Part II

Dwelling

INTRODUCTION

The chapters in this part explore various aspects of what I have called the dwelling perspective. By this I mean a perspective that treats the immersion of the organism-person in an environment or lifeworld as an inescapable condition of existence. From this perspective, the world continually comes into being around the inhabitant, and its manifold constituents take on significance through their incorporation into a regular pattern of life activity. It has been rather more usual, in social and cultural anthropology, to suppose that people inhabit a world – of culture or society – to which form and meaning have already been attached. It is assumed, in other words, that they must perform ‘construct’ the world, in consciousness, before they can act in it. I refer to this view as the building perspective. Each chapter explores some aspect of the contrast between the building and dwelling perspectives, in relation to such topics as the significance of architecture, the perception of the landscape, the idea of environmental change, the practice of wayfinding, and the properties of vision and hearing. In order to lay a foundation for these explorations, however, I begin in Chapter Nine with a general introduction to anthropological theories of perception and cognition. The fundamental question that all such theories seek to address is the following: why should people from different cultural backgrounds perceive the world in different ways?

In the first part of the chapter I outline the history of anthropological attempts to answer this question, starting with the classical work of Emile Durkheim, through influential statements by Edmund Leach, Clifford Geertz and Mary Douglas, to the more recent development of the field known as cognitive anthropology. Throughout this history, the assumption has persisted that people construct the world, or what for them is ‘reality’, by organising the data of sensory perception in terms of received and culturally specific conceptual schemata. But in recent anthropology, this assumption has been challenged by advocates of ‘practice theory’, who argue that cultural knowledge, rather than being imported into the settings of practical activity, is constituted within these settings through the development of specific dispositions and sensibilities that lead people to orient themselves in relation to their environment and to attend to its features in the particular ways that they do. In the second part of Chapter Nine, I assess the relevance for anthropological understanding of alternative approaches drawn from cognitive science, ecological psychology and phenomenology. Though my conclusion is that anthropology has more to gain from an alliance with ecological psychology than with cognitive science, and that such an alliance accords well with a phenomenology of dwelling, there are still problems to be faced in overcoming the dichotomy between culture and biology, in reconciling a
phenomenology of the body with an ecology of mind, and in translating the overall theoretical perspective into a practicable programme of research.

Chapter Ten explores how a dwelling perspective might affect our understanding of the similarities and differences between the ways in which human beings and other animals create environments for themselves. I am concerned, in particular, with the meaning of architecture, or that part of the environment conventionally described as ‘built’. I start by documenting the transition in my own thinking from a ‘building perspective’, according to which worlds are made before they are lived in, to a ‘dwelling perspective’, according to which the forms people build, whether in the imagination or on the ground, only arise within the current of their life activities. Drawing on Jakob von Uexküll’s notion of Umwelt, I show how we might distinguish between human and non-human constructions in the terms of the building perspective, on the basis of the presence or absence of an intentional project of design. This argument, however, implies the existence of some kind of threshold in human evolution, beyond which our ancestors were able to author their own projects. This idea has motivated the search for a point of origin for humanity in general, and for human architecture in particular. Through the adoption of a dwelling perspective, influenced by the philosophy of Martin Heidegger, I show that the point of origin is illusory. There can, then, be no absolute distinction between ‘natural’ and ‘artificial’ structures. Buildings, like other environmental structures, are never complete but continually under construction, and have life-histories of involvement with both their human and non-human inhabitants. Whether, at a certain point in its life history, a structure looks to us like a building or not will depend on the extent and nature of human involvement in its formation.

In Chapter Eleven I turn to what I consider to be the unifying themes of archaeology and sociocultural anthropology: namely, landscape and temporality. This chapter is an attempt to show how the temporality of the landscape might be understood by way of a dwelling perspective. I first set out to clarify the meaning of ‘landscape’ by contrast to the concepts of land, nature, space and environment. I then introduce the notion of ‘taskscape’ to denote a pattern of dwelling activities. The intrinsic temporality of the taskscape, I argue, lies in its rhythmic interrelations or patterns of resonance. At first glance the opposition between landscape and taskscape seems to mirror that, in the field of art, between painting and music. However by considering how taskscape relates to landscape, the distinction between them is ultimately dissolved, and the landscape itself is shown to be fundamentally temporal. I illustrate the thesis of the temporality of the landscape through an analysis of the scene depicted by Pieter Bruegel the Elder in his painting The harvesters. In conclusion, I criticise the view that a properly cultural ecology would be one that would go beyond strictly pragmatic concerns with the conditions of adaptation to focus on the multiple layers of symbolic meaning with which people cover over their environments. For meaning, I contend, does not cover the world but is immanent in the contexts of people’s pragmatic engagements with its constituents. But the discovery of meaning in the landscape has to begin from a recognition of its temporality, and in this lies the essence of archaeological investigation.

The significance of the contrast between building and dwelling perspectives for cosmological conceptions of ‘the earth’ is my theme in Chapter Twelve. I argue that the image of the earth as a globe, implied in such phrases as ‘global environmental change’, is one that actually expels humanity from the lifeworld, such that rather than the environment surrounding us, it is we who have surrounded it. Far from reintegrating human society into the world of nature, the idea of the earth as a solid globe of opaque materiality marks
their final separation. Thus the biodiversity of locally distributed life-forms presents itself
to a universal, globally distributed humanity. The conservation ethic entailed in such a
global vision, which places nature on the inside and humanity on the outside, is at once
ecoentric and anthropocircumferential. Against this, I examine the contrasting image of
the sphere, conjuring up a transparent lifeworld which is perceived by its inhabitants from
within. This image, which is characteristic of the cosmologies of pre-modern societies, is
genuinely anthropocentric, but in a way that counterposes neither humanity and nature,
nor the local and the global. I show how the shift from a spherical to a global perspec-
tive marks the triumph of technology over cosmology. But it also leads to the systematic
disempowerment of local communities, taking from them – in the name of preserving
biodiversity – the responsibility to care for their own environments.

From my discussion of the landscape and of the topological image of the globe in
Chapters Eleven and Twelve, it is clear that in the building perspective (as in the genealog-
ical model of Chapter Eight) the earth is presented to humanity as a surface to be occupied
rather than a world to be inhabited. It is further supposed that the disposition of things
and places on this surface is known by representing it, either in the mind or on paper,
in the form of a map. Thus to know where one is entails identifying one’s current posi-
tion with a corresponding location on the map, and to find one’s way from one position
to another is to navigate by means of it. In Chapter Thirteen I take a critical look at the
notion of the map, and its application in anthropological studies of wayfinding and navi-
gation. I argue that while dwelling in the world entails movement, this movement is not
between locations in space but between places in a network of coming and going that I
call a region. To know one’s whereabouts is thus to be able to connect one’s latest move-
ments to narratives of journeys previously made, by oneself and others. In wayfinding,
people do not traverse the surface of a world whose layout is fixed in advance – as repre-
sented on the cartographic map. Rather, they ‘feel their way’ through a world that is itself
in motion, continually coming into being through the combined action of human and
non-human agencies. I develop a notion of mapping as the narrative re-enactment of jour-
neys made, and of maps as the inscriptions to which such re-enactments may possibly
give rise. However, the building perspective enshrined in modern science splits mapping
into the phases of mapmaking and map-using, and likewise splits wayfinding into the twin
projects of cartography and navigation.

In Chapter Fourteen I turn to a problem in the anthropology of the senses. Does a
building perspective imply the hegemony of vision? Is hearing the predominant sense of
dwelling? To regain an appreciation of human dwelling in the world is it necessary to
rebalance the sensorium, giving greater weight to the ear, and less to the eye, in the ratio
of the senses? Many philosophers and historians have noted the ‘ocularcentrism’ of the
Western tradition, its privileging of sight over the other senses as a source of human know-
ledge. Anthropologists, for their part, have stressed the importance of hearing in the
sensorium of many non-Western peoples. Yet the comparison remains couched in terms
of a dichotomy between vision and hearing whose roots lie firmly in the intellectual history
of the West. In the terms of this dichotomy, vision is distancing, objectifying, analytic,
and atomising; hearing is unifying, subjective, synthetic and holistic. Vision represents an
external world of being, hearing participates in the inwardness of the world’s becoming;
the former is inherently static, the latter suspended in movement. Whereas one hears
sound, one does not see light, but only the things off whose surfaces light is reflected.
This is why hearing is supposed to penetrate the inner, subjective domain of thought and
feeling in a way that vision cannot. It is also why Western thought, for all its dependence
on the written word, and in apparent contradiction to its elevation of sight as the ‘noblest’ of the senses, has tended to treat writing (which is seen) as inferior to speech (which is heard).

But ethnography suggests that people in non-Western societies do not regard vision and hearing as radically opposed, but rather as virtually interchangeable. Nor does their apparent emphasis on understanding through sensory participation rather than external observation entail a bias towards hearing over vision. For many, vision remains paramount. But it is a vision that is non-representational, a matter of watching rather than seeing. Like hearing, it is caught in the flow of time and bodily movement. One can, in short, dwell just as fully in the world of visual as in that of aural experience: indeed for the most part these worlds are one and the same. That this point has been missed in the anthropology of the senses is due to its tendency to treat sensory experience as but a vehicle for the expression of extra-sensory, cultural values. The key question, I conclude, is: what is the relationship between the cultural evaluation of the senses and the ways in which they are practically deployed in acts of perception?
There is one question that, perhaps more than any other, motivates anthropological inquiry. Take people from different backgrounds and place them in the same situation; they are likely to differ in what they make of it. Indeed such difference is something that every anthropologist experiences in the initial phases of fieldwork. But why should this be so? How do we account for it? In their attempts to answer this question, anthropologists have come up against some of the most contested issues in the psychology of perception and cognition. My purpose in this chapter is to show how they have dealt with these issues. The chapter is divided into two parts. In the first part I trace something of the history of the problem over the past century of anthropological thought. In the second, I go on to assess the relevance for anthropological understanding of alternative approaches drawn from cognitive science, ecological psychology and phenomenology. This is a considerable agenda, and in the space of a single chapter I can do no more than touch on the many questions raised.

I

SOCIAL ANTHROPOLOGY

In British social anthropology (as distinct from American cultural anthropology) thinking about perception and cognition goes back to the classical work of Emile Durkheim, himself one of the founding fathers of what was then the new science of sociology. In his manifesto for the new discipline, *The rules of sociological method* (first published in 1895), Durkheim adamantly opposed all attempts to explain social phenomena in terms of the psychological properties of individuals. As he famously declared, ‘every time a social phenomenon is directly explained by a psychological phenomenon, we may rest assured that the explanation is false’ (1982[1895]: 129). If sociology is a kind of psychology, Durkheim thought, its object of study must be the mind of society, not of the individual. This mind, the consciousness of the collectivity, was supposed to have emergent properties of its own, in no way reducible to the given properties of individuals as inscribed in human nature. But it was not until the concluding chapter of his greatest work, *The elementary forms of the religious life*, that Durkheim explicitly spelled out the relation between the consciousness of the individual and that of the collectivity – ‘the highest form of the psychic life’ (1976[1915]: 444). He did so in terms of a thoroughgoing distinction between sensation and representation.

The distinction was made on two grounds. The first lies in the contrast between the ephemerality of sensations and the durability of representations. Every sensation, Durkheim
argued, is tied to a particular moment that will never recur, for even if – at a subsequent point in time – the thing perceived has not changed, the perceiver will no longer be the same. We are nevertheless able to represent our experience, and so to know what we have perceived, by catching perceptual images that would otherwise float by on the stream of consciousness within the mesh of a system of concepts that remains somehow aloof from this sensory agitation (in a ‘different portion of the mind’, Durkheim suggested, that is more calm and serene). Like language, which is the medium in which concepts are expressed (‘for every word translates a concept’), the conceptual system has a kind of stability: it endures, whilst the stream of consciousness flows on (Durkheim 1976[1915]: 433).

Secondly, whereas sensations are private and individual, representations are public and social. Since sensations consist in the reactions of the organism to particular external stimuli, there is no way in which a sensation can be made to pass directly from one individual consciousness to another. If people are to share their experiences they must talk about them, and to do that these experiences must be represented by means of concepts, which in turn may be expressed in words whose meanings are established within a community of speakers by verbal convention. Thus collective representations serve as a kind of bridge between individual consciousnesses that are otherwise closed to each other, furnishing them with a means of mutual understanding. ‘The concept is an essentially impersonal representation; it is through it that human intelligences communicate’ (Durkheim 1976[1915]: 433–4).

Following Durkheim’s lead, British social anthropologists carried on with the comparative study of collective representations – otherwise known as ‘social structures’ – without paying much attention to the psychological premises on which such study rested. Fifty years later, two of the most influential social anthropologists of the day, Edmund Leach and Mary Douglas, could still pose the problem of perception and cognition in very much the same terms. Given that the world of our immediate, sensory experience is a formless and continuous flux in which nothing is the same from one moment to the next, how can we know what we perceive? To recognise specific objects and events in the external world, Leach claimed, the flux has to be cut up into bounded chunks: thus thought fragments the continuum of life as it is lived, and the diversity of culture lies precisely in the manifold ways in which the continuum can be cut. Leach’s first explicit statement of this theory of perception and cognition was presented in an article on ‘Anthropological aspects of language’, published in 1964. Here he argued that the categories of language provide the ‘discriminating grid’ which, laid over the continuous substrate of raw experience, enables the speaker to tell one thing from another, and so to see the world ‘as being composed of a large number of separate things, each labelled with a name’ (1964: 34). As the child learns its mother-tongue, thereby taking on board a conventional system of named categories, so its environment literally takes shape before its very eyes.

Two years later, Mary Douglas published her seminal study, *Purity and danger*. Here, too, we find the same basic idea: that in perception the world is constructed to a certain order, through the imposition of culturally transmitted form upon the flux of experience.

As perceivers we select from all the stimuli falling on our senses only those that interest us, and our interests are governed by a pattern-making tendency ... In a chaos of shifting impressions, each of us constructs a world in which objects have recognisable shapes, are located in depth, and have permanence.

(1966: 36)
As with Leach, the roots of Douglas’s thinking lie in Durkheim’s theory of knowledge. This theory, as we have seen, effectively divides the human subject into two mutually exclusive parts. One part, fully immersed in the sensate, physical world, is continually bombarded by stimuli which are registered in consciousness as a ‘chaos of shifting impressions’. The other part, however, stands aside from this engagement, and is untouched by it. Here are located the conceptual categories that sort the sensory input, discarding or suppressing some elements of it while fitting the remainder into a pre-existing, socially approved schema. Crucially, then, perception is a two-stage phenomenon: the first involves the receipt, by the individual human organism, of ephemeral and meaningless sense data; the second consists in the organisation of these data into collectively held and enduring representations.

**Cultural anthropology**

The rigid distinction between social and psychological phenomena that British social anthropology took from Durkheim was not matched by the parallel, North American tradition of cultural anthropology. The founder of this latter tradition, Franz Boas, consistently adopted the position that the patterned integration of culture, as a system of habits, beliefs and dispositions, is achieved on the level of the individual rather than having its source in some overarching collectivity, and is therefore essentially psychological in nature. Accordingly, American cultural anthropologists of the mid-twentieth century paid a great deal of attention to the way in which the individual personality is fashioned out of the cultural materials available to it. In two respects, however, subsequent developments led to the establishment of a view of perception and cognition more closely in line with that espoused by British writers. The first lay in the separation of culture, as a body of transmissible knowledge, from patterns of observable behaviour. Already in the writings of Clyde Kluckhohn, and in the review of concepts of culture that Kluckhohn compiled in collaboration with Alfred Kroeber, we find a stress on culture as an internalised system of rules and meanings as distinct from manifest behaviour patterns and their artefactual products (Kluckhohn 1949: 32, Kroeber and Kluckhohn 1952: 114). And in 1957, Ward Goodenough confirmed this separation in his much cited definition of culture as ‘whatever it is one has to know or believe in order to operate in a manner acceptable to [a society’s] members’ (cited in D’Andrade 1984: 89).

The distinction between culture and behaviour was once again reiterated, this time by Clifford Geertz, in an influential article first published in 1966, on ‘The impact of the concept of culture on the concept of man’. Culture, Geertz argued, ‘is best seen not as complexes of concrete behavior patterns – customs, usages, traditions, habit clusters – . . . but as a set of control mechanisms – plans, recipes, rules, instructions (what computer engineers call “programs”) – for the governing of behavior’ (Geertz 1973: 44). He nevertheless took strong exception to the view, attributed to Goodenough, that the place to find these control mechanisms is inside the heads of individuals. Herein, then, lay the second development: having split culture from behaviour, the former was removed from the minds of individuals and reinscribed on the level of the collectivity. In a move redolent of Durkheim’s earlier formulation, Geertz insisted that the domain of cultural symbols is social rather than psychological, public rather than private. Their natural place of abode is in the intersubjective space of social interaction – ‘the house yard, the marketplace, and the town square’ – whence they are ‘used to impose meaning upon experience’ (1973: 44–5). For any one individual, the range of symbolic meanings which can be drawn upon
is more or less given by what is current in the community into which he or she is born. But without the guidance provided by significant symbols, human beings would be hopelessly lost, unable to establish their bearings in the world. For unlike other creatures whose activities are more closely controlled by innate response mechanisms, humans depend on a substantial input of additional information, learned rather than innate, in order to function adequately in their normal environments. ‘Undirected by culture patterns – organized systems of significant symbols – man’s behavior would be virtually ungovernable, a mere chaos of pointless acts and exploding emotions, his experience virtually shapeless’ (Geertz 1973: 46).

Despite his different intellectual roots, in American cultural anthropology rather than British social anthropology, Geertz came to conclusions remarkably similar to those that were being drawn at the same time by Douglas, and that I have already touched upon. Both Geertz and Douglas took culture to comprise a framework of symbolic meanings, common to a community and relatively impervious to the passage of time and generations, which gives shape to the raw material of experience and direction to human feeling and action. Thus to return to our original question: if two individuals from different backgrounds, placed in the same environment, construe it in different ways, the reason would be that each has brought a different symbolic system to bear in organising the same material of sensory experience. Granted, then, that every community has its own particular system for the organisation of experience, anthropological attention naturally came to focus on cultural variation in the organisational principles involved. Geertz, as we have seen, claimed that such principles were to be found in the publicly accessible space of social discourse, and not in the interiority of the mind. But others, taking their cue more directly from Goodenough, insisted that cultural cognition can only take place by way of shared conceptual schemata lodged in the minds of individuals. Their aim was to uncover these schemata, and it gave rise, in the late 1960s, to a field of inquiry known rather generally as ‘cognitive anthropology’, though in a narrower and more restricted form as ‘ethnoscience’ (Tyler 1969).

**COGNITIVE ANTHROPOLOGY**

The problem for the cognitive anthropologist, Tyler explains, ‘is to discover how other people create order out of what appears to him to be utter chaos’ (1969: 6). They do so, it is supposed, by grouping the infinitely variable phenomena of the experienced world into a finite set of named, hierarchically ordered classes. This is done by attending only to those perceptual cues that differentiate things as belonging to one class rather than another, while ignoring those that would indicate the uniqueness of every member of a class. But the ordering principles that govern this process of selective attention are given in the mind, not in the world. ‘There is nothing’, Tyler asserts, ‘in the external world which demands that certain things go together and others do not’ (1969: 7). In other words, the principles of classification are arbitrary and subjective with regard to the world whose phenomena are to be classified. They are to be discovered through the formal analysis of responses provided by native informants to a series of questions of the form ‘is this thing here a kind of X?’, ‘what other kinds of X are there?’, ‘is X a kind of Y?’, and so on, all of which are designed by the investigator to elicit precisely the distinctions he or she is looking for.

Despite early promise, the project of cognitive anthropology soon ran into difficulties. An enormous amount of effort was put into mapping out rather limited semantic domains
– for example of kinship terms, plant and animal taxonomies or colour classifications – without bringing any comparable advance in understanding how people actually negotiate their relationships with one another, and with their non-human environments, in the usual course of everyday life. It became apparent that the key to such negotiation lay in a certain flexibility in the use of concepts and a sensitivity to context that was disregarded by formal semantic analysis. The neatly ordered paradigms and taxonomies yielded by this method of analysis seemed to be artefacts of anthropologists’ techniques of controlled elicitation rather than having any counterpart in the cognitive organisation of the people studied. The specialised tasks of naming and discrimination that the latter were expected to perform were not, after all, ones that they would have ordinarily encountered. Indeed the ability to name things correctly is but a small and relatively insignificant part of what a person needs to know in order to get by in the world, so that the greater part of cultural knowledge had still to be uncovered. Above all, cognitive anthropology was unable to grasp the source of human motives: one learned no more from an analysis, say, of kinship terminology about people’s feelings for one another than one might learn from the grammar of a language about why its speakers say the things they do.

In recent years, and partly in response to these objections, cognitive anthropology has resurfaced in a new guise, as the investigation of what are now called ‘cultural models’. Introducing a seminal volume of essays on Cultural models in language and thought, Naomi Quinn and Dorothy Holland define such models as ‘presupposed, taken-for-granted models of the world that are widely shared . . . by the members of a society and that play an enormous role in their understanding of that world and their behaviour in it’ (1987: 4). They differ from the classificatory schemas identified by earlier cognitive anthropologists in three major ways. First, rather than dividing up the continuum of experience into named categories, cultural models offer a description of the world framed in terms of networks of interconnected images or propositions, in which objects, events and situations take on regular, prototypical forms. Actual experience in the real world is then organised by matching it to the prototypical scenarios built into the simplified worlds of the cultural models, and these, in turn, furnish conventional guidelines for action. Secondly, although linguistic data provide important clues to underlying cultural knowledge, it cannot be assumed that word meanings stand to components of the cultural model in a simple relation of one-to-one correspondence. The relation is rather complex and indirect, and can only be grasped through an analysis of the richly textured material of ordinary discourse. Thirdly, cultural models – to the extent that they are fully internalised – do not merely describe or represent the world, they also shape people’s feelings and desires. That is to say, they can have ‘motivational force’ (D’Andrade 1992: 28). As Claudia Strauss argues, in her introduction to a recent volume dedicated to the demonstration of this point, the realm of cognition is inseparable from the realm of affect; thus cultural models should be understood as ‘learned, internalised patterns of thought-feeling’ (Strauss 1992: 3).

Despite these fairly radical revisions, the programme of cognitive anthropology remains basically unchanged. Starting from the premise that culture consists in a corpus of inter-generationally transmissible knowledge, as distinct from the ways in which it is put to use in practical contexts of perception and action, the objective is to discover how this knowledge is organised. Moreover the assumptions on which the programme rests are much as they were in Durkheim’s day. They are that cognition consists of a process of matching sensory experience to stable conceptual schemata, that much if not all of the order that people claim to perceive in the world – and especially the social world – is imposed by the mind rather than given in experience, that people are able to understand one another
to the extent that their cultural orderings are founded on consensus (such that the limits of consensus define the boundaries of society), and that the acquisition of such orderings involves a process of internalisation. These assumptions have not, however, gone unchallenged – indeed there is a powerful movement within contemporary anthropology that would reject them altogether. One of the most influential figures in this movement has been Pierre Bourdieu, who in a series of works has attempted to show how cultural knowledge, rather than being imported by the mind into contexts of experience, is itself generated within these contexts in the course of people’s involvement with others in the practical business of life. Through such involvement, people acquire the specific dispositions and sensibilities that lead them to orient themselves in relation to their environment and to attend to its features in the particular ways that they do. These dispositions and sensibilities add up to what Bourdieu calls the habitus (1990: 52–65).  

**THE THEORY OF PRACTICE**

Like the ‘cultural model’ of cognitive anthropology, the habitus of Bourdieu’s theory of practice could be described as a pattern of thought-feeling. The similarity ends there, however. For thinking and feeling, in Bourdieu’s account, do not go on in an interior subjective (or intersubjective) space of images and representations but in the space of people’s actual engagement in the settings of practical activity. Whereas cultural models are supposed to exist independently of, and prior to, their application in particular situations of use – such as in doing things or making things, or in the interpretation of experience – the habitus exists only as it is instantiated in the activity itself. In other words, the habitus is not expressed in practice, it rather subsists in it. What Bourdieu has in mind is the kind of practical mastery that we associate with skill – a mastery that we carry in our bodies and that is refractory to formulation in terms of any system of mental rules and representations. Such skill is acquired not through formal instruction, but by routinely carrying out specific tasks involving characteristic postures and gestures, or what Bourdieu calls a particular body hexis. ‘A way of walking, a tilt of the head, facial expressions, ways of sitting and of using implements’ – all of these, and more, comprise what it takes to be an accomplished practitioner, and together they furnish a person with his or her bearings in the world (Bourdieu 1977: 87). And if people from different backgrounds orient themselves in different ways, this is not because they are interpreting the same sensory experience in terms of alternative cultural models or cognitive schemata, but because, due to their previous bodily training, their senses are differentially attuned to the environment.

In the anthropological study of cognition this kind of approach is perhaps best represented in the work of Jean Lave. Her book *Cognition in Practice* (1988) is a manifesto for an ‘outdoor psychology’ – that is, a psychology that would take as its unit of analysis ‘the whole person in action, acting within the settings of that activity’ (1988: 17). Cognition, in Lave’s view, is not a process that goes on ‘inside the head’, whose products are representations that bear some complex relation to the world outside, but rather a social activity that is situated in the nexus of ongoing relations between persons and the world, and that plays its part in their mutual constitution. It is a process wherein both persons, as knowledgeable social agents, and the settings in which they act, continually come into being, each in relation to the other. Thus thinking is inseparable from doing, thought is ‘embodied and enacted’, and cognition is ‘seamlessly distributed across persons, activity and setting’ (1988: 171). To study cognition is to focus on the modus operandi not of the mind, in organising the bodily data of sense, but of the whole body-person in
the business of dwelling in the world. And if knowledge is shared it is because people work together, through their joint immersion in the settings of activity, in the process of its formation.

What, then, becomes of the models and schemata of the cognitive anthropologists? Are they merely artefacts of analytic abstraction, products of attempts by anthropological observers to represent manifest behaviour as the output of formal programmes? Or do they, to the contrary, offer clues to basic truths about the way the human mind works? The answers to these questions hinge on more fundamental differences of approach which divide psychologists as much as anthropologists. Roughly speaking, the division is between advocates of cognitive science on the one hand, and their critics on the other, who find inspiration in an ecological or phenomenological perspective on perception and cognition. These differences of approach, and some of their implications for anthropology, are reviewed in the next part of this chapter.

II

Cognitive science

In the field of psychology, cognitive science emerged as an alternative to behaviourism in the 1950s, alongside the development of the digital computer. Its founding axioms are that people come to know what is ‘out there’ in the world by representing it in the mind, in the form of ‘mental models’, and that such representations are the result of a computational process working upon information received by the senses. The functioning of the mind, then, can be compared to the operation of a computer program, and the relation between mind and brain to that between the program and the ‘hardware’ in which it is installed (Johnson-Laird 1988). But the computing analogy also found its way into cognitive anthropology – I have already referred to Geertz’s (1973: 44) likening of cultural control mechanisms to computer software – where it was similarly supposed that the mind is equipped with programmes that construct internal representations of the environment from the data of sensation, and deliver appropriate plans for action (D’Andrade 1984: 88–9). Whereas cognitive scientists, however, have by and large been concerned to discover universals of human cognition, which are attributed to innate structures established in the course of evolution under natural selection, cognitive anthropologists have sought to account for human perception and action in terms of acquired schemata or programmes that differ from one culture to another.

How, then, should we view the relation between these two projects? Are they contradictory or mutually compatible? D’Andrade (1981: 181–2) tackles this issue by considering the fit between programmes and processors. By programmes he means the informational content of transmitted culture – what is ‘passed along’ from generation to generation. By processors he means the apparatus of acquisition that makes such transmission possible, an apparatus that is assumed to be common to all human minds. According to this division, cognitive anthropology is concerned with the diversity of cultural content, and with the way in which its organisation is constrained by invariant properties of the processing devices that govern its acquisition, while cognitive psychology is concerned with the structure and functioning of the devices themselves, and the way in which they work on all kinds of information (including cultural information). This formulation, however, begs a critical question. Granted that mental representations are the products of a
processing of information by acquired cultural programmes, what is the source of the processing apparatus of which these programmes are themselves products? This apparatus, it seems, must already be in place prior to the acquisition of culture; hence its design and operation must be innately specified. In short, the theory that all human cognition is grounded in culturally specific schemata can hold only on condition that human beings come universally pre-equipped with the structures necessary to enable these schemata to be acquired in the first place.

This is precisely the conclusion reached by Dan Sperber (1985), in the context of his critique of cultural relativism – the doctrine, long ascendant in anthropology, that people in different cultures inhabit different cognitive (or rather, cognisable) worlds, each with its own criteria of rationality and judgement. Relativists argue that just as every non-human animal species, depending on its evolved cognitive organisation, can only know the world in its own particular way, so also every human culture is locked into the cognitive framework of a unique worldview. But whereas species differences supposedly have a genetic basis, cultural differences are assumed to be entirely independent of genetic constraint. Thus cultural relativists tend to imagine that theirs is a position opposed to an innatist view of the human mind, and that evidence for the diversity of incommensurate worldviews only goes to prove that the underlying structures of human cognition are genetically underdetermined and malleable to the effects of experience.

Yet in this, Sperber shows, they are mistaken. Relativists, he contends, have failed to attend to the psychological implications of their assumption that human behaviour is rooted in tradition rather than heredity. Had they done so, they would have realised that a creature capable of taking on not just one form of life but any one of a very large number of possible alternative forms would require more rather than less by way of innate programming. On the basis of a formal logical argument, Sperber concludes that ‘the greater the diversity of the cultures that humans are capable of acquiring, the greater the complexity of the innate learning abilities involved’ (1985: 43). Thus the relativists’ appeal to human cultural diversity is not at all contrary to the universalist claims of cognitive science; rather it depends upon them.

Though the logic of Sperber’s argument may be impeccable, it rests on a foundation that is far from secure – namely, that cultural knowledge takes the propositional (or semi-propositional) form of beliefs, ‘representations acquired through social communication and accepted on the ground of social affiliation’ (1985: 59). Underlying the commonsense understanding of the culturally competent actor is supposed to lie a huge database of such representations, which provide all the information necessary to generate appropriate responses under any given environmental circumstances. Yet as many critics of cognitive science have pointed out, and as the failure of attempts to replicate human skills in the design of expert systems has amply demonstrated (Dreyfus and Dreyfus 1987), even the simplest and most routine of everyday tasks are refractory to codification in propositional form. By and large, these tasks are not represented (save in the notebooks of observers), nor are such representations communicated in learning situations. Most cultural learning takes place through trial-and-error and practice, albeit in socially structured situations, and although beginners may need to follow rules, these rules structure the situation of learning and do not themselves form any part of the content of what is learned. For the skilled practitioner consults the world, rather than representations (rules, propositions, beliefs) inside his or her head, for guidance on what to do next. As Andy Clark puts it, why should we go to the trouble of modelling the world when ‘we can use the world as its own best model’ (Clark 1997: 29–30, see also Chapman 1991: 20)?
Faced with the evident artificiality of depicting cultural knowledge in algorithmised form as a set of programmes, acquired by means of a processing device that is somehow constituted in advance of ontogenetic development, cognitive science has come up with an alternative model of the way the mind works. Instead of positing one giant processor with a massive capacity for information storage and retrieval, it is suggested that the mind consists of a very large number of small, simple processors, massively interconnected, all operating in parallel, and receiving inputs and delivering outputs to each other along the countless pathways linking them. Crucially, a system so constituted can learn from experience, not by taking on new informational content, but by adjustments to the differential strengths of the connections among processing units. In other words, knowledge is acquired through the establishment of particular patterns of connection: any processor may therefore be involved in the representation of diverse experiences; conversely the representation of any experience may be distributed across many processors (Johnson-Laird 1988: 174). This so-called ‘connectionist’ model of the mind has a certain anthropological appeal – thus cognitive anthropologists such as D’Andrade (1990: 98–9) have noted that the properties of cultural models are precisely what would be expected from the operation of parallel processing networks, while Bloch (1991) has suggested that the acquisition of practical skills may best be understood in terms of the development of tightly connected networks dedicated to particular domains of cognition (for a more extended review, see D’Andrade 1995: 143–9).

Despite its greater realism, connectionism remains open to much the same criticisms that have been levelled against earlier versions of artificial intelligence (Dreyfus 1992). For ultimately, it is still grounded in the Cartesian ontology that is basic to the entire project of cognitive science – an ontology that divorces the activity of the mind from that of the body in the world. Thus the body continues to be regarded as nothing more than an input device whose role is to receive information to be ‘processed’ by the mind, rather than playing any part in cognition itself. And beyond that, the world is supposed to exist as a domain of problems to be solved, or as a field for the enactment of solutions reached, rather than as a resource for problem solving (Clark 1997: 83–4). Connectionists, Clark admits, ‘inherit a distressing tendency to study disembodied problem solving and to opt for abstract, symbolically defined input-output mappings’ (1997: 80). What they fail to recognise is that the processing loops that yield intelligent action are not confined to some interior space of mind, confined within the skull, but freely penetrate both the body and its environment. This failure is deeply rooted in the history of twentieth-century psychology. It lies, as Edward Reed (1987: 144–5) has shown, in the founding assumptions of the behaviourist theory that cognitive science claims to have overturned: namely that perception is based on discrete bodily sensations touched off by external stimuli, and that action is based on the corresponding bodily responses.

The objection to behaviourism was that, as a theory, it was incomplete: the simple linkage of stimulus and response was considered insufficient to account for the knowledgeability of actors or the productivity of their actions. To complete the picture, cognitive scientists posited a mental processing device that would convert the stimulus input into knowledge, and generate plans for the delivery of meaningful responses. There is however another way out of behaviourism, and this is to treat the perceiving organism not as a passive recipient of stimuli but as an active agent who purposively seeks out information that would specify the meaningful properties of his or her environment. This was the path taken by James Gibson in his pioneering studies of visual perception, and in doing so he laid the foundations for an approach, known as ‘ecological psychology’, which is radically
opposed, in almost every respect, to the project of cognitive science.

ECOLOGICAL PSYCHOLOGY

The point of departure for ecological psychology is the proposition that perceptual activity consists not in the operation of the mind upon the bodily data of sense, but in the intentional movement of the whole being (indissolubly body and mind) in its environment. The emphasis on movement is critical. Cognitive science assumes a static perceiver who has nothing to go on but transient patterns of sensory excitation that are, in themselves, quite insufficient to specify the objects and events that gave rise to them. Thus the problem of perception, for the cognitive scientist, is to show how these ephemeral and fragmentary sense data are reconstructed, in terms of pre-existing schemata or representations, into a coherent picture of the world. But for Gibson, sensations do not, as such, constitute the data for perception (Gibson 1979: 55). Rather, what the perceiver looks for are constancies underlying the continuous modulations of the sensory array as one moves from place to place. In visual perception, for example, we do not see patterns of light but objects in our environment. We do so because, as we move about, the pattern of light reaching the eyes from reflecting surfaces in the environment (that is, the ‘optic array’) undergoes a gradual transformation. It is the invariants that underly this transformation, and not the momentary patterns of stimulation themselves, that specify what we see. Indeed it is Gibson’s contention that the invariant relations that structure the modulations of an optic array for a moving observer contain all the information necessary to specify the environment. Perception, then, is a matter of extracting these invariants. The perceiver has no need to reconstruct the world in the mind if it can be accessed directly in this way.

Certain implications follow. First, if perception entails movement, then it must be a mode of action rather than a prerequisite for action. For Gibson, perception is an active and exploratory process of information pickup; far from working on sensations already received, it involves the continual movement, adjustment and reorientation of the receptor organs themselves. What is important, he argues, ‘is the looking, listening, touching and sniffing that goes on when the perceptual systems are at work’ (1982[1976]: 397–8). Secondly, if perception is a mode of action, then what we perceive must be a direct function of how we act. Depending on the kind of activity in which we are engaged, we will be attuned to picking up particular kinds of information. The knowledge obtained through direct perception is thus practical, it is knowledge about what an environment offers for the pursuance of the action in which the perceiver is currently engaged. In other words, to perceive an object or event is to perceive what it affords. Perhaps the most fundamental contribution of Gibson’s approach to perception lay in his insight that the information picked up by an agent in the context of practical activity specifies what are called the ‘affordances’ of objects and events in the environment (Gibson 1979: 127–43).

Thirdly, the information that is potentially available to an agent is inexhaustible: there is no limit to what can be perceived. Throughout life one can keep on seeing new things in an otherwise permanent world, not by constructing the same sense data according to novel conceptual schemata, but by a sensitisation or ‘fine-tuning’ of the perceptual system to new kinds of information. Novel perceptions arise from creative acts of discovery rather than imagining, and the information on which they are based is available to anyone attuned to pick it up. Finally, and following from the above, one learns to perceive in the manner appropriate to a culture, not by acquiring programmes or conceptual schemata for organising sensory data into higher-order representations, but by ‘hands-on’ training in everyday
tasks whose successful fulfilment requires a practised ability to notice and to respond fluently to salient aspects of the environment. In short, learning is not a transmission of information but – in Gibson’s (1979: 254) words – an ‘education of attention’. As such, it is inseparable from a person’s life in the world, and indeed continues for as long as he or she lives.

There are clear parallels between the ecological critique, in the field of psychology, of cognitive science and the critique by practice theorists of cognitive anthropology, which I reviewed in the first part of this chapter. Both Gibson’s ecological psychology and Bourdieu’s theory of practice set out to re-embed perception and cognition within the practical contexts of people’s ongoing engagement with their environments in the ordinary course of life. And both seek to escape from the sterile Cartesian dualisms of mind and nature, subject and object, intellection and sensation, and so on. Yet while the impact of Bourdieu’s work in social and cultural anthropology has been immense, the relevance of Gibsonian ecological psychology to anthropological theory has been little explored. An obvious reason for the discrepancy lies in the fact that Gibson himself devoted scant attention to the specifically social and cultural dimensions of human life, preferring – if anything – to downplay the significance of the distinction between human beings and other animals. In developing his theory of affordances, Gibson did devote a brief section to ‘other persons and animals’ in the environment of the perceiver, noting that they have the peculiar capacity to ‘act back’ or, literally, to interact with the perceiver. Thus ‘behavior affords behavior, and the whole subject matter of psychology and of the social sciences can be thought of as an elaboration of this basic fact’ (Gibson 1979: 135). But beyond suggesting that the perception of mutual affordances in social life involves the same principles of information pickup as are involved in the perception of inanimate objects, Gibson did not pursue further the implications of this rather sweeping statement.

A recent attempt to develop this neglected aspect of the Gibsonian programme has been made by Edward Reed (1988a). The crux of his argument is that social agents can not only directly perceive their mutual affordances for one another, but also share their direct perception of other constituents of the environment. Attuned through prior training and experience to attending to similar invariants, and moving in the same environment in the pursuit of joint activities, they will pick up the same information (Reed 1988a: 119–20, see Gibson 1982[1967]: 412). Thus, contrary to the axioms of cognitive anthropology, the communion of experience that lies at the heart of sociality does not depend upon the organisation of sensory data, initially private to each perceiver, in terms of an objective system of collective representations. Rather, sociality is given from the start, prior to the objectification of experience in cultural categories, in the direct, perceptual involvement of fellow participants in a shared environment (Ingold 1993a: 222–3). This, indeed, is what makes anthropological fieldwork possible, for it allows the fieldworker and local people to inhabit a common ground of experience, even though each may bring to bear a radically different conceptual frame to the task of its interpretation. As Michael Jackson notes, ‘by using one’s body in the same way as others in the same environment one finds oneself informed by an understanding which may then be interpreted according to one’s own custom or bent, yet which remains grounded in a field of practical activity and thereby remains consonant with the experience of those among whom one has lived’ (1989: 135).

The environment of joint practical activity should not, however, be confused with the physical world of ‘nature’ (Gibson 1979: 8). For the world can appear in this latter guise only to a creature that can disengage itself – or imagine itself to be disengaged – from
the processes of its own material life. But the world we inhabit does not confront us, it surrounds us. This does not mean that it is any less real; the environment, however, is reality constituted in relation to the beings whose environment it is. As I have argued elsewhere (Ingold 1992a), Gibsonian psychology offers a way of thinking about human-environmental relations that dispenses with the conventional dichotomy between naturally given and culturally constructed worlds. According to convention, it is necessary to distinguish between the ‘real’ environment, as it is presented to detached, scientific observation, and the ‘perceived’ environment as it is built up through a selective response to stimuli (Brookfield 1969: 53). In anthropology, the distinction is commonly expressed by means of a contrast between the ‘etic’ level of objective description and the ‘emic’ level on which the environment is made meaningful by cultural subjects. Yet from a Gibsonian perspective, it is apparent that the world becomes a meaningful place for people through being lived in, rather than through having been constructed along the lines of some formal design. Meanings are not attached by the mind to objects in the world, rather these objects take on their significance – or in Gibson’s terms, they afford what they do – by virtue of their incorporation into a characteristic pattern of day-to-day activities. In short, far from being inscribed upon the bedrock of physical reality, meaning is immanent in the relational contexts of people’s practical engagement with their lived-in environments.

PHENOMENOLOGY

It is at this point that ecological psychology makes contact with an older, Continental European tradition of philosophical inquiry, broadly characterised as phenomenological, and represented above all in the works of Martin Heidegger and Maurice Merleau-Ponty. Just as the point of departure, for Gibson, had been the perceiver-in-his/her-environment, so likewise these philosophers set out from the premise that every person is, before all else, a being-in-the-world. And their intellectual agenda, like that of Gibson, was fundamentally antagonistic to the kind of rationalism whose contemporary manifestation, in the field of psychology, is cognitive science. Yet in some ways they went even further. For all his emphasis on perception as a process that is continually going on, Gibson assumed that the world which the perceiver moves around in and explores is relatively fixed and permanent, somehow pre-prepared with all its affordances ready and waiting to be taken up by whatever creatures arrive to inhabit it. From a phenomenological standpoint, by contrast, the world emerges with its properties alongside the emergence of the perceiver in person, against the background of involved activity. Since the person is a being-in-the-world, the coming-into-being of the person is part and parcel of the process of coming-into-being of the world.

Consider, for example, Heidegger’s critique of Cartesianism (reviewed in Dreyfus 1991: 109–27). Heidegger begins by distinguishing two ways in which the world may ‘show up’ to a being who is active within it: availableness and occurrentness. The former is evident in our everyday use of the most familiar things around us, which, absorbed into the current of our activity (as indeed, we are ourselves), become in a sense transparent, wholly subordinate to the ‘in-order-to’ of the task at hand. The latter refers to the way in which things are revealed in their essential nature to an observer who self-consciously stands back from the action, assuming a stance of contemplative detachment or disinterested reflection. Now Cartesian ontology, which takes as its starting point the self-contained subject confronting a domain of isolable objects, assumes that things are initially encountered in their pure occurrentness, or brute facticity. The perceiver has first to make sense of these occurrent
entities – to render them intelligible – by categorising them, and assigning to them meanings or functions, before they can be made available for use. Heidegger, however, reverses this order of priority. For a being whose primary condition of existence is that of dwelling in the world, things are initially encountered in their availableness, as already integrated into a set of practices for ‘coping’ or getting by. To reveal their occurrent properties, things have to be rendered unintelligible by stripping away the significance they derive from contexts of ordinary use. This, of course, is the explicit project of natural science, which seeks to describe and explain a world which the rest of us are preoccupied with living in. Yet the scientist, like everyone else, is a being-in-the-world, and scientific practice, as any other skilled activity, draws unselfconsciously upon the available. Thus even science, however detached and theoretical it may be, takes place against a background of involved activity. The total disengagement of the subject from the world, from which Cartesianism charts a process of building up from the occurrent to the available, is therefore a pure fiction which can only be reached by extrapolating to the point of absurdity a progressive reduction from the available to the occurrent.

If, as Heidegger seems to suggest, self and world merge in the activity of dwelling, so that one cannot say where one ends and the other begins, it surely follows that the intentional presence of the perceiving agent, as a being-in-the-world, must also be an embodied presence. This was the principal contention of Merleau-Ponty in his massive treatise, dating from 1945 [trans. 1962], on the Phenomenology of perception. ‘The body’, Merleau-Ponty wrote, ‘is the vehicle of being in the world, and having a body is, for a living creature, to be involved in a definite environment, to identify oneself with certain projects and be continually committed to them’ (1962: 82). Like Heidegger, Merleau-Ponty was concerned to reverse the ontological priorities of Cartesian rationalism. Just as for Heidegger, the available is the ground upon which we may seek to reveal the properties of the occurrent, so for Merleau-Ponty our knowledge of the body as a physical thing – as a mere conduit or target of the mind’s attention – is grounded in a more fundamental awareness, pre-objective and pre-conscious, which is given by the existential condition of our total bodily immersion, from the start, in an environment. Only because we are thus immersed in the world can we imagine ourselves as existing separately from it. The problem of perception lies in understanding the nature of this immediate pre-objective experience, itself a precondition for objective thought. Accordingly, Merleau-Ponty sought to uncover ‘underneath the objective and detached knowledge of the body that other knowledge which we have of it by virtue of its always being with us and of the fact that we are our body’ (1962: 206, my emphasis). In this latter sense, the body is neither object nor instrument, it is rather the subject of perception.

In recent years, albeit somewhat belatedly, many anthropologists have begun to read Merleau-Ponty with renewed interest. Though there is nothing particularly novel about anthropological concerns with the body and its symbolism, much work in this field is marked by a tendency to treat body praxis as a mere vehicle for the outward expression of meanings emanating from a higher source in culture or society. This is true, for example, of the writings of Mary Douglas. In line with her general thesis, reviewed in the first part of this chapter, of the cultural construction of experience, Douglas holds that the body is a medium whose forms – whether adopted in movement or repose – ‘express social pressures in manifold ways’ (1970: 93). As Jackson has eloquently shown, this ‘subjugation of the bodily to the semantic’ diminishes the body and its experience in two ways. First, body movements – postures and gestures – are reduced to the status of signs which direct the analyst in search of what they stand for, namely extra-somatic cultural meanings. Secondly,
the body is rendered passive and inert, while the active role of mobilising it, putting it to use and charging it with significance is delegated to a knowing subject which is both detached from the body and reified as ‘society’ (Jackson 1989: 122–3). The first reduction fails to recognise that gestures, whatever they might be held to symbolise, delineate their own meanings through their embeddedness in social and material contexts of action. The second reduction ignores a consideration pivotal to Merleau-Ponty’s phenomenology: that the body is given in movement, and that bodily movement carries its own immanent intentionality. Indeed it is because of this intentionality that the subject’s action is, at one and the same time, a movement of perception (1962: 110–11).

Drawing inspiration from Merleau-Ponty, Jackson (1989) calls for studies that would take as their focus the ‘body subject’ in its dealings with the world. In similar vein, and linking Merleau-Ponty’s concerns with perception to Bourdieu’s with practice, Thomas Csordas (1990) puts the case for the establishment of a ‘paradigm of embodiment’ in anthropological inquiry. Far from treating the body as an *object* of study, this paradigm would be launched from the postulate that ‘the body is to be considered as the *subject* of culture, or in other words as the existential [as opposed to the cognitive] ground of culture’ (1990: 5). In its promise to collapse the Cartesian dualities between mind and body, subject and object, the paradigm holds a certain appeal for many anthropologists whose familiarity with indigenous, non-Western understandings – which are not generally concordant with such dualities – predisposes them to adopt a critical attitude towards the foundational assumptions of Western thought and science. Not everyone has been won over, however, as is evident from the continuing strength of cognitive anthropology, and from the pronouncements of anthropologists such as Bloch (1991), D’Andrade (1995) and Sperber (1996) who see a role for anthropology in an interdisciplinary alliance with cognitive science. Moreover, as I shall show by way of conclusion, there remain three major obstacles to the further development of the phenomenological approach.

**CONCLUSION**

The first obstacle has to do with the problematic status of biology. Even anthropologists who would readily accept the idea of embodiment as a paradigm for the study of culture, and who denounce the mind/body distinction, tend to balk at attempts to soften the conventional dichotomy between culture and biology (for example, Csordas 1990: 36). In effect, the dichotomy remains as strong as it always was; only the body has been repositioned. Formerly placed with the organism on the side of biology, the body has now reappeared as a ‘subject’ on the side of culture. Far from collapsing the Cartesian dualism of subject and object, this move actually serves to reproduce it. Moreover it leaves the organism bodiless, reduced to an inchoate mass of biological potential. The embodiment of culture, in short, leads to nothing less than the disembodiment of the organism! Indeed to posit some kind of biological residuum that exists prior to, and independently of, the culturally constituted body is to resort to the very objectivism that a phenomenological approach claims to repudiate (Morton 1995). It seems to me that to consolidate the theoretical gains brought by the paradigm of embodiment, one final step has yet to be taken: that is, to recognise that the body *is* the human organism, and that the process of embodiment is one and the same as the development of that organism in its environment.

This leads to the second obstacle, which is that the cause of dissolving the division between body and mind is ill-served by emphasising one term to the exclusion of the other. One could, in principle, speak just as well of enmindment as of embodiment, to
emphasise the way in which the body and its surroundings are incorporated into those processing loops that underwrite human powers of agency and intentionality. Body and mind, after all, are not two separate things but two ways of describing the same thing – or better, the same process – namely the environmentally situated activity of the human organism-person (see Chapter Nineteen, pp. 352–3). Mind, as Gregory Bateson always insisted, is not ‘in the head’ rather than ‘out there in the world’, but immanent in the active, perceptual engagement of organism and environment (Bateson 1973). Indeed the distance between a Merleau-Pontyan phenomenology of the body and what Bateson christened the ‘ecology of mind’ is not as great as might first appear.

Finally, even if it is agreed that a phenomenological approach offers a richer and more ‘experience-near’ (Geertz 1984: 124) account of human life in the world than do the more formal, ‘experience-distant’ concepts of cognitive science, the problem remains of translating this approach into a programme of research that would give us a more accurate idea than we presently have of how people routinely succeed, in their everyday, skilful ‘coping’, in performing with ease actions that are far beyond the capabilities of any machine yet devised. It is easy to pour scorn on the efforts of researchers in artificial intelligence to replicate the processes at work in the human brain, but as Dreyfus admits (1992: xlv), no one knows how the brain does it, nor are philosophers in any way equipped to provide the answers.

What we can say, however, is that the effect of taking the agent-in-an-environment rather than the isolated, self-contained individual as our point of departure is to collapse not only the venerable Durkheimian distinction between the individual and society, but also the division – which has traditionally rested on this distinction – between the two disciplines of anthropology and psychology. I can see no further intellectual justification for continuing to separate these disciplines. For we now recognise that such processes as thinking, perceiving, remembering and learning have to be studied within the ecological contexts of people’s interrelations with their environments. We recognise, too, that the mind and its properties are not given in advance of the individual’s entry into the social world, but are rather fashioned through a lifelong history of involvement in relationships with others. And we know that it is through the activities of the embodied mind (or enminded body) that social relationships are formed and reformed. Psychological and social processes are thus one and the same. And the discipline that will be called into being to study these processes, whatever we choose to call it, will be the study of how people perceive, act, think, know, learn and remember within the settings of their mutual, practical involvement in the lived-in world.
Chapter Ten

Building, dwelling, living:
How animals and people make themselves at home in the world

This chapter is partly autobiographical, and describes my own attempts over the last few years to find a satisfactory way of understanding the relationships between people and their environments. It is incomplete, in the sense that I cannot claim to have yet found, or that I will ever find, final answers to the questions that are bothering me. Indeed, if one of the main conclusions of what I have to say is that so-called ‘ends’ or ‘goals’ are but landmarks on a journey, then this must apply as much to my own thinking and writing as to everything else that people do in the world. The most fundamental thing about life is that it does not begin here or end there, but is always going on. And for the same reason, as we saw in Chapter One (p. 20), environments are never complete but are continually under construction. My purpose here is to consider the implications of this point with regard to our ideas about the similarities and contrasts between human beings and other animals in the ways in which they go about creating environments for themselves. I am concerned, in particular, with the meaning of architecture, or of that part of the environment which is conventionally described as ‘built’.

In recent years, my own ideas have undergone something of a sea change, which is where the autobiographical element comes in. I began with a view that was – and indeed still is – fairly conventional in anthropology, one that sets out from the premise that human beings inhabit discursive worlds of culturally constructed significance, laid out upon the substrate of a continuous and undifferentiated physical terrain. If I differed from my colleagues, at least in social anthropology, it was in my concern to spell out the implications of this premise for the distinction between human beings and non-human animals. I felt sure that the models developed by ecologists and evolutionary biologists to account for the relations between organisms and their environments must apply as well to the human as to any other species, yet it was also clear to me that these models left no space for what seemed to be the most outstanding characteristic of human activity – that it is intentionally motivated. Human intentions, I argued, are constituted in the intersubjective domain, of relationships among persons, as distinct from the domain in which human beings, as biological organisms, relate to other components of the natural environment. Human life, I therefore proposed, is conducted simultaneously in two domains – a social domain of interpersonal relations and an ecological domain of inter-organismic relations – so that the problem is to understand the interplay between them (Ingold 1986a: 9).

Starting out from two quite reasonable propositions – that human beings are organisms, and that human action is intentionally motivated – I thus ended up with what appeared to be a thoroughly unreasonable result: that unlike all other animals, humans live a split-level existence, half in nature, half out; half organism, half person; half body, half mind. I had come out as an unreconstructed Cartesian dualist, which is perhaps not
so surprising when you remember that the intellectual division of labour between the 
natural sciences and the humanities – and within anthropology between its biological and 
sociocultural divisions – rests on a Cartesian foundation. Something, I felt, must be wrong 
somewhere, if the only way to understand our own creative involvement in the world is 
by taking ourselves out of it. Eventually, it dawned on me that although the problem was 
an anthropological one, it would require more than an anthropological solution: what is 
needed is a completely new way of thinking about organisms and about their relations 
with their environments; in short, a new ecology. And it is towards this new ecology that 
I have been groping.

In this task, I have gained inspiration from three principal sources. The first comes 
from biology, and consists in the work of the handful of courageous scholars – prin-
cipally developmental biologists – who have been prepared to challenge the hegemony of 
neo-Darwinian thinking in the discipline (e.g. Ho and Saunders 1984, see also Oyama 
1985). The second lies in what is known as ‘ecological psychology’, an approach to under-
standing perception and action that is radically opposed to the cognitivist orientation of 
the psychological mainstream (Gibson 1979, Michaels and Carello 1981). And the third 
comes from philosophical writing of a broadly phenomenological bent, above all the works 
of Martin Heidegger (1971) and Maurice Merleau-Ponty (1962). Although developed 
indipendently, in the different disciplinary contexts of biology, psychology and philo-
sophy, these three approaches have much in common. Though I cannot now explore the 
commonalities in detail, I want to highlight just two of them that are rather central to 
what I shall have to say. First, all three approaches reverse the normal order of priority 
– normal, that is, in the history of Western thought – of form over process. Life, in this 
perspective, is not the revelation of pre-existent form but the very process wherein form 
is generated and held in place. Secondly, the three approaches adopt as their common 
point of departure the agent-in-its-environment, or what phenomenology calls ‘being in 
the world’, as opposed to the self-contained individual confronting a world ‘out there’. 
In short, they maintain that it is through being inhabited, rather than through its assim-
ilation to a formal design specification, that the world becomes a meaningful environment 
for people.

In what follows, I refer to this position as the ‘dwelling perspective’, by contrast to the 
more conventional position from which I began, and which I shall call the ‘building perspective’. Thus the movement in my own thinking has been from the building percep-
tive to the dwelling perspective. To document this movement, I shall start by spelling out 
the first of these perspectives, and its implications for the way we understand the construc-
tion of the built environment, in greater depth. I shall then explain what is entailed in 
adopting a dwelling perspective in its place. Finally, I shall consider how this shift from 
a building perspective to a dwelling perspective bears upon the concept and meaning of 
arquitecture.

CONSTRUCTING ENVIRONMENTS AND MAKING WORLDS

Our initial problem may be framed by juxtaposing two statements, the first of which will 
be familiar to anthropological readers, the second much less so. ‘Man’, Clifford Geertz 
has declared, ‘is an animal suspended in webs of significane he himself has spun’ (1973: 
5). One is led to suppose that non-human animals are not so suspended. Spiders spin 
webs, and do indeed suspend themselves in them, but their webs are tangible objects – 
they catch flies, not thoughts. But now consider this passage from the delightful but little
'As the spider spins its threads, every subject spins his relations to certain characters of the things around him, and weaves them into a firm web which carries his existence' (1957: 14). Now the subjects of which von Uexküll speaks are not merely human, nor even close to human. Indeed he begins his stroll with a particular species of parasitic tick! If, as it would seem, what Geertz says of humankind applies equally to ticks, then what – if anything – does distinguish human from non-human environments? Though it might be said, with Nelson Goodman (1978), that human beings are makers of worlds, this only begs the question of how human acts of world-making differ from the processes whereby non-human animals fashion their environments. It was this question that initially led me to focus on the meaning of the built environment: not, that is, on what a built environment means, but on what it means to say that an environment is built. How can we distinguish an environment that is built from one that is not? It is all very well to define the built environment, as do Denise Lawrence and Setha Low in a recent review, to include ‘any physical alteration of the natural environment, from hearths to cities, through construction by humans’ (1990: 454). But why should the products of human building activity be any different, in principle, from the constructions of other animals? Or to phrase the same question in another way, by what right do we conventionally identify the artificial with the ‘man-made’? And where, in an environment that bears the imprint of human activity, can we draw the line between what is, and is not, a house, or a building, or an instance of architecture (Pearson and Richards 1994: 2)?

My first efforts to deal with these questions all hinged on a crucial distinction, which I thought quite unproblematic at the time, between design and execution. The argument ran roughly as follows: imagine a mollusc shell, a beaver’s lodge and a human house. All have been regarded, at one time or another, as instances of architecture. Some authors would restrict architecture to the house, others would include the lodge – as an example of ‘animal architecture’ (von Frisch 1975) – but exclude the shell, others would include all three forms. The usual argument for excluding the shell is that it is attached to the body of the mollusc, whereas for something to count as an artefact it must be detached.
The body. The shell, it is said, ‘just grows’ – there is nothing the mollusc can or need do about it. The beaver, by contrast, works hard to put its lodge together: the lodge is a product of the beaver’s ‘beavering’, of its activity. Likewise the house is a product of the activities of its human builders. In their respective forms, and levels of complexity, they need not be that different (Figure 10.1). Should we, then, conclude that the lodge is beaver-made just as much as the house is man-made?

To this question I answered in the negative (Ingold 1986b: 345–6; 1988b: 90). Wherever they are, beavers construct the same kinds of lodges and, so far as we know, have always done so. Human beings, by contrast, build houses of very diverse kinds, and although certain house forms have persisted for long periods, there is unequivocal evidence that these forms have also undergone significant historical change. The difference between the lodge and the house lies, I argued, not in the construction of the thing itself, but in the origination of the design that governs the construction process. The design of the lodge is incorporated into the same programme that underwrites the development of the beaver’s own body: thus the beaver is no more the designer of the lodge than is the mollusc the designer of its shell. It is merely the executor of a design that has evolved, along with the morphology and behaviour of the beaver, through a process of variation under natural selection. In other words, both the beaver – in its outward, phenotypic form – and the lodge are ‘expressions’ of the same underlying genotype. Richard Dawkins (1982) has coined the term ‘extended phenotype’ to refer to genetic effects that are situated beyond the body of the organism, and in this sense, the lodge is part of the extended phenotype for the beaver.

Human beings, on the other hand, are the authors of their own designs, constructed through a self-conscious decision process – an intentional selection of ideas. As Joseph Rykwert has put it: ‘unlike even the most elaborate animal construction, human building involves decision and choice, always and inevitably; it therefore involves a project’ (1991: 56). It is to this project, I maintained, that we refer when we say that the house is made, rather than merely constructed. I even went so far as to extend the argument to the domain of toolmaking, criticising students of animal behaviour for their assumption that wherever objects are manifestly being modified or constructed for future use, tools are being made. They are only being made, I claimed, when they are constructed in the imagination prior to their realisation in the material (Ingold 1986a: 40–78). But if the essence of making lies in the self-conscious authorship of design, that is in the construction of a project, it follows that things can be made without undergoing any actual physical alteration at all. Suppose that you need to knock in a nail but lack a hammer. Looking around the objects in your environment, you deliberately select something best suited to your purpose: it must be hard, have a flat striking surface, fit in the hand, and so on. So you pick up an appropriate stone. In this very selection, the stone has ‘become’ a hammer in that, in your mind’s eye, a ‘hammer-quality’ has been attached to it. Without altering the stone in any way, you have made a hammer out of it. In just the same manner, a cave may come to serve as a dwelling, a stretch of bare flat land as an airstrip, or a sheltered bay as a harbour.

To deal with situations of this kind, I chose the term co-option. Thus the stone was co-opted, rather than constructed, to become a hammer. It follows that there are two kinds of making: co-optive and constructive. In co-optive making an already existing object is fitted to a conceptual image of an intended future use, in the mind of a user. In constructive making this procedure is reversed, in that the object is physically remodelled to conform more closely to the pre-existing image. Indeed it seemed that the history of
things – of artefacts, architecture and landscapes – could be understood in terms of success-

vie, alternating steps of co-option and construction. We press into service what we find
around us to suit our current purposes, we proceed to modify those things to our own
design so that they better serve these purposes, but at the same time our objectives – or
adaptive requirements – also change so that the modified objects are subsequently
co-opted to quite other projects for which they are perceived to come in handy, and so
on and on. Exactly the same model has been applied to account for the evolution of
organisms – Darwin himself used it in his book on orchids (1862: 348). To adopt terms
suggested by Stephen J. Gould and Elisabeth Vrba (1982), structures adapted for one
purpose may be exapted for another, subsequently undergoing further adaptation, only to
be exapted for yet another purpose . . . The difference is just that in the case of organic
evolution, the selection involved is natural rather than intentional (Ingold 1986b: 200–2).

It was in searching around for ways to express these ideas that I came across the writ-
ings of Jakob von Uexküll, Estonian-born aristocrat and a founding figure in the fields
of both ethology and semiotics, to whose Stroll through the Worlds of Animals and Men,
first published in 1934, I have already referred. Reacting against the mechanistic biology
of the day, von Uexküll argued that to treat the animal as a mere assemblage of sensory
and motor organs is to leave out the subject who uses these organs as tools, respectively,
of perception and action:

We who still hold that our sense organs serve our perceptions, and our motor organs
our actions, see in animals . . . not only the mechanical structure, but also the oper-
ator, who is built into their organs, as we are into our bodies. We can no longer regard
animals as mere machines, but as subjects whose essential activity consists in perceiving
and acting . . . All that a subject perceives becomes his perceptual world and all that he
does, his effector world. Perceptual and effector worlds together form a closed unit, the
Umwelt.

(1957: 6)

For von Uexküll, the Umwelt – that is, the world as constituted within the specific life
activity of an animal – was to be clearly distinguished from the environment, by which
he meant the surroundings of the animal as these appear to the indifferent human observer.
We human beings cannot enter directly into the Umwelten of other creatures, but through
close study we may be able to imagine what they are like. But the reverse does not hold:
the non-human animal, because it cannot detach its consciousness from its own life-
activity, because it is always submerged within its own Umwelt, cannot see objects as such,
for what they are in themselves. Thus for the animal, the environment – conceived as a
domain of ‘neutral objects’ – cannot exist (Ingold 1992a: 43).

Towards the end of his stroll, von Uexküll invites his readers to imagine the manifold
inhabitants of an oak tree. There is the fox, who has built its lair between the roots; the
owl, who perches in the crotch of its mighty limbs; the squirrel, for whom it provides a
veritable maze of ladders and springboards; the ant, who forages in the furrows and crags
of its bark; the wood-boring beetle who feeds and lays its eggs in passages beneath the
bark, and hundreds of others (Figures 10.2 and 10.3). Each creature, through the sheer
fact of its presence, confers on the tree – or on some portion of it – a particular quality
or ‘functional tone’: shelter and protection for the fox, support for the owl, a thorough-
fare for the squirrel, hunting grounds for the ant, egg-laying facilities for the beetle. The
same tree, thus, figures quite differently within the respective Umwelten of its diverse
inhabitants. But for none of them does it exist as a tree (von Uexküll 1957: 76–9). Now consider the forester, who is measuring up the tree to estimate the volume of timber it will yield. For him, the tree figures as a potential source of valuable raw material, whereas for the little child – again to follow von Uexküll’s example (pp. 73–5) – it seems to be alive and to reveal a frightening aspect. But these different perceptions are not tied, as they are for non-human animals, to the modus operandi of the organism. Human beings do not construct the world in a certain way by virtue of what they are, but by virtue of their own conceptions of the possibilities of being. And these possibilities are limited only by the power of the imagination.

Herein, it seemed to me, lay the essential distinction I was seeking between the respective ways in which the subjective existence of human and non-human animals is suspended in ‘webs of significance’. For the non-human, every thread in the web is a relation between it and some object or feature of the environment, a relation that is set up through its own practical immersion in the world and the bodily orientations that this entails. For the human, by contrast, the web – and the relations of which it consists – are inscribed in a separate plane of mental representations, forming a tapestry of meaning that covers over the world of environmental objects. Whereas the non-human animal perceives these objects as immediately available for use, to human beings they appear initially as occurrent phenomena to which potential uses must be affixed, prior to any attempt at engagement. The fox discovers shelter in the roots of a tree, but the forester sees timber only in his mind’s eye, and has first to fit that image in thought to his perception of the occurrent object – the tree – before taking action. Or to take another example, suggested recently by Maurice Bloch, the ‘swidden plot’ exists as an image in the mind of the horticulturalist, who has to match that image to an observed stand of uncut forest prior to transforming it into a field (Bloch 1991: 187). As mental representations, the timber and the swidden plot belong to the ‘intentional worlds’ (cf. Shweder 1990: 2) of the forester and the farmer; as occurrent phenomena, the oak tree and the stand of forest belong to the physical environment of ‘neutral objects’. It has been conventional, in anthropological and other writings of Western academic provenance, to refer to these worlds, of human values and purposes on the one hand, and of physical objects on the other, by means of the shorthand terms, culture and nature, respectively. And in a paper written

Figure 10.2 Fox, owl and oak tree

in 1987, I concluded that ‘making is equivalent to the cultural ordering of nature – the
inscription of ideal design upon the material world of things’ (Ingold 1989: 506). This
statement, I confess, is now a source of considerable embarrassment.

THE BUILDING PERSPECTIVE

In my defence, I can only say that I was singing a tune that has been sung by most
anthropologists, in one form or another, for decades, in the context of an encounter with
students of animal behaviour whose theories had no place for agency or intentionality at
all, except as an epiphenomenal effect of innate predisposition. This tune is what I earlier
called the ‘building perspective’, and I should now like to elaborate on this perspective
with reference to anthropological work other than my own. For a founding statement, we
could turn once again to Geertz, and to his assertion that culture – or at least that kind
of culture taken to be the hallmark of humanity – consists in ‘the imposition of an arbi-
trary framework of symbolic meaning upon reality’ (1964: 39). Reality, that which is
imposed upon, is envisioned here as an external world of nature, a source of raw mate-
rials and sensations for diverse projects of cultural construction. Following from this, a
distinction is commonly made between the real environment that is given independently
of the senses, and the perceived environment as it is reconstructed in the mind through
the ordering of sense data in terms of acquired, cognitive schemata. Other conventional
oppositions that encode the same distinction, and that we have already encountered (see
Chapter Three, p. 41, and Chapter Nine, p. 168), are between ‘etic’ and ‘emic’, and
between ‘operational’ and ‘cognised’. The starting point in all such accounts is an imagined
separation between the perceiver and the world, such that the perceiver has to reconstruct
the world, in the mind, prior to any meaningful engagement with it.

Figure 10.3 Ant, bark-boring beetle and oak tree
From Jakob von Uexküll ‘A Stroll through the Worlds of Animals and Men,’ in Instinctive Behavior,
1957, pp. 78–9, illustrations by G. Kriszat.
Here, then, is the essence of the building perspective: that worlds are made before they are lived in; or in other words, that acts of dwelling are preceded by acts of worldmaking. A good example of this approach comes from the introduction to Maurice Godelier’s book, *The mental and the material* (1986). Here, Godelier is concerned with the proper translation of the Marxian concepts *Grundlage* and *Überbau*, usually rendered in English as ‘infrastructure’ and ‘superstructure’. He likens the *Überbau* to a building: ‘The *Überbau* is a construction, an edifice which rises on foundations, *Grundlage*; and it [the *Überbau*] is the house we live in, not the foundations’ (pp. 6–7). Human beings, then, inhabit the various houses of culture, pre-erected upon the universal ground of nature – including the universals of human nature. For another example, I would like to turn to Peter Wilson’s *The domestication of the human species* (1988). In this book, Wilson argues that the most significant turning point in human social evolution came at the moment when people began to live in houses. Roughly speaking, this marks a division between hunters and gatherers, on the one hand, and agriculturalists and urban dwellers, on the other. ‘Hunter-gatherers’, Wilson writes, ‘create for themselves only the flimsiest architectural context, and only the faintest line divides their living space from nature’. All other societies, by contrast, ‘live in an architecturally modified environment’, inhabiting houses and villages of a relatively enduring kind, structures that – even when abandoned – leave an almost indelible impression in the landscape. In essence, Wilson is distinguishing between societies with architecture and societies without it.

This is a bold generalisation, and like all such, it is an easy target for empirical refutation. That is not my concern, however. I am rather concerned to expose the assumptions entailed in making the distinction between an ‘architecturally modified environment’ and what is

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**Figure 10.4** The Mbuti Pygmy camp of Apa Lelo

simply called ‘nature’. For it is on this distinction that Wilson’s entire argument rests. One objection to it immediately comes to mind. To be sure, the physical arrangement and formal properties of a hunter-gatherer encampment may be very different from those of a permanent village settlement. By way of example, compare the plan, shown in Figure 10.4, of the Mbuti Pygmy camp of Apa Lelo, in the Ituri forest of Zaire, with the plans shown in Figure 10.5 of the ancient Mesopotamian village site of Tell es-Sawwan. In the first case the spatial structure of settlement is loose, informal, and sensitive to the changing state of interpersonal relations between cliques, hosts and visitors. In the second it is tightly packed, geometrically regular, and appears to impose fairly tight constraints on the disposition of people and activities. Moreover, compared with the substantial buildings of the village settlement, the constructions of the hunter-gatherers are scarcely more than shades and windbreaks. Most of life, for hunter-gatherers, goes on around dwellings rather than in them. Nevertheless, the fact remains that hunter-gatherers do build shelters of various kinds. So who are we to say that they have no architecture? And if they do not, how are we to comprehend their building activity?

The answer that emerges from Wilson’s account is that among hunter-gatherers, erecting shelters is one of a suite of activities, along with food-collecting, cooking, toolmaking and repair, childminding, and so on, that constitute the daily round for these people. Thus building activity is part and parcel of life in an environment that is already given in nature, and that has not itself been artificially engineered. With village architecture, by contrast, nature has to a degree been covered over or transformed, so that what immediately confronts people is not a natural environment but – in Wilson’s words – ‘an environment of their own making, the cultural’ (1988: 8). If hunter-gatherers build as part of their adaptation to the given conditions of the natural environment, villagers adapt to the conditions of an environment that is already built. Either way, the environment is given in advance, as a kind of container for life to occupy. Where, as among hunter-gatherers, building is a part of everyday life, it is not supposed to have any lasting impact on the environment; where, as among villagers, the environment has been manifestly built, the buildings are apparently made before life begins in them. This, of course, is the architect’s perspective: first plan and build the houses, then import the people to occupy them.

Figure 10.5 Building plans of three periods from the ancient Mesopotamian site of Tell es-Sawwan.

What, then, of the dwellings of nomadic pastoralists? A recent study comparing pastoral tent dwellings and village houses in Turkey and Iran by the archaeologist, Roger Cribb (1991), found that despite differences in the building materials used and the flexibility they afford, the tent and the house were virtually identical in their underlying organisational templates. What really distinguished the house from the tent was the degree to which the imposed, cultural design – shared by villagers and nomads alike – is actually translated into enduring, material structures. For such structures do not get built overnight; they grow cumulatively in the course of a settlement’s continuous occupation, such that ‘each new alteration or addition builds on a series of existing structures’. But in the case of a pastoral nomadic camp, ‘each occupation is a fresh event’, so that the camp ‘has no such history but remains permanently retarded in the initial stages of the normal developmental cycle [of the settlement]’ (1991: 156). Thus, although pastoralists carry a basic organisational template with them, there is little opportunity for its enduring physical realisation before the camp picks up and moves off somewhere else, where the occupation process starts all over again. In such cases, building never proceeds beyond the first phase of temporary habitation (Ingold 1992c: 795–6).

In a statement that epitomises the building perspective, Amos Rapoport writes that ‘the organisation of space cognitively precedes its material expression; settings and built environments are thought before they are built’ (1994: 488). In the case of villagers, the environment is ready-built. In the case of nomadic pastoralists, it would seem, the environment, though thought, is never more than partially built. As for the hunter-gatherers, it appears that the building hardly gets started at all: indeed Rapoport refers to the camp sites of Aboriginal people of the Australian Central Desert as exemplars of the situation where the environment is thought but never built. On these grounds, as we saw in Chapter Three (pp. 56–7), they are supposed to inhabit a ‘natural’ rather than an ‘artificial’ environment.

THE SEARCH FOR ORIGINS

Having spelled out the essence of the building perspective, let me now return to my earlier observation, comparing the forms of the beaver’s lodge and the human house, that the first is tied, as it were, to the nature of the beaver itself, whereas the second is both historically and regionally variable. Among non-human animals, it is widely supposed, there can be no significant change in built form that is not bound to evolutionary changes in the essential form of the species. With human beings, by contrast, built form is free to vary independently of biological constraint, and to follow developmental pathways of its own, effectively decoupled from the process of evolution. In his famous paper of 1917, on ‘The Superorganic’, Alfred Kroeber declared: ‘Who would be so rash as to affirm that ten thousand generations of example would convert the beaver from what he is into a carpenter or a bricklayer – or, allowing for his physical deficiency in the lack of hands, into a planning engineer!’ (1952: 31). Yet human beings, through practice, example and a good measure of ingenuity, coupled with their ability to transmit their acquired knowledge across the generations and to preserve it in long-term memory, have learned all these trades, and many more besides.

However, this argument implies some kind of threshold in the evolution of our own kind, at which point our ancestors were sufficiently endowed with the qualities of intelligence and manual dexterity to become the authors of their own projects of building. Taking off from this point, the history of architecture must be supposed to have proceeded
from the earliest dwellings to the modern construction industry, the species-specific nature of the human organism remaining all the while unchanged. But what was the earliest dwelling? According to Kenneth Bock, an event in the history of architecture – such as the construction of a Gothic vault – differs from an event in the evolution of species ‘in that the former involves formation of intent or purpose on the part of an actor while the latter does not’ (1980: 182). The same idea is implied by Joseph Rykwert when he suggests that the essence of architecture lies in ‘taking thought about building’ (1991: 54). But how did it come about that, at some decisive moment, our ancestors began to think about what they built?

As Rykwert shows, in his study of the notion of the ‘primitive hut’ in the history of architecture, this is a question that has long exercised the minds of Western thinkers. And the title of his book, On Adam's House in Paradise (1972), nicely conveys the mythic quality of the many speculative answers that have been proposed. Reproduced in Figure 10.6 is one of the more delightful images of ‘the first hut’, taken from the work of the great French architectural theorist, Eugène Viollet-le-Duc, Histoire de l'habitation humaine, published in 1875 (Viollet-le-Duc 1990: 26). Architecture began, for Viollet-le-Duc, when the problem of the need for shelter was met through the procedures of rational planning. In his tale of the building of the first hut the secret is revealed to a hapless primitive tribe, the Nairitti, by a progressive time-traveller by the name of Epergos, bestowed upon them as a gift of his superior intelligence. For Viollet-le-Duc, as for many others, Rykwert notes, it was ‘the difference of conception, the attachment of meaning to his task, that distinguishes man’s first attempts [at building] from those of the instinctually driven beasts’ (1972: 22). These attempts may have been decidedly inferior to the constructions of animals, nevertheless they marked the turning point at which humanity was set upon the road to culture and civilisation.

The search for the first building continues to this day, though it is informed by a much better knowledge both of the archaeological traces left by early human or hominid populations, and of the behaviour of those species of animals – namely the great apes – most closely related to humankind. One of the most peculiar and distinctive aspects of the behaviour of chimpanzees, gorillas and orang-utans is their habit of building so-called ‘nests’. In functional terms, they are not really nests at all: every individual animal builds its own nest afresh, each evening, and uses it for the sole purpose of sleeping. Nor does the nest site mark any kind of fixed point in the animal’s movements; it may be built anywhere, and is abandoned the next morning (Groves and Sabater Pi 1985: 23). Nevertheless, assuming that the common ancestor of apes and humans would have had a similar habit, attempts have been made to trace an evolutionary continuum from this nesting behaviour to the residential arrangements of prototypical human groups (of which the camps of contemporary hunter-gatherers have frequently been taken as the closest exemplars, on the grounds of the presumed similarity of ecological context).

Comparing the nesting patterns of apes with the camping patterns of human hunter-gatherers, Colin Groves and J. Sabater Pi note some striking differences. The human ‘nest’, if we may call it that, is a fixed point for the movements of its several occupants, and a place to which they regularly return. In other words, it has the attributes of what the ethologist, Heini Hediger, would call ‘home’: it is a ‘goal of flight’ and a ‘place of maximal security’ (Hediger 1977: 181). There is a difference, too, in the respective ways in which apes and humans go about building their accommodation. For one thing, apes use material that comes immediately to hand, normally by a skilful interweaving of growing vegetation to form an oval-shaped, concave bed; whereas humans collect suitable materials from
For another thing, the ape makes its nest by bending the vegetation around its own body; whereas the human builds a hut, and then enters it (Groves and Sabater Pi 1985: 45). There is a sense, as Hediger remarks, in which apes build from the ‘bottom up’, seeking support for rest and sleeping, whereas humans build from the ‘top down’ seeking shelter from sun, rain or wind (1977: 184). Yet there are also remarkable similarities between ape and human living arrangements, in the overall number and layout of nests or huts and in the underlying social organisation, and on the grounds of these similarities, Groves and Sabater Pi feel justified in arguing that human campsites are but elaborations of a generalised ape pattern. All the critical differences – the functioning of the site as a home-base, the collection of material prior to construction, the technique of building from the outside – can be put down, they think, to one factor, namely the human ability ‘to visualise objects in new configurations, and to bring these configurations into being on the basis of that mental picture’ (1985: 45).
Though in substance based on fact rather than fantasy, the form in which this argument is cast is virtually identical to that of Viollet-le-Duc’s tale of the building of the first hut. Equipped, albeit by natural selection rather than providential intervention, with foresight and intelligence, the first builders set to work to execute a plan that was already formed as a picture in their imagination. They had solved the problem of shelter in their minds, prior to putting the solution into practical effect. It is in this light that we can understand the extraordinary significance that has been attached to the so-called ‘stone circle’ discovered at the famous site of Olduvai Gorge in Tanzania, and dated to some 1.75 million years ago (Figure 10.7). In her interpretation of the circle, Mary Leakey writes that in its general appearance, it ‘resembles temporary structures often made by present-day nomadic peoples who build a low stone wall round their dwellings to serve either as a windbreak or as a base to support upright branches which are bent over and covered with either skins or grass’ (1971: 24). A photograph of such a dwelling, from the Okombambi people of Southwest Africa, is provided to substantiate the comparison. As always in these matters, the specific interpretation has been challenged. What has not been challenged, however, is the frame of mind that leads us to suppose that if the interpretation were correct, we would have at last discovered the real ‘first hut’, and with it not just the origins of architecture, but the point of transition to true humanity.

Figure 10.7  The ‘stone circle’ from Bed I of Olduvai Gorge.
For it is the structure of our thought, not the patterning of the archaeological record, that sets up a point of origin at the intersection of two axes, one of evolutionary change – leading from ancestral pongids and hominids to human beings, the other of historical change – leading from Palaeolithic hunting and gathering to modern industry. (Why this should be so is a matter to which I return in Chapter Twenty-one, pp. 388–90.) To explode the myth of the first hut thus requires nothing less than the dissolution of the dichotomy, which in modern scholarship separates the biological sciences from the humanities, between evolution and history, or between the temporal processes of nature and culture. Before indicating how this might be done, I need to introduce what I have called the ‘dwelling perspective’.

**The Dwelling Perspective**

For this purpose I turn to Martin Heidegger’s evocative essay, ‘Building Dwelling Thinking’, on which I have drawn for my title (Heidegger 1971: 145–61). In this essay, Heidegger asks what it means to build and to dwell, and what the relation is between these two – between building and dwelling. He begins with what might be taken as the hegemonic view, as enshrined in the discourse of Western modernity. This is that building and dwelling are separable but complementary activities, related as means to ends. We build houses so that we may dwell in them (or, as is usual in industrial society, some people build houses for other people to live in). To dwell, in this sense, means merely ‘to occupy a house, a dwelling place’. The building is a container for life activities, or more strictly for certain life activities, since there are other kinds of activity that go on outside houses, or in the open air. Yet, Heidegger asks, ‘do the houses in themselves hold any guarantee that dwelling occurs in them?’ (1971: 146). To clarify matters, let us call the physical structure, the building in itself, the house, and the setting within which people dwell the home (Lawrence 1987). Heidegger’s question can then be rephrased as follows: what does it take for a house to be a home (Pearson and Richards 1994: 6)? Merely to pose the question in this form suggests that there must be more to dwelling than the mere fact of occupation. What, then, does it mean, ‘to dwell’?

Heidegger tackles the issue through an exercise in etymology. The current German word for the verb ‘to build’, bauen, comes from the Old English and High German buan, meaning ‘to dwell’. Though this original meaning has been lost, it is preserved in such compounds as the English ‘neighbour’, meaning one who dwells nearby. Moreover, this sense of dwelling was not limited to one sphere of activity among many – to domestic life, say, as opposed to work or travel. Rather it encompassed the whole manner in which one lives one’s life on the earth; thus ‘I dwell, you dwell’ is identical to ‘I am, you are’. Yet bauen has another sense: to preserve, to care for, or more specifically to cultivate or to till the soil. And then there is the third sense: to construct, to make something, to raise up an edifice. Both these modern senses of building – as cultivation and as construction – are thus shown to be encompassed within the more fundamental sense of dwelling. In the course of time, however, this underlying sense has fallen into disuse, such that bauen has come to be reserved exclusively for cultivation and construction. Having forgotten how the latter activities are grounded in dwelling, modern thought then rediscovers dwelling as the occupation of a world already built.

In short, where before, building was circumscribed within dwelling, the position now appears reversed, with dwelling circumscribed within building. Heidegger’s concern is to regain that original perspective, so that we can once again understand how the activities of building – of cultivation and construction – belong to our dwelling in the world, to the
way we are. ‘We do not dwell because we have built, but we build and have built because we dwell, that is because we are dwellers . . . To build is in itself already to dwell . . . *Only if we are capable of dwelling, only then can we build*’ (Heidegger 1971: 148, 146, 160, original emphases). I take this to be the founding statement of the dwelling perspective. What it means is that the forms people build, whether in the imagination or on the ground, arise within the current of their involved activity, in the specific relational contexts of their practical engagement with their surroundings. Building, then, cannot be understood as a simple process of transcription, of a pre-existing design of the final product onto a raw material substrate. It is true that human beings – perhaps uniquely among animals – have the capacity to envision forms in advance of their implementation, but this envisioning is itself an activity carried on by real people in a real-world environment, rather than by a disembodied intellect moving in a subjective space in which are represented the problems it seeks to solve (see Chapter Twenty-three, pp. 418–19). In short, people do not import their ideas, plans or mental representations into the world, since that very world, to borrow a phrase from Merleau-Ponty (1962: 24), is the homeland of their thoughts. Only because they already dwell therein can they think the thoughts they do.

To argue that the forms of buildings arise as a kind of crystallisation of human activity within an environment clearly puts paid to my initial dichotomy between design and execution. No longer can we assume, with Christopher Alexander, that form is ‘the ultimate object of design’ (1964: 15), as though the one issued quite automatically and unproblematically from the other. To the contrary, a dwelling perspective ascribes the generation of form to those very processes whose creativity is denied by that perspective which sees in every form the concrete realisation of an intellectual solution to a design problem. Where, then, does this leave the constructions of non-human animals? The argument is equally damaging to the conventional biological account, which holds that the outward, phenotypic form – not just of the animal itself, but of the constructions making up its ‘extended phenotype’ – is the expression of a solution to some specific problem of adaptation, already reached by natural selection, and transferred to the animal at the point of conception, encrypted in the materials of heredity – the genes. That design is thus imported into the organism, as a kind of ‘evolved architecture’ (Tooby and Cosmides 1992), prior to the organism’s development within an environmental context, is indeed one of the great delusions of modern biology. For as I shall show in Chapter Twenty-one, the forms of organisms are in no way prefigured in their genes but are the emergent outcomes of environmentally situated development processes.

For any animal, the environmental conditions of development are liable to be shaped by the activities of predecessors. The beaver, for example, inhabits an environment that has been decisively modified by the labours of its forbears, in building dams and lodges, and will in turn contribute to the fashioning of an environment for its progeny. It is in such a modified environment that the beaver’s own bodily orientations and patterns of activity undergo development. The same goes for human beings. Human children, like the young of many other species, grow up in environments furnished by the work of previous generations, and as they do so they come literally to carry the forms of their dwelling in their bodies – in specific skills, sensibilities and dispositions. But they do not carry them in their genes, nor is it necessary to invoke some other kind of vehicle for the inter-generational transmission of information – cultural rather than genetic – to account for the diversity of human living arrangements.

We can now see how, by adopting a dwelling perspective – that is, by taking the animal-in-its-environment rather than the self-contained individual as our point of
departure – it is possible to dissolve the orthodox dichotomies between evolution and history, and between biology and culture. For if, by evolution, we mean differentiation over time in the forms and capacities of organisms, then we would have to admit that changes in the bodily orientations and skills of human beings, insofar as they are historically conditioned by the work of predecessors (along with the enduring products of that work, such as buildings), must themselves be evolutionary. And if, by cultural variation, we mean those differences of embodied knowledge that stem from the diversity of local developmental contexts, then far from being superimposed upon a substrate of evolved human universals, such variation must be part and parcel of the variation of all living things, which has its source in their enmeshment within an all-encompassing field of relations. It is not necessary, then, to invoke one kind of theory, of biological evolution, to account for the transition from nest to hut, and another kind, of cultural history, to account for the transition from hut to skyscraper. For once history is itself recognised as an evolutionary process, the point of origin constituted by the intersection of evolutionary and historical continua disappears, and the search for the first hut – for the beginnings of architecture, history and true humanity – becomes a quest after an illusion.6

The House as Organism

Let me conclude by returning to von Uexküll’s oak tree. Suppose that it stands, not in the forest, but in the precincts of a house. Now at first glance we might have no hesitation in regarding the house, but not the tree, as a building, or an instance of architecture. For surely the house, as Godelier puts it, belongs to ‘that part of nature which is transformed by human action and thought [and] owes its existence to conscious human action on nature’ (1986: 5, see also Chapter Five p. 79). The tree, on the other hand, has no such debt to humanity, for it has grown there, rooted to the spot, entirely of its own accord. On closer inspection, however, this distinction between those parts of the environment that are, respectively, built and unbuilt seems far less clear. For the form of the tree is no more given, as an immutable fact of nature, than is the form of the house an imposition of the human mind. Recall the many inhabitants of the tree: the fox, the owl, the squirrel, the ant, the beetle, among countless others. All, through their various activities of dwelling, have played their part in creating the conditions under which the tree, over the centuries, has grown to assume its particular form and proportions. And so, too, have human beings, in tending the tree’s surroundings.

But the house also has many and diverse animal inhabitants – more, perhaps, than we are inclined to recognise. Sometimes special provision is made for them, such as the kennel, stable or dovecote. Others find shelter and sustenance in its nooks and crannies, or even build there. And all, in their various ways, contribute to its evolving form, as do the house’s human inhabitants in keeping it under repair, decorating it, or making structural alterations in response to their changing domestic circumstances. Thus the distinction between the house and the tree is not an absolute but a relative one – relative, that is, to the scope of human involvement in the form-generating process.7 Houses, as Suzanne Blier notes (1987: 2), are living organisms. Like trees, they have life-histories, which consist in the unfolding of their relations with both human and non-human components of their environments. To the extent that the influence of the human component prevails, any feature of the environment will seem more like a building; to the extent that the non-human component prevails, it will seem less so.
Building, then, is a process that is continually going on, for as long as people dwell in an environment. It does not begin here, with a pre-formed plan, and end there, with a finished artefact. The ‘final form’ is but a fleeting moment in the life of any feature, when it is matched to a human purpose, likewise cut out from the flow of intentional activity. As the philosopher Alfred North Whitehead once remarked, ‘from the moment of birth we are immersed in action, and can only fitfully guide it by taking thought’ (1938: 217). And this applies, with equal force, to ‘taking thought about building’, the definitive characteristic of the architectural attitude. We may indeed describe the forms in our environment as instances of architecture, but for the most part we are not architects. For it is in the very process of dwelling that we build.
Chapter Eleven
The temporality of the landscape

PROLOGUE
I adhere to the view that social or cultural anthropology, biological anthropology and
archaeology form a necessary unity – that they are all part of the same intellectual enter-
prise. I am not concerned here with the link with biological or ‘physical’ anthropology,
but what I have to say does bear centrally on the unifying themes of archaeology and
sociocultural anthropology. I want to stress two such themes, and they are closely related.
First, human life is a process that involves the passage of time. Secondly, this life-process
is also the process of formation of the landscapes in which people have lived. Time and
landscape, then, are to my mind the essential points of topical contact between archae-
ology and anthropology. My purpose, in this chapter, is to bring the perspectives of
archaeology and anthropology into unison through a focus on the temporality of the
landscape. In particular, I believe that such a focus might enable us to move beyond the
sterile opposition between the naturalistic view of the landscape as a neutral, external back-
drop to human activities, and the culturalistic view that every landscape is a particular
cognitive or symbolic ordering of space. I argue that we should adopt, in place of both
these views, what I have called a ‘dwelling perspective’, according to which the landscape
is constituted as an enduring record of – and testimony to – the lives and works of
past generations who have dwelt within it, and in so doing, have left there something of
themselves.

For anthropologists, to adopt a perspective of this kind means bringing to bear the
knowledge born of immediate experience, by privileging the understandings that people
derive from their lived, everyday involvement in the world. Yet it will surely be objected
that this avenue is not open to archaeologists concerned with human activities in the
distant past. ‘The people’, it is said, ‘they’re dead’ (Sahlins 1972: 81); only the material
record remains for their successors of our own time to interpret as best they can. But this
objection misses the point, which is that the practice of archaeology is itself a form of dwelling.
The knowledge born of this practice is thus on a par with that which comes from the
practical activity of the native dweller and which the anthropologist, through participa-
tion, seeks to learn and understand. For both the archaeologist and the native dweller,
the landscape tells – or rather is – a story, ‘a chronicle of life and dwelling’ (Adam 1998:
54). It enfolds the lives and times of predecessors who, over the generations, have moved
around in it and played their part in its formation. To perceive the landscape is there-
fore to carry out an act of remembrance, and remembering is not so much a matter
of calling up an internal image, stored in the mind, as of engaging perceptually with an
environment that is itself pregnant with the past. To be sure, the rules and methods of
engagement employed respectively by the native dweller and the archaeologist differ, as do the stories they tell. Nevertheless, insofar as both seek the past in the landscape, they are engaged in projects of fundamentally the same kind.1

It is of course part of an archaeological training to learn to attend to those clues which the rest of us might pass over (literally, when they are below the surface), and which make it possible to tell a fuller or a richer story. Likewise native dwellers, along with their anthropological companions, learn through an education of attention. The novice hunter, for example, travels through the country with his mentors, and as he goes, specific features are pointed out to him. Other things he discovers for himself, in the course of further forays, by watching, listening and feeling. Thus the experienced hunter is the knowledgeable hunter (see Chapter Three, pp. 55–6). He can tell things from subtle indications that you or I, unskilled in the hunter’s art, might not even notice. Called upon to explicate his knowledge, he may do so in a form that reappears in the work of the non-native ethnographer as a corpus of myths or stories, whereas the archaeologist’s knowledge – drawn from the practices of excavation rather than hunting – may appear in the seemingly authoritative form of the site report. But we should resist the temptation to assume that since stories are stories they are, in some sense, unreal or untrue, for this is to suppose that the only real reality, or true truth, is one in which we, as living, experiencing beings, can have no part at all. Telling a story, as I observed in Chapter Three (p. 56), is not like unfurling a tapestry to cover up the world, it is rather a way of guiding the attention of listeners or readers into it. A person who can ‘tell’ is one who is perceptually attuned to picking up information in the environment that others, less skilled in the tasks of perception, might miss, and the teller, in rendering his knowledge explicit, conducts the attention of his audience along the same paths as his own.

Following that preamble, I shall now go on to lay out the burden of my argument. This is presented in four principal sections. In the first two, I attempt to specify more precisely what I mean by my key terms – landscape and temporality. I argue that temporality inheres in the pattern of dwelling activities that I call the taskscape. In the third section I consider how taskscape relates to landscape and, ultimately by dissolving the distinction between them, I proceed to recover the temporality of the landscape itself. Finally, I draw some concrete illustrations of my arguments from a well-known painting by Bruegel, The harvesters.

LANDSCAPE

Let me be begin by explaining what the landscape is not. It is not ‘land’, it is not ‘nature’, and it is not ‘space’. Consider, first of all, the distinction between land and landscape. Land is not something you can see, any more than you can see the weight of physical objects. All objects of the most diverse kinds have weight, and it is possible to express how much anything weighs relative to any other thing. Likewise, land is a kind of lowest common denominator of the phenomenal world, inherent in every portion of the earth’s surface yet directly visible in none, and in terms of which any portion may be rendered quantitatively equivalent to any other (Ingold 1986a: 153–4).2 You can ask of land, as of weight, how much there is, but not what it is like. But where land is thus quantitative and homogeneous, the landscape is qualitative and heterogeneous. Supposing that you are standing outdoors, it is what you see all around: a contoured and textured surface replete with diverse objects – living and non-living, natural and artificial (these distinctions are both problematic, as we shall see, but they will serve for the time being). Thus at any particular moment, you can
ask of a landscape what it is like, but not how much of it there is. For the landscape is a
plenum, there are no holes in it that remain to be filled in, so that every infill is in reality
a reworking. As Meinig observes, one should not overlook ‘the powerful fact that life must
be lived amidst that which was made before’ (1979a: 44).

The landscape is not ‘nature’. Of course, nature can mean many things, and this is not
the place for a discourse on the history of the concept. Suffice it to say that I have in
mind the rather specific sense whose ontological foundation is an imagined separation
between the human perceiver and the world, such that the perceiver has to reconstruct
the world, in consciousness, prior to any meaningful engagement with it. The world of
nature, it is often said, is what lies ‘out there’. All kinds of entities are supposed to exist
out there, but not you and I. We live ‘in here’, in the intersubjective space marked out
by our mental representations. Application of this logic forces an insistent dualism, between
object and subject, the material and the ideal, operational and cognised, ‘etic’ and ‘emic’.
Some writers distinguish between nature and the landscape in just these terms – the former
is said to stand to the latter as physical reality to its cultural or symbolic construction.
For example, Daniels and Cosgrove introduce a collection of essays on The iconography
of landscape with the following definition: ‘A landscape is a cultural image, a pictorial way
of representing or symbolising surroundings’ (1988: 1).

I do not share this view. To the contrary, I reject the division between inner and outer
worlds – respectively of mind and matter, meaning and substance – upon which such
distinction rests. The landscape, I hold, is not a picture in the imagination, surveyed by
the mind’s eye; nor however is it an alien and formless substrate awaiting the imposition
of human order. ‘The idea of landscape’, as Meinig writes, ‘runs counter to recognition
of any simple binary relationship between man and nature’ (Meinig 1979b: 2). Thus,
neither is the landscape identical to nature, nor is it on the side of humanity against
nature. As the familiar domain of our dwelling, it is with us, not against us, but it is no
less real for that. And through living in it, the landscape becomes a part of us, just as we
are a part of it. Moreover, what goes for its human component goes for other compo-
nents as well. In a world construed as nature, every object is a self-contained entity,
interacting with others through some kind of external contact. But in a landscape, each
component enfolds within its essence the totality of its relations with each and every other.
In short, whereas the order of nature is explicate, the order of the landscape is implicate
(Bohm 1980: 172).

The landscape is not ‘space’. To appreciate the contrast, we could compare the everyday
project of dwelling in the world with the rather peculiar and specialised project of the
surveyor or cartographer whose objective is to represent it. No doubt the surveyor, as he
goes about his practical tasks, experiences the landscape much as does everyone else whose
business of life lies there. Like other people, he is mobile, yet unable to be in more than
one place at a time. In the landscape, the distance between two places, A and B, is expe-
renced as a journey made, a bodily movement from one place to the other, and the
gradually changing vistas along the route. The surveyor’s job, however, is to take instru-
mental measurements from a considerable number of locations, and to combine these data
to produce a single picture which is independent of any point of observation. This picture
is of the world as it could be directly apprehended only by a consciousness capable of
being everywhere at once and nowhere in particular (the nearest we can get to this in
practice is by taking an aerial or bird’s-eye view). To such a consciousness, at once immo-
 bile and omnipresent, the distance between A and B would be the length of a line plotted
between two points that are simultaneously in view, that line marking one of any number
of journeys that could potentially be made (cf. Bourdieu 1977: 2). It is as though, from an imaginary position above the world, I could direct the movements of my body within it, like a counter on a board, so that to say ‘I am here’ is not to point from somewhere to my surroundings, but to point from nowhere to the position on the board where my body happens to be. And whereas actual journeys are made through a landscape, the board on which all potential journeys may be plotted is equivalent to space. 3

There is a tradition of geographical research (see, for example, Gould and White 1974) which sets out from the premise that we are all cartographers in our daily lives, and that we use our bodies as the surveyor uses his instruments, to register a sensory input from multiple points of observation, which is then processed by our intelligence into an image that we carry around with us, like a map in our heads, wherever we go. The mind, rather than reaching into its surroundings from its dwelling place within the world, might be likened in this view to a film spread out upon its exterior surface. The sense of space implicated in this cartographic view of environmental perception may be illuminated by means of an analogy drawn from the linguistics of Ferdinand de Saussure. To grasp the essence of language, Saussure invites us to picture thought and sound as two continuous and undifferentiated planes, of mental and phonic substance respectively, like two sides of a sheet of paper. By cutting the sheet into pieces (words) we create, on one side, a system of discrete concepts, and on the other, a system of discrete sounds; and since one side cannot be cut without at the same time cutting the other, the two systems of division are necessarily homologous so that to each concept there corresponds a sound (Saussure 1959: 112–13).

Now when geographers and anthropologists write about space, what is generally implied is something closely akin to Saussure’s sheet of paper, only in this case the counter-side to thought is the continuum not of phonic substance but of the surface of the earth. And so it appears that the division of the world into a mosaic of externally bounded segments is entailed in the very production of spatial meanings. Just as the word, for Saussure, is the union of a concept with a delimited ‘chunk’ of sound, so the place is the union of a symbolic meaning with a delimited block of the earth’s surface. Spatial differentiation implies spatial segmentation. This is not so of the landscape, however. For a place in the landscape is not ‘cut out’ from the whole, either on the plane of ideas or on that of material substance. Rather, each place embodies the whole at a particular nexus within it, and in this respect is different from every other.

A place owes its character to the experiences it affords to those who spend time there – to the sights, sounds and indeed smells that constitute its specific ambience. And these, in turn, depend on the kinds of activities in which its inhabitants engage. It is from this relational context of people’s engagement with the world, in the business of dwelling, that each place draws its unique significance. Thus whereas with space, meanings are attached to the world, with the landscape they are gathered from it. Moreover, while places have centres – indeed it would be more appropriate to say that they are centres – they have no boundaries. In journeying from place A to place B it makes no sense to ask, along the way, whether one is ‘still’ in A or has ‘crossed over’ to B (Ingold 1986a: 155). Of course, boundaries of various kinds may be drawn in the landscape, and identified either with natural features such as the course of a river or an escarpment, or with built structures such as walls and fences. But such boundaries are not a condition for the constitution of the places on either side of them; nor do they segment the landscape, for the features with which they are identified are themselves an integral part of it. Finally, it is important to note that no feature of the landscape is, of itself, a boundary. It can only
become a boundary, or the indicator of a boundary, in relation to the activities of the people (or animals) for whom it is recognised or experienced as such.

In the course of explaining what the landscape is not, I have already moved some way towards a positive characterisation. In short, the landscape is the world as it is known to those who dwell therein, who inhabit its places and journey along the paths connecting them. Is it not, then, identical to what we might otherwise call the environment? Certainly the distinction between landscape and environment is not easy to draw, and for many purposes they may be treated as practically synonymous. It will already be apparent that I cannot accept the distinction offered by Yi-Fu Tuan, who argues that an environment is ‘a given, a piece of reality that is simply there’, as opposed to the landscape, which is a product of human cognition, ‘an achievement of the mature mind’ (Tuan 1979: 90, 100). For that is merely to reproduce the dichotomy between nature and humanity. The environment is no more ‘nature’ than is the landscape a symbolic construct. Elsewhere, I have contrasted nature and environment by way of a distinction between reality of – ‘the physical world of neutral objects apparent only to the detached, indifferent observer’, and reality for – ‘the world constituted in relation to the organism or person whose environment it is’ (Ingold 1992a: 44). But to think of environment in this sense is to regard it primarily in terms of function, of what it affords to creatures – whether human or non-human – with certain capabilities and projects of action. Reciprocally, to regard these creatures as organisms is to view them in terms of their principles of dynamic functioning, that is as organised systems (Pittendrigh 1958: 394). As Lewontin succinctly puts it (1982: 160), the environment is ‘nature organised by an organism’.

The concept of landscape, by contrast, puts the emphasis on form, in just the same way that the concept of the body emphasises the form rather than the function of a living creature. If the body is the form in which a creature is present as a being-in-the-world, then the world of its being-in presents itself in the form of the landscape. Like organism and environment, body and landscape are complementary terms: each implies the other, alternately as figure and ground. The forms of the landscape are not, however, prepared in advance for creatures to occupy, any more than are the bodily forms of those creatures independently specified in their genetic make-up. Both sets of forms are generated and sustained in and through the processual unfolding of a total field of relations that cuts across the emergent interface between organism and environment (Goodwin 1988). Having regard to its formative properties, we may refer to this process as one of embodiment.

Though the notion of embodiment has recently come much into fashion, there has been a tendency – following an ancient inclination in Western thought to prioritise form over process (Oyama 1985: 13) – to conceive of it as a movement of inscription, whereby some pre-existing pattern, template or programme, whether genetic or cultural, is ‘realised’ in a substantive medium. This is not what I have in mind, however. To the contrary, and adopting a helpful distinction from Paul Connerton (1989: 72–3), I regard embodiment as a movement of incorporation rather than inscription, not a transcribing of form onto material but a movement wherein forms themselves are generated (Ingold 1990: 215). Taking the organism as our focus of reference, this movement is what is commonly known as the life-cycle. Thus organisms may be said to incorporate, in their bodily forms, the life-cycle processes that give rise to them. Could not the same, then, be said of the environment? Is it possible to identify a corresponding cycle, or rather a series of interlocking cycles, which builds itself into the forms of the landscape, and of which the landscape may accordingly be regarded as an embodiment? Before answering this question, we need to turn to the second of my key terms, namely ‘temporality’. 
Temporality

Let me begin, once again, by stating what temporality is not. It is not chronology (as opposed to history), and it is not history (as opposed to chronology). By chronology, I mean any regular system of dated time intervals, in which events are said to have taken place. By history, I mean any series of events which may be dated in time according to their occurrence in one or another chronological interval. Thus the Battle of Hastings was an historical event, 1066 was a date (marking the interval of a year), and records tell us that the former occurred in the latter. In the mere succession of dates there are no events, because everything repeats; in the mere succession of events there is no time, as nothing does. The relation between chronology and history, in this conception, has been well expressed by Kubler: ‘Without change there is no history; without regularity there is no time. Time and history are related as rule and variation: time is the regular setting for the vagaries of history’ (1962: 72).

Now in introducing the concept of temporality, I do not intend that it should stand as a third term, alongside the concepts of chronology and history. For in the sense in which I shall use the term here, temporality entails a perspective that contrasts radically with the one, outlined above, that sets up history and chronology in a relation of complementary opposition. The contrast is essentially equivalent to that drawn by Alfred Gell (1992: 149–55) between what he calls (following McTaggart) the A-series, in which time is immanent in the passage of events, and the B-series, in which events are strung out in time like beads on a thread. Whereas in the B-series, events are treated as isolated happenings, succeeding one another frame by frame, each event in the A-series is seen to encompass a pattern of retentions from the past and protentions for the future. Thus from the A-series point of view, temporality and historicity are not opposed but rather merge in the experience of those who, in their activities, carry forward the process social life. Taken together, these activities make up what I shall call the ‘taskscape’, and it is with the intrinsic temporality of the taskscape that I shall be principally concerned in this section.

We can make a start by returning for a moment to the distinction between land and landscape. As a common denominator in terms of which constituents of the environment of diverse kinds may be rendered quantitatively comparable, I compared land with weight. But I could equally have drawn the comparison with value or with labour. Value is the denominator of commodities that enables us to say how much any one thing is worth by comparison with another, even though these two things may be quite unlike in terms of their physical qualities and potential uses. In this sense, the concept of value (in general) is classically distinguished from that of use-value, which refers to the specific properties or ‘affordances’ of any particular object, that commend it to the project of a user (Ingold 1992a: 48–9, cf. Gibson 1979:127, Marx 1930: 169). Clearly, this distinction, between value and use-value, is precisely homologous to that between land and landscape. But if we turn to consider the work that goes into the making of useful things, then again we can recognise that whilst the operations of making are indeed as unlike as the objects produced – involving different raw materials, different tools, different procedures and different skills – they can nevertheless be compared in that they call for variable amounts of what may simply be called ‘labour’: the common denominator of productive activities. Like land and value, labour is quantitative and homogeneous, human work shorn of its particularities. It is of course the founding premise of the labour theory of value that the amount of value in a thing is determined by the amount of labour that went into producing it (I return to this theme in Chapter Seventeen, pp. 326–8).
How, then, should we describe the practices of work in their concrete particulars? For this purpose I shall adopt the term ‘task’, defined as any practical operation, carried out by a skilled agent in an environment, as part of his or her normal business of life. In other words, tasks are the constitutive acts of dwelling. No more than features of the landscape, however, are tasks suspended in a vacuum. Every task takes its meaning from its position within an ensemble of tasks, performed in series or in parallel, and usually by many people working together. One of the great mistakes of recent anthropology – what Reynolds (1993: 410) calls ‘the great tool-use fallacy’ – has been to insist upon a separation between the domains of technical and social activity, a separation that has blinded us to the fact that one of the outstanding features of human technical practices lies in their embeddedness in the current of sociality. It is to the entire ensemble of tasks, in their mutual interlocking, that I refer by the concept of taskscape. Just as the landscape is an array of related features, so – by analogy – the taskscape is an array of related activities. And as with the landscape, it is qualitative and heterogeneous: we can ask of a taskscape, as of a landscape, what it is like, but not how much of it there is. In short, the taskscape is to labour what the landscape is to land, and indeed what an ensemble of use-values is to value in general.

Now if value is measured out in units of money, and land in units of space, what is the currency of labour? The answer, of course, is time – but it is time of a very peculiar sort, one that must be wholly indifferent to the modulations of human experience. To most of us it appears in the familiar guise of clock-time: thus an hour is an hour, regardless of what one is doing in it, or of how one feels. But this kind of chronological time does not depend upon the existence of artificial clocks. It may be based on any perfectly repetitive, mechanical system, including that (putatively) constituted by the earth in its axial rotations and in its revolutions around the sun. Sorokin and Merton (1937), in a classic paper, call it ‘astronomical’ time: it is, they write, ‘uniform, homogeneous; . . . purely quantitative, shorn of qualitative variations’. And they distinguish it from ‘social time’, which they see as fundamentally qualitative, something to which we can affix moral judgements such as good or bad, grounded in the ‘rhythms, pulsations and beats of the societies in which they are found’, and for that reason tied to the particular circumstances of place and people (1937: 621–3; see also Chapter Seventeen, pp. 325–6). Adopting Sorokin and Merton’s distinction, we could perhaps conclude that whereas labour is measured out in units of astronomical time, or in clock-time calibrated to an astronomical standard, the temporality of the taskscape is essentially social. Before we can accept this conclusion, however, the idea of social time must be examined a little more closely.

In my earlier discussion of the significance of space, I showed that in the cartographic imagination, the mind is supposed to be laid out upon the surface of the earth. Likewise in the chronological perspective, time appears as the interface between mind and ‘duration’ – by which is meant an undifferentiated stream of bodily activity and experience. Taking time in this sense, Durkheim famously likened it to ‘an endless chart, where all duration is spread out before the mind, and upon which all possible events can be located in relation to fixed and determinate guidelines’ (1976 [1915]: 10). Rather like Saussure’s sheet of paper, it could be compared to a strip of infinite length, with thought on one side and duration on the other. By cutting the strip into segments we establish a division, on the one hand, into calendrical intervals or dates, and on the other hand, into discrete ‘chunks’ of lived experience, such that to every chunk there corresponds a date in a uniform sequence of before and after. And as every chunk succeeds the next, like frames on a reel.
of film, we imagine ourselves to be looking on ‘as time goes by’, as though we could take up a point of view detached from the temporal process of our life in the world and watch ourselves engaged now in this task, now in that, in an unending series of present instants. Whence, then, come the divisions which give chronological form to the substance of experience? Durkheim’s answer, as is well known, was that these divisions – ‘indispensable guidelines’ for the temporal ordering of events – come from society, corresponding to the ‘periodical recurrence of rites, feasts, and public ceremonies’ (p. 10). Thus for Durkheim, time is at once chronological and social, for society itself is a kind of clock, whose moving parts are individual human beings (Ingold 1986b: 341).

This is not, however, the way we perceive the temporality of the taskscape. For we do so not as spectators but as participants, in the very performance of our tasks. As Merleau-Ponty put it, in reckoning with an environment, I am ‘at my task rather than confronting it’ (1962: 416). The notion that we can stand aside and observe the passage of time is founded upon an illusion of disembodiment. This passage is, indeed, none other than our own journey through the taskscape in the business of dwelling. Once again we can take our cue from Merleau-Ponty: ‘the passage of one present to the next is not a thing which I conceive, nor do I see it as an onlooker, I effect it’ (1962: 421). Reaching out into the taskscape I perceive, at this moment, a particular vista of past and a future; but it is a vista that is available from this moment and no other (see Gell 1992: 269). As such, it constitutes my present, conferring upon it a unique character. Thus the present is not marked off from a past that it has replaced or a future that will, in turn, replace it; it rather gathers the past and future into itself, like refractions in a crystal ball. And just as in the landscape, we can move from place to place without crossing any boundary, since the vista that constitutes the identity of a place changes even as we move, so likewise can we move from one present to another without having to break through any chronological barrier that might be supposed to separate each present from the next in line. Indeed the features that Durkheim identified as serving this segmenting function – rites, feasts and ceremonies – are themselves as integral to the taskscape as are boundary markers such as walls or fences to the landscape.

The temporality of the taskscape is social, then, not because society provides an external frame against which particular tasks find independent measure, but because people, in the performance of their tasks, also attend to one another. Looking back, we can see that Durkheim’s error was to divorce the sphere of people’s mutual involvement from that of their everyday practical activity in the world, leaving the latter to be carried on by individuals in hermetic isolation. In real life, this is not how we go about our business. By watching, listening, perhaps even touching, we continually feel each other’s presence in the social environment, at every moment adjusting our movements in response to this ongoing perceptual monitoring. For the orchestral musician, playing an instrument, watching the conductor and listening to one’s fellow players are all inseparable aspects of the same process of action: for this reason, the gestures of the performers may be said to resonate with each other. In orchestral music, the achievement of resonance – or what Schutz (1951: 78) called a ‘mutual tuning-in relationship’ – is an absolute precondition for successful performance. But the same is true, more generally, of social life (Wikan 1992, Richards 1996). Indeed it could be argued that in the resonance of movement and feeling stemming from people’s mutually attentive engagement, in shared contexts of practical activity, lies the very foundation of sociality.

Let me pursue the analogy between orchestral performance and social life a little further since, more than any other artistic genre, music mirrors the temporal form of the taskscape.
I want, by means of this analogy, to make three points. First, while there are cycles and repetitions in music as in social life, these are essentially rhythmic rather than metronomic (on this distinction, see Young 1988: 19). It is for precisely this reason that social time, pace Durkheim, is not chronological. A metronome, like a clock, inscribes an artificial division into equal segments upon an otherwise undifferentiated movement; rhythm, by contrast, is intrinsic to the movement itself. Langer has argued that the essence of rhythm lies in the successive building up and resolution of tension, on the principle that every resolution is itself a preparation for the next building up (1953: 126–7). There may of course be rests or sustained notes within a piece, but far from breaking it up into segments, such moments are generally ones of high tension, whose resolution becomes ever more urgent the longer they are held. Only our last exhalation of breath is not a preparation for the next inhalation – with that, we die; similarly with the last beat the music comes to an end. Social life, however, is never finished, and there are no breaks in it that are not integral to its tensile structure, to the ‘ebb and flow of activity’ by which society itself seems to breathe (Young 1988: 53).

My second point is that in music as in social life, there is not just one rhythmic cycle, but a complex interweaving of very many concurrent cycles. While it reflects the temporal form of social life, music in fact represents a very considerable simplification, since it involves only one sensory register (the auditory), and its rhythms are fewer and more tightly controlled. In both cases, however, since any rhythm may be taken as the tempo for any of the others, there is no single, one-dimensional strand of time. As Langer puts it: ‘life is always a dense fabric of concurrent tensions, and as each of them is a measure of time, the measurements themselves do not coincide’ (1953: 113). Thus the temporality of the taskscape, while it is intrinsic rather than externally imposed (metronomic), lies not in any particular rhythm, but in the network of interrelationships between the multiple rhythms of which the taskscape is itself constituted. To cite a celebrated anthropological example: among the Nuer of southern Sudan, according to Evans-Pritchard, the passage of time is ‘primarily the succession of [pastoral] tasks and their relations to one another’ (1940: 101–2, my emphasis). Each of these relations is, of course, a specific resonance. And so, just as social life consists in the unfolding of a field of relationships among persons who attend to one another in what they do, its temporality consists in the unfolding of the resultant pattern of resonances.

Thirdly, the forms of the taskscape, like those of music, come into being through movement. Music exists only when it is being performed; it does not pre-exist, as is sometimes thought, in the score, any more than a cake pre-exists in the recipe for making it. Similarly, the taskscape exists only so long as people are actually engaged in the activities of dwelling, despite the attempts of anthropologists to translate it into something rather equivalent to a score – a kind of ideal design for dwelling – that generally goes by the name of ‘culture’, and that people are supposed to bring with them into their encounter with the world. This parallel, however, brings me to a critical question. Up to now, my discussion of temporality has concentrated exclusively on the taskscape, allowing the landscape to slip from view. It is now high time to bring it back into focus. I argued in the previous section that the landscape is not nature; here I claim that the taskscape is not culture. Landscape and taskscape, then, are not to be opposed as nature to culture. So how are we to understand the relation between them? Where does one end and the other begin? Can they even be distinguished at all?

If music best reflects the forms of the taskscape, it might be thought that painting is the most natural medium for representing the forms of the landscape. And this suggests
that an examination of the difference, in the field of art, between music and painting might offer some clues as to how a distinction might possibly be drawn between taskscape and landscape as facets of the real world. I begin by following up this suggestion.

TEMPORALISING THE LANDSCAPE

At first glance the difference seems obvious: paintings do not have to be performed, they are presented to us as works that are complete in themselves. But on closer inspection, this contrast appears more as an artefact of a systematic bias in Western thought, to which I have already alluded, that leads us to privilege form over process. Thus the actual work of painting is subordinated to the final product; the former is hidden from view so that the latter alone becomes an object of contemplation. In many non-Western societies, by contrast, the order of priority is reversed: what is essential is the act of painting itself, of which the products may be relatively short-lived – barely perceived before being erased or covered up. This is so, for example, among the Yolngu, an Aboriginal people of northern Australia, whose experience of finished paintings, according to their ethnographer, is limited to ‘images fleetingly glimpsed out of the corner of the eye’ (Morphy 1992: 187). The emphasis, here, is on painting as performance. Far from being the preparation of objects for future contemplation, it is an act of contemplation in itself. So, too, is performing or listening to music. Thus all at once, the contrast between painting and music seems less secure. It becomes a matter of degree, in the extent to which forms endure beyond the immediate contexts of their production. Musical sound, of course, is subject to the property of rapid fading: speeding outwards from its point of emission, and dissipating as it goes, it is present only momentarily to our senses. But where, as in painting, gestures leave their traces in solid substance, the resulting forms may last much longer, albeit never indefinitely.

Returning now from the contrast between music and painting to that between taskscape and landscape, the first point to note is that no more than a painting is the landscape given ready-made. One cannot, as Inglis points out, ‘treat landscape as an object if it is to be understood. It is a living process; it makes men; it is made by them’ (1977: 489). Just as with music, the forms of the landscape are generated in movement: these forms, however, are congealed in a solid medium – indeed, to borrow Inglis’s words again, ‘a landscape is the most solid appearance in which a history can declare itself’ (ibid.). Thanks to their solidity, features of the landscape remain available for inspection long after the movement that gave rise to them has ceased. If, as Mead argued (1977 [1938]: 97), every object is to be regarded as a ‘collapsed act’, then the landscape as a whole must likewise be understood as the taskscape in its embodied form: a pattern of activities ‘collapsed’ into an array of features.

But to reiterate a point made earlier, the landscape takes on its forms through a process of incorporation, not of inscription. That is to say, landscape formation is not a matter – as James Weiner would have it (1991: 32) – of transforming ‘a sheer physical terrain into a pattern of historically experienced and constituted space and time’, as though the physical world pre-existed as a blank slate, a mere substrate of formless materiality, awaiting the impress of cultural significance. Human beings do not, in their movements, inscribe their life histories upon the surface of nature as do writers upon the page; rather, these histories are woven, along with the life-cycles of plants and animals, into the texture of the surface itself (see Chapter Eighteen, pp. 347–8). Thus the forms of the landscape arise alongside those of the taskscape, within the same current of activity. If we recognise a
man’s gait in the pattern of his footprints, it is not because the gait preceded the footprints and was ‘inscribed’ in them, but because both the gait and the prints arose within the movement of the man’s walking.

Since, moreover, the activities that comprise the taskscape are unending, the landscape is never complete: neither ‘built’ nor ‘unbuilt’, it is perpetually under construction. This is why the conventional dichotomy between natural and artificial (or ‘man-made’) components of the landscape is so problematic. Virtually by definition, an artefact is an object shaped to a pre-conceived image that motivated its construction, and it is finished at the point when it is brought into conformity with this image. What happens to it beyond that point is supposed to belong to the phase of use rather than manufacture, to dwelling rather than building. But the forms of the landscape are not pre-prepared for people to live in – not by nature nor by human hands – for it is in the very process of dwelling that these forms are constituted. We may recall here Heidegger’s remark, already cited in the last chapter, that ‘to build is in itself already to dwell’ (1971: 146). Thus the landscape is always in the nature of work in progress.

My conclusion that the landscape is the congealed form of the taskscape does enable us to explain why, intuitively, the landscape seems to be what we see around us, whereas the taskscape is what we hear. To be seen, a thing need do nothing itself, for the optic array that specifies its form to a viewer consists of light reflected off its outer surfaces. To be heard, on the other hand, a thing must actively emit sounds or, through its movement, cause sound to be emitted by other objects with which it comes into contact. Thus, outside my window I see a landscape of houses, trees, gardens, a street and pavement. I do not hear any of these things, but I can hear people talking on the pavement, a car passing by, birds singing in the trees, a dog barking somewhere in the distance, and the sound of hammering as a neighbour repairs his garden shed. In short, what I hear is activity, even when its source cannot be seen. And since the forms of the taskscape, suspended as they are in movement, are present only as activity, the limits of the taskscape are also the limits of the auditory world. (While I deal here only with visual and aural perception, we should not underestimate the significance of touch, which is important to all of us but above all to blind people, for whom it opens up the possibility of access to the landscape – if only through proximate bodily contact.)

This argument carries an important corollary. Whereas both the landscape and the taskscape presuppose the presence of an agent who watches and listens, the taskscape must be populated with beings who are themselves agents, and who reciprocally ‘act back’ in the process of their own dwelling. In other words, the taskscape exists not just as activity but as interactivity. Indeed this conclusion was already foreshadowed when I introduced the concept of resonance as the rhythmic harmonisation of mutual attention. Having said that, however, there is no reason why the domain of interactivity should be confined to the movements of human beings. We hear animals as well as people, such as the birds and the dog in my example above. Hunters, to take another example, are alert to every sight, sound or smell that reveals the presence of animals, and we can be sure that the animals are likewise alert to the presence of humans, as they are also to that of one another. On a larger scale, the hunters’ journeys through the landscape, or their oscillations between the procurement of different animal species, resonate with the migratory movements of terrestrial mammals, birds and fish. Perhaps then, as Reed argues, there is a fundamental difference between our perception of animate beings and inanimate objects, since the former – by virtue of their capacity for autonomous movement – are aware of their surroundings (including us) and because they act on those surroundings (including us)’
(Reed 1988a: 116). In other words, they afford the possibility not only of action but also of interaction (cf. Gibson 1979: 135). Should we, then, draw the boundaries of the taskscape around the limits of the animate?

Though the argument is a compelling one I find it unsatisfactory, for two reasons in particular. First, as Langer observes, ‘rhythm is the basis of life, but not limited to life’ (1953: 128). The rhythms of human activities resonate not only with those of other living things but also with a whole host of other rhythmic phenomena – the cycles of day and night and of the seasons, the winds, the tides, and so on. Citing a petition of 1800 from the seaside town of Sunderland, in which it is explained that ‘people are obliged to be up at all hours of the night to attend the tides and their affairs upon the river’, Thompson (1967: 59–60) notes that ‘the operative phrase is “attend the tides”: the patterning of social time in the seaport follows upon the rhythms of the sea’. In many cases these natural rhythmic phenomena find their ultimate cause in the mechanics of planetary motion, but it is not of course to these that we resonate. Thus we resonate to the cycles of light and darkness, not to the rotation of the earth, even though the diurnal cycle is caused by the earth’s axial rotation. And we resonate to the cycles of vegetative growth and decay, not to the earth’s revolutions around the sun, even though the latter cause the cycle of the seasons. Moreover these resonances are embodied, in the sense that they are not only historically incorporated into the enduring features of the landscape but also developmentally incorporated into our very constitution as biological organisms. Thus Young describes the body as ‘an array of interlocking (or interflowing) cycles, with their own spheres of partial independence within the solar cycle’ (1988: 41). We do not consult these cycles, as we might consult a wrist-watch, in order to time our own activities, for the cycles are inherent in the rhythmic structure of the activities themselves. It would seem, then, that the pattern of resonances that comprises the temporality of the taskscape must be expanded to embrace the totality of rhythmic phenomena, whether animate or inanimate.

The second reason why I would be reluctant to restrict the taskscape to the realm of living things has to do with the very notion of animacy. I do not think we can regard this as a property that can be ascribed to objects in isolation, such that some (animate) have it and others (inanimate) do not. For life is not a principle that is separately installed inside individual organisms, and which sets them in motion upon the stage of the inanimate. To the contrary, as I have argued elsewhere, life is ‘a name for what is going on in the generative field within which organic forms are located and “held in place”’ (Ingold 1990: 215). That generative field is constituted by the totality of organism–environment relations, and the activities of organisms are moments of its unfolding. Indeed once we think of the world in this way, as a total movement of becoming which builds itself into the forms we see, and in which each form takes shape in continuous relation to those around it, then the distinction between the animate and the inanimate seems to dissolve. The world itself takes on the character of an organism, and the movements of animals – including those of us human beings – are parts or aspects of its life-process (Lovelock 1979). This means that in dwelling in the world, we do not act upon it, or do things to it; rather we move along with it. Our actions do not transform the world, they are part and parcel of the world’s transforming itself. And that is just another way of saying that they belong to time.

For in the final analysis, everything is suspended in movement. David Reason expresses the point in an eloquent passage that could stand as a summary of all I have argued so far:
Landscapes change; and change is itself an intrinsic aspect of our experience of landscape. The landscape is a polyrhythmic composition of processes whose pulse varies from the erratic flutter of leaves to the measured drift and clash of tectonic plates. Relative to the human span, the view before us seems composed of fleeting, ephemeral effects which create a patina of transience on apparently stable forms.

(1987: 40)

As this passage reveals, what appear to us as the fixed forms of the landscape, passive and unchanging unless acted upon from outside, are themselves in motion, albeit on a scale immeasurably slower and more majestic than that on which our own activities are conducted. Imagine a film of the landscape, shot over years, centuries, even millennia. Slightly speeded up, plants appear to engage in very animal-like movements, trees flex their limbs without any prompting from the winds. Speeded up rather more, glaciers flow like rivers and even the earth begins to move. At yet greater speeds solid rock bends, buckles and flows like molten metal. The world itself begins to breathe. Thus the rhythmic pattern of human activities nests within the wider pattern of activity for all animal life, which in turn nests within the pattern of activity for all so-called living things, which nests within the life-process of the world.

At each of these levels, as Mae-Wan Ho shows, coherence is founded upon resonance (Ho 1989: 18–20). Reminding us of Whitehead's maxim, that there is ‘no holding nature still and looking at it’, Ho argues that the world is not anything we can look at but a process that we are part of. Ultimately, then, by re-placing the tasks of human dwelling in their proper context within the process of becoming of the world as a whole, we can do away with the dichotomy between taskscape and landscape – only, however, by recognising the fundamental temporality of the landscape itself.

**The harvesters**

In order to provide some illustration of the ideas developed in the preceding sections, I reproduce here a painting which, more than any other I know, vividly captures a sense of the temporality of the landscape. This is *The harvesters*, painted by Pieter Bruegel the Elder in 1565 (Figure 11.1). I am not an art historian or critic, and my purpose is not to analyse the painting in terms of style, composition or aesthetic effect. Nor am I concerned with the historical context of its production. Suffice it to say that the picture is believed to be one of a series of twelve, each depicting a month of the year, out of which only five have survived (Gibson 1977: 147). Each panel portrays a landscape, in the colours and apparel appropriate to the month, and shows people engaged in the tasks of the agricultural cycle that are usual at that time of year. *The harvesters* depicts the month of August, and shows field hands at work, reaping and sheafing a luxuriant crop of wheat, whilst others pause for a midday meal and some well-earned rest. The sense of rustic harmony conveyed in this scene may, perhaps, represent something of an idealisation on Bruegel's part. As Walter Gibson points out, Bruegel was inclined to 'depict peasants very much as a wealthy landowner would have viewed them, as the anonymous tenders of his fields and flocks' (1977: 157–8). Any landowner would have had cause for satisfaction in such a fine crop, whereas the hands who sweated to bring it in may have had a rather different experience. Nevertheless, Bruegel painted during a period of great material prosperity in the Netherlands, in which all shared to some degree. These were fortunate times.
We are accustomed, by the conventions of modern society, to describe our experience of landscape as though we were viewing a picture. What I am about to suggest, however, is precisely the reverse. Rather than treating the world as its own painting I should like you, the reader, to regard this painting by Bruegel as though it were its own world, into which you have been magically transported. Imagine yourself, then, set down in the very landscape depicted, on a sultry August day in 1565. Standing a little way off to the right of the group beneath the tree, you are a witness to the scene unfolding about you. And of course you hear it too, for the scene does not unfold in silence. So used are we to thinking of the landscape as a picture that we can look at, like a plate in a book or an image on a screen, that it is perhaps necessary to remind you that exchanging the painting for ‘real life’ is not simply a matter of increasing the scale. What is involved is a fundamental difference of orientation. In the landscape of our dwelling, we look around (Gibson 1979: 203). In what follows I shall focus on six components of what you see around you, and comment on each insofar as they illustrate aspects of what I have had to say about landscape and temporality. They are: the hills and valley, the paths and tracks, the tree, the corn, the church, and the people.

Figure 11.1 The harvesters (1565) by Pieter Bruegel the Elder. The Metropolitan Museum of Art, Rogers Fund, 1919 (19.164).
The hills and valley

The terrain is a gently undulating one of low hills and valleys, grading off to a shoreline that can just be made out through the summer haze. You are standing near the summit of a hill, from where you can look out across the intervening valley to the next. How, then, do you differentiate between the hills and the valley as components of this landscape? Are they alternating blocks or strips into which it may be divided up? Any attempt at such division plunges us immediately into absurdity. For where can we draw the boundaries of a hill except along the valley bottoms that separate it from the hills on either side? And where can we draw the boundaries of a valley except along the summits of the hills that mark its watershed? One way, we would have a landscape consisting only of hills, the other way it would consist only of valleys. Of course, ‘hill’ and ‘valley’ are opposed terms, but the opposition is not spatial or altitudinal but kinaesthetic. It is the movements of falling away from, and rising up towards, that specify the form of the hill; and the movements of falling away towards, and rising up from, that specify the form of the valley. Through the exercises of descending and climbing, and their different muscular entailments, the contours of the landscape are not so much measured as felt – they are directly incorporated into our bodily experience. But even if you remain rooted to one spot, the same principle applies. As you look across the valley to the hill on the horizon, your eyes do not remain fixed: swivelling in their sockets, or as you tilt your head, their motions accord with the movement of your attention as it follows its course through the landscape. You cast your eyes first downwards into the valley, and then upwards towards the distant hill. Indeed in this vernacular phrase, to ‘cast one’s eyes’, common sense has once again grasped intuitively what the psychology of vision, with its metaphors of retinal imagery, has found so hard to accept: that movement is the very essence of perception. It is because, in scanning the terrain from nearby into the distance, your downward glance is followed by an upward one, that you perceive the valley.

Moreover someone standing where you are now would perceive the same topographic panorama, regardless of the time of year, the weather conditions and the activities in which people may be engaged. We may reasonably suppose that over the centuries, perhaps even millennia, this basic topography has changed but little. Set against the duration of human memory and experience, it may therefore be taken to establish a baseline of permanence. Yet permanence, as Gibson has stressed, is always relative; thus ‘it is better to speak of persistence under change’ (Gibson 1979: 13). Although the topography is invariant relative to the human life-cycle, it is not itself immune to change. Sea-levels rise and fall with global climatic cycles, and the present contours of the country are the cumulative outcome of a slow and long drawn out process of erosion and deposition. This process, moreover, was not confined to earlier geological epochs during which the landscape assumed its present topographic form. For it is still going on, and will continue so long as the stream, just visible in the valley bottom, flows on towards the sea. The stream does not flow between pre-cut banks, but cuts its banks even as it flows. Likewise, as we have seen, people shape the landscape even as they dwell. And human activities, as well as the action of rivers and the sea, contribute significantly to the process of erosion. As you watch, the stream flows, folk are at work, a landscape is being formed, and time passes.

The paths and tracks

I remarked above that we experience the contours of the landscape by moving through it, so that it enters – as Bachelard would say – into our ‘muscular consciousness’. Reliving
the experience in our imagination, we are inclined to recall the road we took as ‘climbing’ the hill, or as ‘descending’ into the valley, as though ‘the road itself had muscles, or rather, counter-muscles’ (Bachelard 1964: 11). And this, too, is probably how you recall the paths and tracks that are visible to you now: after all, you must have travelled along at least some of them to reach the spot where you are currently standing. Nearest at hand, a path has been cut through the wheat-field, allowing sheaves to be carried down, and water and provisions to be carried up. Further off, a cart-track runs along the valley bottom, and another winds up the hill behind. In the distance, paths criss-cross the village green. Taken together, these paths and tracks ‘impose a habitual pattern on the movement of people’ (Jackson 1989: 146). And yet they also arise out of that movement, for every path or track shows up as the accumulated imprint of countless journeys that people have made – with or without their vehicles or domestic animals – as they have gone about their everyday business. Thus the same movement is embodied, on the side of the people, in their ‘muscular consciousness’, and on the side of the landscape, in its network of paths and tracks. In this network is sedimented the activity of an entire community, over many generations. It is the taskscape made visible.

In their journeys along paths and tracks, however, people also move from place to place. To reach a place, you need cross no boundary, but you must follow some kind of path. Thus there can be no places without paths, along which people arrive and depart; and no paths without places, that constitute their destinations and points of departure. And for the harvesters, the place to which they arrive, and whence they will leave at the end of the day, is marked by the next feature of the landscape to occupy your attention . . .

The tree

Rising from the spot where people are gathered for their repast is an old and gnarled pear-tree, which provides them with both shade from the sun, a back-rest and a prop for utensils. Being the month of August, the tree is in full leaf, and fruit is ripening on the branches. But this is not just any tree. For one thing, it draws the entire landscape around it into a unique focus: in other words, by its presence it constitutes a particular place. The place was not there before the tree, but came into being with it. And for those who are gathered there, the prospect it affords, which is to be had nowhere else, is what gives it its particular character and identity. For another thing, no other tree has quite the same configuration of branches, diverging, bending and twisting in exactly the same way. In its present form, the tree embodies the entire history of its development from the moment it first took root. And that history consists in the unfolding of its relations with manifold components of its environment, including the people who have nurtured it, tilled the soil around it, pruned its branches, picked its fruit, and – as at present – use it as something to lean against. The people, in other words, are as much bound up in the life of the tree as is the tree in the lives of the people. Moreover, unlike the hills and the valley, the tree has manifestly grown within living memory. Thus its temporality is more consonant with that of human dwelling. Yet in its branching structure, the tree combines an entire hierarchy of temporal rhythms, ranging from the long cycle of its own germination, growth and eventual decay to the short, annual cycle of flowering, fruiting and foliation. At one extreme, represented by the solid trunk, it presides immobile over the passage of human generations; at the other, represented by the frondescent shoots, it resonates with the life-cycles of insects, the seasonal migrations of birds, and the regular round of human agricultural activities (Davies 1988). In a sense, then, the tree bridges
the gap between the apparently fixed and invariant forms of the landscape and the mobile and transient forms of animal life, visible proof that all of these forms, from the most permanent to the most ephemeral, are dynamically linked under transformation within the movement of becoming of the world as a whole.

The corn

Turning from the pear-tree to the wheat-field, it is no longer a place in the landscape but the surrounding surface that occupies your attention. And perhaps what is most striking about this surface is its uniformity of colour, a golden sheen that cloaks the more elevated parts of the country for as far as the eye can see. As you know, wheat takes on this colour at the particular time of year when it is ripe for harvesting. More than any other feature of the landscape, the golden corn gathers the lives of its inhabitants, wherever they may be, into temporal unison, founded upon a communion of visual experience. Thus whereas the tree binds past, present and future in a single place, the corn binds every place in the landscape within a single horizon of the present. The tree, we could say, establishes a vivid sense of duration, the corn an equally vivid sense of what Fabian (1983: 31) calls coevalness. It is this distinction that Bachelard has in mind when he contrasts the ‘before-me, before-us’ of the forest with the ‘with-me, with-us’ of fields and meadows, wherein ‘my dreams and recollections accompany all the different phases of tilling and harvesting’ (Bachelard 1964: 188). You may suppose that the sleeper beneath the tree is dreaming of corn, but if so, you may be sure that the people and the activities that figure in his dream are coeval with those of the present and do not take him back into an encounter with the past.

Where the corn has been freshly cut, it presents a sheer vertical front, not far short of a man’s height. But this is not a boundary feature, like a hedge or fence. It is an interface, whose outline is progressively transformed as the harvesters proceed with their work. Here is a fine example of the way in which form emerges through movement. Another example can be seen further off, where a man is engaged in the task of binding the wheat into a sheaf. Each completed sheaf has a regular form, which arises out of the coordinated movement of binding. But the completion of a sheaf is only one moment in the labour process. The sheaves will later be carried down the path through the field, to the haycart in the valley. Indeed at this very moment, one woman is stooped almost double in the act of picking up a sheaf, and two others can be seen on their way down, sheaves on their shoulders. Many more operations will follow before the wheat is eventually transformed into bread. In the scene before you, one of the harvesters under the tree, seated on a sheaf, is cutting a loaf. Here the cycle of production and consumption ends where it began, with the producers. For production is tantamount to dwelling: it does not begin here (with a pre-conceived image) and end there (with a finished artefact), but is continuously going on.

The church

Not far off, nestled in a grove of trees near the top of the hill, is a stone church. It is instructive to ask: how does the church differ from the tree? They have more in common, perhaps, than meets the eye. Both possess the attributes of what Bakhtin (1981: 84) calls a ‘chronotope’ – that is, a place charged with temporality, one in which temporality takes on palpable form. Like the tree, the church by its very presence constitutes a place, which
owes its character to the unique way in which it draws in the surrounding landscape. Again like the tree, the church spans human generations, yet its temporality is not inconsonant with that of human dwelling. As the tree buries its roots in the ground, so also people’s ancestors are buried in the graveyard beside the church, and both sets of roots may reach to approximately the same temporal depth. Moreover the church, too, resonates to the cycles of human life and subsistence. Among the inhabitants of the neighbourhood, it is not only seen but also heard, as its bells ring out the seasons, the months, births, marriages and deaths. In short, as features of the landscape, both the church and the tree appear as veritable monuments to the passage of time.

Yet despite these similarities, the difference may seem obvious. The church, after all, is a building. The tree, by contrast, is not built, it grows. We may agree to reserve the term ‘building’ for any durable structure in the landscape whose form arises and is sustained within the current of human activity. It would be wrong to conclude, however, that the distinction between buildings and non-buildings is an absolute one. Where an absolute distinction is made, it is generally founded on the assumption that built form, rather than having its source within nature, is superimposed by the mind upon it. That assumption, however, presupposes the separation of mind and nature. But from the perspective of dwelling there is no such separation. It is evident, from this latter perspective, that the forms of buildings, as much as of any other features of the landscape, are neither given in the world nor placed upon it, but emerge within the self-transforming processes of the world itself. With respect to any feature, the scope of human involvement in these processes will vary from negligible to considerable, though it is never total (even the most engineered of environments is home to other species). Thus to recall our conclusion from the last chapter, what is or is not a building is a relative matter; moreover as human involvement may vary in the life history of a feature, it may be more or less of a building in different periods.

Returning to the tree and the church, it is clearly too simple to suppose that the form of the tree is naturally given in its genetic make-up, whereas the form of the church preexists, in the minds of the builders, as a plan which is then realised in stone. In the case of the tree, we have already observed that its growth consists in the unfolding of a total system of relations constituted by the fact of its presence in an environment, from the point of germination onwards, and that people, as components of the tree’s environment, play a not insignificant role in this process. Likewise the ‘biography’ of the church consists in the unfolding of relations with its human builders, as well as with other components of its environment, from the moment when the first stone was laid. The final form of the church may indeed have been prefigured in the human imagination, but it no more issued from the image than did the form of the tree issue from its genes. In both cases, the form is the embodiment of a developmental or historical process, and is rooted in the context of human dwelling in the world.

In the case of the church, moreover, that process did not stop when its form came to match the conceptual model. For as long as the building remains standing in the landscape, it will continue – as it does now – to figure within the environment not just of human beings but of a myriad of other living kinds, plant and animal, which will incorporate it into their own life-activities and modify it in the process. And it is subject, too, to the same forces of weathering and decomposition, both organic and meteorological, that affect everything else in the landscape. The preservation of the church in its existing, ‘finished’ form in the face of these forces, however substantial it may be in its materials and construction, requires a regular input of effort in maintenance and repair.
human input lapses, leaving it at the mercy of other forms of life and of the weather, it will soon cease to be a building and become a ruin.

**The people**

So far I have described the scene only as you behold it with your eyes. Yet you do not only look, you listen as well, for the air is full of sounds of one kind and another. Though the folk beneath the tree are too busy eating to talk, you hear the clatter of wooden spoons on bowls, the slurp of the drinker, and the loud snores of the member of the party who is outstretched in sleep. Further off, you hear the swish of scythes against the cornstalks and the calls of the birds as they swoop low over the field in search of prey. Far off in the distance, wafted on the light wind, can be heard the sounds of people conversing and playing on a green, behind which, on the other side of the stream, lies a cluster of cottages. What you hear is a taskscape.

In the performance of their particular tasks, people are responsive not only to the cycle of maturation of the crop, which draws them together in the overall project of harvesting, but also to each other’s activities as these are apportioned by the division of labour. Even within the same task, individuals do not carry on in mutual isolation. Technically, it takes only one man to wield a scythe, but the reapers nevertheless work in unison, achieving a dance-like harmony in their rhythmic movements. Similarly the two women carrying sheaves down into the valley adjust their pace, each in relation to the other, so that the distance between them remains more or less invariant. Perhaps there is less co-ordination between the respective movements of the eaters, however they eye each other intently as they set about their repast, and the meal is a joint activity on which all have embarked together, and which they will finish together. Only the sleeper, oblivious to the world, is out of joint – his snores jar the senses precisely because they are not in any kind of rhythmic relation to what is going on around. Without wakeful attention, there can be no resonance.

But in attending to one another, do the people inhabit a world of their own, an exclusively human world of meanings and intentions, of beliefs and values, detached from the one in which their bodies are put to work in their several activities? Do they, from within such a domain of intersubjectivity, look at the world outside through the window of their senses? Surely not. For the hills and valley, the tree, the corn and the birds are as palpably present to them (as indeed to you too) as are the people to each other (and to you). The reapers, as they wield their scythes, are with the corn, just as the eaters are with their fellows. The landscape, in short, is not a totality that you or anyone else can look at, it is rather the world in which we stand in taking up a point of view on our surroundings. And it is within the context of this attentive involvement in the landscape that the human imagination gets to work in fashioning ideas about it. For the landscape, to recall the words of Merleau-Ponty (1962: 24), is not so much the object as ‘the homeland of our thoughts’.

**Epiologe**

Concluding an essay on the ways in which the Western Apache of Arizona discover meaning, value and moral guidance in the landscape around them, Keith Basso abhors the tendency in ecological anthropology to relegate such matters to an ‘epiphenomenal’ level, which is seen to have little or no bearing on the dynamics of adaptation of human
populations to the conditions of their environments. An ecology that is fully cultural, Basso argues, is one that would attend as much to the semiotic as to the material dimensions of people’s relations with their surroundings, by bringing into focus ‘the layers of significance with which human beings blanket the environment’ (Basso 1984: 49). In rather similar vein, Denis Cosgrove regrets the tendency in human geography to regard the landscape in narrowly utilitarian and functional terms, as ‘an impersonal expression of demographic and economic forces’, and thus to ignore the multiple layers of symbolic meaning or cultural representation that are deposited upon it. The task of decoding the ‘many-layered meanings of symbolic landscapes’, Cosgrove argues, will require a geography that is not just human but properly humanistic (Cosgrove 1989: 120–7).

Though I have some sympathy with the views expressed by these writers, I believe that the metaphors of cultural construction they adopt have an effect quite opposite to that intended. For the very idea that meaning covers over the world, layer upon layer, carries the implication that the way to uncover the most basic level of human beings’ practical involvement with their environments is by stripping these layers away. In other words, such blanketing metaphors actually serve to create and perpetuate an intellectual space in which human ecology or human geography can flourish, untroubled by any concerns about what the world means to the people who live in it. We can surely learn from the Western Apache, who insist that the stories they tell, far from putting meanings upon the landscape, are intended to allow listeners to place themselves in relation to specific features of the landscape, in such a way that their meanings may be revealed or disclosed. Stories help to open up the world, not to cloak it.

And such opening up, too, must be the objective of archaeology. Like the Western Apache – and for that matter any other group of people who are truly ‘at home’ in the world – archaeologists study the meaning of the landscape not by interpreting the many layers of its representation (adding further layers in the process) but by probing ever more deeply into it. Meaning is there to be discovered in the landscape, if only we know how to attend to it. Every feature, then, is a potential clue, a key to meaning rather than a vehicle for carrying it.10 This discovery procedure, wherein objects in the landscape become clues to meaning, is what distinguishes the perspective of dwelling. And since, as I have shown, the process of dwelling is fundamentally temporal, the apprehension of the landscape in the dwelling perspective must begin from a recognition of its temporality. Only through such recognition, by temporalising the landscape, can we move beyond the division that has afflicted most inquiries up to now, between the scientific study of an atemporalised nature, and the humanistic study of a dematerialised history. And no discipline is better placed to take this step than archaeology. I have not been concerned here with either the methods or the results of archaeological inquiry. However to the question, ‘what is archaeology the study of?’, I believe there is no better answer than ‘the temporality of the landscape’. I hope, in this chapter, to have gone some way towards elucidating what this means.
Chapter Twelve

Globes and spheres
The topology of environmentalism

My purpose in this chapter is no more than to try out a rather embryonic idea. It concerns the significance of the image of the globe in the language of contemporary debate about the environment. Though the image has long been deployed in geopolitical contexts, and even longer in connection with navigation and astronomy, my impression is that its use as a characterisation of the environment is rather recent. I have in mind such phrases, which slip so readily off the tongues of contemporary policy-makers, as ‘global environmental change’. One is immediately struck by the paradoxical nature of this phrase. An environment, surely, is that which surrounds, and can exist, therefore, only in relation to what is surrounded (Ingold 1992a: 40). I do not think that those who speak of the global environment mean by this the environment surrounding the globe. It is our environment they are talking about, the world as it presents itself to a universal humanity. Yet how can humans, or for that matter beings of any other kind, possibly be surrounded by a globe? Would it not be fairer to say that it is we who have surrounded it?

My idea is that what may be called the global outlook may tell us something important about the modern conception of the environment as a world which, far from being the ambience of our dwelling, is turned in upon itself, so that we who once stood at its centre become first circumferential and are finally expelled from it altogether (Figure 12.1). In other words, I am suggesting that the notion of the global environment, far from marking humanity’s reintegration into the world, signals the culmination of a process of separation.

The image of the globe is familiar to all of us who have gone through a Western schooling and are used to studying models upon which are drawn, in outline, the continents and oceans, and the gridlines of latitude and longitude. We are taught that this is what the earth looks like, although none of us, with a handful of significant exceptions, has ever seen it. By and large, life is lived at such close proximity to the earth’s surface that a global perspective is unobtainable. The significant exceptions comprise, of course, that privileged band of astronauts who have viewed the earth from outer space. In a sense,

Figure 12.1 Two views of the environment: (A) as a lifeworld; (B) as a globe.
the astronaut’s relation to the real globe seen through the window of the spacecraft mirrors the schoolchild’s relation to the model globe in the classroom: in both cases the world appears as an object of contemplation, detached from the domain of lived experience. For the child the world is separately encapsulated in the model; for the astronaut life is separately encapsulated, albeit temporarily, in the space module. My point with this comparison is a simple one: with the world imaged as a globe, far from coming into being in and through a life process, it figures as an entity that is, as it were, presented to or confronted by life. The global environment is not a lifeworld, it is a world apart from life.

Before pursuing the implications of this view, I should like to introduce an alternative image of the world which, at least in European thought, is of far more ancient provenance. This is the image of the sphere. Something of the difference in connotation between ‘globe’ and ‘sphere’ is suggested in their very acoustic resonance: ‘globe’ is hard and consonantal; ‘sphere’ soft and vocalic. A globe is solid and opaque, a sphere hollow and transparent. For the early astronomers, of course, the cosmos itself was seen to be comprised of a series of such spheres, at the common centre of which stood man himself. The idea was that as man’s attention was drawn ever outward, so it would penetrate each sphere so as to reach the next. This is illustrated in Figure 12.2, taken from the Scala Naturale of Giovanni Camillo Maffei, published in Venice in 1564, and dedicated to the Count of Altavilla. Here there are fourteen concentric spheres which – Maffei tells us – may be envisaged to form a giant stairway, the ascent of which affords, step-by-step, a comprehensive knowledge of the universe. In the picture, the Count is shown taking the first step, under Maffei’s direction (see Adams 1938: 58–9).

Unlike the solid globe, which can only be perceived as such from without, spheres – as is clear from this figure – were to be perceived from within. The global view, we might say, is centripetal, the spherical view centrifugal. Nor is it any accident that the perception of the spheres was imaged in terms of listening rather than looking. Visual perception, insofar as it depends on the reflection of light from the outer surface of things, implies both the opacity and inertia of what is seen and the externality of the perceiver. The spheres, being transparent, could not be seen, but undergoing their own autonomous rotations about the common centre, they could be heard: thus the motion of the spheres was supposed to make a harmonious sound that could be registered by the sufficiently sensitive ear. Dating back to Pythagoras and subsequently taken up by Plato and Aristotle, the notion of the ‘music of the spheres’ was passed on to the Middle Ages through the writings of Boethius, and became integral to the ideas of the Renaissance, starting with Marsilio
Ficino in the fifteenth century (Hallyn 1993: 232). Still today, it is commonly argued that the space of auditory perception is spherical in form, a sphere that surrounds (without enclosing) the listener at its centre. Thus whereas we appear to be on the edge of visual space looking in with the eye, we are always at the centre of auditory space listening out with the ear (Schafer 1985: 88, 94; cf. Ihde 1976, Carpenter and McLuhan 1960). The globe is to the sphere, according to this argument, as vision is to hearing.\(^1\)

The idea of the spherical cosmos is by no means exclusive to the history of European thought. Let me present one further example, taken from Fienup-Riordan’s (1990) account of the lifeworld of the Yup’ik Eskimos. Her cross-sectional depiction of the cosmos as perceived by the Yup’ik, reproduced in Figure 12.3, bears an uncanny resemblance to Maffei’s diagram. At the centre is the dwelling, from which roads lead in various directions through the several surrounding spheres.

A person journeying far enough in any direction would eventually arrive at a point where the earth folded back up into the skyland, the home of the spirits of the game . . . Not only was the earth encompassed by a canopy from above, but below its thin surface resided the spirits of the dead, both animal and human, each in separate villages. Four or five ‘steps’ separated these two distinct but related domains.

(Fienup-Riordan 1990: 110)

Notice how in this image the surface of the earth, far from bounding the world externally, is but a thin and permeable membrane dividing the world internally, between upper and lower hemispheres.

What I hope to have established, at least in outline, is that the lifeworld, imaged from an experiential centre, is spherical in form, whereas a world divorced from life, that is yet complete in itself, is imaged in the form of a globe. Thus the movement from spherical to global imagery is also one in which ‘the world’, as we are taught it exists, is drawn ever further from the matrix of our lived experience. It appears that the world as it really exists can only be witnessed by leaving it, and indeed much scientific energy and resources have been devoted to turning such an imaginative flight into an achieved actuality. One consequence is the alleged discrepancy between what, in modern jargon, are called ‘local’ and ‘global’ perspectives. Insofar as the latter, afforded to a being outside the world, is seen to be both real and total, the former, afforded to beings-in-the-world (that is, ordinary people) is regarded as illusory and incomplete. Retrieving from my shelves a geology textbook published in 1964 – two years before the earth was first photographed from space – I read on the very first page that ‘races of men [whose] horizons are limited to a tribal territory, the confines of a mountain valley, a short stretch of the coast line, or the congested blocks

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\(^1\) This passage is from the book “Globes and Spheres.”
of a large city’ can have no conception of the true nature and extent of the world about them (Putnam 1964: 3). If true knowledge is to be had by looking at the world, this statement is self-evidently valid. My point, however, is that this speculative assumption is precisely what has given us the imagery of the world as a globe. And it is this assumption, too, that privileges the knowledge we get from school by looking at model globes over the knowledge we get from life by actively participating in our surroundings.

Do not misunderstand me. I am not some latter-day flat-earther or pre-Copernican. I do not mean to deny that the earth takes the form of a globe – something that has been known, if not universally accepted, at least from the time of Pythagoras – or that it is one of a number of planets revolving around a rather insignificant star. My question is how it came to pass that this globe, the planet we call Earth, was taken to be an environment, or what my geology textbook called ‘the world about us’.

We can take a cue from the writings of Immanuel Kant who, in his *Critique of pure reason*, drew a sophisticated analogy between the topological form of the earth and that of the universe as a whole – that is, the ‘world’ conceived as the domain of all possible objects of knowledge. Kant first places himself in the shoes of one ignorant of the fact that the earth is global in form:

If I represent the earth as it appears to my senses, as a flat surface, with a circular horizon, I cannot know how far it extends. But experience teaches me that wherever I may go, I always see a space around me in which I could proceed further. (1933: 606)

One is thus in the hapless position of realizing that one’s knowledge is limited, but of having no way of knowing just how limited it is. Once it is recognised, however, that the earth is a globe, and given a knowledge of its diameter, it is immediately possible to calculate, from first principles, its surface area. And so, even though – as we traverse the surface – new horizons are always opening up, not only can we work out, by subtraction, how much there remains to be discovered, but also every fresh observation can be slotted into position, in relation to each and every other, within a complete, unifying spatial framework. Thus, to obtain a comprehensive knowledge of the environment, we must already have in mind an image of the globe, or come pre-equipped with what Kant called ‘an extended concept of the whole surface of the earth’, onto which may be mapped the data of experience (see Richards 1974: 11). Moreover the same applies to knowledge in general, which the mind sees as arrayed upon the surface of a sphere, at once continuous and limited in extent: ‘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 . . .’. (Kant 1933: 607). In this analogy, the topology of the earth’s surface comes to stand for the fundamental idea, which the mind is said to bring to experience, of the unity, completeness and continuity of nature. Here, surely, is to be found the very essence of the global outlook.

Let us, then, compare an imaginary Kantian traveller, journeying across the globe in search of new experiences to fit into his overall conception, with the Yup’ik Eskimos, in whose cycles of everyday and seasonal movement the cosmos, as they see it (Figure 12.3), is continually being re-created (Fienup-Riordan 1990: 110–11). For both, the earth provides the ground on which they move, but whereas for the Yup’ik, this movement is conducted within the world, the Kantian traveller, for whom the world is a globe, journeys
upon its outer surface. It is at this surface, the interface between world and mind, sensation and cognition, that all knowledge is constituted. Not only is the surface a continuous one, it also lacks any centre. Anywhere upon it can serve, in principle, equally well as a point of origin or as a destination. Thus if the ‘world about us’ is the globe, planet earth, it is not a world within which we dwell, as is the Yup’ik world depicted with the house at its centre, but one on which we dwell. The globe, of course, does have a centre, yet a journey to the centre of the earth, as immortalised in Jules Verne’s celebrated novel, is a voyage into the unknown, a domain of strange and terrifying primordial forces.

In short, from a global perspective, it is on the surface of the world, not at its centre, that life is lived. As a foundational level of ‘physical reality’, this surface is supposed already to have been in existence long before there was any life at all. Then somehow, through a series of events of near-miraculous improbability, there appeared on it first life and then, very much later, consciousness. These appearances are commonly pictured in terms of the addition of extra layers of being to that basic layer represented by the earth’s surface: hence the tripartite division into lithosphere, biosphere and noosphere, corresponding respectively to the inorganic substance of rocks and minerals, the organic substance of living things and the superorganic substance of human culture and society.

Although spherical imagery is employed here, the spheres are defined as layered surfaces that successively cover over one another and the world, not as successive horizons disclosed from a centre. And the outer wrapping is none other than the human mind and its products. This picture (see Figure 12.4) is the complete obverse of the medieval conception illustrated in Figure 12.2. The difference may be considered in relation to the genesis of meaning. The world which the Count of Altavilla is setting out to explore in Maffei’s diagram is itself a world of meaning which, through a kind of sensory attunement, an education of attention, will be gradually revealed to him as he proceeds from one level of understanding to the next. This world – like the world of the Dreaming in Aboriginal Australia (see Chapter Three, p. 56) – has properties of both transparency and depth: not only can one see into it, but also the more one looks the further one sees. By contrast, the world depicted in Figure 12.4, insofar as it corresponds to ‘planet Earth’, consists of pure substance, physical matter, presenting an opaque and impenetrable surface of literal reality upon which form and meaning are overlain by the human mind. That is to say, meaning does not lie in the relational context of the perceiver’s involvement in the world, but is rather inscribed upon the outer surface of the world by the mind of the perceiver. To know the world, then, is a matter not of sensory attunement but of cognitive reconstruction. And such knowledge is acquired not by engaging directly, in a practical way, with the objects in one’s surroundings, but rather by learning to represent them, in the mind, in the form of a map.

Figure 12.4 Lithosphere, biosphere and noosphere.
I reserve discussion of the notions of mapping and mapmaking for the next chapter. It is sufficient to note, here, the immediate connection between the apprehension of the world as a solid globe and the idea, commonly encountered even in anthropological literature, of the environment as a substrate for the external imposition of arbitrary cultural form. The world becomes a *tabula rasa* for the inscription of human history.

The familiar globes of geography classrooms provide a vivid example of such inscription or covering over. Though the sea is painted blue, the continental land-masses are frequently painted in a mosaic of contrastive colours, representing the territories of nation states. Thus, we are led to think, has the order of human society wrapped itself around the face of the world. Yet that order, we know, has its roots in the history of colonialism, and the attendant voyages of (principally maritime) discovery and exploration. The image of the world as a globe is, I contend, a colonial one. It presents us with the idea of a preformed surface *waiting to be occupied*, to be colonised first by living things and later by human (usually meaning Western) civilisation. Through travel and exploration, it is said, mankind has conquered the globe. Having now filled it up, and still multiplying in numbers at an alarming pace, we are urgently searching around, not just in fantasy but also in fact, for new worlds to colonise. Not only, then, does it appear that the world existed prior to life; it also appears that life can hop from world to world and even – like a parasitic vector flying between successive hosts – exist temporarily in worldless suspension.

The idea that the world exists prior to the forms of life that come to occupy it, and hence that each of these life-forms is itself separately encoded in a context-free vehicle, a kind of free-floating capsule that can carry form from one site of occupation to another, is deeply entrenched in both biological and anthropological thought. In biology it appears as the doctrine of genetic preformation, according to which every organism may be specified, independently of the environmental context of its development, as a unique configuration of self-replicating elements (genes). Through a process of variation under natural selection, organisms are supposed to evolve in ways that make them better adapted to the conditions of their environments, yet the very notion of adaptation implies that these conditions are specifiable in advance, in terms of a set of exogenous parameters quite distinct from the endogenous, genetically fixed parameters of the adapting organisms. There is thus one set of specifications for life, and another set for the world (see Lewontin 1983). In anthropology, cultural information is made to play much the same role as is played by the genes in biology. Again, there is one set of specifications for the forms of life that are carried around – as it used to be said – ‘inside people’s heads’. And there is another set for the environment, often identified with ‘nature’ or ‘the physical world’, upon which these forms are inscribed. And if we ask ‘What kind of world is this, that is an environment for every form of life yet external to all of them?’, the answer, as we have seen, is planet Earth, the globe.

Moreover, once the world is conceived as a globe, it can become an object of appropriation for a collective humanity. In this discourse, we do not belong to the world, neither partaking of its essence nor resonating to its cycles and rhythms. Rather, since our very humanity is seen to consist, in essence, in the transcendence of physical nature, it is the world that belongs to us. Images of property abound. We have inherited the earth, it is said, and so are responsible for handing it on to our successors in reasonably good condition. Much of the current concern with the global environment has to do with how we are to ‘manage’ this planet of ours. That it is ours to manage, however, remains more or less unquestioned. Such management is commonly described
in the language of intervention. But to intervene in the world, as we have already had occasion to note (Chapter Four, p. 63), implies the possibility of our choosing not to do so (Williams 1972: 154). It implies that human beings can launch their interventions from a platform above the world, as though they could live on or off the environment, but are not destined to live within it. Indeed, this rendering of action towards the environment as planned intervention in nature is fundamental to the Western notion of production (see Chapter Three, pp. 58–9). History itself comes to be seen as a process wherein human producers, through their transforming reaction on nature, have literally constructed an environment of their own making.

The idea is epitomised in the title of an influential volume, published in 1956, called *Man’s role in changing the face of the earth* (Thomas et al. 1956). There are two points about this title to which I wish to draw attention. The first is that with the world envisaged as planet Earth, it is its face that is presented to humanity as the substrate for the latter’s transforming interventions. This recalls my earlier observation that in the global outlook, life appears to be lived upon the outer surface of the world rather than from an experiential centre within it. The world does not surround us, it lies beneath our feet.3 The second point concerns the notion of change. It is not of course the case, as was believed by some of the early advocates of uniformitarianism, that the earth has persisted since the beginning of time in homeostatic equilibrium, at least until humans came along to upset the balance. On the contrary, it has been – and continues to be – racked by geological forces acting on such a scale as to make the most impressive feats of human engineering seem puny by comparison. These earth-shaping processes, however, are considered to be immanent in the workings of nature. They are what the world undergoes. But in speaking of the role of humanity, the world appears as an object of transformation. Change figures as what is done to the planet by its present owner-occupiers, human beings. It is thus exogenous rather than endogenous, not nature transforming itself, but nature transformed through the imposition of non-natural, human design.

This is what is meant when, in ‘changing the face of the earth’, the universal agent – ‘man’ – is said to have replaced the natural environment with one which is, to an ever-greater extent, artificial. Thus the construction of the human order appears to entail the destruction of the natural one, as production entails consumption. We are, today, increasingly concerned to limit what are perceived to be the destructive consequences of human activity. My point, however, is that the very notions of destruction and damage limitation, like those of construction and control, are grounded in the discourse of intervention. That is to say, they presume a world already constituted, through the action of natural forces, which then becomes the object of human interest and concern. But it is not a world of which humans themselves are conceived to be a part. To them, it is rather presented as a spectacle. They may observe it, reconstruct it, protect it, tamper with it or destroy it, but they do not dwell in it. Indeed, what is perhaps most striking about the contemporary discourse of global environmental change is the immensity of the gulf that divides the world as it is lived and experienced by the practitioners of this discourse, and the world of which they speak under the rubric of ‘the globe’. No-one, of course, denies the seriousness of the problems they address; there is good reason to believe, however, that many of these problems have their source in that very alienation of humanity from the world of which the notion of the global environment is a conspicuous expression.

This point brings me back to the distinction, mentioned earlier, between ‘local’ and ‘global’ perspectives. The difference between them, I contend, is not one of hierarchical degree, in scale or comprehensiveness, but one of kind. In other words, the local is not
a more limited or narrowly focused apprehension than the global, it is one that rests on
an altogether different mode of apprehension – one based on practical, perceptual engage-
ment with components of a world that is inhabited or dwelt-in, rather than on the
detached, disinterested observation of a world that is merely occupied. In the local perspec-
tive the world is a sphere, or perhaps a nesting series of spheres as portrayed in Figures
12.2 and 12.3, centred on a particular place. From this experiential centre, the attention
of those who live there is drawn ever deeper into the world, in the quest for knowledge
and understanding. It is through such attentive engagement, entailed in the very process
of dwelling, that the world is progressively revealed to the knowledge-seeker. Now different
centres will, of course, afford different views, so that while there is only one global perspec-
tive, indifferent to place and context, the number of possible local perspectives is potentially
infinite. This does not mean, however, that they are in any sense incomplete, or that they
represent no more than fragments of a total picture. It is only when we come to repre-
sent local differences in terms of a globalising discourse that the centre from which each
perspective is taken is converted into a boundary within which every local view is seen to
be contained. The idea that the ‘little community’ remains confined within its limited
horizons from which ‘we’ – globally conscious Westerners – have escaped results from a
privileging of the global ontology of detachment over the local ontology of engagement.

To the extent that it has been used to legitimate the disempowerment of local people
in the management of their environments, this idea has had serious practical consequences
for those amongst whom anthropologists have conducted their studies. To adopt a distinc-
tion from Niklas Luhmann (1979), it might be argued that the dominance of the global
perspective marks the triumph of technology over cosmology. Traditional cosmology places
the person at the centre of an ordered universe of meaningful relations, such as that
depicted by Maffei (Figure 12.2), and enjoins an understanding of these relations as a
foundation for proper conduct towards the environment. Modern technology, by contrast,
places human society and its interests outside what is residually construed as the ‘phys-
ical world’, and furnishes the means for the former’s control over the latter. Cosmology
provides the guiding principles for human action within the world, technology provides
the principles for human action upon it. Thus, as cosmology gives way to technology, the
relation between people and the world is turned inside out (Figure 12.1), so that what
was a cosmos or lifeworld becomes a world – a solid globe – externally presented to life.
In short, the movement from spherical to global imagery corresponds to the undermining
of cosmological certainties and the growing belief in, and indeed dependence upon, the
 technological fix. It is a movement from revelation to control, and from partial know-
ledge to the calculated risk.

Let me add one further comment in conclusion. I have written throughout as though
the characterisations of the environment, respectively, as globe and sphere were irrevo-
cably opposed, and thus mutually exclusive. But this is not really so, since each view
contains the seeds of the other. To regard the world as a sphere is at once to render
conceivable the possibility of its logical inverse, the globe; and of course vice versa. We
could say that both perspectives are caught up in the dialectical interplay between engage-
ment and detachment, between human beings’ involvement in the world and their
separation from it, which has been a feature of the entire history of Western thought and
no doubt of other traditions as well. Concretely, this is perhaps most clearly manifest in
the architectural form of the dome (Smith 1950). A sphere on the inside, a globe on the
outside, this form has a cosmic resonance of near-universal appeal. But for any society,
at any period of its history, we may expect one perspective to be ascendant, and the other
to be associated with its more or less muted undercurrent. And my sense of the contemporary discourse on the environment in the West is that it continues to be dominated by global imagery associated with the triumph of modern science and technology, but that it is under increasing threat from those – including many anthropologists – who would turn to local or indigenous cosmologies of engagement for sources of insight into our current predicament.

**POSTSCRIPT**

Since this chapter was written, two further strands have emerged along which I think the argument can be extended. One is to relate the image of the globe, discussed here, with that of the tree, which is currently pervasive in the representation of biodiversity. The second is to show how the distinction between globe and sphere, as alternative topologies of environmental awareness, crosscuts the conventional dichotomy, as it appears in contemporary environmentalist debates, between ecocentrism and anthropocentrism.

The image of living things as arrayed upon the branches of a tree will already be familiar from my discussion of the genealogical model in Chapter Eight (pp. 134–5). The definitive feature of the model, I argued, is that every creature is specified in its essential nature through the bestowal of attributes passed down along lines of descent, independently and in advance of its placement in the world. The idea that the world is presented to life as a surface to be occupied, at once continuous and finite in extent – in short, as the surface of a globe – is simply the obverse of this notion. The intrinsic connection between the geological image of the world as a globe and the biological image of life as a tree is beautifully illustrated in an engraving by Johannes Christian Bendorp, dating from the turn of the nineteenth century (reproduced in Bouquet 1995: Figure 2.6). Said to depict the Tree of Jesse, it shows a bay tree – on whose trunk and branches are arrayed all the descendants of Adam and Eve – springing from a point on the surface of a solid globe. The precise location of this point is immaterial; what is significant, however, is the inscription below, which reads: ‘God created the whole family of man from one blood, to inhabit the entire Earth’ (Bouquet 1995: 51). Thus the Earth, as a globe, is there to be colonised by those who ‘branch out’ over it, along their several lines of descent.

Now one of the consequences of the genealogical model, as I showed in Chapter Eight (pp. 138–9), is that difference is rendered as diversity. Thus living things are classified and compared, and their kinds enumerated, in terms of intrinsic properties that they are deemed to possess by virtue of genealogical connection, irrespective of their positioning in relation to one another in an environment. This is the basis for the modern concept of biodiversity. It follows, however, that this very concept is founded in a global perspective. In other words, the mode of apprehension that would reveal the totality of living things as a catalogue of biodiversity is also one that reveals the world as a globe in the purview of a universal humanity. That is why the human species is itself so conspicuously absent from mainstream conceptions of global biodiversity. Species can only be enumerated in the natural world by a humanity that has set itself above and beyond it, and that – being simultaneously everywhere and nowhere – can set the whole of nature in its sights. So far as human differences are concerned, these are typically understood in terms of a concept of cultural diversity that is seen as analogous to biodiversity rather than as an extension of it. And the analogy, of course, serves only to reinforce the belief that whatever differences may exist between peoples, on account of their divergent histories of descent, are superimposed upon a humanity that is common to all.
To pick up the second strand: contemporary discussions concerning human rights and responsibilities towards the environment, above all in global geopolitical arenas, have tended to revolve around a pivotal opposition between the positions of so-called anthropocentrism and ecocentrism. By anthropocentrism is usually meant an attitude which values all things non-human – all inanimate and animate components of the environment barring other people – solely as instrumental means to the realisation of exclusively human ends. Against this, ecocentrism is defined as that attitude which credits the world of nature – and above all, of living things in their interrelationships – with an intrinsic value quite independently of the purposes and activities, and even of the presence, of human beings. Yet despite (or perhaps because of) their conventional opposition, these two positions share more in common than meets the eye. Both presuppose a global perspective. For both, ‘there is just one big environment’, identified with the order of nature (Cooper 1992: 167). But by its very vastness, this all-embracing environment is profoundly alien to human experience. It is, as David Cooper puts it, ‘much too big’ to be lived in. One cannot relate to its components. The environment we relate to, by contrast, is the one that surrounds us, that constitutes our milieu and our ambience. And this is spherical rather than global in its topology.

Since we are human, the world around us must necessarily be anthropocentric: this, in itself, implies no lack of participation, nor does it entail an instrumental attitude. Indeed it is decidedly odd that the term ‘anthropocentrism’ should have been adopted to denote an attitude that, more than any other, withdraws human life from active participation in the environment. It is an attitude that might be more accurately described as ‘anthropocircumferentialism’. The term may be an impossibly cumbersome one; nevertheless I believe we need it, if only to distinguish the discursive construction of the environment characteristic of modern Western thought and science from the many pre-modern and non-Western cosmologies that are anthropocentric in the strict sense of placing the human being at the hub of a dwelt-in world, a centre of embodied awareness that reaches out, through the activity of the senses, into its surroundings. Thus the shift from anthropocentrism to anthropocircumferentialism is tantamount to the withdrawal of the human presence from the centre to the periphery of the lifeworld (Figure 12.1). And ecocentrism, finally, is just the other side of the coin from anthropocircumferentialism. For once humanity is placed on the outside, surrounding the global environment, then the environment – now surrounded rather than surrounding – no longer holds any place for human beings.
Chapter Thirteen

To journey along a way of life
Maps, wayfinding and navigation

INTRODUCTION

Everyone has probably had the experience, at some time or other, of feeling lost, or of not knowing in which way to turn in order to reach a desired destination. Yet for most of the time we know where we are, and how to get to where we want to go. Ordinary life would be well-nigh impossible if we did not. It remains a challenge, however, to account for everyday skills of orientation and wayfinding. This challenge is compounded by the considerable potential for misunderstanding surrounding the question of what it actually means to know where one is, or the way to go. For the map-using stranger, making his way in unfamiliar country, ‘being here’ or ‘going there’ generally entails the ability to identify one’s current or intended future position with a certain spatial or geographic location, defined by the intersection of particular coordinates on the map. But a person who has grown up in a country and is conversant with its ways knows quite well where he is, or in what direction to go, without having to consult an artefactual map. What, then, does he have that the stranger lacks? According to a view that has found wide support in the literatures of geography and psychology, there is no difference in principle between them. Both are map-users. For both, knowing where one is means identifying one’s position in the world with a location on the map. The difference is just that the native inhabitant’s map is held not in the hand but in the head, preserved not on paper but in memory, in the form of a comprehensive spatial representation of his usual surroundings. At any moment, it is supposed, he can access this mental or ‘cognitive’ map, and determine his location in terms of it.

In this chapter I shall argue, to the contrary, that there is no such map, and that the belief in its existence is a consequence of the mistaken attribution to native people of a sense of what it means to know one’s whereabouts that effectively treats them as strangers in their own country. Indeed the native inhabitant may be unable to specify his location in space, in terms of any independent system of coordinates, and yet will still insist with good cause that he knows where he is. This, as I shall show, is because places do not have locations but histories. Bound together by the itineraries of their inhabitants, places exist not in space but as nodes in a matrix of movement. I shall call this matrix a ‘region’. It is the knowledge of the region, and with it the ability to situate one’s current position within the historical context of journeys previously made – journeys to, from and around places – that distinguishes the countryman from the stranger. Ordinary wayfinding, then, more closely resembles storytelling than map-using. To use a map is to navigate by means of it: that is, to plot a course from one location to another in space. Wayfinding, by contrast, is a matter of moving from one place to another in a region. But while it would
be wrong, or at least misleading, to liken the countryman’s knowledge to a map, there is
a certain parallel to be drawn between the processes of knowing and mapping. Both are
environmentally situated activities, both are carried out along paths of travel, and both
unfold over time. Just as wayfinding has to be distinguished from navigation, however,
so also mapping must be distinguished from mapmaking. For the designs to which mapping
gives rise — including what have been variously categorised as ‘native maps’ and ‘sketch
maps’ — are not so much representations of space as condensed histories. Thus, to put
my thesis in a nutshell, knowing is like mapping, not because knowledge is like a map,
but because the products of mapping (graphic inscriptions), as those of knowing (stories),
are fundamentally un-maplike. What follows is an elaboration of this argument.

COGNITIVE MAPS

At the most general level, the question of how people find their way around may be posed
in terms of two alternative metaphors. Following David Rubin (1988: 375), I call the
first a complex-structure metaphor, and the second a complex-process metaphor. The
former, which has long been dominant in cognitive psychology, holds that even before
the individual steps forth into the environment, he has already had copied into his mind
— through some mechanism of replication — a comprehensive description of its objects,
features and locations, and the relations between them. This, of course, is the cognitive
map. Having determined his current whereabouts and desired destination within the map,
and having plotted the route between them, his actual movement from place to place is
a perfectly straightforward, indeed almost mechanical matter of executing the prescribed
course. Getting from A to B, in short, is explained through the harnessing of a simple
process, of bodily locomotion, to a complex structure, the mental map. With a complex-
process metaphor, on the other hand, little or no pre-structured content is imputed to
the mind. Instead, wayfinding is understood as a skilled performance in which the trav-
eller, whose powers of perception and action have been fine-tuned through previous
experience, ‘feels his way’ towards his goal, continually adjusting his movements in response
to an ongoing perceptual monitoring of his surroundings. What the first approach explains
through positing an isomorphism between structures in the world and structures in the
mind, the second explains as the unfolding of a field of relations established through the
immersion of the actor-perceiver within a given environmental context. This is the
approach favoured by ecological psychology, and it is the one I follow here.

Before pursuing an ecological approach to wayfinding, however, it is worth reflecting
on the circumstances in which the notion of the cognitive map came to be introduced
in the first place. At that time, some half a century ago, psychology was still in the grip
of the behaviourist paradigm. Animals, including human beings, were supposed to respond
more or less automatically, in ways conditioned by previous experience, to particular
environmental stimuli. Seeking to verify this simple model, psychologists devised numerous
experiments in which their star laboratory animal — the humble rat — was induced to run
through a variety of mazes. Starved at the outset, having successfully negotiated the maze
the rat would be rewarded with food from a box. The idea was that through repeated
trials, the animal would learn to take one particular path rather than another at each
successive ‘choice-point’ along the route. The whole route would then be remembered as
a chain of conditioned responses, such as right or left turns, triggered by the successive
appearance of particular stimuli in the form of gateways in the maze. But rats are enter-
prising creatures, and they often found ways of subverting the experimenters’ intentions.
They would, for example, manage to climb out of the maze near the start by pushing back the cover and then run directly over the top to the food box, where they would climb back down and eat. This caused some consternation in the behaviourist camp, since according to the stimulus–response model they should have had no idea of the direction in which to head off in search of food, knowing no other way than the familiar route through the maze, with all its twists and turns.

To further test the rats’ abilities, psychologist Edward C. Tolman and his collaborators devised what they called a ‘spatial orientation’ experiment (Tolman, Ritchie and Kalish 1946). A maze was first set up as shown in Figure 13.1. Starting at A, the animals had to run across an open circular table, then through the alley CD, and finally along the roundabout route through E and F to reach the food box at G. Once they were accustomed to this, the original maze was replaced with the apparatus shown in Figure 13.2. Starting again at A, the animals ran across the circular table and down the alley, only to find it blocked at one end. After returning to the table and exploring a little way down the other radiating paths, each rat would eventually choose to run all the way out along one of them. The overwhelming majority opted for path number 6 – the path that would take them to precisely the same spot where, in the original set-up, the food box had been located. This experiment seemed to provide convincing evidence that in their training for the first maze, the rats had not merely learned a fixed sequence of steps that would lead them reliably towards their goal. Rather, as Tolman hypothesised, they must have built up ‘something like a field map of the environment’, upon which could be traced all possible routes and paths and their relationships. Having located their own position and that of the food box in terms of this map, the rats were able to select the path, in the second maze, that led directly from the one to the other. In light of this ability it was clearly inadequate, Tolman reasoned, to liken the animal’s central nervous system – as the behaviourists had done – to a telephone switch-board such that every incoming stimulus simply ‘dials up’ the appropriate response. The brain was to be compared, instead, to a ‘map control room’ where stimulus-based information would be collected and collated, and where the routes would be plotted that would finally determine the animal’s overt behavioural responses (Tolman 1948: 192).

Despite its provocative title, Tolman’s 1948 paper – ‘Cognitive maps in rats and men’ – had much to say about rats but virtually nothing about human beings. Ironically, what little Tolman did have to say about humans had nothing to do with their abilities of orientation and wayfinding, but with certain psychopathologies which, he thought, could be attributed to regimes of child training that blocked the development of properly comprehensive cognitive maps. Ending on a high moral tone, Tolman preached that only by inculcating the paramount virtues of reason and tolerance could our
children be furnished with maps sufficiently broad and comprehensive to cope with ‘that great God-given maze which is our human world’ (1948: 208). It is hard to know what the rats would have made of this! Be that as it may, more recent work by James and Carol Gould on the wayfinding abilities of honey bees helps to put the rats’ capacities in perspective. For it turns out that what rats can do, bees can do too: namely, make their way directly to a food source, along a course never taken before. And they can do this without involving anything that we might dignify by terms like ‘thought’, ‘reason’ or ‘imagination’. The Goulds sound an appropriate note of scepticism when they remark that the calculation a bee would have to undertake in order to plan an optimal route would not be beyond a simple computer. There is no obvious reason why the bee, or for that matter the rat, should have any more of an understanding of the task before it than the computer, or why its solution should call for any intelligence whatsoever (Gould and Gould 1988: 224–5).

Here is what the Goulds did with their bees. First, a group of foragers were trained to fly to a feeding station in some woods out of sight of the hive. Later, individuals about to set off from the hive to the feeder were captured and transported, in an opaque container, to another location well off from their regular route and from which the feeder, likewise, was hidden from view. Here they were released. It was found that the bees flew straight from this location to the feeder, along what can only have been an entirely novel route for them. There is no way in which they could have done this, had they been constrained to follow a fixed sequence of steps between accustomed landmarks – as stipulated by the stimulus-response model. Instead, the Goulds suggest, the bee does what we would do under similar circumstances: ‘she would use nearby landmarks to figure out where she is, determine in which direction her goal lies, and then depart directly towards it’ (Gould and Gould 1988: 109). She navigates, in other words, in terms of a cognitive map. That humans do likewise was suggested by experiments conducted by Worchel (cited by Oatley 1977: 539–40), who led his subjects blindfold along two sides of a right-angled triangle and then told them to make their way back along the hypoteneuse – a task they completed with considerable accuracy. The ability to update one’s position on the cognitive map, and thereby to keep on target despite twists and turns, is – according to Keith Oatley – the basis for any kind of navigation, whether on land or at sea. But whatever the conditions under which it is carried out, navigation ‘is a complex cognitive skill’ (Oatley 1977: 537).

Comparing what the Goulds say about bees with what Oatley says about humans, we find more than a hint of double standards. Confronted with essentially the same task, its successful accomplishment by humans is attributed to complex skills whereas bees apparently do it on autopilot. I do not mean to deny that human wayfinding is a highly complex, skilled process. But there seems good reason to suppose that it is skilled precisely
to the extent that it goes beyond the simple computational operations described by cognitive map theorists. For the environment within which people find their way about is not, as Tolman would have it, a ‘great God-given maze’, with all its landmarks, routes, openings and obstructions already laid out in advance. It is rather an immensely variegated terrain of comings and goings, which is continually taking shape around the traveller even as the latter’s movements contribute to its formation. To hold a course in such an environment is to be attentive at all times to what is going on around you, and to respond in ways that answer to your purpose. This is probably as true of rats, in their ordinary environment, as it is of human beings in theirs. Rats are sensitive and intelligent creatures, and if their performance in experimental mazes manifests a basic computational capacity but no real skill, this is only because the artificial set-up in which they find themselves is a highly impoverished one that deprives them of any opportunity for the exercise of normal powers of discrimination and judgement.

WHAT IS A MAP ANYWAY?

The core assumption of the cognitive approach to orientation and wayfinding is, as we have seen, that perceptually salient aspects of the structure of the world are copied into an analogous structure in the mind (Rubin 1988: 375). This copy is said to be a map, or at least to be maplike in form. But why should this particular metaphor have been adopted, rather than some other? Why maps rather than, say, pictures or images? What is the difference between a map of the world and a picture or image of the world? Any general definition of a map, say Arthur Robinson and Barbara Petchenik, ‘must be based on its being simply a representation of things in space’ (1976: 15). Yet a perspective drawing would satisfy this criterion, and we would surely not describe such a drawing as a map. One possible approach to defining a map, in contradistinction to the perspectival image, is suggested by Alfred Gell (1985). The approach rests on the idea that maps encode beliefs or propositions about the locations of places and objects that are true (or taken to be true) independently of where one is currently positioned in the world. An example of such a proposition might be that ‘Edinburgh is north of London’. One could issue statements to this effect whether one was in London, Edinburgh, or anywhere else for that matter, and they would all be equally valid. In Gell’s terms, these statements – each of which is a token of the proposition in question – are non-indexical, in that their truth conditions are not bound to the place where they are made.

Accordingly, Gell proceeds to define the map as ‘any system of spatial knowledge and/or beliefs which takes the form of non-token-indexical statements about the spatial locations of places and objects’ (1985: 278–9). Now a person equipped with knowledge in this form ought, in principle, to be able to figure out just how the world should look from any selected point of observation. If I were hiking in the mountains, for example, I should be able to state how the various peaks would appear arrayed before me, were I standing on a particular summit. Such statements, however, since they hold good only for the view from that summit, and none other, are indexical of the place. Any set of beliefs and propositions whose tokens are indexical in this sense, having regard for what is where for a subject positioned at a certain location, comprises what Gell calls an image (1985: 280). Thus the difference between the image and the map comes to hinge on the criterion of the indexicality or non-indexicality of its tokens. If our knowledge consisted only of images – that is, of token-indexical spatial propositions – then, to follow Gell’s argument, we would never be able to hold any coherent idea about our own location in space, or about
the locations of other places relative to ourselves. We know where we are, not because what we see around us matches to a certain mental image, but because this image has itself been uniquely derived from an underlying map, at a point defined by a given set of spatial coordinates that are indifferent to our own movement. As we travel from one place to another, we pass through a sequence of images, each of which is specific to – and in turn permits us to identify – a particular location along the way. But the map, from which all these images are generated, remains the same wherever we are.

I shall return in due course to what Gell has to say about the nature of navigation and wayfinding. For the moment I want to focus on the implications of this way of distinguishing between the map and the image. It is certainly true, as Gell intimates, that the mere possession of a map, whether mental or artefactual, will not help you to find your way around unless you can use it to generate location-specific images for comparison with immediate perceptual experience. It is also true that no map will do the work that cognitive theorists expect of it unless the information it encodes is invariant with respect to the location of the percipient. Consider Oatley’s assertion, for example, that the essence of navigation lies in the ‘ability to update one’s position within the cognitive map while travelling’ (1977: 539). How could this possibly be done if the map keeps changing as one goes along? Oatley himself confuses the issue, when he speaks of the navigator’s cognitive map as ‘a process, not just a picture’ (p. 546). For if the navigator is to look to the map for directions, it can be neither process nor picture, neither embodying his own movement nor representing any particular scenes along the route. ‘We only update maps’, as Gell observes, ‘when the geography of the world changes, not whenever we move about ourselves’ (1985: 274). Ultimately, the justification for extending the map metaphor into the domain of cognition must lie in the assumption, more often than not unstated, that what the map affords is a representation of things in space that is independent of any particular point of view.

This assumption, however, raises problems of its own. One of the difficulties that cartographers often face in their attempts to explain the nature of maps is that the very fields, of cognition and communication, from which they might find appropriate analogues have already seized upon the map as an analogue from cartography. ‘When non-cartographic writers use the term “map”’, as Robinson and Petchenik say, ‘they seem to mean that it is possible to take isolated incidents, experiences, and so on, and arrange them intellectually so that there is some coherence, some total relation, instead of individual isolation’ (1976: 4). Thus scientists refer to their theories as maps, into which can be fitted the data of observation, while anthropologists are inclined to attribute a similar maplike quality to culture and society (for example, Leach 1976: 51), on the grounds that it furnishes an overarching framework of concepts and categories for the organisation of otherwise fragmentary sensory experience. These, and many other similar metaphorical usages make it appear natural and self-evident that actual maps should function in the same way, as schematic representations of the real world, which do not index any position but upon which it should be possible to plot the position of everything in relation to everything else. Now most people in Western societies, educated since their schooldays in the conventions of modern cartography, probably do tend to think of maps as representations of this kind. But whether the artefacts and inscriptions that have at one time or another been designated as maps actually satisfy the requirement of non-indexicality, is moot. The question, in short, is: are maps maplike?

David Turnbull, arguing from the perspective of a sociologist of science, makes a compelling case to the effect that they are not. The idea that maps are independent of
any point of view, that the propositions they encode are equally valid wherever one stands in the world, is, Turnbull contends, a myth – though it is one that has been avidly cultivated in the name of science and objectivity (Turnbull 1989: 15). The reality is that no map, however ‘modern’ or sophisticated the techniques of its production, can be wholly divorced from the practices, interests and understandings of its makers and users. Or to put it another way, every map is necessarily embedded in a ‘form of life’. And to the extent that it is so embedded, it must fail on the criterion of non-indexicality. As Turnbull explains, ‘all maps are in some measure indexical, because no map, representation or theory can be independent of a form of life’ (1989: 20). At first glance, this argument seems to run directly counter to Gell’s insistence that a representation can only be a map insofar as the propositions encoded therein are non-indexical. Closer examination, however, reveals a certain slippage in the meaning of indexicality. Is indexing a place the same as indexing a form of life? If the map discloses a perspective or ‘point of view’, is this a view in the world, as it appears from a particular place, or a view of the world, filtered through the concepts, categories and schemata of a received cultural tradition? Could a map be non-indexical in the first sense and indexical in the second?

Consider an example to which both Gell and Turnbull refer. Micronesian mariners, who are used to voyaging across hundreds of miles of open sea between often tiny islands, know the bearing of any island from any other by its so-called ‘star course’ – that is, by a list of stars whose successive rising or setting points, during the night, indicate the direction in question. The expert mariner has committed to memory an entire compendium of star courses, each unique to a particular pair of islands, and it is in this compendium, according to Gell, that his ‘map’ consists. Now it is clearly the case that any statement of the course between one island A, and another island B, will not depend for its validity on one’s current position at sea. Thus star courses ‘have the essential map property of non-token-indexicality; they do not change truth value according to where they are uttered’ (Gell 1985: 284). Yet it is also fair to say, with Turnbull, that the principles upon which the Micronesian mariner’s map is constructed are securely embedded within the percepts and practices of traditional seafaring, and therefore that it requires a knowledge of this cultural context to be able to ‘read’ and understand the map. It would appear, in short, that while the map indexes a tradition, it is non-indexical with regard to location. The same, moreover, could be said of ‘modern’ maps, constructed on scientific principles with the aid of sophisticated technological gadgetry. Modern science and technology, as Turnbull remarks (1991: 36), are as dependent on tradition for their successful transmission as is Micronesian seafaring lore. And no more than Micronesian maps can modern maps be understood without taking into account ‘the world view, cognitive schema or the culture of the mapmaker’ (Turnbull 1989: 20).

There is, however, something deeply paradoxical about this argument. For to separate tradition from locality, or culture from place, is also to divorce traditional knowledge from the contexts of its production in the environmentally situated experience of practitioners. Thus the form of life is reduced to a ‘world view’ or ‘cognitive schema’ – a set of rules and representations for the organisation of sensory experience that individuals carry in their heads and that are available for transmission independently of their bodily activity in the world. It is as though culture were received along lines of traditional transmission from ancestors, and imported into the sites of its practical application. But this is to fall right back into the classical view of culture as a map, the analogy – as Bourdieu (1977: 2) points out – ‘which occurs to an outsider who has to find his way around in a foreign landscape and who compensates for his lack of practical mastery, the prerogative of the
native, by the use of a model of all possible routes’. So here is the paradox: actual maps are made to appear indexical with regard to cultural tradition only by a rendering of culture as non-indexical with regard to locality. The placing of maps within their cultural context is paralleled by the displacing of culture from its context in the lifeworld. How, then, are we to resolve this dilemma? How can we hold on to the commonsense notion that maps retain a certain invariance as we move about, that they do not continually recompose themselves to reflect the particularities of wherever we happen to be, while yet recognising their embeddedness in locally situated practices? My answer, in brief, will be that what maps index is movement, that the vision they embody is not local but regional, but that the ambition of modern cartography has been to convert this regional vision into a global one, as though it issued from a point of view above and beyond the world.

**How to see the world from everywhere at once**

When you stand at a particular spot, everything appears from a certain angle, while much of the environment will likely be hidden from view behind prominent foreground features. Stand at another spot, and things will appear differently. In order to have any conception of the overall configuration of one’s environment, it would seem necessary to be in possession of some kind of totalising scheme into which every one of these location-specific perceptual images could be integrated. This, as we have seen, is an argument commonly adduced to justify positing the existence of cognitive maps. It is an argument, however, that assumes a snapshot theory of vision, as if one could only ever see, in perspective, from a fixed point of observation. ‘Is not to see’, as Merleau-Ponty asks rhetorically, ‘always to see from somewhere?’ He proceeds to answer, however, in the negative (Merleau-Ponty 1962: 67). To take up his own example, the house next door may be viewed from this side or that, from inside or outside, or even from up above if one were to fly overhead. But what I see is none of these appearances; it is the house itself, in all its concrete actuality. The form of the house is progressively disclosed to me as I move around and about, and in and out, not as the sum of a very large number of images, arrayed in memory like frames on a reel of film, but as the envelope of a continually changing perspectival structure. Observation, Merleau-Ponty claims, consists not in having a fixed point of view on the object, but ‘in varying the point of view while keeping the object fixed’ (1962: 91). Thus the house is not seen from somewhere but from nowhere – or rather from everywhere (pp. 67–9).

In keeping with his ecological approach to visual perception, James Gibson presents an argument along very similar lines. Animals and people, Gibson writes, see as they move, not just in the intervals between movements. Such ambulatory vision takes place along what he calls a ‘path of observation’. A path is to be understood not as an infinite series of discrete points, occupied at successive instants, but as a continuous itinerary of movement. Thus the environment one sees is neither ‘seen-at-this-moment’ nor ‘seen-from-this-point’. On the contrary, ‘what one perceives is an environment that surrounds one, that is everywhere equally clear, that is in-the-round or solid, and that is all-of-a-piece’ (Gibson 1979: 195–7). But if the features of this environment are revealed as one travels along paths of view, rather than projected from a sequence of points of view, where do these paths begin, and where do they end? And if we see not at this moment in time, but over a certain period, how long is this period? Such questions cannot be precisely answered. Of a minor feature we might say, after only cursory exploration, that we have seen it all. But of a complex, varied and extensive terrain, although we may have criss-crossed it along innumerable paths,
we may still feel there is more to be discovered. As for our perception of the environment as a whole, what else can this be than the outcome of a lifetime’s observation, along all the paths we have ever taken? This is what Gibson means when he asserts that perceiving the world over a sufficient length of time, and along a sufficiently extended set of paths, is tantamount to perceiving it ‘as if one could be everywhere at once’ (p. 197).

It is critically important to distinguish this sense of omnipresence from that implied by the conventional notion of the ‘bird’s-eye view’ (Gibson 1979: 198–9). The latter, of course, has nothing to do with the way birds in flight actually see, but rather describes how we imagine the world would look from a point of observation so far above the earth’s surface that the entire territory with which we are familiar from journeys made at ground level could be taken in at a glance. The higher one goes, it is supposed, the more one’s vision transcends the locational constraints and narrow horizons of the view from the ground. And by the same token, the more apparently maplike it becomes. Robinson and Petchenik are right to point out that the analogy between the map and the bird’s eye view is potentially misleading, not only because of their different geometries of projection, but also because the map is ‘a construction, an abstraction, an arrangement of markings that relates to spatial “reality” only by agreement, not by sensory testability’ (1976: 53). Nevertheless, anyone who has flown over familiar country by plane will have been astonished, on the one hand, by how strange it looks, and on the other, by how closely the view from the window resembles a topographic map of the same territory. There is nothing strange, however, about the environment perceived from everywhere, in the sense adduced by Merleau-Ponty and Gibson, nor do you have to leave the ground to perceive it in this way. It is not a view from ‘up there’ rather than ‘down here’, but one taken along the multiple paths that make up a country, and along which people come and go in the practical conduct of life. Our perception of the environment as a whole, in short, is forged not in the ascent from a myopic, local perspective to a panoptic, global one, but in the passage from place to place, and in histories of movement and changing horizons along the way.

The same point could be made, following Edward Casey (1996: 30), through a contrast between vertical and lateral modes of integration. In the vertical mode, embraced by modern cartography as well as by cognitive map theorists, local particulars obtained by observation on the ground are fitted within an abstract conception of space so as to form a representation of the world as though one were looking down upon it from ‘up above’. While the eyes of the body remain close to the ground, the mind’s eye – which is witness to this maplike representation – is up with the birds. The lateral mode of integration, by contrast, presupposes no such division between mind and body. For the work of integration is performed by the organism as a whole as it moves around, purposefully and attentively, from place to place. Such movements do not merely connect places that are already located in terms of an independent framework of spatial coordinates. Rather, they bring these places into being as nodes within a wider network of coming and going. Casey refers to this network of interplace movement as a region – that is, ‘an area concatenated by peregrinations between the places it connects’ (1996: 24). Evidently, when Gibson speaks of perceiving the environment from everywhere at once, that ‘everywhere’ is neither space, nor a portion of space, but a region in this sense. Likewise, every ‘somewhere’ is not a location in space but a position on a path of movement, one of the matrix of paths comprising the region as a whole. In short, whereas everywhere-as-space is the world as it is imagined from a point of view above and beyond, everywhere-as-region is the world as it is experienced by an inhabitant journeying from place to place along a way of life.
This idea of the region may be illustrated by means of three ethnographic examples. Among the Walbiri, an Aboriginal people of western central Australia, the entire country is perceived ‘in terms of networks of places linked by paths’ (Munn 1973a: 215). Originally laid down through the movements of ancestral beings in that formative era known as the Dreaming, these paths are continually retraced in the journeys of the living people who take after them. As they relate the stories of these journeys, Walbiri men and women may draw web-like figures in the sand whose basic components are lines and circles. Every line conveys a journey to or from camp, while every circle conveys the act of making camp by walking all around it. Rather similarly for the Ongees, a group of hunter-gatherers inhabiting the island of Little Andaman in the Bay of Bengal, places are brought into being at the confluences of the paths of movement of humans, animals and spirits. Asked by the ethnographer, Vishvajit Pandya, to draw the places where humans and spirits live, Ongee informants responded by sketching lines of movement (straight for humans, wavy for spirits), leading to the demarcation of the various places at their intersections.2 The world of the Ongees, Pandya concludes, ‘is not a preconstituted stage on which things happen, but rather an area or region created and constructed by the ongoing practice of movement’ (Pandya 1990: 777). My third example is taken from A. Irving Hallowell’s study of the Saulteaux (Ojibwa), hunters and trappers of the Berens River district near Lake Winnipeg in Canada. In Saulteaux experience, to move in a certain direction is always to travel from place to place. This is so not only for human persons, but also for the sun, the moon and the winds, all of which are held to be persons of a kind. Thus ‘what we refer to abstractly as cardinal directions are to them the homes of the winds, the places they come from. Similarly, east is thought of as the place where the sun rises; west, the place where it sets; south is the place to which the souls of the dead travel, and the place from which the summer birds come’ (Hallowell 1955: 191). For the Saulteaux, then, as indeed for the Ongee and the Walbiri, ‘everywhere’ is not a space but a region concatenated by the place-to-place movements of humans, animals, spirits, winds, celestial bodies, and so on.

**Knowing as you go**

We can now return to the paradox I introduced earlier. If our knowledge of the environment is embedded in locally situated practices, how come that it retains a certain constancy as we move about? If all knowledge is context-dependent, how can people take their knowledge with them from one context to another? For clues towards a resolution I turn once again to the work of David Turnbull. One of Turnbull’s aims is to break down the conventional distinction between so-called indigenous knowledge and Western science. He does so by emphasising that all knowledge, of whatever kind and historical provenance, is generated within a ‘field of practices’ (1989: 61). And since practices must be carried out by particular people in particular places, all knowledge – including that which we call science – must be inherently local. Let me set aside for the time being the contrary thesis, which Turnbull confusingly appears to entertain at the same time, that the context for both indigenous and scientific knowledge is something like a worldview or cognitive schema, by nature detached from the local sites of its practical expression. I have already drawn attention to the dangers of falling back on a concept of culture that divorces knowledge and its transmission from environmentally situated experience. My present concern is with another difficulty in Turnbull’s argument. For while on the one hand, he insists that a common characteristic of all knowledge systems is their ‘localness’, he also argues,
on the other, that what is critical to the growth and reproduction of any knowledge system is the work that goes into moving its diverse components – including practitioners, their know-how and skills, technical devices and standards of evaluation – from one local site of knowledge production to another (Turnbull 1993a: 30).

Consider the case of Western science. According to what might be called the ‘official’ view of science, data recorded by means of standardised procedures in diverse locations are fitted into a framework of theory consisting of propositions that are strictly non-indexical with regard to place. What happens in practice, however, is a good deal more messy. Not only is it unclear where data collection ends and theory building begins, but also there is no unified body of theory under which all of experience can be subsumed. Rather, there are as many theoretical growth-points as there are sites of practical investigation, and the character of each is conditioned by circumstances peculiar to each place. Much of the labour of science, Turnbull argues, lies in attempts to establish the connectivity and equivalence that would render procedures developed and results obtained in one local context applicable in another (1993a: 37). But if science calls for the constant movement of personnel, knowledge and techniques from place to place, and the assemblage, in each, of inputs of heterogeneous provenance, how can it also share the characteristic of localness? As a system of knowledge, science cannot be rooted in any particular place or places, but must rather emerge from the total network of interplace relations constituting its field of practice. Furthermore, if that is so for science, then it should be equally so for any other knowledge system. As Turnbull himself puts it, ‘all knowing is like travelling, like a journey between the parts of a matrix’ (1991: 35). So what is this matrix? It is, of course, a region in the sense defined above – that is, the sum of journeys made.

My point is that knowing, like the perception of the environment in general, proceeds along paths of observation. One can no more know in places than travel in them. Rather, knowledge is regional: it is to be cultivated by moving along paths that lead around, towards or away from places, from or to places elsewhere. Conceived as the ensemble of such place-to-place movements, the notion of region, far from denoting a level of generalisation intermediate between local particulars and global universals, offers a way out of this kind of dichotomous and hierarchical thinking. As every place, through the movements that give rise to it, enfolds its relations to all others, to be somewhere is to be everywhere at once. Rephrased in our terms, what Turnbull proposes is a compelling argument to the effect that all knowledge systems, including science, are integrated laterally rather than vertically. The philosopher Joseph Rouse makes much the same point in arguing that ‘we go from one local knowledge to another rather than from universal theories to their particular instantiations’ (Rouse 1987: 72). In light of the foregoing considerations, I would prefer to say that we know as we go, from place to place. This does not, however, alter the basic point, which is that science is distinguished from other systems of knowledge by the lengths to which it goes to present itself as if it were vertically integrated, as if the scientist’s task were to fit data to theory rather than to put the knowledge that has brought him to one place to work in setting off towards another. To create this illusion, science has to suppress, or to hide from view, the social labour involved in establishing equivalences and connections across places (Turnbull 1996: 62). In this, moreover, it is aided and abetted by modern cartography, which has been similarly concerned to establish its scientific credentials through its claim to produce accurate and objective representations of a world ‘out there’.

Cartographers, like scientists, and indeed like practitioners of any other knowledge system, draw their material from all manner of sources, through both direct observation
and inquiry into local tradition. The collection and collation of this material may take them – or agents operating on their behalf – on innumerable and often lengthy journeys. None of this, however, appears in the final form of the modern, ‘scientific’ map. To the contrary, one of the most striking characteristics of the modern map is its elimination, or erasure, of the practices and itineraries that contributed to its production (Turnbull 1996: 62). In the words of Michel de Certeau, ‘the map, a totalising stage on which elements of diverse origin are brought together to form a tableau of a “state” of geographical knowledge, pushes away into its prehistory or into its posterity, as if into the wings, the operations of which it is the result or the necessary condition’ (1984: 121). Just as science, in the official view, is charged with the task of integrating site-specific data into an overarching, unified framework of theory, so the mission of cartography is ostensibly one of representing the ‘geographic facts’ on the ground within a single, universal system of spatial coordinates (Edney 1993: 55). The ideal is a perfect congruence between the world and its representation, and progress is measured by the degree of approximation towards it. Thus in the work of the modern cartographer, knowledge generated through movement from place to place within a region is presented as if it issued from a totalising vision above and beyond the world. In short, cartography transforms everywhere-as-region, the world as experienced by a mobile inhabitant, into everywhere-as-space, the imaginary ‘bird’s-eye view’ of a transcendent consciousness.

The same transformation, of course, is worked on the ordinary perception of the environment by the theory of cognitive maps. As in the modern artefactual map, so too in its ‘mental’ analogue, all those movements of coming and going through which people develop a knowledge of their environment are pushed into the wings, to recall de Certeau’s phrase, leaving the map as a fait accompli, final and complete, the product of a process of making that begins with the layout of the world and ends with that layout copied into the mind. Any journeys undertaken beyond that point are supposed to belong to the phase of map-using rather than mapmaking, and therefore to play no further part in the formation of the map itself. The traditional Micronesian seafarer, in this view, is just as much a map-user as is the modern marine navigator with his charts and compass, even though his skill ‘is entirely mental and perceptual, using no instruments of any kind’ (Oatley 1977: 537). But whereas modern artefactual maps have their authors, designers or manufacturers, the origins of traditional mental maps appear lost in the mists of time. Indeed to say of such maps that they are ‘traditional’ is virtually tantamount to an admission that they have no maker or makers, but rather that they ‘make themselves’ – or that like myths, following Lévi-Strauss’s celebrated aphorism, they ‘think themselves out’ through the medium of men’s minds and without their knowledge (Lévi-Strauss 1966a: 56). In any case the assumption is that the map is made before it is used, that it already exists as a structure in the mind, handed down as part of a received tradition, prior to the traveller’s venturing forth into the world.

My contention, to the contrary, is that people’s knowledge of the environment undergoes continuous formation in the very course of their moving about in it. To return to a distinction which I introduced at the outset, this is to account for such knowledge in terms of the generative potentials of a complex process rather than the replication of a complex structure. That process consists in the engagement of the mobile actor-perceiver with his or her environment. As I have already suggested, we know as we go, not before we go. Such ambulatory knowing – or knowledgeable ambulating – cannot be accommodated within the terms of the conventional dichotomy between mapmaking and map-using. The traveller or storyteller who knows as he goes is neither making a map
nor using one. He is, quite simply, *mapping*. And the forms or patterns that arise from this mapping process, whether in the imagination or materialised as artefacts, are but stepping stones along the way, punctuating the process rather than initiating it or bringing it to a close. My perspective, in short, accords with what Robert Rundstrom has called ‘process cartography’, in which mapping is seen as ‘open-ended, ongoing, always leading to the next instance of mapping, the next map’ (Rundstrom 1993: 21). In what follows, I first show in more detail how mapping differs from mapmaking. I then turn to the distinction between mapping and map-using. All wayfinding, I argue, is mapping; all navigation map-using. Thus mapping is to map-using as wayfinding to navigation. The overall structure of the argument is summarised in Figure 13.3.

**Mapping is not mapmaking**

‘Mapping’ and ‘mapmaking’, according to Denis Wood, ‘do not mean the same thing’ (1992: 32). The difference, in his view, is akin to that between speaking and writing. Wood thinks of mapping as a *capacity* universal to humans, established along with other capacities of the human mind-brain through a process of evolution under natural selection. But the fact that all human beings are capable of mapping does not mean that they all make maps. Likewise, just because all humans can speak does not mean they all write. Whereas mapping, like speaking, might be regarded as a ‘universal expression of individual existence’, mapmaking, like writing, has to be seen as ‘an unusual function of specifiable social circumstances arising only within certain social structures’ (Wood 1993a: 50). In other words, the emergence of mapmaking belongs not to the evolution of humanity but to its history. Yet the difference between mapping and mapmaking, just as that between speaking and writing, is for Wood a very fine one. It is not the difference between outwardly expressing an idea and ‘capturing’ that expression in an alternative medium. For one thing, mapping is no more the externalisation of a map that already exists in the mapper’s head than is speaking the externalisation of a thought. Rather, both mapping and speaking are genres of performance that draw their meanings from the communicative contexts of their enactment. It follows, for another thing, that neither mapmaking nor writing can serve to transcribe pre-existent thoughts or mental representations onto paper. The map, like the written word, is not, in the first place, the transcription of anything, but rather an *inscription*. Thus mapping gives way to mapmaking at the point, not where mental imagery yields an external representation, but where the performative gesture becomes an inscriptive practice (Wood 1993a: 53).

Wood illustrates his argument with a nice example. Two boys have been playing rollerblade hockey. At home over dinner, one explains the layout of the court by gesturing with his hands and fingers over a place mat. The other does the same at school, to impress a friend, but in this case (it is during an art class) he gestures with pencil in hand, over a sheet of paper. Whereas nothing remains of the first boy’s gestures on the mat, those of the second leave a trace in the form of an inscription, a sketch-map, that can be preserved and reproduced indefinitely beyond the context of its production. We may
suppose that the two boys were of equal ability, and moreover that the first would have had ready access to pencil and paper had he needed it. So why did the second make a map and the first not? The answer, for Wood, lies in the nature of the communicative situation. In general, just as much as in this exemplary instance, it is the situation – at once social and political – that calls for the map. And while the difference between gesturing with an inscribing tool and gesturing without might seem slight, the socio-political consequences are immense. It is the ‘fine line of . . . inscription’, Wood concludes, ‘that differentiates . . . mapping . . . from mapmaking, and mapping societies from mapmaking societies, in the latter of which it is the inscriptive property of the artefactual map that permits it to serve the interests of the power elites who control the mapmaking process (as well as those who would contest them)’ (1993a: 53).

Now while I agree with Wood that there is an important distinction to be made between mapping and mapmaking, I would draw it along different lines. Before doing so, however, we need to be more precise about the meaning of mapping. Wood himself seems unable to make up his mind whether the term refers to a cognitive capacity, to actual movement in the environment, or to the narrative reenactment of journeys made. At one point he tells us that mapping ‘is the way we humans make and deploy mental maps’ (1992: 32), while at another he dismisses the concept of the mental map only to declare that mapping ‘is really just . . . getting around’ (1993a: 53). Yet in his example of the two boys, mapping appears to consist neither in having a pre-existent ‘map in the head’, nor in bodily movement on the ground, but in a kind of retrospective storytelling. It seems to me that the notion of an evolved capacity for mental mapping is deeply flawed. One could hardly expect any such capacity to spring, fully formed, from an individual’s genetic make-up, in advance of his or her entry into the lifeworld. It would rather have to undergo development in the very unfolding of the individual’s life within an environment. Thus the life-historical process of ‘getting around’ – or in a word, wayfinding – would appear to be a condition for the emergence of a ‘mapping capacity’, rather than a consequence of its application. This leaves us with the third sense of mapping – the retelling of journeys made (or possibly the rehearsal for journeys to be made) – as perhaps the most appropriate. I admit, however, that the distinction between wayfinding and mapping is not hard and fast. For one way of retelling the story of a journey is to retrace one’s steps, or the steps of ancestors who made the journey in the past. In effect, since travelling from one place to another means remembering the way, all wayfinding is mapping, though not all mapping is wayfinding. I return to this point below.

For the time being, let us continue to regard mapping as the re-enactment, in narrative gesture, of the experience of moving from place to place within a region. In this sense, both boys in Wood’s example were engaged in mapping. The fact that one left no trace whereas the other produced a lasting inscription has no appreciable bearing on the nature of the activity as such. The sketch-map that emerged, as the trace of the second boy’s gestures, was a more or less incidental by-product of the mapping process, not its ultimate goal. Rundstrom makes much the same point in his account of mapping among Inuit of the central and eastern Canadian Arctic. An Inuit traveller, returning from a trip, could recount every detail of the environment encountered along the way, miming with his hands the forms of specific land and sea features. Such gestural performance, after a long journey, could last many hours. It could also, given appropriate tools and materials, generate an inscription. Many of these inscriptions were produced at the instigation of Western explorers who made contact with the Inuit. They were often astonished at the accuracy of what they regarded as ‘native maps’. But for Inuit mappers it was the performance that mattered
– ‘the recapitulation of environmental features’ – rather than any material artefacts or inscriptions to which it gave rise (Rundstrom 1990: 165). Undoubtedly the vast majority of maps that have ever been produced in human societies, like those of the Inuit, have been improvised on the spot within a particular dialogic or storytelling context, and without any intention for their preservation or use beyond that context. This applies, for example, to the web-like sand drawings of the Walbiri, to which I have already referred (Munn 1973b: 196). ‘Most maps for most of the time’, as Wood observes, ‘have probably been ephemeral, scratched in sand or snow, or, if committed to a more permanent medium, immediately crunched up and thrown away’ (1993b: 83, see Lewis 1993: 99).

In the course of producing such a map, the mapper takes his interlocutors on a tour of the country, and as he does so his moving hand, which may or may not hold an inscribing implement, traces out the paths taken and the sights or landmarks encountered along the way. Of the maps produced in aboriginal times by the Saulteaux, Hallowell notes that ‘their purpose was not to delineate a section of the country as such, but to indicate a route to be followed, and the emphasis was upon a succession of landmarks roughly indicated in their relations to one another’ (Hallowell 1955: 195). Malcolm Lewis’s studies of native North American and Inuit maps have shown that they invariably rest on deictic principles: that is, they point to things, revealing aspects of how they look as one proceeds along a path of observation from ‘here’ to ‘there’ (Lewis 1993: 102). Even in contemporary Western societies, whose inhabitants are bombarded on a daily basis with images founded upon cartographic geometries of plane projection – where they live, as Wood puts it, ‘map-immersed in the world’ (1992: 34) – people continue to describe their environment, to themselves and others, by retracing the paths of movement they customarily take through it rather than by assigning each of its features to a fixed location in space. ‘When we are asked for directions’, as Barbara Belyea notes, ‘few of us can resist pointing and waving our arms, or tracing the traveller’s route over the surface of his map. The gesture becomes a part of the map, a feature of its reception’ (Belyea 1996: 11, my emphasis). It may be misleading, Belyea suggests, to liken the inscriptive process to writing, as though the purpose of the exercise were to represent the features of the landscape in the same way that writing is supposed to represent the spoken word. For the graphs on the map are not representations of anything. Every line is rather the trace of a gesture, which itself retraces an actual movement in the world. To read the map is therefore to follow the trace as one would the path of the hand that made it.3

The analogy between mapping and writing, however, may be closer than Belyea thinks. For much of its history, at least in the Western world, writing was understood not as the representation of speech but as a means by which what has been said or told could be committed to memory (Carruthers 1990). Throughout the Middle Ages, as David Olson notes, ‘written records were thought of and treated as reminders rather than representations’ (Olson 1994: 180). And the same was true of medieval maps, which served as memoranda of itineraries, providing directions and advice to the traveller who would undertake the same journey (de Certeau 1984: 120). In the history of writing as in that of mapping, remembering gradually gave way to representation over the same period – from the fifteenth to the seventeenth century – that also saw the rise of modern scientific discourse. De Certeau has shown how, in the course of this transition, the map ‘slowly disengaged itself from the itineraries that were the conditions of its possibility’. For some time, maps would continue to be illustrated with pictures of ships, landforms, people and beasts of various descriptions, winds and currents, and the like. Subsequently dismissed as quaint decorations, these figures were really fragments of stories, telling of the journeys,
and the incidents that took place along them, from which the map resulted. But eventually, the map won out over these pictorial figurations, eliminating all remaining traces of the practices that produced it (de Certeau 1984: 120–1). Thus the making of maps came to be divorced from the experience of bodily movement in the world. The cartographer has no need to travel, indeed he may have no experience whatever of the territory he so painstakingly seeks to represent. His task is rather to assemble, off-site, the information provided to him – already shorn of the particular circumstances of its collection – into a comprehensive spatial representation. It is of course no accident that precisely the same task is assigned, by cognitive map theorists, to the mind in operating upon the data of sense.

It is at the point where maps cease to be generated as by-products of story-telling, and are created instead as end-products of projects of spatial representation, that I draw the line between mapping and mapmaking. In effect, mapmaking suppresses, or ‘brackets out’, both the movements of people as they come and go between places (wayfinding), and the re-enactment of those movements in inscriptive gesture (mapping). It thereby creates the appearance that the structure of the map springs directly from the structure of the world, as though the mapmaker served merely to mediate a transcription from one to the other. I call this the cartographic illusion (see Figure 13.4). One aspect of this illusion lies in the assumption that the structure of the world, and so also that of the map which purports to represent it, is fixed without regard to the movement of its inhabitants. Like a theatrical stage from which all the actors have mysteriously disappeared, the world – as it is represented in the map – appears deserted, devoid of life. No-one is there; nothing is going on. Suppose, for example, that I describe a journey I have made by tracing a path with my finger over the surface of a topographic map. Once the map has been folded and put away, nothing of this would remain. So far as the map’s representation of the world is concerned, I may as well have never made the trip. Had I, alternatively, traced my path with a pencil, the resulting lines would be deemed to have added nothing to the map, but rather to have defaced it. To restore the map, they would have to be rubbed out! Either way, my gesture does not become part of the map but is excluded from it, as is my original movement from the world it represents. This is in marked contrast to the maps of native North American Indians and Inuit, as described by such scholars as Lewis, Rundstrom and Belyea, which actually grow, line by line, with every additional gesture. So do the charts used by Micronesian seafarers, which ‘literally get larger, coconut-palm rib by cowrie shell, and stick by stone’

![Figure 13.4](image-url) The cartographic illusion. The environmentally situated movement entailed in both wayfinding and its narrative re-enactment (mapping) is bracketed out to create the illusion that the form of the map arises, in mapmaking, as a direct transcription of the layout of the world.
(Wood 1992: 31). And so, too, do our own sketch-maps. In these instances the development of the map, as a ‘pattern of interconnected lines’ (Belyea 1996: 6), parallels that of the region, as a network of coming and going. But the modern topographic map does not grow or develop, it is made. And just as the process of its production is eliminated from the final form of the product, so the world it describes is not a world in the making, but one ready-made for life to occupy.

It is this, finally, that lies behind the distinction between the map and the picture, as alternative descriptions of the same country. For those of us schooled in the conventions of modern cartography, the distinction may seem obvious enough. Maps are supposed to furnish an objective record of the disposition of things in space, that is strictly independent of any point of view, whereas pictures show how these things might be experienced by a subject positioned somewhere in that space, or moving through it (Turnbull 1989: 15). It is widely believed, as Svetlana Alpers observes, that ‘maps give us the measure of a place and the relationship between places, quantifiable data, while landscape pictures are evocative, and aim rather to give us some quality of a place or the viewer’s sense of it. One is closer to science, the other is art’. Anything on the map that evokes the experience of place or movement is dismissed by the scientific cartographer as ‘mere decoration’; anything in the picture that conveys factual information about spatial location is dismissed by the artist as ‘mere topography’ (Alpers 1983: 124–6). But for the Dutch painters and draughtsmen of the seventeenth century, who are the subjects of Alpers’s study, these boundaries between maps and pictures, and between science and art, would have made little sense. Mapping and picturing were, for them, one and the same, having as their common aim ‘to capture on a surface a great range of knowledge and information about the world’ (1983: 122). As mapmaking triumphed over mapping, however, and as cartographers sought to dissociate themselves professionally from artists, so maps were stripped of their pictorial attributes. Thus historians of cartography, viewing the development of mapmaking in retrospect, are able to present it as having progressed from being an ‘art’ to being a ‘science’, replacing subjective fancy with hardwon and independently verifiable factual information (Edney 1993: 56). Art, in the words of Brian Harley, was gradually ‘edged off the map’ (Harley 1989: 4). But to edge art off the map is also to edge human actor-perceivers off the world, to push their direct, sensory experience into the wings, and to consign their narratives of movement and travel to the realms of fable, fantasy and hallucination.

Wayfinding is not navigation

‘Navigation’, writes Edwin Hutchins, ‘is a collection of techniques for answering a small number of questions, perhaps the most central of which is “Where am I?”’ (Hutchins 1995: 12). So – to return to a question I raised at the outset – what does it mean to know where one is? What would one need to know in order to feel that the question has been satisfactorily answered? First of all, according to Hutchins, one must possess some representation of space – a map – whether internal or external, inscribed in the mind or on a sheet of paper, within which every object or feature in one’s environment is assigned a determinate location. One has then to be able to establish a coherent set of correspondences between what is depicted on the map and what is visible in one’s surroundings. From these it should be possible to identify one’s current position in the world with a specific location on the map. Only then has the question of where one is been answered (Hutchins 1995: 12–13). Alfred Gell, in an article to which I have already referred, argues
along much the same lines. To know where one is, in Gell’s view, it is not enough to have formed a perceptual image of the environment as seen from some place. This image has to be matched to that generated from the map (mental or artefactual) at a particular spatial location. ‘Navigation’, according to Gell, ‘consists of a cyclic process whereby images generated from maps are matched up against perceptual information, and perceptual images are identified with equivalent coordinates on a map’ (1985: 280). This process of matching is essentially the same as what Hutchins means by ‘establising correspondences’, such as, for example, when we say ‘this here’ (pointing to contours on the map) corresponds to ‘that there’ (pointing to the outline of a hill on the horizon).

Now while Gell takes as his principal ethnographic example the classic case of Micronesian seafaring, Hutchins chose to study the practices of nautical navigation on board a large modern naval vessel. Both writers insist, however, that reduced to its bare essentials, navigation is a cognitive task that all of us face all the time as we find our way about, whether at sea or on land. Navigational techniques may of course be distinguished, as Gell admits, both in terms of their complexity and the volume of information handled, and in terms of the extent to which this information is published or transmitted by rote memorisation. But none of this, he claims, alters the fact that ‘the essential logical processes involved in all way-finding, from the most elementary and subliminal, to the most complex and laborious, are identical’ (Gell 1985: 286). For Hutchins, likewise, we are all navigators in our everyday lives, as the following passage reveals:

When the navigator is satisfied that he has arrived at a coherent set of correspondences, he might look to the chart and say ‘Ah, yes; I am here, off this point of land.’ And it is in this sense that most of us feel we know where we are. We feel that we have achieved reconciliation between the features we see in our world and a representation of that world.

(1995: 13, my emphasis)

Yet as soon as Hutchins takes us on board ship, and introduces us to the work of the navigators on the bridge, things look rather different. For it turns out that establishing correspondences between features on the chart and features in the environment is extremely difficult, and calls for specialised skills that can only be acquired through lengthy training and hands-on experience. To reconcile the chart with the territory, as Hutchins explains, one has to imagine how the world would look from a point of view – that of the ‘bird’s eye’ – from which it is never actually seen, save from an aircraft or satellite. The ordinary passenger, untutored in the techniques of navigation, is quite unable to do this, and may confess to being baffled by maps and charts. He cannot, in other words, translate from his on-board experience of motion as ‘moving through a surrounding space’ to the depiction of motion on the chart as ‘that of an object moving across a space’. Navigators, on the other hand, become so used to thinking of the movement of the ship from this peculiar perspective – as if they were manoeuvring it about like a counter on a game-board – that they find it difficult to imagine this movement, any more, from the ordinary passenger’s perspective (Hutchins 1995: 62).

I intend to argue, in accord with Hutchins’s ethnography but contrary to his general claim, that we are no more navigators in our everyday lives – in finding our way around in a familiar environment – than we are cartographers when we retrace these movements in narrative. Navigation (or map-using) is, I contend, as strange to the ordinary practices of wayfinding as is cartography (or map-making) to ordinary practices of mapping. It would be
hard to imagine why we should find the navigator’s charts so baffling, or why his skills should be so specialised, if they were but analogues of cognitive structures and capacities that we use all the time. Thus Gell, along with others who have had resort to the notion of cognitive maps, is surely wrong to regard wayfinding and navigation as processes of a similar or even identical kind. For when we move about, we do not normally think of ourselves as piloting our bodies across the surface of the earth, as the navigator pilots his ship across the ocean. Nor do we have to think in this way in order to know, at any moment, where we are. This is because the question ‘Where am I?’ is not ordinarily answered in terms of a location in space, determined by the intersection of an independent set of coordinates. Hutchins to the contrary, it is not in this sense that most of us feel we know where we are. Indeed I may know precisely where I am and yet have no idea of my geographic location. For it is not by assigning the position where I currently stand to certain spatial coordinates that an answer to the ‘where’ question is arrived at, but rather by situating that position within the matrix of movement constitutive of a region.

To amplify this point, let me compare two, admittedly fictional, scenarios. In the first you are walking with a friend through unfamiliar terrain, equipped with a topographic map. Arriving at a place that affords a good panoramic view, your friend stops to ask, ‘Where are we?’ You look around, pointing to various landmarks which you proceed to correlate with markings on the map. Finally, indicating with a finger a particular spot on the map’s paper surface, you declare ‘We are here’. In the second scenario, you are walking in familiar country around your home, with a companion who is a stranger to the area. Once again, on arrival at a certain place, your companion puts the same question, ‘Where are we?’ You may respond in the first instance with a place-name. But then, realising that the name alone leaves him none the wiser, you might go on to tell a story about the place – about your own association with it, about other people who have lived and visited there, and about the things that happened to them. Now in the second case you have no need to consult an artefactual map, nor would it be of any avail to you, not because you have resort instead to a map inside your head, but because knowing your present whereabouts has nothing to do with fixing your location in space. As someone who has lived in a country, and is used to its ways, knowing where you are lies not in the establishment of a point-to-point correspondence between the world and its representation, but in the remembering of journeys previously made, and that brought you to the place along the same or different paths. In the first scenario, of course, you have no knowledge of this kind. Having never visited the country before you do not know where you are, in the sense you do when on home ground, even though you may be able to locate your own position, and that of everything else, with pin-point accuracy on your map.

For those who know a country, in short, the answers to such basic questions as ‘Where am I?’ and ‘Which way should I go?’ are found in narratives of past movement. It is in this respect, as noted earlier, that wayfinding and mapping become one and the same: to follow a path is also to retrace one’s steps, or the steps of one’s predecessors. And in this respect, too, wayfinding differs fundamentally from navigation, just as mapping differs from map-using. For when navigating in a strange country by means of a topographic map, the relation between one’s position on the ground and one’s location in space, as defined by particular map coordinates, is strictly synchronic, and divorced from any narrative context. It is possible to specify where one is – one’s current location – without regard to where one has been, or where one is going. In ordinary wayfinding, by contrast, every place holds within it memories of previous arrivals and departures, as well as expectations of how one may reach it, or reach other places from it. Thus do places enfold the passage
of time: they are neither of the past, present or future but all three rolled into one. Endlessly generated through the comings and goings of their inhabitants, they figure not as locations in space but as specific vortices in a current of movement, of innumerable journeys actually made. Taking this view of place as my starting point, I now want to show how wayfinding might be understood not as following a course from one spatial location to another, but as a movement in time, more akin to playing music or storytelling than to reading a map.

**Paths, Flows and the Passage of Time**

The inspiration for this move comes from Gibson, and follows from his insight – which I explored in an earlier section – that the environment is perceived not from multiple points of view but along a path of observation. Rejecting both of the dominant psychological approaches to wayfinding, as chains of conditioned responses to environmental stimuli and as navigation by means of cognitive maps, Gibson proposes an alternative, ‘the theory of reversible occlusion’ (1979: 198). In brief, the theory states that one knows the way in terms of the specific order in which the surfaces of the environment come into or pass out of sight as one proceeds along a path. Suppose, for example, that you are walking along a street in town, or through a valley in the countryside. The surfaces you can see – the facades of buildings in the one case, or the ground rising on either side in the other – comprise a vista. As Gibson explains, a vista is ‘a semienclosure, a set of unhidden surfaces, . . . what is seen from here, with the proviso that “here” is not a point but an extended region’. But now, as you turn the corner into another street, or reach the brow of the ridge at the head of the valley, a new set of surfaces, previously hidden, looms into view, while those of the original vista disappear from sight. The passage from one vista to another, during which the former is gradually occluded while the latter opens up, constitutes a transition. Thus to travel from place to place involves the opening up and closing off of vistas, in a particular order, through a continuous series of reversible transitions. It is through this ordering of vistas, Gibson maintains, that the structure of the environment is progressively disclosed to the moving observer, such that he or she can eventually perceive it from everywhere at once (Gibson 1979: 198–9).

Gibson’s notion of wayfinding through reversible occlusion has been further developed in recent work by psychologist Harry Heft (1996). We have already seen how the forms of environmental features are revealed as the envelopes of a continually modulating perspective structure along a path of observation. Now this flow of perspective structure, as Heft points out, also specifies the observer’s own movements relative to the layout of the environment. As every path of travel gives rise to its own distinctive flow pattern, so every such pattern uniquely specifies a certain path. To find one’s way, Heft argues, means to travel along a particular route so as to generate or recreate the flow of perspective structure peculiar to the path leading to one’s destination (1996: 122). One remembers the route as a succession of vistas connected by transitions, rather as one might remember a piece of music as a series of thematic sections linked by bridge passages. Just as with musical performance, wayfinding has an essentially temporal character (1996: 112): the path, like the musical melody, unfolds over time rather than across space. In this connection, it is important to remind ourselves of Gibson’s contention that every path should be conceived as a unitary movement, and not as a potentially infinite set of adjacent points (Gibson 1979: 197). In music, a melodic phrase is not just a sequence of discrete tones; what counts is the rising or falling of pitch that gives shape to the phrase as a whole. Likewise in wayfinding,
the path is specified not as a sequence of point-indexical images, but as the coming-into-sight and passing-out-of-sight of variously contoured and textured surfaces.

In this respect, too, the theory of wayfinding advanced here differs profoundly from that which Gell has caricatured under the rubric of ‘mapless practical mastery’, and which he attributes, inter alia, to Bourdieu (Gell 1985; see Bourdieu 1977: 2). ‘We can suppose’, writes Gell, ‘that practical mastery of the environment consists of possessing complete knowledge of what the environment looks like from all practically-available points of view’. The master traveller, equipped with such knowledge, remembers the journey from A to B as a ‘chain of linked landscape images’, each particular to a certain point along the route, selected from the total stock of images filed in memory. As he proceeds on his way he will pause, every so often, to check that what he sees from the spot where he stands corresponds to the image he has on file (Gell 1985: 274–5). Our argument, to the contrary, is that mastery consists in knowing what the environment looks like from all practically available paths of view, that what the traveller remembers are vistas and transitions rather than location-specific images, and that keeping track is a matter of regenerating the flow of perspective structure over time. Now for Gell the theory of mapless practical mastery, taken on its own, could not possibly work, since it would leave the traveller bereft of any means to formulate navigational decisions. It is all very well to know that you are currently where you ought to be – that what you see around you matches your expectations for a certain stage in your journey. But this alone will not tell you in which direction to go to reach the next checkpoint. Nor, if what you see does not match any of the images in the chain for the particular journey you are making, do you have any way of working out how to get back on track. In short, to go from A to B, or from any point to any other along the way, you need to be able to ascertain their relative locations in space. And this, Gell reasons, requires a map.

If it were true that all wayfinding consisted of navigation between fixed points, Gell’s argument would be unassailable. But it is not. Ordinary movement in a familiar environment lacks the stop-go character of navigation, in which every physical or bodily manoeuvre (displacement in space) is preceded by a mental or calculative one (fixing the course). ‘Finding one’s way’ is not a computational operation carried out prior to departure from a place, but is tantamount to one’s own movement through the world. To recapitulate my earlier point, we know as we go, not before we go. Thus the operation is not complete until one has reached one’s final destination: only then can the traveller truly claim to have found his way. The notion of ‘finding’ has here to be understood in its original sense of exploratory movement, at once improvisatory and assured, guided by past experience and by a continual monitoring of fluctuations not only in the pattern of reflected light but also in the sounds and ‘feel’ of the environment. There is no better illustration of this than the example that Gell himself uses in an attempt to prove, to the contrary, that wayfinding is based on the execution of pre-formulated ‘navigational decisions’ (1985: 282). This is the case of Micronesian seafaring. In a classic paper on the subject, Thomas Gladwin describes how, at every moment during a voyage, the mariner is attentive to ‘a combination of motion, sound, feel of the wind, wave patterns, star relationships, etc.’, all of which – through comparison with remembered observations from past experience – translates into ‘a slight increase or decrease in pressure on the steering paddle, or a grunted instruction to slack off the sail a trifle’ (Gladwin 1964: 171–2). Quite unlike the European navigator, with his charts and compass, the Micronesian seafarer feels his way towards his destination by continually adjusting his movements in relation to the flow of waves, wind, current and stars. In this respect his activity does not differ in principle
from that of the terrestrial traveller who responds to the flow of perspective structure as he journeys through a landscape. Both are essentially engaged in projects of wayfinding rather than navigation: thus Hallowell’s observation that for the Saulteaux, direction always has the meaning of ‘toward such-and-such a place’, is paralleled by Gladwin’s that the Micronesian mariner proceeds as if he were constantly within sight of land (Hallowell 1955: 190–1, Gladwin 1964: 173). And once it is recognised that the wayfinder’s multisensory monitoring is of flows, not images, and that flows specify paths and not spatial locations, Gell’s objections to the idea of mapless practical mastery fall away.

Micronesian seafaring resembles terrestrial wayfinding in one other critical respect: every journey is apprehended and remembered as a movement through time rather than across space. Islands, for the mariner, are not pinned down to specific spatial or geographic locations, nor does he imagine his craft to be covering the distance over a planar surface from one such location to another. Throughout the voyage he remains, apparently stationary, at the centre of a world that stretches around as far as the horizon, with the great dome of the heavens above. But as the journey proceeds the island of embarkation slips ever farther astern while the destination island draws ever closer. At the same time an island off to one side, selected as a point of reference for the voyage, is supposed to swing past the boat, falling as it does so under the rising or setting positions of a series of stars. The fact that the reference island (etak) is normally invisible below the horizon, and may not even exist at all, has been a source of puzzlement to many interpreters who – assuming that the mariner’s task is to navigate from one spatial location to another – have proposed that the etak is used to obtain a locational fix. Nothing in what the mariners themselves have to say, however, suggests that it serves any such purpose. The alleged bearing of the etak does not enter into any numerical computation. Rather, pointing to the etak is the mariner’s way of indicating where he is in terms of the temporal unfolding of the voyage as a whole (Hutchins 1995: 87–8). We have already seen how, in terrestrial wayfinding, a route from one place to another is remembered as a temporally ordered sequence of vistas. In much the same way, the Micronesian mariner remembers an inter-island voyage as a sequence of etak segments, each of which begins as the reference island falls under one particular star and ends as it falls under the next in line. At any movement, the mariner will know what segment he is in. As it swings beneath the horizon, from segment to segment, the etak island marks in its movement the passage of time, just as do the sun, moon and stars overhead, in theirs. Completion of the penultimate segment should bring the mariner, at length, to the final ‘etak of sighting’, as the island for which he is bound hoves into view.

THE WORLD HAS NO SURFACE

One further contrast remains to be drawn between wayfinding and navigation, and it takes us back to the cartographic notion of the map as a representation of some portion of the earth’s surface. The following ‘official’ definition of the map, issued by the International Cartographic Association, is exemplary:

A map is a representation normally to scale and on a flat medium, of a selection of material or abstract features on, or in relation to, the surface of the Earth or of a celestial body.

(cited in Robinson and Petchenik 1976: 17)
Now the idea that the world is presented to the traveller as a surface to be traversed presupposes the specialised, 'bird’s-eye view' of the cartographer or navigator. Indeed the world can only be perceived to have an exterior surface by a mind that is situated above and beyond it. In ordinary wayfinding however, whether on land or at sea, the world is apprehended from within. One makes one’s way through it, not over or across it. Of course the traveller encounters surfaces of diverse kinds – of solid ground, water, vegetation, buildings, and so on – and it is largely thanks to the responses of these surfaces to light, sound and the pressure of touch that he perceives the environment in the way he does. For the mariner the ocean, with its subtle differences of tint and colour, sculpted by the wind into waves and ripples, and breaking up around the boat into foam and spray, presents an infinitely variegated and ever changing surface. Likewise for the pedestrian, making his way along a forest track, the surface of the ground is a patchwork of mud, furrowed by the imprint of previous journeys, puddles, fallen leaves, broken boughs, and outcropping rocks and stones. These are surfaces, however, in the world, not of the world. That is to say, they are formed on the interface, not between matter and mind, but between solid or liquid substance and the gaseous medium (air) in which humans live and breathe, and which affords movement and sensory perception. In short for its manifold inhabitants, journeying along their respective ways of life, the world itself has no surface.

I noted earlier the parallel between the tracing of paths on the ground in wayfinding and the tracing of lines on paper (or in sand, snow, etc.) in mapping: indeed to the extent that all wayfinding is mapping, these are one and the same. Our conclusion, however, that for the mapper or wayfinder the world has no surface, calls for some qualification of the view, for which I argued above, that mapping is an inscriptive process. This need not be so. If a map consists of a network of interconnected lines, each corresponding to a path of movement through the world, there is no necessary reason why these lines should be inscribed on a surface. One could think of the gesturing hand, in mapping, as a weaving hand rather than a drawing hand, and of the result as something more akin to a cat’s cradle than a graph. The lines of the map could be threads, wires or sticks. Micronesian mariners used coconut leaf ribs to map the intersecting courses of ocean swells (Turnbull 1991: 24). Or to take a familiar example from a contemporary urban context, one could construct a route map for the London Underground out of stiff wire, soldered at the intersections, and it would serve just as well as the conventional printed versions. The fact that the map is generally reproduced on paper is a matter of obvious practical convenience, but not of logical necessity. The meaning of the map lies entirely in its routes and intersections, whereas the paper surface has no significance whatsoever. To read the map is to trace a continuous path from one station to another, without regard to their respective locations on the surface. With the modern topographic map it is quite otherwise, for in this case the paper surface of the map stands for nothing less than the surface of the earth. One of the most revealing indicators of this change in the significance of the map-surface, corresponding to the transition from mapping to mapmaking, lies in the appearance of frame boundaries. Native maps, as Belyea points out (1996: 6), are never framed. A line or border drawn around and enclosing such a map would have no meaning. The frame of the topographic map, by contrast, defines the portion of the earth’s surface that the map purports to represent. Thus the appearance of borders around the map corresponds to the disappearance of the itineraries and practices that give rise to it.
CONCLUSION

There is a paradox at the heart of modern cartography. The more it aims to furnish a precise and comprehensive representation of reality, the less true to life this representation appears. ‘To present a useful and truthful picture’, as Mark Monmonier writes, ‘an accurate map must tell white lies’ (Monmonier 1991: 1). But the reason for the discrepancy between truth and accuracy is not quite what Monmonier claims it to be. It is not that the map must leave things out if critical information is not to be drowned in a welter of ever finer particulars. It is rather that the world of our experience is a world suspended in movement, that is continually coming into being as we – through our own movement – contribute to its formation. In the cartographic world, by contrast, all is still and silent. There is neither sunlight nor moonlight; there are no variations of light or shade, no clouds, no shadows or reflections. The wind does not blow, neither disturbing the trees nor whipping water into waves. No birds fly in the sky, or sing in the woods; forests and pastures are devoid of animal life; houses and streets are empty of people and traffic. To dismiss all this – to suggest that what is excluded in the cartographic reduction amounts, in Monmonier’s words, to a ‘fog of detail’ – is perverse, to say the least (Wood 1992: 76). For it is no less than the stuff of life itself. Were one magically transported into the looking-glass world behind the map, one would indeed feel lost and disoriented, as in a fog. But the fogginess is a function not of the amount or density of detail but of the arrestation of movement. Detached from the flow of which each is but a moment, details settle like an opaque precipitate upon the surface of the earth. Little wonder, then, that the cartographer feels the need to sweep them up, or that the navigator prefers to brush them aside in plotting a course!

The ordinary wayfinder, on the other hand, is not generally troubled by detail. Quite to the contrary, the richer and more varied the texture of the environment, the easier it is to find one’s way about. But above all, wayfinding depends upon the attunement of the traveller’s movements in response to the movements, in his or her surroundings, of other people, animals, the wind, celestial bodies, and so on. Where nothing moves there is nothing to which one can respond: at such times – as before a storm, or during an eclipse – the experienced traveller can lose his bearings even in familiar terrain. These observations should finally lay to rest the cartographic illusion, namely that the world is pre-prepared as a stage upon which living things propel themselves about, from one location to another. Life, in this view, is an internal property of objects, transported upon the exterior surface of a lifeless earth. In the view I have set forth here, by contrast, the world is not ready-made for life to occupy. Contrary to the assumptions of cartographers and cognitive map theorists, life is not contained within things, nor is it transported about. It is rather laid down along paths of movement, of action and perception. Every living being, accordingly, grows and reaches out into the environment along the sum of its paths. To find one’s way is to advance along a line of growth, in a world which is never quite the same from one moment to the next, and whose future configuration can never be fully known. Ways of life are not therefore determined in advance, as routes to be followed, but have continually to be worked out anew. And these ways, far from being inscribed upon the surface of an inanimate world, are the very threads from which the living world is woven.