and colour

You cannot draw the sky, but you can paint it. That, at least, was Gibson's opinion. Drawings are comprised of lines, and these lines, according to Gibson, delineate features of the environment that have come to the notice of the draughtsman and that he wishes to commit to a surface. These features are registered at the eye as a nested series of solid angles: thus the outline of a thing such as a tree subtends a larger angle, within which are nested the numerous and much smaller angles subtended by the occluding edges of leaves and branches, in so far as they can be made out. This set of solid angles comprises what Gibson calls the 'ambient optic array'. What is not specified in the array, he insists, cannot be drawn. Thus a line drawing can specify corners, edges, occluding edges (such as of an upright cylindrical object like a tree trunk or pylon), wires, cracks or fissures, and the horizon that marks the division between earth and sky (Figure 20.1). But the drawing *cannot* specify the shading, the texture or, crucially, the colour of a surface: only an 'abrupt discontinuity' in any of these qualities can be drawn.[1] Moreover, in the absence of surface, you cannot draw translucence. Thus, while one might draw objects *in* the sky, such as clouds or the moon, whose outlines are specified by the angles they subtend at the eye, one cannot draw the sky itself, whether by day or by night.

Gibson is adamant in his rejection of the more traditional view of drawing, tied to classical optics, according to which the draughtsman mentally projects, onto the page, an image that has first been formed in his mind, and then physically traces the outlines. Nevertheless, the pencil-point of lead on the page still serves for him as an inverse of the pencil-point of light-rays at the eye. Thus the line traced by the moving hand emerges as a record of the invariants extracted from the optical array by the moving eye. To that extent, Gibson remains very much a Cartesian. Indeed, Descartes himself preferred copper engravings to paintings, a preference that Merleau-Ponty traces to the premise that in presenting things by their outsides – their envelopes – engravings 'preserve the forms of objects'.[2] That is, they record invariants in just the way that Gibson says drawings ought to do.

Seeing and drawing, thus understood, both participate in what Deleuze and Guattari call the 'white wall/black hole system'.[3] The black hole is the

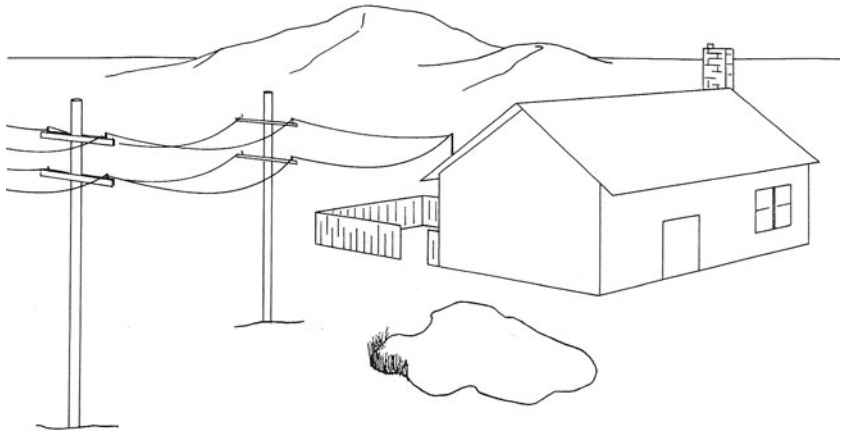


Figure 20.1 Some of the possible meanings of a line.
Corner, edge, occluding edge, wire, fissure, skyline, horizon, reproduced from Gibson's *The Ecological Approach to Visual Perception* (1979: 288).

seat of subjectivity, into which – to recall Serres's characterisation of modernity – is plunged a landscape in its totality. 'This black hole', wrote Serres, 'absorbs the world.'[4] Concealed behind or within the hole lurks the Cartesian intellect, isolated and self-contained. The white wall, on the contrary, is the plane of significance, on which are projected the intellect's constructions, whether rendered in writing or as drawn designs or – as in the cinema – as already captured images. This is the white wall of the *screen*. Quite unlike the 'screen wall' of the tent, as characterised by Vilém Flusser and introduced in Chapter 6, which weaves the diverse experience of inhabitants into its very texture, the white wall is ideally texture-less and utterly indifferent to the forms and fragments cast upon it. The screen of the cinema, for example, remains blankly impervious to the moving images that play on its surface. These movements are projected onto the white screen, but are not woven into its fabric.[5]

With the white wall/black hole system, white light reflected from the surfaces of objects in the world converges, in seeing, at the black pupil of the eye; while in drawing, the typically black line, issuing from the mind of the hidden subject, by way of the hand, is inscribed upon the white surface of paper. Colour, in this system, is superficial, even deceptive. In contrast with the power of the line – engraved or drawn – to specify invariant form, colour figures as mere ornament, embellishment or 'make-up' with the power to seduce or charm but not, as in writing or drawing, to convey the processes of thought.[6] 'Truth', writes the anthropologist Michael Taussig, 'comes in black and white for our philosophers. … Shapes and forms, outlines and marks, that is truth. Colour is another world … a luxury, an excess, a filler, a decoration.' We have to fence it in with lines and marks – what Taussig here calls the 'boundary riders' of thought.[7]

If, however, we return to van Gogh's *The Starry Night*, then this division between line and colour seems confounded. For while it is a painting comprised entirely of lines, every line is coloured, pulsing – in Taussig's words – with a 'raw energy … plasmatically exuding from thick ribs of oil paint'. Here, as Merleau-Ponty remarks, 'depth, colour, form, line, movement, contour, physiognomy, are all branches of Being, and … each one can sway all the rest'.[8] They do not present themselves as answering to distinct problems or objectives, as between recording information and conveying mood, nor do they stand on opposite sides of a division between a rational mind and an inchoate world, or between thought and feeling. This calls for quite a shift in our usual ways of thinking. Ever since Newton, we have been accustomed to the idea that as radiant energy, light comes in a range of wavelengths which, if differentially refracted by means of a prism, yield up all the colours of the spectrum. Recombined, they merge into 'colourless' white. Thus colour is equivalent to spectral differentiation. But if, as I have argued here, waves of radiant energy, on the one hand, and, on the other, the capacity of photo-receptors in the eye to react to them are conditions for the experience of light but do not amount to light as such, then we have to ask again: what *is* colour? Can we describe colours as differentiations not of wavelength but of affect?

This, of course, is an old problem. It lay at the root of Goethe's celebrated spat with Newton, in his *Theory of Colours* of 1810. Colour, for Goethe, is not a physical datum but a phenomenon of correspondence, and every colour is a particular blend of the affective and the cosmic, of perceiver and perceived. At its most concentrated, it is black. Light, at its most intense, is white. With this continuum from black to white, colour is the fundamental term while light modulates it, and not the other way round. 'White that becomes darkened or dimmed', Goethe observed, 'inclines to yellow; black, as it becomes lighter, inclines to blue.'[9] We can see this in van Gogh's painting, where the brightest star, nearest the horizon, glows white, while those towards the zenith, as well as the moon, are fading to yellow. At the same time, the glimmerings of light in the night sky take it from black to shades of blue. In this scheme, colours are the lightening of the dark, and not the spectrum of the rainbow. Gibson, in these terms, was colour-blind, since as you will recall, his theory of visual perception left him unable to tell day from night, light from dark. For classical optics, all the spectral colours of radiant light are equally arrayed on the white wall of projection as viewed through the black pinhole of the eye's pupil. But in Goethean theory all colours lie between black and white, not on a scale of quantitative variation – that is, of measurable wavelength – but on a *qualitative continuum of affective intensity*: of 'degrees of difference' rather than 'differences of degree' (Figure 20.2).[10] For van Gogh as for Goethe, the black hole is a place not of nothingness but of infinite density, from which colours explode in the ignition of our visual awareness.

It follows that all colour, including that of the sky and the celestial bodies, is the product of a fission/fusion reaction. There is, after all, no black-and-white

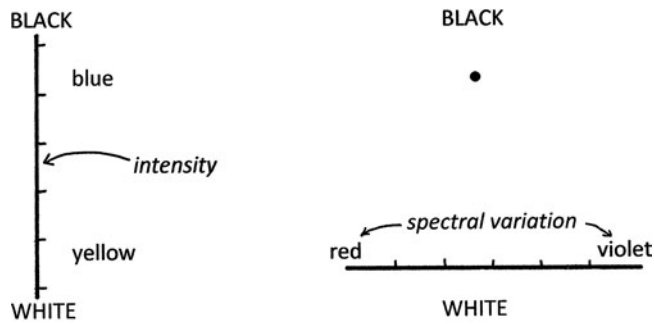


Figure 20.2 The variations of colour.
On the left is shown a continuum of intensity from black to white, according to Goethe. Blue is close to black, and yellow close to white. On the right, following Newton, the colours are ranged as a spectrum from red to violet, all combining to white. The black dot is the eye's pupil.

opposition between line and colour, as though the pupillary movement of a black point, issuing from within, were traced upon an external surface already saturated with the constituent hues of white light. Rather, every line has, or better *is*, colour, and every colour goes out along a line. Whether painted, drawn or written, lines pour from the fusion of the affective and the cosmic as colours pour from tar. 'Colour walks', writes Taussig. 'And as it walks, so it changes.'[11] It is not, therefore, a mere adornment, conferring an outer garb to thought or filling in its forms, but the very medium in which thought occurs.

Considering the history of script, from the illuminated manuscripts of medieval times to the relentlessly black-and-white compositions of today, what is remarkable is the effort it took not so much to illuminate the manuscripts of the past as to *de*-illuminate those of the present, to divest thought of its medium so as to leave the black marks as stark remnants of what had once been inspired – given breath – by human imagination.[12] It remains for the modern writer to evoke, through artful choice of words, the feeling that, with loss of colour, drained from the lines of script. No amount of words in black on white, however, can make up for the loss. For like the atmosphere in the inclusive sense that I have delineated here, colour gets inside us and makes it so that whatever we do, say, draw or write is done with a certain affection or disposition. 'Drawing gives shape to all creatures', wrote the encyclopaedist Denis Diderot, 'but colour gives them life.'[13] Thus does colour lend atmosphere to the line. Might sound, then, do the same? This is a question for the next chapter.

Notes

1 Gibson (1979: 287)
2 Merleau-Ponty (1964: 172).

3 Deleuze and Guattari (2004: 186).
4 Serres (1995b: 80) – see Chapter 15 above.
5 Curiously, Flusser (1999: 57) holds that the film-screen stores the pictures projected upon it, and the television screen stores electromagnetically transmitted images, in just the same way that the woven screen wall of the tent stores the experience of inhabitants. In my view, nothing could be further from the truth.
6 Roque (1994).
7 Taussig (2009: 17–18).
8 Taussig (2009: 54); Merleau-Ponty (1964: 188)
9 Goethe (1840: 206, §502).
10 For this neat formulation of the distinction between qualitative and quantitative variation, I am indebted to Ricardo Nemirovsky.
11 Taussig (2009: 36).
12 Taussig (2009: 251).
13 Cited in Taussig (2009: 22).

21 Line and sound

In the psychology of music, and of auditory perception more generally, much the same debates have been played out as in the study of vision. On the one hand are those who have resort to the orthodox idea of the poverty of the stimulus, who insist that when we identify what we hear as this or that, we have imposed our own conceptual forms, drawn from the sedimentations of cultural memory, upon the raw material of auditory sensations which are not, in themselves, sufficient to specify their objects. On the other hand there are those who have made explicit appeal to Gibsonian theory, arguing – as Gibson did apropos light – that of all the things we hear, sound is not among them. What we hear, they say, are invariants. Of course we can interpret these invariants in any way we please; all such interpretations, however, are grounded in a direct perception of the real. Just as the invariants of visual perception are patterns in the light, not light itself, so they are too, for these theorists, in auditory perception.

According to this latter view, sound – as light – acts like a messenger that knocks on the doors of perception but perishes at the point of entry. What the listener picks up are not sounds but forms and patterns in the acoustic milieu. That, it is supposed, is why, when asked to report on what we hear, we so commonly tell not of the sounds themselves but of the objects or actions that they draw to our attention: here a dog barking, there a car-engine running, there a cello being played. In each case, correct identification rests on recognising relevant invariants in the sound, not on hearing the sound itself. Adopting just such a Gibsonian approach, musicologist Eric Clarke argues that 'music offers a particularly clear example of invariance in the perceived identity of material under transposition and other kinds of transformation'.[1] Thus a certain theme or motif may be picked out, as a determinate pattern of pitch intervals or temporal proportions, independently of its modulations in the unfolding work.

In sum: whereas from the point of view of classical acoustics, we hear sound and not music (the music taking shape only subsequently, from the mental processing of received auditory stimuli), from a Gibsonian perspective we hear music and not sound (the music consisting in the invariant structures of ambient sound under transformation). Both approaches,

however, start from the physicist's definition of sound: as mechanical vibrations in a medium. As such, for sound to exist there need be no creatures with ears. The tree falling in a forest, to cite a celebrated conundrum, makes a sound regardless of whether anyone is there to hear it. Ears and hearing establish the relevance of the sound, but not its existence. But what if the sound were so scrambled, so diffuse, that it is impossible to discern in it any structure at all? We would then find ourselves in a situation analogous to that of Gibson, wondering what he sees when he looks up at the sky. And our answer, to be consistent with his ecological approach, would have to be that what we hear is noise, not sonority as such. And we might wonder, as we did in the case of the luminosity of the sky, what is left of noise once its sonority has been subtracted. Is noise diffuse sound, in itself, or is it what the sound delivers to us? Could we say that we hear the noise, and not the sound?

Yet if noise specifies nothing, nor does silence. Indeed, were we to follow this approach to its logical conclusion, we would be no more able to distinguish sound from silence than Gibson is able to distinguish day from night. With both extremes, there would be literally nothing to hear. Noise would be like swirling fog or the white-out of a snowstorm, silence like the blackest of black nights. All of which takes us back to our earlier dialogue, when we drew Gibson into a fictive conversation with Merleau-Ponty and Zuckerkandl. We found that for Merleau-Ponty, the light of the sky is not an object of perception; nor is its sound an object of perception for Zuckerkandl. But neither are light and sound mere vectors that carry information about the world which it is left to observers and listeners to extract. They are qualities of experience in themselves. In seeing, Merleau-Ponty would say, 'I *am* light'; in hearing, Zuckerkandl would say, 'I *am* sound.' Of course there could be no light without radiant energy, and no sound without vibration in a material medium, and neither seeing nor hearing without eyes and ears with their receptors and neural connectivities. As qualities of experience, however, sound and light cannot be reduced to their physical, physiological and neurological prerequisites.

Let us then return to what Merleau-Ponty has to say about light and vision, and ask whether something similar might work for sound and hearing as well. Recall that for Merleau-Ponty, light is the spark of vision which is ignited when, in their fusion, the two poles of the affective and the cosmic, one corporeal, the other celestial, set off an explosion of sorts. In that explosion, which carries on through time like an ever-breaking wave or travels like a lit fuse, lies the continual birth of our visual awareness, which once again blows us apart such that at one and the same time we remain where we stand, emplaced where our bodies are, and roam heaven and earth as our attention wanders the furthest reaches of the visual field. And like a spark, light does not connect a source of emission with a recipient but bursts forth in the atmospheric in-between, in directions orthogonal to the line of their connection. If this is so for light, then how would it be for sound?

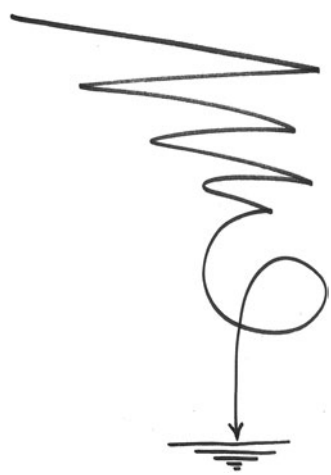
I think the same argument could, in principle, work just as well. There are indeed corporeal and celestial poles of hearing – the one sensing, the other sensible – which, when they collide, generate the experience of sound. And that very sound, born of the fusion of the affective and the cosmic, where what is heard turns out to be our own hearing, also divides us such that – much as in a dream – we are simultaneously at home in our bodies and at large in the cosmos. Sound in this sense does not travel from source to recipient, as from a loudspeaker to the ear. It swirls, rather, between the two as a river between its banks, wrapping around obstacles and forming eddies in the process. Every eddy is a centre of auditory awareness. Sound flows, as Zuckerkandl put it, 'from-out-there-toward-me-and-through-me'.[2] If I were an eddy in the stream, I would say the same of running water. In short, sound – just like light – is the outcome of a fission/fusion reaction. It is worth emphasising once again how this result differs from the view that has come down to us from classical acoustics, according to which the ear – a recipient of sound rather than party to its production – carries physical impulses from the environment across the threshold of the organism, from outside to inside, where they reappear as sensory stimuli. Here the interior subject, at one with itself, is divided against the cosmos. In the fission/fusion model, to the contrary, the perceiver is at one with the cosmos but divided from himself.

Sound, then, like light, is neither physical nor psychic but atmospheric. We have seen that light is atmospheric because it simultaneously beams and beckons. It beams because it is an animation of the soul; it beckons because it illuminates the way from afar. What, I wonder, might be the equivalent words for sound? We speak of *peals* – of bells, of thunder, of laughter – which summon, warn or attract, and there is a direct etymological link to the verb *to appeal*, which means to issue a call of some kind. In the call, as Jean-Luc Nancy observes, is 'breath, exhalation, inspiration and expiration'.[3] Thus we could say that as light beckons, sound peals: the distant peal of the bell is the counterpart of the fire of the beacon. What, then, might be the equivalent of the beam of light? I think it might be *pitch*. To pitch is to throw, to cast into the world. Thus as light beams and beckons, sound pitches and peals. To give an idea of what this might mean in practice, it helps to consider an example. And the example I will use, since it is most familiar to me from my own experience, is playing a musical instrument. In my case, that is the cello.

Stowed in its case, the cello is just an object. In my estimation, it is a beautiful and superbly crafted object. Beyond that, however, not much is to be ascertained merely by looking at it. The instrument begs to be played. Yet at the moment when I start to play, the instrument seems to explode. What had been a recognisable, coherent entity becomes something more like a bundle of affects, a meeting of bowhair, rosin, metallic strings, wood and fingers, coupled with resonant air. Bundle them together and sound erupts as through a fissure. If I continue to play, then the eruption carries on and

the sound keeps flowing. In this exploded view the instrument takes on cosmic dimensions. It blasts into the infinitude of the auditory atmosphere. Indeed, what happens with my cello bears a remarkable resemblance to what happens when I look up at the sky. Gazing heavenwards, I might feel – as did Zuckerkandl when he immersed himself in the firmament and discovered what it means to hear – that I have melted into the sky's immensity, but by tapping a finger on my forehead I can nevertheless assure myself that I am still at home in my body. Likewise, when playing the cello, I can bring my finger down on the fingerboard and feel its hard, resistant surface. Yes: I am here, and here is my cello. Yet in the exploded view, the finger is a phantom presence that touches nothing but has inveigled itself into the midst of the field of audition.

In this double-take lies the reaction between fusion and fission from which experienced sound seems to surge. And it also accounts for the curious combination, in playing an instrument like the cello, of sedentarism and flight. I can be seated on a chair, right here, and yet be possessed of the means, as Merleau-Ponty would put it, to be 'absent from myself'. That, too, is why the finger can show up simultaneously in two quite different ways, at once corporeal, in the haptic space of performance, and as a phantom, in the atmospheric space of explosion. To play, then, is to pull a pitch from the instrument while yet resonating to the peals of sound within which one feels engulfed. With that in mind, we can return to the question of the line. What *is* a line of sound? With regard to light, we have already had to insist upon the distinction between the ray and the beam. Is there a comparable distinction to be made in the case of sound, between the line of transmission and the line of pitch? Consider, for example, the opening of the third suite for unaccompanied cello by Johann Sebastian Bach. I could draw it like this.



This line arises from my attempt to re-enact, calligraphically, the combined auditory and kinaesthetic experience of playing this particular phrase. But is the line, as I play it with my instrument, a line of sound? We can all agree that it is musical, and indeed melodic. If, however, you were an advocate of the ecological approach to auditory perception, you would have to conclude that to call it a line of sound would be gravely mistaken. The line, you would say, is an invariant pattern in the sound, but is not itself sound. Nor would the result be any different were you to favour the alternative, cognitive approach, for then you would say that the line arises from the mental processing of sound, and, again, is not sound itself. Challenged to explain what a line of sound might be, you would likely draw a diagram with a source (such as an instrument in the hands of a musician) and a recipient (such as a listener with ears), and connect them up, explaining that along this line the sound is transmitted, by way of vibrations in the air, from the one to the other. Thus the line of sound would go one way, and the musical line another: the two lines would exist in wholly different dimensions, as pattern differs from the vectors of projection by which it is rendered or discerned. It would follow that when we hear music, the one thing we would not hear is sound; or alternatively, if we were to concentrate on the sound, then we would miss the music.

Earlier, in speaking of the inversions of modernity, I noted how, in their operation, the ever-composing lines of living beings, as they make their way in the world, are surrendered to vectors of projection that deliver the total composition, viewed as a scene, to the eyes of spectators. Clearly, this is exactly what has happened with the composition and performance of musical sound, with the one difference that delivery is made to the ears rather than to the eyes of listeners rather than spectators. It is as though music had joined with drawing in the white wall/black hole system, such that the complete composition originating from the inner ear of the composer, having been projected onto the blank page, would be returned in a reverse movement of performance to the black hole of the listener's ear. As a vector of projection, sound would play no part in the music itself; it would simply be the means of its transmission from instrument to earhole. And this, of course, is exactly how music appears in the classical conventions of western notation, in which black dots and lines are arrayed in complicated patterns on white paper. Music is in black-on-white. With the sound taken out of it, the musical line suffers the same fate as the drawn or painted line once the colour is drained out. It is reduced to the shell of invariance. Here is the same passage from Bach's third suite, from the printed score:

What, then, becomes of pitch? It, too, is transformed, in a manner that has its precise parallel in the field of colour with the reduction of light to rays. Pitch is no longer the intensity with which a sound is pulled or thrown, but a spectrum of vibrational frequencies. Like colour, pitch has been spectralised, arrayed on the equipotential plane of the stave. That is why it has proved necessary to introduce a third term alongside pitch and amplitude, namely timbre, to capture the ordinal qualities of sound that overflow its measured representations.[4] Yet the musician in me protests: this is not how it feels when I sit down to play. As I draw the bow across the strings it seems to me that I pull a pitch as sound is pulled from silence. All sound issues from silence, just as we saw in the foregoing chapter, all colour pours from the blackness of tar. Pitch and tar? They are one and the same. Thus silence is not absence of sound; rather, it is sound at its most concentrated: the muteness of a world so dense, so tightly packed, so locked together, that nothing can move. It is at the eye of the storm. Audible sound arises when the tectonic plates begin to shift, from the cracks and crevices where things don't quite fit: from the squeaking of a hinge, the whistling of the wind through an ill-fitting frame, the ticking from the escapement of a clock, the scuttling of mice in the rafters, the break-up of ice in spring.

All sound, as it escapes from the gridlock of silence, is fugitive: its lines are what Deleuze and Guattari call 'lines of flight'.[5] And as with all such lines, they do not connect, as does a straight line from source to recipient, but swirl in the in-between. Where sounds vary, it is in how and how far they are pitched by the force of the explosion in which they are generated. Silence is black, noise is white: all sounds – like all colours – fall somewhere on a continuum of intensity in between these extremes. They are modulations of pitch (rather than pitch modulations of sound), which is to say that all are products of a fission/fusion reaction. Whether sung or played with an instrument, they pour from the silence of pitch as colour from the blackness of tar. There is, then, no opposition between the musical or melodic line and the line of sound. When I play, the line that issues from my cello *is* a line of sound, and it is the line of sound that you hear, and hear with, when you listen. Sound breathes life into the line just as colour does. It is a phenomenon of atmosphere.

Notes

1 Clarke (2005: 35).
2 Zuckerkandl (1956: 277).
3 Nancy (2007: 20).
4 For a discussion of timbre, its etymology and significance, see Nancy (2007: 39–43). Consider this: 'in speaking of timbre, one is aiming precisely at what does not stem from a decomposition: even if it remains true and possible to distinguish it from pitch, duration, intensity, there is, however, no pitch, and so on, without timbre (just as there is no line or surface without color)' (2007: 39–40).
5 Deleuze and Guattari (2004: 323).

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Part III
Humaning

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22 To human is a verb

The time is July 1885, the place Mount McGregor, to which the eighteenth president of the United States, Ulysses S. Grant, has retired to write his memoirs. On his deathbed, unable to speak because of the throat cancer that was killing him, Grant pencilled the following note to his doctor, John H. Douglas. 'The fact is I think I am a verb instead of a personal pronoun. A verb is anything that signifies to be; to do; or to suffer. I signify all three.'[1] There is no knowing what exactly was going through Grant's mind as he wrote these gnomic lines, for he died a few days later. My purpose in the third and final part of this book, however, is to offer some reflections on what he might have meant, for I believe that his words encapsulate a profound solution to what is surely the oldest and most fundamental problem of anthropology: what, exactly, does it mean to think of ourselves that we are human?

More than five hundred years earlier, on the island of Majorca, the same problem was exercising the mind of the writer, philosopher and mystic Ramon Llull.[2] Born in 1232 to an aristocratic family, by his own account, Llull lived the dissolute life of the troubadour until one day, while composing a love song to his latest paramour, a vision came to him of Christ suspended on the cross. Over subsequent days the vision kept recurring, causing him such alarm that he eventually resolved to abandon his licentious ways and to devote the rest of his life to Christian teaching and scholarship. At that time, Majorca was a centre of commerce in the Mediterranean world and a melting pot of ideas from Islam, Judaism and Christianity. Realising that to convince Muslims and Jews of the truth of Christianity meant approaching the subject in an ecumenical spirit, Llull embarked on nine years of intense study, including learning Arabic from a Muslim slave he had purchased, but with whom he subsequently fell out: imprisoned for blasphemy, the Saracen eventually hanged himself in gaol, saving Llull from the awful responsibility of having to decide on his fate (Figure 22.1). This study laid the foundations for an extraordinarily long and prolific life, during which he wrote some 280 books, composed in Latin and Arabic as well as in his native Catalan. One of the last of these was the *Logica Nova*, written in Genoa in 1303, in his seventy-first year.

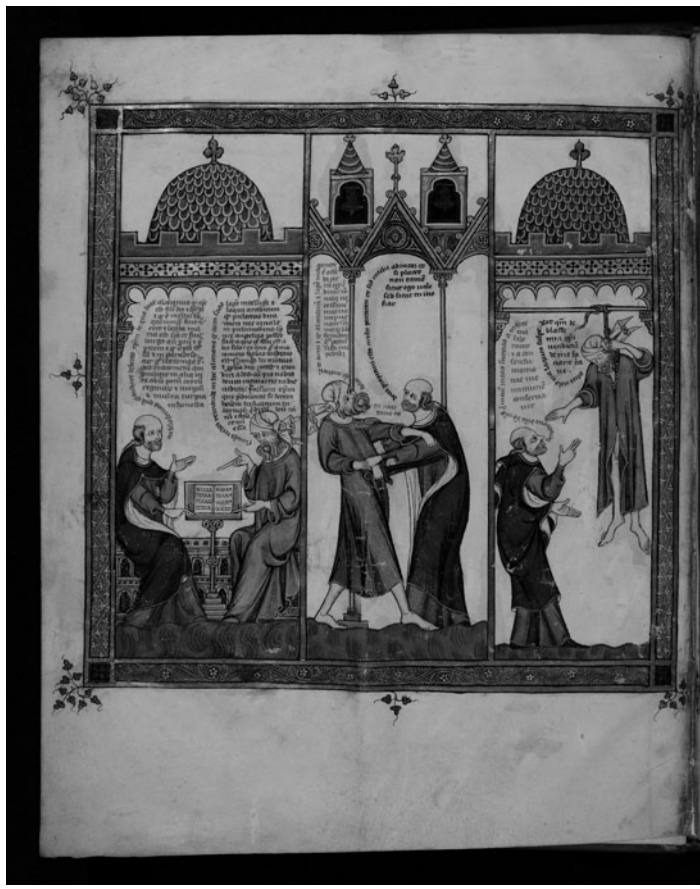

Figure 22.1 The story of Ramon Llull and the Saracen.
The three panels of this triptych depict Llull taking a language lesson from his slave (left), engaging in an altercation over the slave's alleged blasphemy (centre), and finding him hung from a noose in gaol (right). Reproduced from *Breviculum ex artibus Raimundi Lulli* – St Peter perg. 92, Fol. 3v, by permission of Badische Landes-Bibliothek, Karlsruhe.

Much inspired by his engagements with Islamic culture and science, Llull presents us in this work with a dynamic cosmos in which everything there is – every entity or substance – is what it is thanks to the activity proper to it. Things, for Llull, are what they do. For example, it is of the essence of fire that it burns. Precisely what fuels the fire, or what is heated by means of it, is an accidental or contingent matter. Perhaps you burn wood to heat water, but neither wood nor water is necessary for there to be fire. What *is* necessary is that burning should be going on. Likewise, whiteness may whiten this or that body, but there is only whiteness when whitening is going on.[3] That the existence of a thing or substance is indistinguishable from its activity is

not, however, easily expressed in Latin, or indeed in any language that normally enlists the verb into the predicate, and which thus categorically separates persons and things, as causal agents, from the effects they set in train. To achieve this Llull had to devise new words, modelled on the forms of the Arabic verbs with which he was familiar. One of these neologisms appears when he turns to the problem of defining the human. If what goes for everything else goes for human beings too, then they must likewise be defined by the activity proper to them. Where there are humans, something must be going on. But what?

Once again, Llull had to invent a new verb: *homificare*, 'to humanify'. The human, according to Llull's enigmatic definition, is a humanifying animal: *Homo est animal homificans*.[4] Precisely what human beings do, or how they go about it, is by the way. However, wherever and whenever they exist, humanifying is going on. Humans humanify themselves, one another, the animal and vegetable kingdoms, and indeed the entire universe.[5] Thus for Ramon Llull, nearing the end of his long life, as indeed for Ulysses Grant over five centuries later, it seemed that the grammatical form of the human is not that of the subject, whether nominal or pronominal, but that of the verb. For humans to humanify, in the sense that Llull intended, is not to *humanise* the world. That is to say, it is not – as an ontology more conventional to the western tradition would have it – to superimpose a preconceived order of their own on a given substrate of nature. It is rather to forge their existence within the crucible of a common lifeworld. Their humanness is not given from the start, as an *a priori* condition, but emerges as a productive achievement – one, moreover, that they have continually to work at for as long as life goes on, without ever reaching a final conclusion.

This view finds its echo in the writings of the twentieth-century Spanish philosopher José Ortega y Gasset. In a celebrated essay entitled 'History as a system', composed in 1935 just prior to the outbreak of the Spanish Civil War, while living in exile in Buenos Aires, Argentina, Ortega argues that the grammatical form of human life is that of the gerund: it is always in the making, 'a *faciendum* not a *factum*'.[6] For that reason, he thinks, appeals to human nature or, alternatively, to the human spirit are misconceived. To speak of the human body or the soul, or of the psyche or spirit, is to suppose that such a thing has already crystallised out, in a fixed and final form, from the processes that gave rise to it. It is to place, at the origin, a conclusion that is never actually reached. For in truth, where there is human life there is never anything but happening: 'the only thing that is given to us and that *is* when there is human life is the having to make it, each one for himself. … Life is a task.' Thus life *is* not; it *goes on*. Indeed, as Ortega observes, there is a certain absurdity in our customary way of referring to ourselves as human beings. For how can one go on being? It is like asking us to move along and stand in one place at the same time.[7]

Perhaps, then, we should substitute the word 'becoming' for 'being'. As instantiations of life-in-the-making, should we not rather call ourselves

human becomings? In an intriguing aside, Ortega rules out such an alternative, with critical reference to an earlier philosophical writer with whom he is otherwise very much in sympathy. That writer was Henri Bergson. For Bergson, too, it was all happening. Everything was movement, growth, becoming: the apparently fixed forms of things but the envelopes of vital processes. Being, said Bergson, lies in self-making: *l'être en se faisant*. Yet in Bergson's vocabulary, self-making was just another word for becoming (from *devenir*, 'to become'). Ortega insists, to the contrary, that there is more to the human task of self-making than mere becoming; more to life-making than mere living. Humans are quite literally the fabricators of themselves; they are *auto-fabricators*.[8] Unlike other animals which merely become whatever it is in their nature to be, humans – Ortega contends – must perforce determine what they are *going* to be. The fulfilment of human being is always deferred, always not yet: 'man', says Ortega, is a 'not-yet being' or, in a word, an 'aspiration'. And precisely because they aspire to things, humans also face difficulties in their achievement.[9] Life is not difficult for the animal, since it does not reach out for what is not immediately attainable. Nor, for that matter, is it easy. The difference between ease and difficulty is of no concern to the animal. But for humans, caught as they are between the reach of aspiration and the grasp of prehension, it is a never-ending preoccupation.

To put it another way, by comparison to the animal, in whose horizon there is no past or future, only an ever-evolving now, the movement of human life is temporally stretched. Out in front is the 'not yet' of aspiration, bringing up the rear the 'already there' of prehension. At once not yet and already, humans – we might say – are constitutionally ahead of themselves. Whereas other creatures must be what they are in order to do what they do, for humans it is the other way around. They must do what they do to be what they are. Flying does not make a bird, but speaking makes us human. It is not that humans are becoming rather than being; rather, their becoming is continually overtaking their being. This, I suggest, is what Llull had in mind when he spoke of man as a humanifying animal. Moreover, I think it is probably at the back of the minds of most of us when we say of our human selves that we do not just live our lives but *lead* them. What Llull's humanifying and Ortega's auto-fabrication have in common, then, is that they are all about leading life. As an answer, however, this merely kicks the question down the road. The question was: what does it mean to think of ourselves that we are human? All we have managed to do so far is to replace this with another question, namely, what does it mean to say of lives that they are led? The answer I propose, in what follows, is that to lead life is to *lay down a line*.

Notes

1 The semiotician Thomas A. Sebeok gives an account of this episode in the introduction to his collection of essays, *I Think I Am a Verb* (Sebeok 1986: 1–2).

2 For details of Llull's life and work, I have drawn on the authoritative works of Anthony Bonner (1985) and Charles Lohr (1992). Up to now, Llull has attracted little attention in anthropology, but for a recent exception, see Boss (2013).
3 Lohr (1992: 29–30).
4 Here I follow Bonner's translation: 'man is a manifying animal' (in Llull 1985: 609).
5 Lohr (1992: 34). Lohr renders the verb *homificare* as 'hominize' rather than 'humanify'. I explain my preference for the latter below.
6 Ortega y Gasset (1961: 200).
7 Ortega y Gasset (1961: 200, 213, emphasis in original).
8 Ortega y Gasset (1961: 115).
9 Ortega y Gasset (1961: 112–13, 201).

23 Anthropogenesis

Human beings are auto-fabricators, said Ortega. They make or build themselves. But humans also grow: like all living beings, they undergo a process of ontogenesis. They grow themselves and, since their growth is conditioned by the presence and actions of others, they grow one another. Indeed, 'growing one another' is as good a definition as any of social life. But what is the relation between the making of humans and their growing? Which comes first? Here I want to argue that while the conventional notion of humanisation brackets growing within making, the alternative idea of humanifying – which we have taken from Llull – reverses this order of priority, such that moments of making punctuate the process of growing (Figure 23.1). Another way of putting this is in terms of the relative precedence of culture and nurture. Do we think of nurture as the projection of pre-existent cultural form upon materials provided by nature, or of culture as the sum of emergent properties of a nurturing process? Here, I veer towards the latter view. After all, was not culture, in its original sense, something grown – that is, cultivated – rather than made?

The first alternative is already presupposed in the usual language of continuity and change, where to continue is to persist in one stable state or another, and to change is to shift from state to state. It is epitomised in what could be called the 'my, how you've grown' syndrome. As a child, you recall, a distant relative would make fortunately infrequent visits to your household, and every time, on first clapping eyes on you, she would exclaim, 'My, how you've grown!' She remembers you only as she saw you last, and seeing you now she is struck by the change. Growth, for her, bridges the gap between then and now, and accounts for the difference between your previous and present appearance. But for you and for those around you, growth is going on all the time: you do not register it as change, or as a transition from A to B, but as life itself. Yet this life of yours was punctuated by significant events: looking back, you remember them as formative moments in your career that contributed to making you the person you are today. Making in this sense is akin to a rite of passage, and the maker is one who stands at the threshold, easing the persons and materials in his charge across from one phase of life and growth to the next. Writing of the

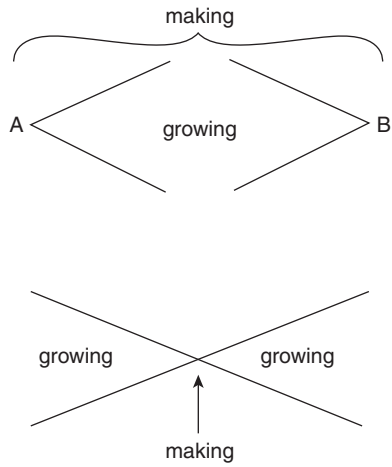

Figure 23.1 Growing-in-making (above) and making-in-growing (below).

initiation rites of Ndembu people in East Africa, anthropologist Victor Turner once observed that 'to "grow" a girl into a woman is to effect an ontological transformation; it is not merely to convey an unchanging substance from one position to another by a quasi-mechanical force'.[1]

Or think of the canoe-builder in the Trobriand Islands – described by anthropologist Bronislaw Malinowski in his classic study, *Argonauts of the Western Pacific* – who is instrumental in turning what had been a tree growing in the forest into a craft that will ride the waves. It is not that the builder begins with shapeless raw material (timber) and ends with a well-formed artefact (the canoe), or that the canoe 'grows' as it takes shape under the impress of his adze, from initial formlessness to final form. The task of the builder is, rather, to bring one way of life and growth (of the tree in the forest) to a close in preparation for the launching of another (of the craft in the ocean). Islanders themselves compare the metamorphosis of the tree into a canoe to that of the caterpillar into a butterfly. Before commencing the task of hollowing out the log, the canoe-builder declares his intentions: 'I shall take hold of an adze, I shall strike! I shall enter my canoe, I shall make thee fly, O canoe, I shall make thee jump! We shall fly like butterflies, like wind; we shall disappear in mist, we shall vanish.'[2] Once hollowed out, the canoe has to be carried to the beach for final preparations. Picture a line of men, filing from village to beach in readiness for departure; they form a multi-legged caterpillar. On the beach they pause, and for a moment – there at the convergence of land, sea and sky – all is still. And then, with a sudden outpouring of activity, the canoe is on its way, and its triangular sail, stitched from dried pandanus leaves, is unfurled. The caterpillar that had entered the chrysalis stage at the beach has emerged as a fully fledged butterfly: its wings the sail, and on the carved prow-boards its eyes.[3]

Consider one more example: what is the difference between a pot and a baby? You might think the answer obvious, for, surely, the pot has been made by a potter, whereas the baby grows and is grown within its mother's womb, and after birth, within the bosom of the home. The former is an artefact, the latter an organism. This may appear obvious to us, yet we know that in many societies, pots are compared to human bodies, often of a neotenised or infantile form. Why are they attributed with such manifestly anthropomorphic features? In northwest Argentina, archaeologists have unearthed considerable numbers of pots, produced by people of the so-called 'La Candelaria' culture and dating from the first millennium AD. Many of them are endowed with bulges that resemble foetal limbs which are just beginning to form; some have faces, others do not. We can never know for sure what La Candelaria potters sought to achieve with their work; however, ethnography from contemporary Amerindian peoples of the same region suggests that in their eyes, pots and babies are not so different after all. Pots do indeed grow like babies, and are grown like them.[4] As the human parent eases the passage of the baby from its prenatal life to its new life in the world, so the potter eases the passage of clay from its life in the earth to its new life as a pot. In the same way that human hands caress and cradle babies, the potter's hands stroke the clay. All this handling, this nurturance, allows the form of the pot to emerge, just as does that of the growing baby.

Here, the form is not imposed onto the 'natural' material of the clay from a superior source in human culture, as the notion of anthropomorphism implies. It rather arises from the caressing and cradling hands of the potter, who is literally inaugurating a new life-cycle through his work. We really need a new word, something like 'anthropo-ontogenetic', to describe how form, rather than being applied to the material, is emergent within the field of human relations. But because the word is so long and so cumbersome, I shall abbreviate it in what follows to *anthropogenic*. In the specific sense that I intend with the term, anthropogenesis is neither making nor growing, but a kind of making-in-growing. To knit an item of clothing could be regarded as anthropogenic in this sense. The shape of the clothing might map onto the bodily form of the wearer, yet this shape arises from countless micro-gestures of threading and looping that turn a continuous strand of yarn into a surface. But is it any different with the body? 'For you created my inmost being', as it is written in the Book of Psalms, 'you knit me together in my mother's womb.' We have already seen how lines that are knit in the same womb may subsequently go their separate ways in the formation of relations of kinship and affinity.[5] What is salient for us now, in referring back to the same passage, is the psalmist's explicit comparison of the growth of the foetus in the womb to an anthropogenic process of knitting.

The perspective of making-in-growing, as this biblical reference indicates, is not far removed from traditions of which we ourselves are the recipients. For the craftspeople of early modern Europe, the image of divine creation as the knitting or weaving together of materials provided the inspiration and

the ideal for their own activity. Materials that were food for living, growing human bodies – such as bread, butter and honey – also fed their work, and vice versa, the materials of craft spilled into medicinal and other prescriptions for bodies.[6] In bodies as in craftwork, materials would be mixed together, with a certain balance and proportion that corresponded to their temperament. This was art imitating nature not by the reproduction of its forms but in the exploration of its processes: if there was a likeness between artefacts and organisms, it was not because the former had been modelled in the image of the latter but because similar processes would generate similar results. So too with pots and babies. In contrast to an anthropomorphic humanising of the world, corresponding to the growing-in-making of the 'my, how you've grown' syndrome, we have thus arrived at an anthropogenic humanifying that is evident, as well, in the making-in-growing of Ndembu initiation that turns girls into women, and the work of the Trobriand canoe-builder whereby those who would otherwise be fated to crawl the earth are released into a buoyant atmosphere of wind and waves.

In recent anthropological literature, however, the concept of anthropomorphism has gained currency in another sense, under the rubric of 'perspectivism'. This refers to the switch of subject positions – allegedly common to the ontological understandings of indigenous Amerindian and northern circumpolar peoples – that can occur, for example, when a human hunter, having lost his bearings in pursuit of an animal, eventually finds himself as a guest in the parallel community of his erstwhile quarry, which now drops its animal mask and appears before him as human. The anthropomorphism here arises from an exchange of perspectives, as in a figure–ground reversal, in the 'flip' from the society of men and women to the society of animals: for in the perspective of the latter, it is now the former that appears non-human. Anthropologist Eduardo Viveiros de Castro, who has pioneered the introduction of perspectivist thinking into anthropological theory, compares this kind of anthropo*morphism* with what he calls the anthropo*centrism* of the so-called 'hylomorphic' model of production, which has come down to us moderns as a legacy from classical Greece, according to which designs having their origin in the realm of human ideas are imposed upon the given materiality of the natural world.[7]

In our terms, this is a contrast not between anthropomorphism and anthropocentrism but between two kinds of anthropomorphism, one of which (transformation-in-exchange) entails a reversal of perspectives, while the other (growing-in-making) entails a one-way transference of form onto matter. However, neither alternative – neither human shape-switching nor human form-imposing – grants primacy to the development of the human form itself. In the exclusive focus on ontological comparison, ontogeny – the *growth* of the human form – has been neglected. Yet without ontogeny, there could be no ontologies to compare.[8] The problem once again comes down to grammatical categories. For Viveiros de Castro, if a being is to take on a human appearance, then it must be a subject, possessed of intentions and

powers of agency, whom one would address by means of appropriate personal pronouns, as against objects, for which impersonal forms would be applied.[9] Thus a hunter, finding himself in the community of animals, would address his hosts as 'you'. However, in a world populated by 'not yet' or aspirant beings whose humanity is, so to speak, continually under construction in the crucible of their common life, there is no separating the doer from the deed or the thinker from the thought. Agency has yet to fall out from action, and intentionality from consciousness. There are no 'subjects' as such, nor, correspondingly, are there 'objects'. So what are there? There are *lines*, and as we found in the foregoing chapter, the grammatical form they take is not of nouns (for objects) or pronouns (for subjects) but of verbs. This is a world not of anthropomorphism but of *anthropogenesis*.

Notes

1 Turner (1967: 101–2).
2 Malinowski's account of Trobriand canoe-building takes up Chapter 5 of *Argonauts of the Western Pacific* (Malinowski 1922: 124–45). These lines are quoted from the 'Ligogu spell', which appears in full on page 132.
3 Scoditti (1983: 268).
4 See Alberti (2014).
5 Psalms 139, verse 13 – see Chapter 4 above.
6 See Smith (2014).
7 Viveiros de Castro (2012: 58, 101).
8 As anthropologist Cecilia McCallum has observed in a recent study of biomedical education in Amazonia, ontologies continually take shape under specific social, historical and biographical conditions. 'It follows that ontogenesis provides a coherent approach to ontological processes' – but, I would add, not vice versa (McCallum 2014: 507).
9 Viveiros de Castro (2012: 97).

24 Doing, undergoing

Now in order to progress with this notion of anthropogenesis, as making-in-growing, I want to introduce another pair of terms, namely the verbs *to do* and *to undergo*. I have drawn this pairing from a work entitled *Intellectual Foundations of Faith*, dating from 1961, by the American theologian Henry Nelson Wieman. In this work, Wieman was specifically concerned to understand in what senses a human life can be creative. It is necessary, he argued, to distinguish between two kinds, or meanings, of creativity.[1] There is, on the one hand, the creativity that is expressed in what people *do*. A person is creative in this sense when he 'constructs something according to a new design that has already come within reach of his imagination'. This is the sense most commonly invoked when creativity is identified with innovation. It is found by looking back from a final product – what Wieman calls a 'created good' – to an unprecedented idea in the mind of an agent, in whose activity it was actualised. Doing is to making here as performance to product. It has a preconceived end.

On the other hand, however, is the creativity that 'progressively creates personality in community'. Wieman's point is to argue that behind the contingencies of what people do, and the miscellany of products or created goods to which these doings give rise, is the 'creative good' that is intrinsic to human life itself, in its capacity to generate persons in relationships. This kind of creativity, he says, is 'what personality undergoes but cannot do'.[2] It does not begin here, with an idea in mind, and end there, with a completed artefact. Rather, it carries on through, without beginning or end. Such is the creativity of social life. For social life is not something the person does but what the person undergoes: a process in which human beings both grow and are grown, undergoing histories of development and maturation – from birth through infancy and childhood into adulthood and old age – within fields of relationships established through the presence and activities of others. And critically, this growth is not just in strength and stature but also in knowledge, in the work of the imagination and the formation of ideas.

As a young man, Wieman had been a keen reader of the philosophical writings of Henri Bergson, and he would later go on to study and publish on the work of Bergson's British contemporary, Alfred North Whitehead. It

was Whitehead who had coined the term 'concrescence' to describe the capacity of living things continually to surpass themselves.[3] In a world of life, Whitehead argued, there are not only concrete, created things but also concrescent, crescent things. Or, rather, one could look at this same world in two ways, either from the outside, considering every organism as the living embodiment of an evolved design, or from the inside, by joining with the generative movement of its growth and formation – that is, of its coming into being or *ontogenesis*. Wieman's distinction between the creativities, respectively, of doing and undergoing, or between created goods and the creative good, is clearly a version of the same thing.

Moreover, there are echoes of Bergson in the idea of a creativity that is to be found not in the characteristic doings of the person but in the creation of personality in community. 'It is … right to say that what we do depends on who we are', wrote Bergson in his *Creative Evolution* of 1911, 'but it is necessary to add also that we are, to a certain extent, what we do, and that we are creating ourselves endlessly.'[4] This endless creation of ourselves corresponds precisely to Wieman's idea of a creativity undergone rather than done. Furthermore, as Bergson was keen to stress, the process is irreversible. Thus to understand creativity in this sense is to read it forwards, in the unfolding of the relations and processes that actually give rise to worldly beings, rather than backwards, in the retrospective attribution of final products to initial designs. It is to recognise, with Bergson, that ontogenesis takes time. This is time as duration: not a succession of instants but the prolonging of the past into the actual. 'Duration', Bergson wrote, 'is the continuous progress of the past which gnaws into the future and which swells as it advances.'[5]

Now we might suppose, as a first approximation, that doing is to undergoing simply as making is to growing. But if that is so, then the same question arises: is undergoing encompassed within doing or doing encompassed within undergoing? Let me begin with the first alternative. As we have already found with the 'my, how you've grown' syndrome, this takes us directly to the rhetoric of *change*. When stuff is moved from one state to another, it is said to undergo material change; when people are moved from one state to another, they are said to undergo social change; when planetary systems are moved from one state to another, they are said to undergo global change. Indeed, in a world driven by the mutually reinforcing agendas of corporate finance, big science and state power, the paradigm of change has assumed a hegemony that is probably without parallel in the history of ideas. Thus it is vitally important to understand the sense of undergoing that the paradigm implies. Undergoing in this sense is passive: it is the result of what, in the doing, is done *to* things, to persons and to the earth. It is a *test* that casts the undergoer in the role of patient or victim, or experimental subject, or perhaps as user or consumer, wedded to the implementation of projects or protocols that have already been laid down at the outset.

This is not to deny the possibility of resistance. We do not resist, however, by obdurately refusing change, or by appeal to permanence and stability. For that would be to endorse the conflation of undergoing with victimhood – with being done *to*; not to challenge it. Wieman's purpose, in insisting upon the intrinsic creativity of human life, was precisely to issue a challenge to the assumed passivity of undergoing. Were all undergoing to be confined within doing – within designs that have already come within reach of the imagination – then there could be no creation in it, only execution. Wieman's key insight was that at least in the social lives of humans, undergoing always overflows doing. Undergoing, in this sense, is active, not passive: it is the way, as Marx and Engels would have put it, in which human beings are not just the executors but the *producers* of their lives.[6] In life one does many things; many ends are achieved, goals realised. However, every end or goal, in its realisation, establishes the possibility of moving on. Thus every doing is but a moment of a life that is led. To follow Wieman is to place doing within undergoing, and the production of created goods within the creative good that is social life. But it is also to follow the political philosophy of Hannah Arendt, who, in developing her account of the human condition, comes to much the same conclusion.

The distinguishing characteristic of a specifically human life, according to Arendt, is that it is full of events that can be told as a story, or that establish a biography. In a life that is led – or what Aristotle called the *bios* as distinct from *zōē*, the life of the animal that advances towards no end and is bound within the cycle of nature – every event is a moment of doing, or, in a word, an action.[7] And in a division that closely parallels the one we have already proposed, by way of the writings of Ortega, between the 'not yet' of aspiration and the 'already there' of prehension, Arendt notes that both classical Greek and Latin had two different words for 'to act': in Greek *archein* and *prattein*; in Latin *agere* and *gerere*. In each pair, the former (*archein*, *agere*) originally carried the sense of initiation or commencement, of setting things in motion, while the latter (*prattein*, *gerere*) meant to take hold of them, to bear with them and to finish them off. However, in the history of usage in both languages, as Arendt shows, these meanings altered. For the one who would set things in motion became exclusively a *leader*, whose function was to issue commands, while those who would bear with them became *subjects*, whose sole duty was to put these commands into practice, to execute them. Thus the idea arose that the leader is the prime doer, and that it is the fate of subjects to undergo whatever their master decrees.[8]

However, the leader's claim to mastery rests on a delusion. For he too is necessarily a participant in social life, and his strength and stature come not from him alone but from what others have lent him, and without which he could achieve nothing. Hence the encompassing of undergoing within doing is no more than a façade, put up by those with pretensions to rule, which hides its opposite, namely that doing is always encompassed within undergoing. Or in Arendt's terms, it is not for some to act and others to suffer; rather,

both action and suffering always go together – they are two sides of the same coin.[9] The leading edge of action – where it gnaws into the 'not yet' of the future, as Bergson would have put it, and swells as it advances – is therefore an undergoing, whereas mastery follows in its wake, in the prehensile phase of carrying out. Yet no sooner do we acknowledge this – no sooner do we place the doing of things back in the current of life that we collectively undergo – than we find the meaning of doing itself subtly altered, in a way that parallels what we have already found with regard to the meaning of making. That is why Wieman's phrasing of the distinction between doing and undergoing maps only as a first approximation onto ours between making and growing. For if doing is encompassed within undergoing as making within growing, then to do, as indeed to make, is not to construct according to a prefigured design but rather to move stuff across a threshold, to prepare it, or to make it ready for new life. It is quite literally to *carry out*, where 'to carry', in its primary sense, is 'to bear from one place to another'.[10]

Arendt herself does not take this step, and remains committed to a view of *homo faber* 'as the master of all nature because he is the master of himself and his doings'.[11] To my mind, this emphasis on mastery in the field of human labour or workmanship seems conspicuously out of joint with Arendt's equally strident assertion that in the field of human relations, one who acts is never the sole author of his doings, and in that sense 'never merely a "doer" but always and at the same time a sufferer' – or as we would say, after Wieman, an undergoer. Is not the workman, too, a being among others, including non-human others, whose mastery only follows from what they have granted him, as it were, 'on sufferance'? Are we not always *with* things before we do anything *to* them? This indeed was our conclusion from the foregoing chapter, in which we argued for a view of human craftsmanship as an anthropogenic making-in-growing, wherein forms arise from the careful nurturing of materials within a field of correspondence, rather than from their having been imposed from without upon a material base. We can now recognise this making-in-growing as a specific instance of doing-in-undergoing. This, moreover, allows us to establish one further connection, of doing-in-undergoing, to the notion of humanifying introduced in Chapter 22. Just as making-in-growing is anthropogenic rather than anthropomorphic, so doing-in-undergoing is a movement not of humanising but of humanifying. Or in a nutshell: humanifying is to humanising as anthropogenesis is to anthropomorphism (see Table 24.1).

Table 24.1 Humanifying : humanising : : anthropogenesis : anthropomorphism

growing-in-making anthropomorphism	making-in-growing anthropogenesis
undergoing-in-doing humanising	doing-in-undergoing humanifying

Notes

1 Wieman (1961: 63–6). For further discussion of this distinction, see Ingold (1986: 202–5) and Ingold and Hallam (2007: 8).
2 Wieman (1961: 65–6).
3 Whitehead (1929: 410).
4 Bergson (1911: 7).
5 Bergson (1911: 4–5).
6 It was in the *German Ideology*, penned in 1846, that Marx and Engels first gave voice to the idea that what human beings *are* coincides with their production (Marx and Engels 1977: 42).
7 Arendt (1958: 97).
8 Arendt (1958: 189).
9 Arendt (1958: 190).
10 *Shorter Oxford English Dictionary*, 6th edition, s.v. 'carry'.
11 Arendt (1958: 144).

25 The maze and the labyrinth

I would now like to place our humanifying being on two legs, as it were, and to imagine what happens when he begins to walk. Earlier, I compared walking with drawing. What kinds of line does the humanifying being, the *animal homificans*, trace when he sets out on foot, where every step is an event of leading life, of humaning? We might begin, as indeed our pedestrian lives begin, with childhood. Perhaps you will recall, from your early days at school, a formation known as the 'crocodile'. I certainly do. It is what teachers use for getting a class without mishap from one point to another. Children are expected to walk two abreast, in a neat line. If they pay attention to their surroundings at all, it is in the interests of safety, to avoid collision with traffic or passers-by. The path of the crocodile, however, is not a way of learning; this happens only at its destination, where once again the teacher stands before the class and addresses them. But when these same children – be they accompanied by a parent or guardian, with friends, or on their own – make their ways from home to school and back, they will walk quite differently. Now hurrying, now dawdling, alternately skipping and plodding, the child's attention is *caught* – or, in the view of an accompanying adult, *distracted* – by everything from the play of light and shadow to the flight of birds and the barking of dogs, to the scent of flowers, to puddles and fallen leaves, and to myriad trifles from snails to conkers, and from dropped coins to telltale litter. It is these trifles that make the street a place of such absorbing interest to the miniature detective whose eyes remain close to the ground.[1]

For the child on his way to school, the street is a labyrinth. Like the scribe, copyist or draughtsman whose eyes are in his fingertips, the child follows its twists and turns, ever curious, but with no commanding view and no glimpse of an end. The challenge is not to lose the trail, and for that he needs to keep his wits about him. Walter Benjamin, fondly recalling his childhood days in Berlin around the turn of the twentieth century, vividly describes the Ariadne's thread that he would follow in and around the Tiergarten, with its bridges, flowerbeds, the pedestals of statues (which being closer to the eye, held greater interest than the figures mounted on them), and kiosks hidden in among the bushes. Here, says Benjamin, he first

experienced what he only later found the word for. That word was 'love'.[2] But growing up, one learns to banish such childish follies. The crocodile devours the detective as discipline gobbles up curiosity. To recover what is lost, one has to go beyond the city, to take a walk in woods, fields or mountains governed by forces as yet untrained. For the adult, Benjamin remarks, it takes some effort to apprehend the city streets once again with the same acuity as a path in the countryside. To achieve this – to regain the labyrinth and lose oneself in it – 'street names must speak to the urban wanderer like the snapping of dry twigs, and little streets in the heart of the city must reflect the times of day … as clearly as a mountain valley'. This art, Benjamin admits, is one that, having been lost in childhood, he acquired again only late in life.[3]

For most of us going about our business in the city, the streets are not a labyrinth. We walk them not for what they reveal along the way but because they afford transit from one point of call to another. We may still get lost in them, but that loss is experienced not as a discovery on the way to nowhere but as a setback in the achievement of a predetermined goal. We mean to get from here to there, and are frustrated by wrong turns and culs-de-sac. For the urban shopper or commuter, then, the streets are not so much a labyrinth as a maze. Technically, the maze differs from the labyrinth in that it offers not one path but multiple choices, of which each may be freely made but most lead to dead ends.[4] It also differs, however, in that its avenues are demarcated by barriers which obstruct any view other than the way immediately ahead. The maze, then, does not open up to the world, as the labyrinth does. On the contrary, it encloses, trapping its inmates within the false antinomy of freedom and necessity. Whether over- or underground, whether navigating the streets or the metro, urban pedestrians have to negotiate a maze of passages flanked by walls or high buildings.

Once set on a particular thoroughfare, the city-walker has no alternative but to continue along it, since it is walled in on either side. A recent visit to the gardens of the Palace of Versailles, outside Paris, afforded the same experience. In each square-shaped garden, dead-straight pedestrian avenues were lined on either side by high walls of trees, and led to enclosed groves with statues or fountains. I felt, in these gardens, an overwhelming sense of claustrophobia. However, unlike the arboreal walls of formal gardens like those of Versailles, or the chessboard that Alice encountered through the Looking Glass whose squares were defined by hedgerows, the walls of the city are not usually bare. Rather, they are replete with advertisements, window displays and the like, which inform pedestrians of possible sidetracks they might choose to take, as and when the opportunity arises, to satisfy their desires. Every time there is a fork in the way, a decision has to be taken: to go to the left, to the right, or possibly straight ahead. A journey through the maze may thus be represented as a stochastic sequence of moves punctuated by decision-points, such that every move is predicated upon the preceding decision. It is an essentially game-like, strategic enterprise. This is

not to deny the tactical manoeuvring that goes on as pedestrians and even drivers jostle with one another in making their ways through the throng of a busy street or subway. But negotiating a passage through the throng is one thing, finding a way through the maze quite another.[5]

In walking the labyrinth, by contrast, choice is not an issue. The path leads, and the walker is under an imperative to go where it takes him. But the path is not always easy to follow. Like the hunter tracking an animal or a hiker on the trail, it is important to keep an eye out for the subtle signs – footprints, piles of stones, nicks cut in the trunks of trees – that indicate the way ahead. Thus signs keep you on the path; they do not, like advertisements, tempt you away from it. The danger lies not in coming to a dead end, but in wandering off the track. Death is a deviation, not the end of the line. At no point in the labyrinth do you come to an abrupt stop. No buffers, or walls, block your onward movement. You are, rather, fated to carry on, nevertheless along a path that, if you are not careful, may take you ever further from the living, to whose community you may never make it back. In the labyrinth you may indeed take a wrong turn, but not by choice. For at the time, you did not notice that the path divided. You were sleepwalking, or dreaming. Indigenous hunters, as we have already observed in connection with the issue of perspectivism, often tell of those who, lured on by the quarry they are following, drift into the prey's world, in which the animals appear to them as human. There they carry on their lives while lost, presumed dead, to their own people.

The maze puts all the emphasis on the traveller's intentions. He has an aim in mind, a projected destination or horizon of expectations, a perspective to obtain, and is determined to reach it. This overarching aim may, of course, be broken down into a number of subsidiary objectives. And it may also be complicated by all the other, competing aims that assail him from all sides. Choices are never clear-cut, and are rarely taken with sufficient information as not to leave a considerable margin of uncertainty. Nevertheless, in the maze, the outward cast of action follows the inward cast of thought. When we say that action is intentional, we mean that a mind is at work, operating from within the actor, and lending it a purpose and direction beyond what the physical laws of motion would alone dictate. Intentions distinguish the travellers in a maze from the balls in a game of bagatelle, which – we suppose – have no idea of where they are heading and are quite incapable of deliberating whether to go in one way or another. Thus the mind intends and the body extends. The walker must decide which way to go, but, having resolved upon a course, has no further need to look where he is going. In the maze, intention is cause and action effect.

Yet in so far as the maze-walker is wrapped up in the space of his own deliberations, he is perforce absent from the world itself. In the labyrinth, quite the opposite is the case. The path-follower has no objective save to carry on, to keep on going. But to do so, his action must be closely and continually coupled with his perception. Lest he lose the way, he should be

ever vigilant to the path as it unfolds before him. He has to watch his step, and to listen and feel as well. He must, in a word, pay attention to things, and adjust his gait accordingly. Path-following is thus not so much intentional as *attentional*. It thrusts the follower into the presence of the real. As intention is to attention, therefore, so absence is to presence. A person might intend to go for a walk; he might reflect upon it, consider the route, prepare for the weather and pack his provisions. In that sense, walking is something he sets out to do. He is the subject, and his walking the predicate. But once on the trail, he and his walking become one and the same. And while there is of course a mind at work in the attentionality of *walking*, just as there is in the intentionality of *going for a walk*, this is a mind immanent in the movement itself rather than an originating source to which such movement may be attributed as an effect. Or in short, if the walker's intention converges upon an origin, his attention comes from being pulled away from it – from displacement.

The maze-walker, we could say, is a navigator; the labyrinthine path-follower a wayfarer.[6] In the carrying on of the wayfarer, every destination is by the way; his path runs always in between. The movements of the navigator, by contrast, are point-to-point, and every point has been arrived at, by calculation, even before setting off towards it. Or to phrase the same distinction in terms we have already elaborated in the preceding chapters, the navigator puts the travail he must undergo or suffer in the frame of doing, which lies in his determination to get from A to B within the space of possibilities offered by the maze. But for the wayfarer in the labyrinth, following the trail is a task which, like life itself, he is compelled to undergo; his doings – those moments of perception and action through which his movement is carried on – are thus framed within this undergoing. But this is also the difference between the march of the crocodile and the caprice of the child-detective on the way to school: on arrival at the gates, the child – an *animal homificans* par excellence – submits to a regime intent on humanising its subjects through the imposition of adult discipline. Walking in the crocodile is no longer an open-ended practice of inquiry but a test to which the answers are given in advance. In what follows I aim to link this difference to my earlier question of what it means to say of lives that they are led, by turning to the concept of *education*.

Notes

1 Ingold and Lee Vergunst (2008: 4).
2 Benjamin (2006: 54).
3 Benjamin (2006: 53–4).
4 See Kern (1982: 13).
5 The distinction between tactical manoeuvring and strategic navigation will be recalled from the conclusion to Chapter 11. See Certeau (1984: xviii–xix).
6 See Ingold (2007a: 15–16).

26 Education and attention

In his recent book, *At the Loch of the Green Corrie*, the Scots poet Andrew Greig speaks thus of his friend and mentor, Norman MacCaig. His eye and heart were drawn to animals, says Greig, yet he was not particularly knowledgeable about them. 'He could name the commonest birds and that was about it. I think he didn't want to know more, believing that knowledge of their Latin names, habitat, feeding and mating patterns, moulting season would obscure their reality. Sometimes the more you know the less you see. What you encounter is your knowledge, not the thing itself.'[1] In this, I think, Greig has touched on something quite profound, which goes to the heart of the meaning and purpose of what we call education. Does knowledge actually lead to wisdom? Does it open our eyes and ears to the truth of what is there? Or does it rather hold us captive within a compendium of our own making, like a hall of mirrors that blinds us to its beyond? Might we see more, experience more, and understand more, by knowing less? And might it be because we know too much that we seem so incapable of attending to what is going on around us and of responding with care, judgement and sensitivity? Which of them is wiser, the ornithologist or the poet – the one who knows the name of every kind of bird but has them ready sorted in his head; the other who knows no names but looks with wonder, astonishment and perplexity on everything he sees?

I want to argue that these alternatives correspond to two quite different senses of education.[2] The first is familiar enough to all of us who have sat in a school classroom, as pupils, or who have stood up before the class to teach. This is the sense of the Latin verb *educare*, meaning to rear or to bring up, to instil a pattern of approved conduct and the knowledge that supports it. A variant etymology, however, traces the word to *educere*, from *ex* (out) plus *ducere* (to lead). In this sense, education is a matter of leading novices *out* into the world rather than – as it is conventionally taken to be today – instilling knowledge *in* to their minds. In the foregoing chapter I set out a contrast between the navigation of the maze and the wayfaring of the labyrinth. In this contrast, I suggest, lies all the difference between these two senses of education: on the one hand the *in*duction (drawing in) of the learner into the rules and representations, or the 'intentional worlds', of a culture; on the

other the *ex*-duction (drawing out) of the learner into the world itself, as it is given to experience.

There is of course nothing new or radical in the suggestion that knowledge is relative to its cultural milieu. That every world is but a view of the world, and that these perspectives or interpretations are multiple and possibly conflicting, has become virtually the default position in the modern, or even post-modern, philosophy of education. Students are more than familiar with the idea that knowledge consists of representations, and they are savvy enough to realise that representations are not to be confused with the 'real thing'. This, as the philosopher of education Jan Masschelein observes, is not where the problem lies. It lies, rather, in the way that a world that can be known only in its representations, in a plethora of images, slips from us in the very move by which we try to hold it in our sights. Our grasp of things is one that always leaves us empty-handed, clutching at reflections. We can no longer open to the world, nor it to us. So the question, for Masschelein, is not how to represent the world, but: 'How to turn the world into something "real", how to make the world "present", to give again the real and discard the shields or mirrors that seem to have locked us up increasingly into self-reflections and interpretations, into endless returns upon "standpoints", "perspectives" and "opinions"?'[3] How, in short, can we escape the maze?

Masschelein's answer is, quite literally, 'through exposure'. And this is precisely what is achieved by education in the sense of *ex*-duction – that is, by walking the labyrinth. Education in this sense has nothing to do with such routine objectives as 'gaining a critical distance' or 'taking up a perspective' on things. It is not about arriving at a point of view. In the labyrinth there is no point of arrival, no final destination, for every place is already on the way to somewhere else. Far from taking up a standpoint or perspective from this position or that, walking continually pulls us away from *any* standpoint – from any position we might adopt. 'Walking', as Masschelein explains, 'is about putting this position at stake; it is about exposition, about being out-of-position.'[4] This is what he means by exposure. It is not that exposure affords a perspective or set of perspectives, for example from ground level, that is different from what might be gained from higher up, or from the air. Indeed, it does not disclose the world from any perspective at all. The walker's attention comes not from having arrived at a position but from being pulled away from it, from displacement.

At first glance this conclusion seems remarkably close to that reached by James Gibson, in his inquiries into the ecology of visual perception which we reviewed at length in the second part of this book. For Gibson, too, proposes that perception is absolutely not about gaining a perspective on things. Briefly to recapitulate his argument: it was that we do not perceive our surroundings from a series of fixed points; nor is it the task of the mind to assemble, in memory, the partial perspectives obtained from each point into a comprehensive picture of the whole. Rather, perception proceeds along what he called a *path of observation*.[5] As the observer goes on his way,

the pattern in the light reaching the eyes from reflecting surfaces in the environment (that is, the 'optic array') is subject to continual modulation, and from the underlying invariants of this modulation, things disclose themselves for what they are. Or more precisely they disclose what they *afford*, in so far as they help or hinder the observer in keeping going, or in carrying on along a certain line of activity. The more practised we become in walking these paths of observation, according to Gibson, the better able we are to notice and to respond fluently to salient aspects of our environment. That is to say, we undergo an 'education of attention'.[6]

Despite the superficial similarity, however, when Masschelein describes walking as a practice of exposure, both the education to which the walker lays himself open and the attention demanded of him are quite the reverse of what Gibson had in mind in his theory of perceptual attunement. It is not a matter of picking up, and turning to one's advantage, the affordances of a world that is already laid out. Recall that the verb *attendre*, in French, means 'to wait', and that even in English, to attend to things or persons carries connotations of looking after them, doing their bidding and following what they do. In this regard, attention abides with a world that is not ready made but always incipient, on the cusp of continual emergence. In a nutshell, whereas for Gibson the world waits for the observer, for Masschelein the walker waits upon the world. To walk, as Masschelein puts it, is to be commanded by what is not yet given but *on the way* to being given.[7] It is not, then, that the walker's attention is being educated; rather the reverse: his education is rendered attentive, opened up in readiness for the 'not yet' of what is to come.

Indeed the walker in the labyrinth, having no goal, no end in sight, always waiting, ever present, exposed yet astonished by the world through which he fares, has nothing to learn and nothing to teach. His itinerary is a way of life – a tradition even, in the original sense of retracing the trails of predecessors[8] – yet it is a way without content to transmit. While there are footsteps to follow, there is no independent corpus of knowledge to be passed on. And because there is nothing to pass on, there are no methods for doing so. Between the conventional definition of education as instilling knowledge and the sense of education that we have explored here, as a leading out into the world, lies the difference between rich methodology and what Masschelein calls 'poor pedagogy'.[9] In its deployment, the notion of methodology turns means into ends, divorcing knowledge-as-content from ways of coming to know, and thereby enforcing a kind of closure that is the very antithesis of the opening up to the present which a poor pedagogy offers. If a rich methodology offers us ready-made knowledge, poor pedagogy opens minds to the wisdom of experience. One belongs to the maze, the other to the labyrinth.

It is the logic of the maze that converts the exploratory wandering of the child, on his way to school, into the disciplined march of the crocodile from a point of departure to a pre-selected destination. At the crocodile's end, the

teacher turns to face her students and, looking back, articulates a perspective from its final vantage point. Hers is indeed a rich methodology. It is a methodology, however, that sets a block on movement. Face-to-face, there's no way forward. Knowledge flies from head to head, but the heads themselves – and the bodies to which the heads belong – are fixed in place. To carry on is not to face and be addressed by those who stand in front but to follow those who have their backs to you. The farer in the labyrinth, abiding with the world and answering to its summons, following on where others have been before, can keep on going, without beginning or end, pushing out into the flux of things. He is, as Masschelein would say, truly *present* in the present. The price of such presence is vulnerability, but its reward is an understanding, founded on immediate experience, that goes beyond knowledge. It is an understanding on the way to truth. For as Greig says of the poet: knowing little of the world, he sees the things themselves.

Notes

1 Greig (2010: 88).
2 On this distinction, see Craft (1984).
3 Masschelein (2010a: 276).
4 Masschelein (2010a: 278).
5 Gibson (1979: 197); see also Ingold (2000: 226–8, 238–40).
6 Gibson (1979: 254); see also Ingold (2001a).
7 Masschelein (2010b: 46).
8 The word 'tradition', derived from the Latin *tradere*, 'to hand over', originally meant something very different from what it is commonly taken for today. It was not so much a body of knowledge to be passed from generation to generation as a performance by means of which, relay fashion, it was possible to *carry on*. Such was the practice, for example, of the monastic scholars of medieval Europe, who would copy liturgical texts with pen and ink, or read them by retracing the letter-line with the fingers while murmuring the corresponding sounds. The monks habitually compared their practice to that of wayfaring through a landscape. Every story in the scriptures, like every trail in the landscape, would lay down a path along which their movement could proceed, and each trail – each story – would take the scribe or reader so far before handing over to the next (Ingold 2013c: 741).
9 Masschelein (2010b: 49).

27 Submission leads, mastery follows

Many scholars, myself included, have followed Gibson's ecological approach to perceptual attunement in describing the process of enskilment by which the novice is gradually transformed into a 'master' of what he does. Walkers become skilled in detecting and responding to irregularities of the ground surface, enabling them to keep their balance in tricky terrain. Hunters become skilled in reading the whereabouts and recent movements of animals from their tracks, enabling them to give chase. Mariners become skilled in every aspect of navigation and seamanship, enabling them to handle their craft in all kinds of conditions. Yet with mastery comes its opposite: submission. To embark on any venture – whether it be to set out for a walk, to hunt an animal or to sail the seas – is to cast off into the stream of a world in becoming, with no knowing what will transpire. It is a risky business. In every case the practitioner has to attend, not just in the sense of paying proper notice to the situation in which he presently finds himself, but also in the sense of waiting upon the appearance of propitious circumstances. Thus the walker, a master of the terrain, must wait for signs that reveal the path ahead, with no surety of where it will lead; the hunter, a master of the chase, must wait for the animal to appear, only to put himself at risk in its pursuit; the mariner, a master of his ship, must wait for a fair wind, only to submit to the elements. The walker, as indeed the hunter and the mariner, once embarked upon a course, is at the mercy of the befalling of things. In these as in countless other examples, mastery and vulnerability, practical enskilment and existential risk, are two sides of the same coin. That coin is attention.

What, then, is the relation between the two sides: between our waiting for the world and the world's waiting for us, and between the modes of education that lie, respectively, in exposure and in attunement? Earlier, I suggested that unlike other creatures that live their lives but do not lead them, the lives of humans are temporally stretched, between the 'already' and the 'not yet'. It seems that in every venture and at every moment, we are both fully prepared and yet utterly unprepared for things to come. What, then, leads, and what follows? The usual answer is to claim that, as intentional beings – that is, as agents – humans deliberate before they act, in Wieman's sense of doing

what has already come within reach of the imagination. This, of course, is to frame undergoing within doing. Thus the mind commands and the body submits more or less mechanically to its directions. Mastery, in this account, is cognitive: if humans lead their lives, it is entirely thanks to their capacity to conceive of designs in advance of their execution, something of which animals – at least for a science of mind constructed on Cartesian principles – are deemed incapable. The chess-master, for example, plans his moves in his head, by means of mental computations of wondrous complexity, whereas their subsequent enactment, entailing the grasping and lifting of a piece from one square and its transport to another, could hardly be simpler. It requires no great skill; indeed, any machine could do it.

I would like to propose, however, that the assumed relation of temporal priority between mastery and submission which underpins the cognitive or intentionalist account of doing should be reversed. This is to frame doing within undergoing rather than vice versa, a reversal that has its exact parallel in Arendt's account of leadership in the sphere of political action. Recall that in the history of classical Greek and Latin terms for 'to act' – as first setting things in train (respectively, *archein* and *agere*) and then following them through (respectively, *prattein* and *gerere*) – the former were progressively limited to the function of command and the latter to that of mechanical execution. Yet as Arendt shows, the leader's assumed mastery – his pretensions to rule – rest on the usurpation for his own ends of powers that come to him only thanks to his involvement in a community of consociates.[1] The idea that minds alone have the power to command rests on a similar delusion. In truth, no mind can function on its own; it can do so only in the midst of others. For its powers come, on sufferance, from the very body and world in which it subsists but over which it pretends to overlordship.[2] Thus the leading edge of action, where it pushes out into the unknown, is a moment not of doing but of undergoing, not of mastery but of submission – a moment of exposure to a world that may or may not afford possibilities for carrying on.

'Think before you act!' we say; sage advice indeed. But in what does this thinking consist? Surely not in an interior processing of information, as the cognitive theorist would have it, with a view to the issue of commands. To think is rather to take a deep breath, to draw strength and inspiration from your surroundings, to wonder, to recollect, to gather, to marshal. *It is to attend*. That's what thinking is. It is an inhalation, a pause, such as is notated in writing with punctuation and in music with rests. As we saw in Chapter 18, it has long been a priority in the western tradition to disguise or conceal such moments, to suppose that inspiration comes entirely from inside the actor and not from his being breathed upon, as though he could speak without ever taking breath or operate without pause. Maybe a machine could do that, at least until running out of fuel. But living persons cannot. Remember the snail! Like all of us, it too must draw in if it is to issue forth. Lines of life, following the ways of the labyrinth, are hesitant at the tip. It is

only in the follow-through that mastery, born of past practice, kicks in. Thus in the labyrinth as in life, *submission leads and mastery follows*: education as exposure precedes education as attunement. Rather than a commanding mind that already knows its will trailing a subservient body in its wake, out in front is an aspirant imagination that feels its way forward, improvising a passage through an as yet unformed world, while bringing up the rear is a prehensive perception already accustomed to the ways of the world and skilled in observing and responding to its affordances.

Philosopher Henri Bortoft, in his advocacy of the principles of Goethean science, makes much the same point through a clever reversal of the phrase 'it appears'. In the conventional and grammatically correct order of words, 'it' comes before 'appears': the thing exists prior to its disclosure, ready and waiting to be perceived by the moving observer, whose attention is attuned to what it affords. For the farer in the labyrinth, however, attention is moved upstream, to the 'appearing of what appears'. One is attending – waiting – for 'it' to emerge. To say 'appears it', Bortoft comments, 'may be bad grammar but it is better philosophically'.[3] It also gives a better way to express what it means to imagine. To *appear things*, I suggest, is tantamount to imagining them. To imagine something is to appear it, to assist in its gestation and to attend its birth. Thus the power of the imagination lies not in mental representation, nor in a capacity to construct images in advance of their material enactment. Imagining is a movement of opening, not of foreclosure, and what it brings forth are not endings but beginnings. 'Imagination', writes anthropologist Michael Jackson, 'is consciousness in its most opportunistic, promiscuous and migratory mode.'[4] As we say colloquially, the propensity of the imagination is to roam, to cast about for a way ahead or to improvise a passage; it is not to follow a sequence of steps towards a predetermined goal. In this sense, imagination is the generative impulse of a life that is perpetually pulled along by the hope, promise and expectation of its continuation.

With that, we can return to Ortega y Gasset, for whom, as you will recall, this is precisely what is so distinctive about *human* life. Since at every moment, the human must resolve not what he is but what he is going to be, at no point can the process arrive at a final conclusion. Fulfilment is ever-deferred, ever 'not yet'. Humans, wherever and however they live, are always humaning, creating themselves as they go along. They are, in that sense, the script-writers or novelists of their own lives. And as every novelist knows, characters have a way of outrunning their author's capacity to write them down. It is vital not to lose them.[5] So too, in the creation of our own lives, we are fated to give chase to hopes and dreams that are forever on the point of vanishing. And since all human life is happening, so all creation is occasional: a moment-to-moment improvisation. Whereas God created the world in a single act, and finished the job, 'man', wrote Ortega, 'makes himself in the light of circumstance, … he is a God as occasion offers, a "secondhand God"'. And it is precisely in this task of secondhand creation that

imagination comes into play. God needs no imagination, says Ortega, since His creation is already all in place before the act begins. But worldly, mortal humans can only recreate piecemeal, a bit at a time.[6] Following Ortega, we could say that the imagination is the generative impulse of a life that continually runs ahead of itself, another word for the aspiration of not-yet-being. As such, it leads from the front rather than pressing from behind. But *where* it leads is not yet plotted out before the act begins. And for Ortega, without imagination – without this capacity to run ahead of ourselves – human life would be impossible.

Here, then, is our answer to the question posed at the outset of this part of the book: what does it mean to say of lives that they are led? A life that is led, we respond, or one that undergoes an education, is held in the tension between submission and mastery, between imagination and perception, between aspiration and prehension, and between exposure and attunement. In every one of these pairings, the first leads and the second follows. But the former's lead is not commanding but tentative. It requires of its following not passive obedience but active delivery. Pushing the boat out, I call upon my powers of perception to respond. Yet in that very response I discover that, unbeknownst to me, I have been there before, as have my predecessors since time immemorial. Without even thinking about it, I seem to know the ropes. Heading out along the trail, into the 'not yet', I already know how it goes. Thus *all imagining is remembering*. As the phenomenologist Bernhard Waldenfels has put it, 'we are older than ourselves':[7] behind the selves we are on the point of becoming, but are not yet, are the selves that we already are without our knowing. In this ongoing, iterative process of becoming who we were, and of having been whom we become, there is no bottom line, no point at which we can uncover some basic human nature that was there before it all began. As Ortega said, we are secondhand gods, not created once and for all but creating and recreating ourselves as the occasion demands. Thus as an *animal homificans*, in Llull's phrase, I am my walking, and my walking walks me. So here's a riddle: I carry on, and am in turn carried. I live and am lived. I am both younger and older than myself. What am I? President Ulysses Grant was right. I think I am a verb.

Notes

1 Arendt (1958: 189–90).
2 This is the founding premise of Andy Clark's theory of the 'extended mind', according to which the mind co-opts for its operations not only the apparatus of the body but also a host of extra-somatic objects and structures, both natural and artefactual. Those supports for thinking that lie beyond the body and brain comprise what Clark calls the mind's 'wideware'. In Chapter 10 we saw that the wideware includes not just equipment but the very ground we walk (Clark 1997, 1998).
3 Bortoft (2012: 95–6).

4 Jackson (2013: 163). In this connection, it is worth recalling Vincent van Gogh's comment on imagination in his letter to Émile Bernard, cited in Chapter 19. The imagination can give birth, he said, to a nature beyond what 'the single brief glance at reality … can let us perceive' (in Soth 1986: 301). Van Gogh would, I think, have agreed wholeheartedly that the painter does not represent what appears before him, whether as images in the mind or as objects in the world, but rather *appears* what he paints. This was also at the heart of the Paul Klee's 'Creative credo' of 1920: 'Art does not reproduce the visible but makes visible' (Klee 1961: 269).
5 I have discussed this point at greater length elsewhere (Ingold 2013a: 70–3).
6 Ortega y Gasset (1961: 206).
7 Waldenfels (2004: 242).

28 A life

In the ever-unfolding life of the *animal homificans*, the humaning human, things are never given once and for all, but are always on their way to being given. In this life, as Gilles Deleuze puts it, there are no actuals, only virtuals. Such a life is not to be found in a record of achievements, nor can it be reconstructed like a *curriculum vitae*, by listing the milestones along a route already travelled. It rather passes between milestones, as a river between its banks, pulling away from them as it sweeps by. This is what Deleuze means by *a* life (rather than *the* life), carried on in what he calls the 'plane of immanence'.[1] *The* life is filled with our doings; *a* life is what each of us must necessarily undergo. From all I have said so far, it should be clear that the plane of immanent life – of virtuality, of the appearing of what appears – is also the plane of the labyrinth. Immanent life, in short, is labyrinthine.

To explain what he means, Deleuze draws an example from an episode in Charles Dickens's novel *Our Mutual Friend*. One Mr Riderhood, an unpleasant and disreputable man, has been rescued by onlookers following an accident on the Thames. His rowboat had been run down by a steamer. Close to drowning, he is carried to a nearby lodging, and the doctor is called. While Mr Riderhood's life hangs in the balance, his burly rescuers, together with the mistress of the house, greet the doctor's inconclusive investigations with a mixture of awe and hushed reverence. Eventually, however, the patient comes round, and as he regains consciousness the spell is lifted. Returning to his usual surly and bad-tempered self, Mr Riderhood scolds and berates the assembled company, including, by then, even his daughter, while his erstwhile saviours immediately recoil – their respect for life eclipsed by their contempt for this particular specimen of it. Neither Riderhood in this world nor Riderhood in the other, as Dickens wryly remarks, would draw any compassion from anyone, 'but a striving human soul between the two can do it easily'.[2]

As Dickens's tale reveals, the plane of immanence is suspended precariously between the biographical particularities of life and death, or of consciousness and coma: a suspension in which those particularities – decisions made, courses taken, goals achieved, crimes committed – are dissolved or placed in abeyance. It is just the same, as we have already seen, in the stories of indigenous hunters who also, in the pursuit of prey, find

themselves in a zone of existential uncertainty where the balance of life and death, as between hunter and prey, can tip either way.[3] Thus to walk the labyrinth is like threading through cobwebs, where the ground itself is but a veil. Like the spider, we hang in there. Not that life, in this sense, is confined to critical situations. As Deleuze is keen to stress, '*A* life is everywhere, in all the moments that a given living subject goes through.'[4] What, then, is the relation between the virtual moments of immanent life, lived along the ways of the labyrinth, and the actual moments marked by decision-points in the maze? For do we not all, and at all times, have a foot in both concurrently?

The intentionalist account of action, as I have shown, locates the actor first and foremost in the maze. Here, the things we do determine the tests we undergo. We want to go from here to there, so we undergo the tribulations of the journey. To give priority to the labyrinth, however, is to put it the other way around: it is to place the things we do in the current of the life we undergo. Life, then, is not subservient to agency, but agency subservient to life. Nowhere is this sense of a life undergone better expressed than in a poem by Jean-Luc Nancy, entitled 'The instructions'. The poem was prominently displayed on a large glass panel as part of the 'Do it' exhibition, held at the Art Gallery of the City of Manchester from July to September 2013. The exhibition provided its public with dozens of instructions, ranging from the active to the absurd, which visitors could try out for themselves, either in the gallery or at home. Judged as a poem, 'The instructions' is perhaps proof that poetry is better left to poets than to philosophers. However, it happens to encapsulate almost everything I have been trying to say in the foregoing chapters. In the poem Nancy invites us to think of doing in a way to which we are quite unaccustomed. And this way corresponds almost exactly to what I have called doing-in-undergoing, as opposed to undergoing-in-doing.

Do it!

'it': What you have to do,
What is up to you to do,
What falls to you

'it': Undetermined, undeterminable,
Which will only exist when you have done it

Do it, do that,
That thing no-one expects,
Not even you,
That improbable thing

Do what stems from your doing,
And yet is not done by you
Nor produced
But stems from well before your doing
From well before you

Do what escapes you
What is not yours
And that you owe.[5]

First of all, says Nancy, the 'it' that you 'do' is not already within reach, ideally if not materially, before you start. Doing, in other words, does not translate from an image in the mind to an object in the world. Rather, both the thing and the idea of it emerge together from the doing itself. The idea, to borrow a neat formulation from political philosopher Michael Oakeshott, 'is the stepchild, not the parent of the activity'.[6] This doing, moreover, is an act to which you submit: you do not order it; rather it *falls* to you. It was the last thing you expected to happen, and in undertaking the task, you were perhaps surprised to discover capacities of perception and action you never knew you had. But where has it come from, this thing you did? For Nancy it has no point of origin; it cannot be traced to an intention. What we do is not done by an authorial agent with a design in mind. It is, rather, part of a never-ending process of attention and response in which, as we have seen, all human life is caught. Just as the 'already' is always behind us, as far back as we care to go, so the 'not yet' will always escape ahead of us, beyond the horizon of our expectations. And as we owe our very existence to what has gone before, and as what comes after owes its existence, at least in part, to us, so our deeds belong to no-one: not to ourselves, not to others, but to history – or, better, to life.

The doing of which Nancy speaks – the doing that is not done by you – is a kind of *action without agency*, a doing-in-undergoing, an auto-fabrication, an anthropogenesis. That it is so hard to put into words owes much to the fact that the grammatical categories with which we are familiar today impose an opposition between the active and the passive voice of the verb according to which, as linguist Émile Benveniste observed in a classic study, the former is for 'action done' and the latter for 'action undergone'. We therefore have the greatest difficulty in expressing an undergoing that is active rather than passive. Yet as Benveniste shows, the active/passive opposition is neither ancient nor universal. Plenty of non-Indo-European languages do not have it, and even within the Indo-European fold it has emerged historically from a decomposition of what ancient Greek grammarians called the 'middle voice'. It was this decomposition that put agency, as it were, out in front, separating the doer from the deed. In the middle voice, by contrast, the doer is *inside* the process of his doing, inside the verb. In a doing to which agency is thus subservient, writes Benveniste, the doer 'achieves something which is being achieved in him'.[7] Such is the doing of *a* life. Lived in the appearing of what appears, in the river current, *a* life is forever escaping from *the* life which leaves its appearances as benchmarks on the banks.

Now the gap between the two – between *a* life and *the* life, between the virtual and the actual, that temporal stretch by which imagination always outpaces perception – is no more, and no less, than *school*, in its original

meaning (from the Greek *scholè*) of free time. Just as with the middle voice, in the lexicon of ancient Greece *scholè* signified the flight of undergoing from the determinations of doing. With this, I would like to return once more to my earlier theme of education, and to the philosophy of Masschelein. For in the original sense of the term, Masschelein argues, education 'is about making "school" in the sense of *scholè*'. As the architect of *scholè*, the educator or teacher 'is one who un-finishes, who undoes the appropriation and destination of time'.[8] He is not so much a custodian of ends as a catalyst of beginnings, whose task it is to unlock the imagination and to confer upon it the freedom to roam without aim or destination.

We should not, of course, confuse school in this sense with the institution familiar to western societies that commonly goes by that name. For in its institutional history, the school has been largely devoted to corralling the imagination, to converting it into a capacity to represent ends in advance of their achievement. The object of the institution has overwhelmingly been to destine time, not to un-destine it; to complete the instillation of knowledge into the minds of students, not to unravel it.[9] It has been to assert the primacy of the maze over the labyrinth, of the crocodile over the detective, and of mastery over submission. Thus the institution of the school and the free time of *scholè* are committed, respectively, to the contrary imperatives of *educare* and *educere*, of drawing in and leading out, inculcation and exposure, intention and attention. What the former appropriates, the latter holds in abeyance. *Scholè* puts a delay on end-directed activity. On this plane of immanence, where nothing is any more what it was or yet what it will be, there is – as the saying goes – everything to play for. Unfinished, freed up from ends and objectives, common to all, the world is once more restored to presence. It touches us, so that we – together *exposed* to its touch – can live with it, in its company.[10] Or, in a word, we can *correspond* with it.

Notes

1 Deleuze (2001: 28, 31).
2 Dickens (1963: 444). The novel was first published in 1865.
3 See, for example, Willerslev (2007).
4 Deleuze (2001: 29, emphasis in original).
5 I am indebted to Thomas Schwarz Wentzer for drawing my attention to this poem. It is reproduced here courtesy of the author, and by permission of Independent Curators International (New York).
6 Oakeshott (1991: 52).
7 Benveniste (1971: 149).
8 Masschelein (2011: 530).
9 Masschelein (2011: 531).
10 Masschelein (2011: 533).

29 In-between

There is a difference between between and in-between. This might sound like the worst kind of scholastic pedantry. But although the difference may seem slight, almost imperceptible, in verbal expression, it is of enormous ontological consequence and underwrites the entire argument of this book. 'Between' articulates a divided world that is already carved at the joints. It is a bridge, a hinge, a connection, an attraction of opposites, a link in a chain, a double-headed arrow that points at once to this and that. 'In-between', by contrast, is a movement of generation and dissolution in a world of becoming where things are not yet given – such that they might then be joined up – but on the way to being given. It is an interstitial differentiation, a fission/fusion reaction, a winding and unwinding, inhalation and exhalation, flowing one way in a direction orthogonal to the double arrow of between but with no final destination. Between has two terminals, in-between has none. Any movement in the between, like the undergoing that is framed in doing or the growing framed in making, is merely from here to there, from an initial to a final state. In the in-between, however, movement is the primary and ongoing condition. *Where between is liminal, in-between is arterial; where between is intermediate, in-between is midstream*. And the in-between is the realm of the life of lines (Figure 29.1).

Some examples culled from previous chapters will help to illustrate the distinction. We began our inquiry with the figures depicted in Matisse's painting *Dance* (see Figure 1.3), and we can return to it now, for in their movement and their harmony, there is clearly more going on between them than can be grasped merely by the observation that the figure in the middle background, for example, stands intermediate between those respectively to her right and her left. In the whirligig, a headstrong future plays continual catch-up with a resurgent past. Here, the dancers are not just standing between one another. They are corresponding, midstreaming. Theologians call this *perichoresis*, referring to the dance in which each of the divine persons of the Trinity revolves around the others, generating in their circulation a kind of longing that springs not from any one person in particular but from their mutual adoration.[1] Then again in Chapter 5, comparing the knot and the joint, I showed that joining *up* is one thing; joining *with* is quite

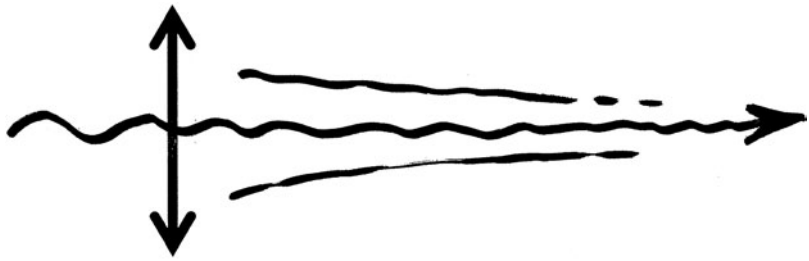

Figure 29.1 Intermediacy and midstreaming.

another: the first is an enchaining or articulation of static elements, the second a gathering of materials in movement, as in carpentry, basketry and textiles, which develop a feel for one another – that is, a sympathy – on the inside. As my argument implies, the dynamic in-between-ness of sympathetic relations is radically distinct from the static between-ness of articulation.

And so it is too with knowledge, which for the wanderer – as we saw in Chapter 10 – grows with the maturation of his own person along the paths he threads through the ground, in the manifold of earth and sky. Such knowledge, as philosopher Michael Polanyi long ago observed, is quite unlike knowledge of the kind that has been joined up or articulated in explicit propositional forms – such as in written words, diagrams or mathematical symbols. 'Tearing away the paper screen of graphs, equations and computations', Polanyi wrote, 'I have tried to lay bare the inarticulate manifestations of intelligence by which we know things in a purely personal manner.'[2] But the difference is not that articulate and personal knowledge occupy separate domains of the mind, respectively 'higher up' and 'lower down' in some imaginary column of consciousness, let alone – as some theorists have seriously suggested – that the proper domain of personal knowledge is not the mind at all but the body.[3] It is, rather, that articulate knowledge is *between*; personal knowledge *in-between*. The latter subsists in a consciousness that streams around and amidst the fixed points that the former joins up (Figure 29.2).

Is it not ironic, then, that, following Polanyi's precedent, generations of scholars have chosen to characterise personal knowledge, in contradistinction to its articulate counterpart, as 'tacit'? What a strange word to use for 'the restless power of the ever-turning wheel', as historian Mary Carruthers chooses to characterise the churning human mind![4] For personal knowledge is neither quiescent nor unmoving. It is, on the contrary, turbulent and sometimes noisy, and can issue forth in both deeds and words. Only at the eye of the churn, at the point of most intense concentration, does silence reign. However, knowledge rendered in forms that are articulated, joined up, pinned to fixed co-ordinates of reference, and committed to paper independently of the vocal and gestural currents of its production, is reduced to

Figure 29.2 Articulate and personal knowledge.
Personal knowledge swirls around and amidst the fixed points that articulate knowledge joins up.

silence in quite another way. This is the empty, exoskeletal silence of a world of discrete objects, eviscerated of all traces of affect. Whereas the black silence of concentration forms like a solid knot in the grain of consciousness, the silence of articulation plots intermediate distances on the white wall of the screen.

Turning to the atmosphere, we have seen how the air we breathe is of the in-between: it does not lie between us but is the very medium in which our lives are mixed and stirred. But we have seen, too, how in the history of modernity, this in-between was converted into a between, when the world was turned outside in and boxed inside the theatre. In the theatricalisation of space, air became ether, and light and sound – which once had curved and twisted with the wind – were converted into vectors of projection, linking the eye and mind of the spectator to the reconstructed panorama of the scenery. The beam of light is in-between, but the ray – connecting source and recipient – is between. Similarly in music, the line of pitch is in-between;

the line of transmission between. In his aesthetics, Gernot Böhme makes much of the in-between-ness of the atmosphere. It is, he contends, the '"in-between" by means of which environmental qualities and [human] states are related'. And again, atmosphere is 'a typical intermediate phenomenon, something between subject and object'.[5] Intermediate? Well perhaps, inside the theatre. But if we undo the inversion, releasing the inmates of the box to the fullness of earth and sky, then the atmosphere is no longer a between that points both ways, towards the subject and towards the object. It becomes more like the wind, a movement of the in-between, of the interstices, a mid-streaming that ruffles every surface with which it comes into haptic contact. Returned to the outdoors, what had been intermediate is placed back in the midst of things, where people cast their own shadows in the light of the sun.

And then, most crucially of all, what lies between in the field of human relationships? Social life goes on between people, does it not? Why else do we speak of interaction as its most fundamental dynamic? 'Action and speech', writes Hannah Arendt, 'go on between men' – and women too, of course: another statement of the obvious that covers up a minefield. What is this between? The matters of the world with which people deal and about which they speak are what we are accustomed to calling their 'interests', from Latin *inter* (between) plus *esse* (to be): literally – in Arendt's definition – that 'which lies between people and therefore can relate and bind them together'.[6] Interests, thus, are intermediate. But besides acting *towards* and speaking *about* their worldly interests, people also act and speak directly *to* one another, and in so doing the physical, worldly, tangible between of their material interests is overlain by an in-between of an altogether different kind:

> This second, subjective in-between is not tangible, since there are no tangible objects into which it could solidify; the process of acting and speaking can leave behind no such results and end products. But for all its intangibility, this in-between is no less real than the world of things we visibly have in common. We call this reality the 'web' of human relationships.[7]

But what, exactly, is the difference between these two betweens? Do they fall, as Arendt would have it, on either side of a division between objects and subjects, things and persons, material and immaterial? Is the 'between-ness' different because of its predicate, of *what* it both divides and binds? I want to suggest, to the contrary, that the difference lies in the 'betweening' itself. It is not that one between is objective and the other intersubjective, but that one is given in *intermediacy*, the other generated in *midstreaming*.

I stand on the bank of a river; on the opposite bank is a ferryman with a boat. The river separates us, presenting as it does a formidable material obstacle to my passage. Requiring to cross, I shout to the man to come over to pick me up. A pressure wave ripples through the air and reaches the ferryman's ears: he hears my shout. Only then, at the point when I throw a line

of communication across the gap, does the river come to lie *between* myself and the ferryman. For in this communication, the river becomes a matter of common concern to both of us, an *inter-est*. But now imagine the scene as it unfolds over time. The ferryman pushes his boat out into the water, launching at an angle to allow for the current. As he approaches, he and I strike up a conversation, although I have to raise my voice to make it heard over the distance and against the sighing of the wind and the hubbub of the gurgling waters, which tend to drown it out. It seems that our respective voices, pitched upon the aerial currents, mingle and are carried along with the voice of the river as it flows on its way, together with the squeaking of the rowlocks and the rhythmic splash of the oars as they dip in and out. These atmospheric lines of pitch do not so much go back and forth as answer to one another, in a movement that goes not across but along. The waters of the river, we say, flow *in-between* its banks. But they do not flow from bank to bank. And no more do our voices.

Here, then, is the difference between the two kinds of between-ness. For the ferryman, at least in one sense – and probably the one that I, as a potential passenger, am most interested in – when rowing across, 'between' is halfway. It is a transitory moment in the passage, and a liminal space. But in another sense, the ferryman joins his life with the river, submitting in every crossing to its flow: as when he pushes his boat out into the stream, angling the boat to the current, and in answering to it with his oars. Thus his crossings are framed within his life on the river just as doing is framed within undergoing. As for the river itself, flowing along, between-ness is a perpetual movement on the way to nowhere: true, the river will eventually open up into the sea, but it does not deliver its waters to a place. The river is an artery: it has no origin, and no destination. In-between is not intermediate, halfway to a destination, on neither one side of the valley or the other, nor a cup half full. Nor is it to be pulled in two directions at once. It is, rather, in the midst, un-destined, running along the valley bottom, a cup that has never ceased overflowing. And it runs one way.

That is why I have trouble with the concept of intersubjectivity as a way to talk about human social relations. In his manifesto for an existential anthropology, and with due acknowledgement to Arendt, Michael Jackson urges that our first rule of method should be to focus not on relata but on the *subjective in-between* – 'on that which comes into being in this intermediate space of human inter-est and inter-action'.[8] But as the litany of terms bearing the prefix *inter-* reveals – intersubjective, intermediate, interest, interaction – Jackson's in-between is in fact the between of the double-headed arrow. He has reduced the in-between of social life – of what, as Wieman had it, 'personality undergoes but cannot do' – to a reciprocal to-ing and fro-ing between subjects, in which what each undergoes is framed by what the other does. Or, in other words, he has reduced midstreaming to intermediacy. Contrary to Jackson, I believe that our focus should be on the becoming of persons and things within the midstream of correspondence,

rather than on the intermediacy of interaction.[9] The prefix of choice, then, should be not *inter-* but *mid-*. As we saw in the foregoing chapter, the line speaks not in the active voice, nor in the passive, but in the voice of the middle. Deleuze and Guattari put the point in a nutshell: a line of becoming, they write, 'is always in the middle: one can only get it by the middle. A becoming is neither one nor two, nor the relation of the two, it is the in-between.'[10] This is the in-between of the labyrinth.

Let me return in conclusion to my earlier discussion, in Chapter 23, of anthropomorphism and anthropogenesis. In the anthropomorphic project of transcendent humanisation, the adolescent appears to stand between childhood and adulthood, the student between matriculation and graduation, even whole societies between tradition and modernity. The adolescent, the student, the developing society, are all regarded as 'intermediate' in their level of growth, attainment or prosperity. The anthropogenic process of humanifying, by contrast, recognises no levels of transcendence. In this process there are only aspirant beings for whom doing is framed within undergoing, whose agency has yet to fall out from action, and whose life with others is lived attentionally rather than intentionally, in the labyrinth rather than the maze. This is an immanent life lived midstream, in the in-between, where there are no subjects, no objects, no subject–object hybrids; only verbs. Wherever you find them, humans are humaning. To emphasise the point, we could set this view of anthropogenesis side-by-side with a remark from Eduardo Viveiros de Castro, in his introduction to the anthropomorphic 'transformation-in-exchange' of cosmological perspectivism. 'The capacities of conscious intentionality and agency', he writes, 'define the position of the subject': thus intentionality, subjectivity and agency are packaged into an indissoluble triad of mutual implication.[11] But in my triad, intention is replaced by attention, the subject by the verb, and human agency by the doing-in-undergoing of humanifying. Together, these three components add up to what I call *correspondence*. In the next and final chapter, I speculate on the potential of this concept.

Notes

1 I am grateful to Markus Mühling for introducing me to this concept.
2 Polanyi (1958: 64).
3 I refer here to the lazy habit of inserting the word 'embodied' before 'knowledge', every time it is used, as though this was enough to let any author off the hook of Cartesian dualism. Much of the responsibility for this sorry state of affairs can be attributed to the influence of sociologist Pierre Bourdieu, who repeatedly insisted that the principles of the art of living could be passed from body to body, silently and insensibly, without ever rising to the level of conscious awareness. See, for example, Bourdieu (1990: 166).
4 Carruthers (1998: 258); see Polanyi (1966).
5 The quoted lines are from Böhme (1993: 114) and (2013: 3).
6 Arendt (1958: 182).
7 Arendt (1958: 183).

8 Jackson (2013: 24).
9 I think that science studies scholar Karen Barad (2003: 814–18) is getting at much the same thing with her concept of 'agential intra-action'. However, neither 'intra-action' nor 'agency' quite does it for me. The trouble with 'intra-action' is that it precisely reverses the between of 'inter-action', turning it outside in, whereas with 'midstreaming' I aim for a 90° rotation, as shown in Figure 29.1, converting the bilateral to the longitudinal, between to along. Correspondence is about longing for things rather than siding with them. Moreover, what is crucial about this longing is that there is no agent apart from the action set in train. Barad, indeed, admits as much when she writes that 'agency … is an enactment, not something that someone or something has' (2003: 826–7). But if agency *is* intra-activity, as she claims, then I do not see why we need a concept of agency at all. Why not just stick with action?
10 Deleuze and Guattari (2004: 323).
11 Viveiros de Castro (2012: 99).

30 The correspondence of lines

Interaction is between; correspondence in-between. The life of lines is a process of correspondence. Thus for the between-ness of subjects, in Arendt's formulation, I substitute the *correspondence of lines*, and for the web of human relationships, the meshwork. What are the implications of this substitution for the discipline and practice of anthropology? Without wishing to sound overly hyperbolic, I believe that it has the potential to transform our approach to the study of social life in all its traditional subfields: of kinship and affinity, ecology and economy, ritual and religion, politics and law. It can also help to take us beyond the divisions between human biology and culture, and between human evolution and history, that up to now have acted as road blocks to our thinking. Finally, it can change the ways we value and purpose our work, and the responsibilities that attach to it. Let me conclude by touching on each of these areas in turn.

We are accustomed to speaking of the 'lines' of kinship, and to drawing these lines in genealogical diagrams. It is also usual, in such diagrams, to depict them as linking persons point to point. Kinship is made to look as though its lines connect. Correspondence thinking, however, acknowledges what the people among whom we work already know, namely, that the lines *are* persons. Kinship, then, is a mesh of lines, not a net of connections. And what do kinspersons do? They *attend* to one another, in the sense of abiding with each other, caring for them and doing their bidding, on which we have already elaborated in previous chapters. This mutual attention – or 'amity', as Meyer Fortes called it[1] – is axiomatic: which is to say that as an unconditional commitment to a life undergone *with* others, kinship holds in abeyance those particular interests that lie *between* others and the self. The imperatives of kinship, in other words, are those of life itself – of life, however, lived as a story, as humanifying, as *bios* rather than *zōē*. Indeed we could go so far as to *define* kinship as a correspondent process of anthropogenesis – of the making-in-growing of persons – whose constituent lines, far from articulating end-to-end, join in the middle, in the midst of things. It is in precisely this respect that kinship differs from affinity. The paths of kinship are followed unconditionally, wherever they may lead, but affinity offers strategy and choice. Kinship is a labyrinth, affinity a maze. Lines of kinship, inscribed

into the plane of immanence, run in between the points or nodes that affinity joins up. Affinity is between; kinship in-between.

Turning to ecology and economy, both terms share a common root in the Greek word for 'house' (*oikos*). Economy is house-holding. In the definition of ecology – a term coined by the zoologist Ernst Haeckel in 1866 – nature itself becomes a household in the continuation of which each and every organism plays its part. But what could a household be in a world without objects? Certainly not the potato in a sack so commonly invoked in studies of tribal and peasant societies organised by the so-called 'domestic mode of production'.[2] It is, rather, analogous, if anything, to a potato in the ground: a reservoir bound to others along thread-like tendrils that carry the torch of further growth. What if we were to think of the household likewise: as a concentration of materials and potential energy from which lifelines fan out into the milieu of earth and air, where they tangle with the lines of all the other living things that, in their habitation of the earth, deposit their own trails in the form of roots and runners, paths and tracks? To make a living, farmers and woodsmen must join with the ways of plants; hunters and herdsmen with the ways of animals; artisans with the ways of their materials. Production, in such an ecology of correspondence, is about attending to the trajectories of these non-human lives. Here we can return to an earlier question posed, but not answered, in Chapter 8: do people produce upon the earth, or do they assist in harvesting what the earth has itself produced? In an economy of lines, production is on the side neither of humans nor of the earth; it is, rather, a correspondence of earthly undergoings and human doings. For as much as kinship is about attending to persons, economy is about attending to active materials. In this, humans are not just the producers of objects to consume. They too are transformed in the process; what they achieve is achieved in them. To produce, in short, is actively to undergo, in the middle voice. And just as undergoing always overflows doing, so the production of life always exceeds the finalities of consumption.

Like kinship and economy, religion, too, is fundamentally a knotting of lines. Though the etymology of the term is disputed, at least one interpretation has it as a compound of *re* (again) and *ligare* (to bind or fasten). Religion is thus re-binding, and lines and knotting seem to be at the heart of it. Yet classically, discussions of religion have been waylaid by questions of belief and the supernatural. This is to think of the religious imagination as a power of representation, of giving form to appearances or dressing a world already in place with images of the divine. I have argued, to the contrary, that imagination is the power of appearing things, not of representing them: it is the impulse of a life that, in continually running ahead of itself, leads by submission. And this perhaps gives us a better way of understanding religious sensibility, as a matter not of belief but of *faith*. Religious faith, as theologian Peter Candler puts it, is founded in a grammar of participation, not of representation.[3] It has nothing to do with holding beliefs *about* the world and everything to do with corresponding *with* it. It is about commitment and the

passion that infuses it, about the recognition of what we owe to the world for our existence and our capacity to act – precisely what is denied by the despot who claims all strength to himself, and by the cognitive scientist for whom the mind owes nothing to the world for its power of command. The combination of attentionality, leading by submission and doing-in-undergoing that, as I have shown, is of the essence of correspondence is perfectly captured in the concept of religious 'observance'. What is failure to observe? It is negligence. 'Whoever has no religion', as Michel Serres astutely notes, 'should not be called an atheist or an unbeliever, but negligent.'[4]

That correspondence has a political dimension is abundantly clear from the writings of both Ortega y Gasset and Arendt, which we have already discussed at length. From Arendt we take the idea that the strength to act can come only from what others have lent us – that is, from our participation in a community. That is why doing is necessarily framed within undergoing, and not the other way around. From Ortega we learn that humans are auto-fabricators, that what they are is what they have made of themselves, not some nature that was there before history began. For what we humans are, therefore, we bear a historical responsibility. Law is the codification of this responsibility, and of the rights and obligations that follow from it. Yet there can be no responsibility without responsiveness.[5] To be answerable, we must be able to answer. Answering and being answered to: that, precisely, is correspondence. We may suppose, as Durkheim classically did, that the domain of law rides above the tumult of contractual negotiation, untouchable and inviolate. Each individual contractor, then, is in it for himself yet responsible to society as a whole. But this would be a responsibility drained of responsiveness. There would just be, on the one hand, the multiple 'betweens' of interaction, and, on the other, the singular totality of society. Yet our very existence as sentient beings, capable of answering and being answered to, depends on our immersion in the in-between. Remember Mauss? We are like octopuses and anemones in the sea! To hang in there it is necessary to put out a line, and to let it correspond with others. The inner feeling-for-one-another or sympathy of this correspondence generates the affect without which no system of regulation could function. Bereft of affect, no judgement, however justified in terms of cold logic, could carry practical or motivational force. Ultimately, then, as responsibility rests on responsiveness, any system of law and ethics must be founded on the correspondences of the in-between.

'*Man*', Ortega famously declared, weighing his words with emphasis, '*has no nature; what he has … is history*.'[6] We can now go one step further. *History is correspondence*: the process in which human lives, in their passage and their self-making, their aspiration and prehension, their imagination and perception, exposure and attunement, submission and mastery, continually answer to one another. For the generation of anthropologists writing in the mid-twentieth century, Ortega's declaration stood for their belief that human experience was shaped by histories of culture and not by the determinations

of biology. Others wondered why these alternatives should be mutually exclusive: could man not have both biology *and* culture; could he not be shaped, at once, by both nature *and* history?[7] But this is not what Ortega meant at all. History, for him, was not man's culture but his *life*. Life is not one complementary part of the package; it is all man has. But if that is so, then what becomes of human evolution? Have we not evolved, as the species of beings that we are, over millions of years, compared with which the entire course of history – regardless of when we suppose it might have begun – is little more than the blink of an eye? And has this evolution not left us with a suite of durable capacities and dispositions that have long remained more or less immune to the vagaries of history? That humans have evolved is not in doubt; that this evolution has established a fixed stage for the play of history is, however, contradicted by every line of this book. Evolution is a life-process in which creatures, in what they do, establish what others in turn must undergo, and history – as anthropogenesis, as humanifying – is just a local version of it. It is a version, however, that in the combined work of imagination and memory, has stretched the very fabric of time. What, then, would be a general theory of evolution that could thus encompass human history as a specific instance? It would, of course, be a theory of correspondence.

Finally, what of the discipline of anthropology itself? More than any other discipline in the human sciences, I believe that anthropology has the means and the determination to show how knowledge grows from the crucible of lives lived with others, in the in-between. This knowledge consists not in propositions about the world but in the skills of perception and capacities of judgement that develop in the course of direct, practical and sensuous engagements with the beings and things with whom, and with which, we share our lives. For like people everywhere and at all times, we are both observers and participants. There is no contradiction here, as one cannot observe without participating, or participate without observing. It is important to refute, once and for all, the commonplace fallacy that observation is a practice exclusively dedicated to the objectification of the beings and things that command our attention and their removal from the sphere of our sentient involvement with consociates. As should be clear from the foregoing, to observe is not to objectify; it is to attend to persons and things, to learn from them, and to follow in precept and practice. Participant observation, in short, is a practice of correspondence: a way of living attentively with those among whom we work. Herein, I contend, lies the purpose, dynamic and potential of anthropology. It is not to arrive at retrospective accounts of what life is like for the people of particular places and times: it is not ethnographic, in that sense. Rather, it is *educational*.[8] To undergo this education is to join *with* others in an ongoing exploration of what the possibilities and potentials of life might be. Our responsibilities, therefore, are to the future: what we seek are ways to continue. For come what may, the life of lines must carry on!

Notes

1 Fortes (1969: 219–49).
2 Sahlins (1972: 95).
3 Candler (2006: 30–40); see also Ingold (2013c: 746).
4 Serres (1995a: 48).
5 The human, as philosophical anthropologist Thomas Schwarz Wentzer argues, is a *responsive being* (2014: 30). 'From a first person perspective … responsiveness precedes responsibility; it is the existential condition to the answer that I am' (2014: 42).
6 Ortega y Gasset (1961: 217).
7 See, for example, Bidney (1953: 154–5). Elsewhere (Ingold 2001b) I have called this the 'complementarity thesis'.
8 Ingold (2014: 388–9).

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