



**ENVIRONMENTAL
ARCHAEOLOGY AND
THE SOCIAL ORDER**

John G. Evans

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ENVIRONMENTAL ARCHAEOLOGY AND THE SOCIAL ORDER

This original and controversial volume sets a new agenda for the study and understanding of environmental archaeology. Instead of seeing human communities as mapping their activities onto the environment and using it in a cost-effective way, the environment is here seen as a means through which people explore their social world.

Environmental Archaeology and the Social Order presents a wide variety of case-studies, ranging from early Palaeolithic to Post-modern, and from Europe to the Andes, West and East Africa, and the USA. The book deals with both the theory and method of environmental archaeology, with significant sections on Neanderthals, Palaeolithic mobiliary art and the origins of farming, as well as transhumance, climate as social construct, field survey and the place of documents in environmental research. Professor Evans interprets his findings in social constructionist terms, creating an important argument against the use of traditional materialist and processualist paradigms.

This innovative and challenging volume sets environmental archaeology within contemporary agency theory, and effectively integrates archaeological science into mainstream archaeological discourse. It should appeal to archaeology students and professionals alike and provide an important new direction for the future of environmental archaeology.

John G. Evans is Professor in the School of History and Archaeology, Cardiff University. His most recent books are *Land and Archaeology* and, with Terry O'Connor, *Environmental Archaeology*.

ENVIRONMENTAL
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AND THE
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John G. Evans

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To the memory of my parents,
Mary, who taught me about texture,
and David, who lent me his ideology

CONTENTS

<i>List of illustrations</i>	viii
<i>Preface and acknowledgements</i>	xiii
1 A brief history of environmental archaeology	1
2 Sociality and environment	20
3 Textures help a person think	45
4 Chalkland landscapes	73
5 Climate	94
6 Surveys in temperate and Mediterranean countries	119
7 Text, monuments and land	148
8 Transhumance	172
9 Hunting and death in Neanderthal Europe	201
10 The origins of farming in south-west Asia	219
11 Conclusions	250
<i>Bibliography</i>	255
<i>Index</i>	273

LIST OF ILLUSTRATIONS

Figures

1.1	Different theories of relationships between animals and humans.	4
1.2	Differences between the number of birds discovering baits and subsequently utilizing them in three species of corvid (crow family) in Maine.	7
1.3	Sociality in the European mole, <i>Talpa europaea</i> .	9
1.4	Succulent stonecrop in the Isles of Scilly.	10
1.5	Henbane, <i>Hyoscyamus niger</i> , Stackpole Warren, Pembrokeshire.	11
1.6	Hazel catkins, <i>Corylus avellana</i> , at a woodland edge near Caerwent, Gwent.	18
2.1	The re-use of antiquity. Late Roman wall in the Athens agora, built around AD 280, showing the re-use of ancient building materials, including column segments.	36
2.2	The appropriation of antiquity. Neolithic entrance of La Hougue Bie passage grave, Jersey, and the Jerusalem Chapel on the summit of the mound, built in around 1520.	37
2.3	The influence of antiquity. Sphinx and Neo-classical façade at Harewood House in Yorkshire.	38
2.4	The creation of antiquity. Ascott-under-Wychwood Neolithic long barrow, Oxfordshire, cross-section at the edge of the mound.	39
2.5	Relationship between world views and the materialities through which they are realized.	40
3.1	Texture in vegetation in the Preseli Mountains, Pembrokeshire.	46
3.2	Texture in beach sand.	48
3.3	Texture in rock.	49
3.4	Multiple textures in fossil sand, erosion exposing layers of land snails, Stackpole Warren, Pembrokeshire.	50

LIST OF ILLUSTRATIONS

3.5	Texture in shell surfaces seen under the electron microscope.	51
3.6	Texture in Roman pottery fabrics, Bossington, Hampshire.	52
3.7	Different kinds of texture and their modification.	54
3.8	Woodland edge and clearance, Bargrennan, Galloway, showing the contrast between woodland and the disorder of fallen trees and tree-plates.	57
3.9	Beckhampton Road long barrow, Wiltshire. Ox skull lying on the Neolithic soil beneath the mound.	59
3.10	Edge locations of sites in Neolithic and Mesolithic Britain, showing the asymmetry achieved in combinations of different soil types and view.	60
3.11	Isles of Scilly. Prehistoric field wall exposed at low tide and incorporating a large granite quernstone.	65
3.12	Bar Point, St Mary's, Isles of Scilly, excavation of prehistoric fields.	65
3.13	Tresyssylt, West Wales, field walls showing a diversity of sequence.	66
4.1	Central southern England showing some chalkland river valleys.	74
4.2	Scheme of valley modification in the Holocene, showing diversity between valleys and increase in the scope for social referencing with time.	76
4.3	Flint artefacts (cortex stippled) showing different degrees of symmetry.	79
4.4	Different styles of landscape referencing on the Marlborough Downs, Wiltshire.	83
4.5	West Overton, Wiltshire, Neolithic to Middle Bronze Age valley bottom archaeology, buried beneath alluvium.	86
4.6	The meaning and social use of different kinds of materials through a <i>chaîne opératoire</i> between settlement and the land.	89
4.7	Schematic plan of a chalkland valley side showing contrasting visual components of Iron Age and Medieval referents in relation to the topography.	91
5.1	Tower of the Winds or Temple of Aiolos, Roman agora, Athens.	95
5.2	Location of sites and areas discussed in Chapter 5.	97
5.3	Graph showing a distinctive pattern of climate change and human responses to it, based on the period 1670 to 1710 in south-east Scotland.	107
5.4	Distribution of female figurines possibly related to climate prediction and other social referencings.	114

LIST OF ILLUSTRATIONS

5.5	Jenne-Jeno, Iron Age terracotta human head from the Middle Niger.	115
5.6	Jenne-Jeno, arrangement of sandstone slabs, waste iron, statuette fragments and ceramics with snake and headless-human appliqué.	115
5.7	Jenne-Jeno, terracotta statuette buried in the foundation of a house in an assemblage of ritual ceramics.	116
5.8	Jenne-Jeno, terracotta, purposefully decapitated body.	116
6.1	Fieldwalking near Torricella Peligna, Abruzzo, in August 2002.	120
6.2	Juvanum survey, field surface textures.	122
6.3	Location of some significant surveys.	123
6.4	Maddl Farm and Ashdown Park Roman villas, Berkshire. Sherds per 100-m square.	124
6.5	East Brittany survey area, delimited by the dashed-and-dotted line. Roman pottery, Roman tile, fabric 10, and later Bourgs.	127
6.6	East Brittany survey, field A116. Distributions per 10-m square of Medieval pottery, phosphate and magnetic susceptibility.	129
6.7	East Brittany survey. Slate in two areas and fabrics 1, 4 or 6.	132
6.8	East Brittany survey. Record of parish registers, baptism/burial ratios for Ruffiac, 1668 to 1794.	133
6.9	Ancient urban sites in Boeotia.	135
6.10	Survey of the city of Askra. Density of finds in modern fields and intensive samples.	138
6.11	Inner Mani, southern Peloponnese, in the south-west part of the peninsula.	145
6.12	The city states of early historic Boeotia, showing discrepancies between boundaries as determined from historical sources and theoretical boundaries as suggested by Thiessen polygons and 5-km radii.	146
7.1	Yazilika rock sanctuary, Hattusa, Turkey; late thirteenth century BC.	150
7.2	Yazilika rock sanctuary, Hattusa, Turkey; late thirteenth century BC. Text in Hittite hieroglyphs giving the name and titles of the king, Tudhaliya IV.	151
7.3	Tombstone, with formal dedicatory inscription, by a road in the Greek agora, Athens.	152
7.4	Graffiti in a public park, Llandaff Fields, Cardiff.	153
7.5	Church of the Holy Apostles, from around AD 1000, in the Greek agora, Athens.	154
7.6	Byzantine Church of Panagia Scripou at Orchomenos, Boeotia.	155

LIST OF ILLUSTRATIONS

7.7	Panagia Scripou, Orchomenos; inscriptions on the outside of the church.	156
7.8	Panagia Scripou, Orchomenos; a diversity of spolia.	157
8.1	Location of areas of transhumance.	177
8.2	Sheep grazing in the high pastures of the Abruzzi Mountains, accompanied by dogs.	180
8.3	A recently abandoned transhumant drove-road or <i>tratturo</i> crossing the Biferno Valley.	181
8.4	Saepinum, Biferno Valley; the Bovianum Gate.	182
8.5	Hilltop settlements in the Abruzzo, central Italy.	184
8.6	Prehistoric hill settlement of Montepallano in the Abruzzo.	185
8.7	Estancia Copacabana, Bolivia. Movement of people between different locations from agricultural and pastoral residences.	190
8.8	North Wales hut classes and place names as an indication of transhumance.	193
8.9	North Wales, altitudinal distribution of prehistoric and Roman hut classes.	194
9.1	Different theories of relationships between animals, humans and their bones.	203
9.2	The relationship between the landscape of life and the landscape of burial.	204
9.3	Middle Palaeolithic Europe, location of places mentioned in the text.	207
9.4	Different styles of survivorship or death distributions in humans and animals.	214
10.1	The Fertile Crescent, location of sites mentioned in the text.	220
10.2	Domesticated rye, <i>Secale</i> sp., at an early stage of growth and in flower.	231
10.3	Domesticated barley, <i>Hordeum</i> sp., showing its visuality in different stages of growth.	232
10.4	Social states with their responses and resolution through crop processing.	234
10.5	Wild grasses in various stages of ripening to show the brittle rachis state.	236
10.6	Abu Hureyra, summary of some environmental events.	244

Table

6.1	Sherd densities in field surveys (per 100 m ²) in relation to annual mean rainfall (mm)	134
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PREFACE AND ACKNOWLEDGEMENTS

This book shows how environmental archaeology can be studied from the point of view of human social relationships. It is a series of studies at different scales of space and time. I have looked at some key subjects, such as the origins of burial, the origins of agriculture, the nature of climate and the way people use texts, in order to make the subject widely accessible in archaeology generally.

Environments are considered in the ways proposed by Michael Shanks and Chris Tilley (1987), that is as media of social engagement, just as social scientists such as Pierre Bourdieu (1977) and Peter Dickens (1990) do. The works of these writers have been extremely helpful, while people who have used a social agency approach in archaeology more recently, such as John Barrett (1997) and, especially, Marcia-Anne Dobres (2000), have enabled me to focus these ideas in my particular field of environmental archaeology. This book is a product of a whole genre of archaeological theory, and other scholars such as Chris Gosden (1994), Ian Hodder (1982) and Richard Hingley (1997) have also provided much food for thought over the years. In anthropology, the research of Nadia Seremetakis (1991) and, at the other end of the theoretical spectrum, Tim Ingold (1988) have been equally magnetic.

Many of the ideas presented here have been tried out on students in the Archaeology Department at University College, Cardiff, and I am especially grateful in this respect to David Green. To my former students, Alexandra Logotheti, Katerina Paschali and Margarita Giannakopoulou, who welcomed me to Greece and accompanied me in my travels in Inner Mani, Boeotia and Athens, my most grateful thanks.

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J. G. E.

A BRIEF HISTORY OF ENVIRONMENTAL ARCHAEOLOGY

This book is the presentation not of a hard-won theory but of an idea. My aim is to convince the reader through narrative, example and passion. Cumulation is a large part of this so that in the end you have nowhere else to go. That is why history is so attractive: it allows alternatives to be set aside while at the same time giving security in the current vogue. Archaeologists are conscious about the history of their subject, yet in practical terms, even in reality, I wonder how much of archaeological history is not of our own making, how much of it really took place at all.

Still, a historical perspective is a good way to identify and characterize environmental archaeology (Evans and O'Connor 1999) because that is how the subject developed and how it is now – an accumulation of ideas through time. Articulation with associated histories – stratigraphy (in the eighteenth century), the antiquity of humans and early archaeology (in the nineteenth century), evolution (also in the nineteenth century), ecology (in the early twentieth century) and molecular biology (in the later twentieth century) – is a part of this characterization, as is the changing role of environmental archaeologists themselves.

EARLIER YEARS

Environmental archaeology is the study of past human environments, traditionally from archaeological excavations, sections and boreholes but increasingly from written sources, and the relationships between humans and those environments. In the early years, before the 1960s, the physical environment was seen as a backcloth to human activities. The environment was passive, with humans mapping their activities onto it, and this applied to the food plants and animals as much as to the land and weather. Equally passive were the environmental archaeologists who mapped *their* activities onto those of the archaeologists, although this kind of approach also applied to other aspects of archaeology – like burial practice and cities and art – which were treated in an equally narrative way. Environmental archaeology

brought in the physical environment of climate and biology which conventional archaeology often ignored, but there was not really a difference between how environmental archaeologists and cultural archaeologists thought. Sometimes the environment was permissive, allowing of several options or choices, sometimes it was determining as with Braudel's *longue durée* (Bintliff 1991). Environmental change led to economic change, as in the 'oasis theory' of the origins of agriculture in the Near East. Catastrophism was the extreme, volcanic eruptions overthrowing civilizations; and even today, when theory and ideas have moved on, we still need this kind of construction. Yet Charles Darwin was warning against it in 1859: 'so profound is our ignorance and so high our presumption that we marvel when we hear of the extinction of an organic being; and as we do not see the cause, we invoke cataclysms to desolate the world'.

ECOLOGICAL OBJECTIVISM

Immediately before the above quotation, the great man had written: 'nature remains for long periods of time uniform, though assuredly the merest trifle would give the victory to one being over another'. Darwin understood ecology several decades before the subject came formally into being. And it is with ecology that the second major phase of environmental archaeology is recognized. Geoffrey Dimbleby, Professor of Environmental Archaeology in London's Institute of Archaeology, firmly identified the subject with a role of hope in the utterly appalling degradation of ecosystems being wrought by human activities. His work on the heathlands of the British Isles (Dimbleby 1962) showed how wrong Thomas Hardy (1878) had been in his vision of the permanence of the Wessex heaths, 'The untameable, Ishmaelitic thing that Egdon now was it always had been', opening up ideas of management in relation to past change.

A phase of optimism, driven by ideas of optimization and the cost-effectiveness of energy expenditure, ensued. In transferring ecological principles to humans, archaeologists developed models which allowed for predictability in human relationships with the environment, known by the general term of 'Middle Range Theory'. Research endeavours with major biological and geological content took place in two key areas, the origins of humans in Africa and the origins of agriculture in south-west Asia.

Three names stand out. The first is that of Louis Leakey who, in his search for the origins of humans, spawned a diversity of research, and the second is that of Lewis Binford, who was significantly responsible for the development of the Middle Range Theory in which this research was framed (Binford 1981). Big issues were at stake, especially the confrontation of our animal past as ways of explaining human aggression, male domination and war. The origins of hunting in hominids, of food-sharing and divisions of labour were

key areas of research, linked closely to emergent ideologies of feminism, community and family identity, and race. The food-procuring practices in the early evolution of hominids were explored through the archaeology of their stone tools (Schick and Toth 1993). Taphonomy, a branch of research which deals with the interpretation of fossil bones, was adopted from solid-rock palaeontology and keenly diversified in early hominid and modern ethnographic studies (Behrensmeyer and Hill 1980). Investigations took place in modern African people and in modern primates on the tracks of animals from their hunting and butchery to the sharing of their meat and the fate of their bones (Rose and Marshall 1996). Feminists studied the relevance to feminism of the perceptions and creations of these researches (Haraway 1989). And 'sociobiology' synthesized the humanities within biology in a savage debate, of which two of the more sober contributors were E. O. Wilson (1975) and Marshall Sahlins (1977).

The importance of these issues ensured well-funded research, and the benefits for environmental archaeology in both theoretical and practical aspects were enormous. Much of the work on bones has been about the separation of human (or hominid) and animal carnivore assemblages, and there has been specific interest in the origins of hunting in hominids. A problem with using modern comparisons between bone assemblages of animal carnivore and human origin as templates for archaeology, however, is that neither animal behaviour nor human behaviour takes place in isolated worlds of nature or culture, animal or human. This is irrespective of anthropological constructs as to the existence of such a division or not (Ingold 1996b; Dickens 1996: 6). Rather it refers to the fact that the behaviour of animal carnivore and hominid is each influenced by the other and so, therefore, are the bone assemblages which each leaves behind (Figure 1.1, upper). To be sure, there are distinctive animal and human contributions to their own activities, and some of these, such as the presence of toothmarks and cutmarks respectively and the removal of particular components of carcasses away from death sites, can be identified; but other traces, such as the intensity of gnawing or cutting as related to the influence of other species at the death site, could not. Interaction is partly ecological, animals and hominids adjusting their behaviour in relation to competition or co-operation with other species, but it is also expressive (Figure 1.1, lower), about social influence and power. We will return to this shortly.

The third in my trilogy of memorable names from this phase of environmental archaeology is that of Eric Higgs who, with his search for the origins of agriculture in south-west Asia, was responsible for the development of 'Site Catchment Analysis', or SCA (Higgs and Vita-Finzi 1972). This is encompassed within the methodology of Middle Range Theory in that it uses a practical logic of how land might be exploited. It suggests how the environment was exploited from a particular site with reference to the potential of the land. Land-use was seen as being mapped onto the environment, with decreasing

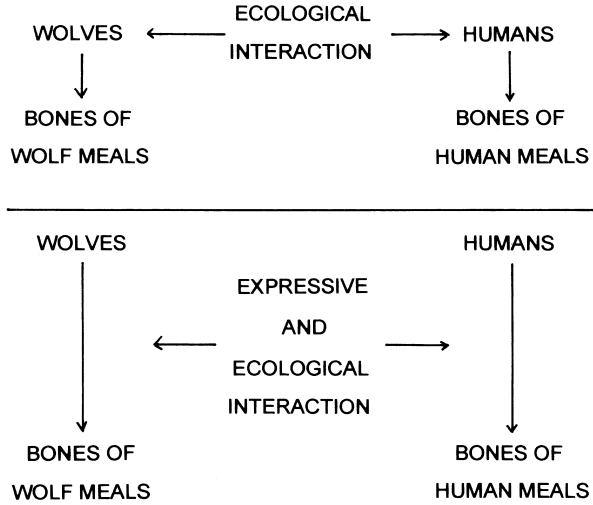


Figure 1.1 Different theories of relationships between animals and humans. In the upper part of the diagram is the conventional ecological theory; in the lower part, living creatures of two species and the bones of their meals relate to each other through social expression. (Compare Figure 9.1.)

intensity of use as one moved away from the site, with the exception of local hotspots of exploitation as for quarrying stone or dealing with specialized resources like hay which were not encompassed within the catchment.

Aside from issues like changing land type, uncertainties about technology and cultural choice, a problem was the question of maximization of effort in procuring food and other resources like fuel and shelter. It is questionable that people use the land to its full potential in a cost-effective way, reducing their intensification as they move outward from the settlement or site. There is always some slack. This means that there need not be a watertight equation of land potential and its exploitation. Moreover, exploitation from a single site is unrealistic, even today in subsistence farms which one might think of as the epitome of settlement stability and tradition. People move around quite a lot. As we know from modern studies of agro-pastoralists in semi-arid areas (among others), there is considerable temporo-spatial agility in the way land and settlements are used, with people moving – often at irregular intervals (not the regular seasonal ones we think of in our comfortable ideas of transhumance or hunter-gatherer mobility) and through a variety of settlement sites, variously owned – in various age and gender groupings. Settlements can stay deserted and in uncertain ownership, only to be reclaimed and reoccupied uncontentiously after several years.

As a result of such problems, more recent studies have looked at not just one site but several sites of resource exploitation and activity in a regional –

or strategic – system. Sites were seen as being related to each other, with the added input of tactical influence in catchments (Bailey and Davidson 1983). One site could be a look-out site for game, another a regional centre where people came to exchange ideas, a third an isolated settlement. Fieldwalking, in which land-use was investigated by surface survey, encouraged the regional approach and especially the search for new sites and an investigation of what was going on in the areas between sites (Ch. 6). This was an important advance and was part of a general shift within archaeology towards regional studies. Recognition of discrepancies between theoretical catchments – as defined by SCA and the use of Thiessen polygons – and actual ones as discovered by fieldwalking, excavation or from literary sources, allowed exploration of socio-political factors, rather than just the raw economic ones, to which catchments might relate (Ch. 6, p. 144 and Figure 6.12) (Bintliff 1988). Such investigations allowed power and sociality to be added to the equation, and were an important advance in our understanding. So the trend towards a regional approach was more than just a view of bigger areas and a more complete economic picture, it was a trend towards the incorporation of socio-political factors as well.

This brings us to a question which has been addressed more by human geographers and anthropologists than by environmental archaeologists, and that is the relative influences of the physical environment and socio-cultural factors in human practice. The two perspectives were used in conjunction by Fernand Braudel (1949) in his study of Early Modern Mediterranean history but each in the context of different time dimensions (Bintliff 1991; Gosden 1994). The history of short-term events and medium-term structures such as demographic cycles was seen as occurring in a framework of social and economic directives, whereas that of the long-term, the *longue durée*, was environmentally driven. Several people have drawn attention to the problem of completely understanding a history which is framed in two different infrastructures. One of my purposes in this book is to show how these two alternatives, in being driven, unilineal, schemes, are in effect the same side of a coin, the other side of which is the use of environments in social expression. Seeing the creation of socialities as taking place through the physical environment, and at scales which range from the interests of single individuals to much larger groups, allows all three of Braudel's time levels to be understood in the one scheme (Ch. 2, p. 35; Ch. 10, p. 245).

THE DAMAGE OF A CULTURE OF MAXIMIZATION

Conventional ecology sees maximization in the use of materials and energy as critical in our understanding of the way in which plants and animals behave. These ideas seem to have been taken from the precepts of evolutionary theory, especially those of struggle and fitness in which survival of

the individual and perpetuation of the species are key goals. Yet of the triple pillars of modern biology, it was ecology that came first into the world, even if it was a lifeless ecology, and it is interesting to speculate how things might have gone had ecology been developed as a discipline before the discovery of evolution.

It is fruitful, too, to think about the development of evolutionary theory in a socio-cultural environment different from that of the Industrial Revolution and empires. Is it necessarily true, for example, that animal and plant communities struggle, that they behave in the energy-effective way that Darwin envisaged, enshrined in his unfortunately worded phrases ‘the struggle for existence’ (actually taken from Thomas Malthus) and ‘the survival of the fittest’? Darwin lived in an age of Protestant work ethic, in the country where the Industrial Revolution began, and in an empire which needed concepts and schemes like evolution to legitimate its increasing conquest of unfamiliar races of humanity. Malthus too, only a bit earlier. But Malthus based his ideas on marginal communities where there was pressure, like mountain regions. One of his case studies was in Tibet. Another was the environment of emergent industrial towns and cities with their unusual pressures and exceptionally high rates of population. Darwin visited the Galapagos Islands, but these are islands where one can expect strong selection pressures, and quite distant from the continental mainland from which genetic dilution might come. They had also been settled by people several hundreds of years before Darwin, so the animals and plants there had been subjected to human selection pressures too. And to put things into further perspective, it was Linnaeus’s species themselves, with their little expressions of difference in their DNA, that created evolution in the first place, not the other way round.

This is not a chapter about evolution, but our understanding of how evolution takes place has a strong part to play in our views about ecology. Logically it ought to be the other way round, as I have just explained, but as socially constructed it is not. Yet if we could see evolution as driven by social expression of individuals and groups of plants and animals, as being more directed than we think, we could get away from ideas of struggle, competition and fitness and open up new possibilities for relationships in ecology. Animals and plants could be seen as behaving in an individualistic, sentient and expressive way, with an active sociality in their lives as important as growth, maintenance and reproduction. For example, the distinctions between Darwin’s finches of the different Galapagos Islands are mainly in the beaks, a feature that is usually seen as having evolved through different feeding habits. Yet it is mainly through these differences in the beaks that these birds communicate, so we could see evolutionary separation as having come about through socialities primarily and by feeding as a consequence of that.

Indeed, work in several animal groups is showing that much behaviour is about establishing, maintaining, and even opposing social relationships.

BRIEF HISTORY OF ENVIRONMENTAL ARCHAEOLOGY

Many animals symbolize or express relations through their behaviour or through the use of artefacts or land. Indeed, such behaviour is probably widespread in the animal kingdom and perhaps even among plants.

Ravens in Maine and Vermont advertise the presence of food to other ravens, calling out with specific kinds of cries when they discover food. Discoveries are made by one raven or at most a pair, yet there is deliberate, active, recruitment of others to the food (Figure 1.2) (recruitment is also directly from the roost at distances too far away for vocal recruitment

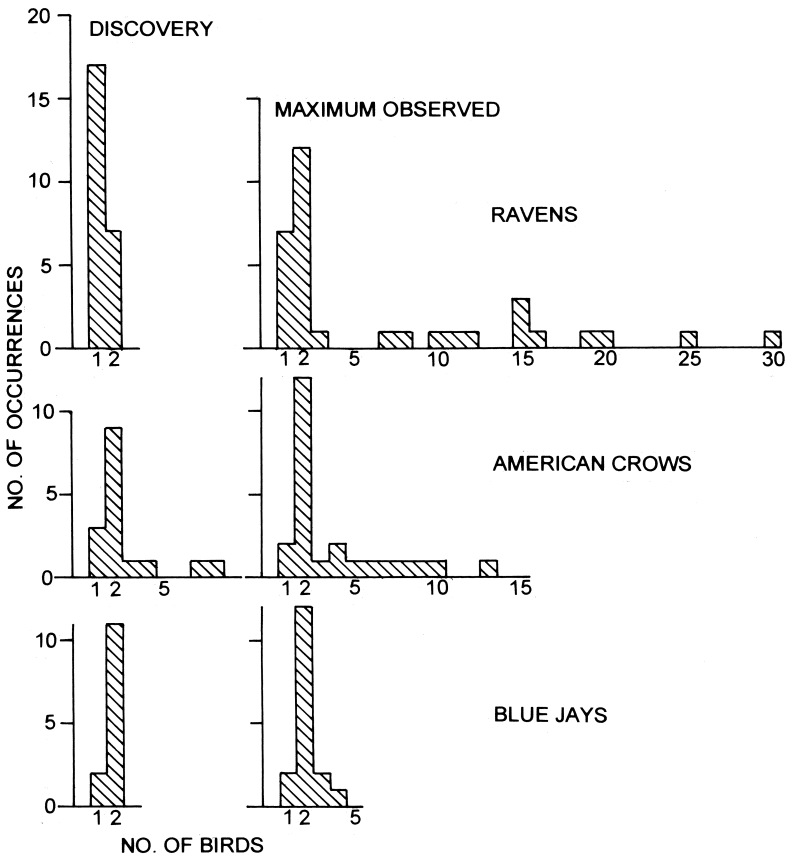


Figure 1.2 Differences between the number of birds discovering baits and subsequently utilizing them in three species of corvid (crow family) in Maine. In the raven, *Corvus corax*, two-thirds of the baits are discovered by single birds and the other third by pairs; subsequently large numbers use the bait. In the other two species, most discoveries are made by pairs and there is not so much subsequent recruitment. These data suggest active recruitment in ravens to the bait, behaviour which benefits social relationships in the community. (Based on Heinrich 1991: fig. 2.)

alone, so other, as yet unknown, factors are involved). Mostly it is young individuals, still unmated, that behave in this way, not the mated, established, pairs. This type of behaviour is counter to what one would expect if there were struggle for survival; drawing attention to food would seem to be sacrificing reproductive success. It is suggested that feeding allows the development of socialities, ranking especially among the young males, for the purpose of selecting mates. This, of course, can only be done in company, so discovery of food needs to be advertised and other ravens recruited for it to serve its purpose (Heinrich 1991).

Work on primates in the last two decades has shown that they spend a lot of time socializing and establishing relations but that these are disbanded often within hours and serve little useful purpose in terms of survival and the passing on of genes. Shirley Strum (1987), working on baboons, showed that aggression and dominance were neither inevitable nor central, and not the only influences in baboon social lives. Much more relevant than permanent dominance hierarchies were immediate socialities which could be quickly established and as quickly broken down. 'Families and friendship were at least as important as hierarchy in providing organization and stability' (ibid.: 148). Significantly, these friendly and impermanent relationships were being used as a means of both exploring and creating society in a single process. Baboon behaviour of the more sophisticated kind that Strum had elicited with her observations could be understood within hominid species as well. Baboons are also 'nicer, brighter and more humanlike than we had first painted them' (ibid.: 154).

In mountain sheep (Geist 1971: 64) home ranges of rams seem to be laid out 'contrary to efficiency and logic'. Inheritance of these ranges from the older rams they follow in younger years can be only a part of the story. Rams move past or through several female groups which they ignore before reaching the ones where they mate. This kind of expressive and somewhat casual exploratory behaviour is similar to that of Heinrich's ravens and Strum's baboons. Surely the females which the rams pass in their journeys are at least acknowledged: there can hardly be a total lack of social engagement in those places, even if it is transient. It may have benefits in terms of some kind of social storage, but it may, too, be about the establishment of relationships through expression.

A male blackbird moves around an Athens garden getting worms in the sight of a cat, knowing the cat is there, as a means of developing his own bravado and expressing it thus to potential mates. The cat moves closer, the blackbird moves to another patch. This would be the adaptive, Darwinian, explanation for such behaviour. But does the blackbird taunt the cat or develop a sociality with it for no survival reason at all other than the immediacy of excitement, as a creation of its own individuality?

Or, take the European mole (*Talpa europaea*): 'Clearly, if a territorial system evolves then the benefits to be gained must outweigh the costs'

(Gorman and Stone 1990: 89). But even in these aggressive and asocial animals, cannot territories be established to enable sociality for its own sake? In a field of fifteen moles, the territories of all of them overlap with at least one other for the males and with three or even four for the females (Figure 1.3A). Some of this overlap, it is true, is of interdigitating rather than conjoining tunnels, but moles are still aware of each other in these areas of overlap (ibid.: 94). And if a mole dies or is removed, neighbouring mole territories are moved closer to each other (Figure 1.3B). There is also the point that in some cases moles defend more resources than they strictly require (behaviour seen, too, in the massacres by foxes in henhouses), and this is outside the breeding season (ibid.: 91). An argument based in evolutionary theory, that this denies others and reduces their breeding success, is far-fetched. More likely is the need for social expression, males interacting with others to flex their muscles for the attraction of females, or males getting to know females before the main pairing begins. Or beyond this, even fun.

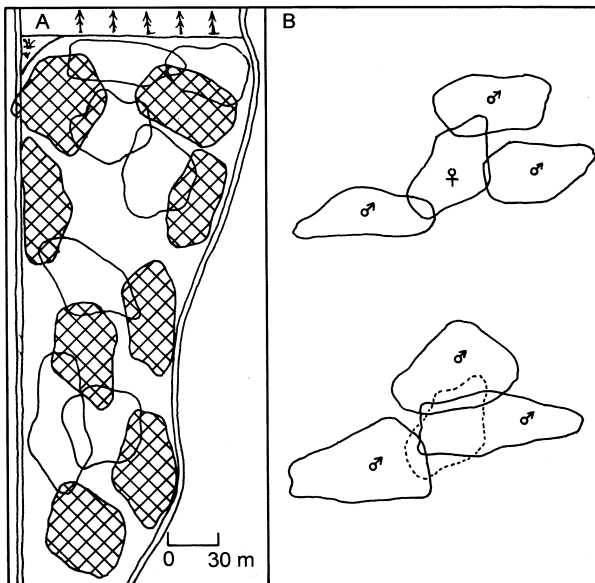


Figure 1.3 Sociality in the European mole, *Talpa europaea*. A, spatial organization of mole territories as revealed by radiotelemetry, males cross-hatched, females open; note the overlap in females but not in males; B, response of moles to the demise of a neighbour, the upper part of the figure before the removal of one individual, the lower afterwards, showing some adjustment and overlap of territories. Both sets of data indicate some sociality in these animals. (From Gorman and Stone 1990: figs 6.1 and 6.4.)

I am reminded, here too, of gannet colonies where only a small part of the island of Grassholm off the Welsh coast is occupied, the gannet pairs nesting only one metre apart.

In herring gulls, repeated dropping and catching of clams closely matches predictions of play (Gamble and Cristol 2002). Two other possibilities, that the behaviour was a means of testing for the intentions of nearby gulls to steal the clams or for repositioning a clam so that it is more likely to break when dropped, were ruled out. But no tests were run to examine the possibilities that the behaviour was a means of social expression – which is different from play – a way of establishing rank in the presence of other gulls.

The point of these examples is to bring animals more into line with humans as beings with individuality and non-adaptive behaviour and that express themselves socially, often through the environment. Some of this is likely framed within conventional evolutionary biology and is about getting the fittest mates, as Heinrich suggests with the ravens of Maine and Vermont. Some of it is about animals exploring their social world, creating it and coming to understand it in the process, and then disbanding the relationships and going on, as is likely the case with the baboons that Shirley Strum explored. And some of it, as with the herring gulls of Gamble and Cristol, is about sheer fun. Even plants express (Figures 1.4 and 1.5).

It is not an issue that I am contrasting sociality with functionality. Sociality may be just as functional and involve just as much competitiveness as the basics of procuring food and obtaining mates. Nor is it an issue as to how

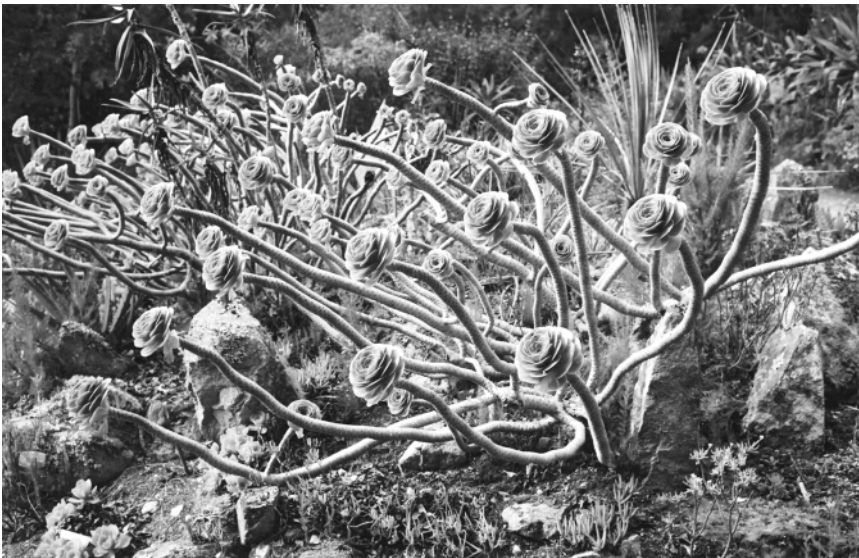


Figure 1.4 Succulent stonecrop in the Isles of Scilly.



Figure 1.5 Henbane, *Hyoscyamus niger*, Stackpole Warren, Pembrokeshire. 'Even plants express.'

much of such behaviour is adaptive, contributing to survival (of the individual and the next generation), and how much raw pleasure, emanating from the sentience and feelings of the individual. (This sounds as if I have transferred the sociobiological question to the world of animals alone.) What is important is the existence of expressive behaviour in animals and its diversity. Accepting a degree of social expression in plant and animal behaviour and a relaxation of struggle allows us to view biology in a more diverse light and one that articulates in several ways with human style as well. It allows a more flexible ecology in which the plants and animals as individuals have a say, and one, thus, in which relationships between the natural and cultural worlds are more easily accommodated (Figure 1.1, lower). Human behaviour, too, can be viewed less in relation to constraints of ecology, with its imperatives of maximization and struggle, and more in relation to a general diversity in the plant and animal worlds.

Closing the gap between humans and animals releases us from seeing just the two groups in stark contrast and instead allows humans to be seen as a part of the wider diversity of animals. This lends itself to a freer comparison of humans with individual animal species, outside of taxonomic or evolutionary hierarchies. In this respect I would also question the whole philosophy of sociobiology as being demeaning to animals, as if there is no sociality in biology.

DIFFERENT STYLES OF LANDSCAPE: DIFFERENT KINDS OF SOCIALITY

In the past twenty-five years archaeology has 'gone social', but we need to be clear: there are several kinds of sociality. We have seen this within the animal world, and it applies as well in environmental archaeology. We can examine these through the medium of another branch of archaeology which has been important in the history of the human environment, namely landscape archaeology. This is the study of quite large areas of human activity in contrast to the study of single sites, and we have already looked at one of its branches in Site Catchment Analysis. Often with landscape archaeology the area of concern encompasses the full range of activities of a human settlement or a number of settlements, like a commune or city state. It is a more reasonable approach if we want to understand how a human community lived, and it is usually referred to as the 'regional approach'. But because 'landscape' as a term is more value-laden than 'regional' and has evoked more passion, it is better to look at different styles of regional survey through landscape rather than the more neutral eponym.

One form of landscape archaeology sets the stage with physical evidence on the ground, documentary evidence from archives and spatial relationships from geographical models, and then brings in the actors (Aston 1985; Thomas 1993). Surface survey (Ashby 1927), aerial photography, the use of parish records, fieldwalking and Site Catchment Analysis (Evans and O'Connor 1999: Ch. 9) are among the main methods used in this form of data collecting. There are different emphases according to conditions, England having a strong tradition of local history in earthwork survey and the use of parish records, the Middle East and Palaeolithic studies seeing more the use of Site Catchment Analysis, while Italy and Greece for later prehistoric and historic times are the heartlands of regional fieldwalking surveys. But as a whole, the general tenor of this kind of work is one of linearity – get the data, put in the people.

A start to socializing landscape is seen where the physical environment is incorporated into strong hierarchical schemes of politicality and power, where it is wrenched almost forcibly into place. Some of John Bintliff's (1988) ideas about Classical Boeotia, where some cities and their territories

become large and powerful, taking in more land than their population would normally demand, where small settlements are clustered around these cities, and where the further hinterlands are accordingly sparsely populated or barren, are of this kind. This differs from environmental determinism in that politics, hierarchical power and the social attraction play a part in environmental relationships. Barbara Bender's theory about the origins of agriculture (1975, 1978), with the build-up of surpluses of grain as a means of manipulating power in emergent family or tribal leadership, is another example of the integration of this kind of raw sociality within environmental archaeology. This perspective on sociality is about how 'developing social relations may promote economic [and environmental] change' (Bender 1978: 204). But these relations are usually about strongly hierarchical societies and especially in power at the top.

More complex is the situation where individual societal needs are referenced and deployed. For me, the beginning was *Social Theory and Archaeology* by Michael Shanks and Chris Tilley (1987: ch. 4), in which the active role of material culture in mediating relationships between people and groups was laid out. Ian Hodder's (1982) studies, in the role of calabashes and metalwork in the definition of groupings such as women and young men within and across boundaries in Kenyan tribal societies, were another spur. It should be an easy step from the use of material culture in this way to the similar use of the environment and landscape, yet surprisingly little has been explored. The more socially aware archaeologists and anthropologists have paved the way, as with Barbara Bender's *Landscape: Politics and Perspectives* (1993) and Chris Tilley's *A Phenomenology of Landscape* (1994). In the former, Thomas (1993), adopting ideas of Heidegger, sees landscape as something created as it is experienced rather than as an entity viewed, or even participated in, as a separate act. 'Heidegger's term "dwelling" succinctly describes the way people *are* on earth, it is a verb which conveys a sense of continuous being which unites the human subjects with their environment' (ibid.: 28). And Thomas well distinguishes this from the previous kind of sociality:

we cannot assume that past landscapes were inhabited by smoothly-running social systems. More likely, we should imagine struggles played out across the tiniest aspects of day-to-day existence. We need to recover the 'spaces of resistance', not just the dominated landscape.

(Thomas 1993: 29)

In phenomenology, 'Places, pathways and human subjectivities mediate each other to create an understanding of ... social being' (Tilley 1999: 180). Tilley's interest in trackways is obsessive. A specific form of this kind of engagement where material culture and land are drawn into schemes of

social expression is the use of metaphor (Tilley 1999). Natural landscape features, especially their historical associations, are used by people as a means of referencing their social world: 'a metaphorical notion of a landscape that empowers the mind and acts so as to reproduce the landscapes of social life is fundamental in most small-scale societies' (ibid.: 181). Drawing on the work of Basso (1996) among the Western Apache of Arizona, Tilley understands metaphorical connections between landscape and social action as a way in which the Apache come to understand themselves. Here we begin to see the depth of meaning in the term 'landscape', not just as land that is worked, through the soil and in its production – for most landscape names like 'fen' and 'downs' involve management connotations – nor just in its history or mythology, but in the way it is drawn into how people think, relate to each other, and understand their lives. Citing Basso (1996: 43) (after Tilley 1999: 182), 'it is this interior landscape – this landscape of the moral imagination – that most deeply influences their vital sense of place, and also ... their sense of self'.

Yet hardcore environmental archaeologists have lagged behind in integrating their data into this kind of social landscape, as Edmonds (1999a) points out. Links with phenomenology were already in place in the Mesolithic in Britain, with movement of small, dispersed communities 'along traditional, well-worn, pathways and a return to places that had been used in earlier years or by older generations' (ibid.: 488). History, here specifically of ancestry and origin myths, allows easy access to places along the routes. Links with cattle, vegetational history and gift exchange may be forged; 'as much as a source of wealth ... as a source of nutrition, herding provided a new medium through which to categorize and differentiate people' (ibid.).

This style of sociality is fashionably referred to as 'agency', the establishment of social condition by individuals or groups through the mediatory influence of land or indeed any part of the social or physical environment (Dobres and Robb 2000). At its simplest, agency is the arena of a single individual establishing ease within his or her own mind without any resort to the outside world. More usually, it is bound up with two or more individuals establishing relationships between each other through the mediatory articulation of some kind of setting (social or physical). Agency is exemplified in individuals' life-histories, the establishment of their ontological security, and how they go about their lives. But often (and importantly), much larger interest groups – from specific age-gender combinations within a community, like pre-pubescent girls, to entire nations – can be involved in agency-driven practices (Dobres 2000: 133, 199, 213). This is important, because agency is often thought to involve individuals alone.

We begin to see how Site Catchment Analysis is so flawed. Land is not neutral, but is used in an active way to demonstrate identities, construct metaphors and articulate power. Settlements are positioned so as to be visually expressive. The easiest options in terms of economic production

and access are not always taken since social value can be a greater consideration. And so we have entered a phase in our history in which environments are seen as being used by people to mediate their social worlds.

INTERPRETIVE ARCHAEOLOGY

Deeper theory sees society as being continually under construction through a nexus of minute agency-style interactions. The creation of socialities is always on the move. This harks back to Heidegger (p. 13), but more closely it harks back to Shirley Strum's baboons (p. 8) and the way she saw constant exploration, establishment and disbanding of unions among individuals in an effort to understand the whole troop. Importantly in this, it is not just the baboons or the people of the past that are involved but the scientists and archaeologists themselves: 'Society is constructed through the many efforts to define it; it is something achieved in practice by all actors, including scientists who themselves strive to define what society is' (Strum and Latour 1987: 785). Even concepts like identity are in question: 'baboons would not be seen as being *in* a hierarchy, rather they would be ordering their social world by their very activity' (ibid.: 789).

Archaeology has engaged with these ideas in the emergence of 'interpretive archaeology' in which researchers and their individual directives are foregrounded (Shanks and Hodder 1995: 5; Preucel and Hodder 1996: 7). Its relation to agency theory is quite complex in that the archaeologists themselves are exploring their own socialities through their work on the socialities of others; and as with agency itself, it can fall within the domain of individual researchers as well as larger, specific-interest, groups. It aims at breaking down the view of the past as a linearity – that is, a linearity from excavation to material remains, and from material remains to interpretation – by drawing the lives of the archaeologists and the lives of those they study together in a single endeavour.

In foregrounding the researcher it allows them to use archaeology as a means of understanding their own lives and positions in society. I see in my own School of History and Archaeology a spectrum in this: some of my colleagues are driven by passion for their subject irrespective of their own or others' security and ease; some are driven by fastidiousness and detail as displacement for deeper research; while others are not especially interested in archaeology, using their job (administration or archaeology) to establish themselves in wider eyes. For each, there is an agendum of agency, but it varies in its relationships with the individual and the wider world. For groups, too, this applies, and again constructions and use can be various. Conventionally, archaeology is understood as the study of material remains of the past, and as such it is a real subject, believed in and participated in by people of many ages and walks of life. It gives meaning and satisfaction to

their lives. More agency-related is the socio-political management of the past (with which we have been familiar for longer than the formal recognition of interpretive archaeology), as in political-nationalist manipulations of ethnicity (Trigger 1989), the establishment of Green movements through the use of climate data, and the appropriation of ancient monuments into the ceremonies and ritual of neo-sacred societies like the present-day Druids (Piggott 1968). This kind of multiplicity of interpretation and use is one of the hallmarks of interpretive archaeology. Taken to extremes, it envisions archaeology as an art form, with each experience being an act of creativity, the goals as much about the lives of people present as those in the past.

Environmental archaeologists have tended to be conservative in the adoption of the interpretive position, keeping within standard paradigms of science. But it would be nice to see a wider agenda in which the active role of the physical environment, including articulation with contemporary social issues, as advocated by O'Connor (2001), and the lives of the environmental archaeologists themselves, is explored and accepted with honesty. We could, for example, see the present increase in multi-raciality in the towns and cities of the United Kingdom and other western states in the light of similar events from the past and as something which can be articulated through food. The Roman period saw a significant increase in different kinds of imported food plants, especially in the cities, and this can be correlated with wider trade links in the early centuries of the Empire as well as increasing multi-raciality as a result of settling army veterans. But we could also see this increase in botanical diversity as an active easing of these colonizations, with regard to both the native and the immigrant population, just as white people today in western towns embrace cuisines of the Orient. Likewise, the employment of foreign labour in coastal resorts in Britain finds an echo from much earlier times in coastal Breton Mesolithic sites. At two cemeteries, women – and especially the younger women – exhibited less dependence on marine foods than the men, suggesting some of the women marrying in from inland communities (Schulting and Richards 2001), perhaps from farming groups. Maybe the rejection of marine foods – the fish and shellfish diet of their compatriots – was a conscious opposition to their men or to their new ethnicity. There were also differences between the two cemeteries, with women in one having been more focused on land-based foods than those in the other, so maybe such oppositions were being worked out between separate families or communities as well.

John Barrett (1997: 122) has written: 'How can we understand a past which we can never observe?' My reply to this is twofold. First, there is no past separate from the present, the two are one entity, time being a continuous engagement of accumulation and shedding of experience and knowledge; 'we', equally, are not separate from the past, being constituted through it in various ways – as living beings, as humans, as archaeologists and as individuals. This is one of the core concepts of the interpretive posi-

tion, it is about the constitution of ourselves and our communities through a past which is continuously changing. Society in the past was created as it was experienced and explored, in the words of Strum and Latour (1987: 785), 'through the many efforts to define it'. In the same way, through my exploration of the past, I create a present archaeology and society (and my own sociality) which are engagements of the two worlds as I strive to understand them both.

Second, what we engage with as the past is no less complete than the range of material culture that we engage with today. In interpretive archaeology, multiplicities – even uncertainties – of meaning are encouraged. To this extent it is embraced especially, although not exclusively, by prehistorians, perhaps as a questioning by them of the privilege of writing, and even speech, as media of explanation. But just because something is written down or somebody tells us something it does not mean that the information is any more truthful than the interpretation we might put on some pollen. I am sitting at a table. Why? Because in general, to do so is a part of western culture; more specifically and at particular times of the day, it is about eating; incidentally, it can be about security; yet ultimately it can be quite unimportant because it is a part of my avoiding doing something else. Usually, we would think about such an act in functional-materialist terms, but this takes away a variety of essences – of culture, dissemblance and sophistry. Even the uncertainty in interpretation is truthful to the uncertainty in reality.

The study of environments is done at once at the level of the data themselves. Data do not exist. Or at least they do not exist outside of interpretation: practice and materiality are one in that they are realized through meaning, they explore meaning and they create it (Barrett 1997: 122). Immediately I come in contact with the data, I am testing not only them but my responses to them and my social world. I am creating ideas, social relationships, new materialities and environments in my engagement with the material remains of the past.

But, of course, these are engagements with material which has already been involved in mediating the socialities of earlier lives. Meaning articulates with meaning. It runs through life-histories, ultimately to a time in a new sociality. In seeing any materiality, in whatever state, as relevant to practice, we are articulating immediately with the data interpretively and with its mediatory role (i.e. agency) in the past. So an equally pragmatic consequence of the interpretive approach, and of John Barrett's question in particular, is that every facet of material remains – what we call the 'archaeological record' – is of direct relevance to past human lives. Conventionally neutral materials like soil textures, fragmented bones and pollen grains can have been purposefully created and actively used as such by ancient communities and have been of as much significance in their lives as the landscapes, the animals and the vegetation that gave rise to them.

Soil texture can have been created for its roughness as a metaphor of land defilement and a means of assuaging guilt: cultivation, then, was a corollary of this, not a precursor. Hazel bushes can have been encouraged for the visuality of their pollen along a woodland edge (Figure 1.6) as a means of creating identity in a land and its people: coppicing and use of the long rods were a consequence of this. Bones can have been used in their scent and visuality to express meaning, as of ownership, territoriality or just presence, around the home or over the surface of the land (Figure 1.1, lower); which bones were present, which absent, their degree of articulation, their state of breakage and their surface textures (corroded, gnawed, with cutmarks, or fresh) can all be a part of these creations. Eating meat was quite a secondary thing. Even writing, the raw materiality of text, can be used as a means of wielding influence and power, whether the writing can be read or not: its use in land transactions and dispute settlements is an adjunct to this.

In fact any part of our experience should be susceptible to transference in this way. As Nietzsche wrote of our Sun (in *The Gay Science*): ‘Great star! What would your happiness be, if you had not those for whom you shine!’ (Hollingdale 1969: 20). And it was Nietzsche (among other nineteenth-century philosophers) with his perspectivism, his claim that ‘there can be no single perspective on reality that is objective and universal’ (Robinson



Figure 1.6 Hazel catkins, *Corylus avellana*, at a woodland edge near Caerwent, Gwent.

1999: 71), who foreshadowed the interpretive approach. Of course we cannot take this beyond the scope of the relevant ancient analytical powers. In the Breton example, discussed above, the isotopic composition of the human bones on which this study was based could not be understood in the Mesolithic, yet the re-use of two of the tombs after several centuries, one significantly including two of the young women whose diet was land-based, with 'the movement and manipulation' of the bones, indicates a continuing relevance. Mesolithic people may have had some concept of metabolism, even believing that the bones held an essence in relation to this. After all, it was Democritus in Classical Greece who suggested an atomic theory of matter, and he can hardly have been the first.

CONCLUSIONS

- 1 Environmental archaeology can be defined through a historical perspective and its relationships with the development of archaeological thought. In this way the problems of allying it with one or other of the sciences or humanities are avoided and it is understood in the way in which it was originally intended, as a management within archaeology.
- 2 Agency theory sees environmental archaeology as the study of the way in which people used past human environments to understand and reproduce their lives. I have sought to emphasize the social manipulation of the physical environment. I see environments as related primarily to the development of socialities and only secondarily to producing food or gaining shelter.
- 3 In this, many of the materials we use to reconstruct past environments were actively created and used in the past. I need to convince you that the positioning of settlements is about visual expression, that style of sheep flocks is used in a socially active way, that potsherds are scattered on fields as a part of establishing identity of individuals and communities, and that soil texture as a medium for plant growth is hardly important in the use of the land in the first instance. Environments are used in practical ways only after they have been established in the social domain, with the implication that practicalities do not take place in the most suitable land in terms of cost-effectiveness.
- 4 Environmental archaeology must be viewed as a personal social (including group) engagement with the past. This, the 'interpretive approach', entails an active articulation of the researcher with the materials, using them in the creation and understanding of his or her own sociality. Since this was how these materials were used in the past as well, the situation for the interpretive environmental archaeologist can get quite complicated.

SOCIALITY AND ENVIRONMENT

THE SOCIAL UNIVERSE: ITS ATOMIC STRUCTURE

Human beings, like animals, need to maintain peaceful relations, and much of our behaviour and indeed energy expenditure is about this. It is no accident that the three biggest taboos in human society are social constructs. Without the need for peace – that is, in a solely functionalist world – the concepts of rape, murder and cannibalism would not exist. Mechanisms for inhibiting sexual acts with any person at random, or killing and eating them – which, after all, in a world driven by cost-effectiveness would seem reasonable behaviour – involve restraint and respect. In humans, these are achieved not through a thought-out understanding of these prescripts but through the creation of socialities, and especially through security and identity. People need to be easy in their lives.

Individuals need to feel satisfied to be complete, and we have already looked at some of the ways this can be achieved in the academic world (Ch. 1, p. 15). In the simplest form of social engagement, there need be no involvement with other people at all; through religion or asceticism (and, indeed, aestheticism) many people lead a fulfilled life. To Lao-Tse and the Taoists of sixth-century BC China, social participation was an impediment to the proper development of the individual: ‘Could it be that the human condition, even the ways we relate to each other, is better understood by those who have opted out of relationships?’ (France 1996: xii). But then we have Confucius, with his philosophy of doing the right thing by one’s fellow human beings, of maintaining respect for not just oneself but for others. Humans are social beings. Interaction is a creation of peace and love in order that society survives:

It is through community – the on-going cross-fertilization of minds – that humans have been able to produce and maintain both culture (inward excellence) and civilization (external potency) And community is the highest moral value: good conduct, thoughts and actions properly befitting members of the human race are

those which follow from and express conscious identification with fellow humans . . . as against the mere immediate and natural self, the self rooted in and shackled by the world of actual existence. Community is reason, heaven, true happiness, lordship over nature; isolation and mere individual satisfaction are evil, the falsification of the human essence, continuing slavery to nature.

(Berki 1988: 14)

A bit excessive, maybe, but it makes the point.

Still, there is latent violence in each of us, or so Friedrich Nietzsche would have us believe (Hollingdale 1969; Robinson 1999). This is sublimated in the creation of identities, and in this we achieve power because identities can only be created in relation to other people. Both of these – identity and power – however small (and power may be nothing more than self-respect), are at the root of much social behaviour. There is almost a constant need to maintain an edge of self-respect – the ‘will to power’ – the basis of Nietzschean philosophy. However altruistic we like to think of ourselves there is always, in even the simplest of acts, a nuancing of power. In nuancing a particular result, like allowing someone to go through a door before you, or you yourself going through a door before another person, you achieve an edge of power.

Some of these interactions may not last more than a few seconds: we are not talking here about the establishment of permanent rankings. But the will to power, the maintenance of self-respect, is still a part of every act in which two or more people are involved, and as such – as the fine structure of society – it needs our close attention. As John Adams tells us: ‘The desire of the esteem of others is as real a want of nature as hunger – and the neglect and contempt of the world as severe a pain, as the gout or stone’ (1805: 28, cited in Mills 1956: 90). Take the concept of *hybris* in ancient Greece. Usually we think of this as arrogance, especially of the kind that invites disaster, but Nick Fisher (1992) has shown that this was not the meaning the Classical writers had in mind. For them, *hybris* referred to the affronting of someone intentionally, to a situation where one person deliberately offended another so as to achieve some sense of superiority over them. It may have been only slight, but it gave a sense of power. The person committing *hybris* needed to know something about the person he was shaming, what his response was likely to be, while in order for power to be attained the act had to be known about by the person being affronted. A sense of injustice, followed by reciprocation in anger and revenge, were likely consequences. *Hybris* was a social interaction.

We see a similar interplay in gift exchange, where respect between individuals is nuanced in the passing of artefacts or land from one person to another. But exchange is not just about swapping gifts or land; it is about acquiring objects and land of increasingly deeper history (and hence value)

and keeping them out of circulation for as long as possible. Wealth and status can be related to how much is given but also to what is held back (Weiner 1992). It is more about exchanging meaning than the objects themselves (*ibid.*), and ultimately it is about respect.

More nuanced and personal felicitations are described by Pierre Bourdieu (1977) for certain Berber groups of North Africa. In the maintenance of face and respect, giving and receiving need subtle regulation if they are to achieve their aim of allowing the giver to feel a sense of goodness while at the same time enabling the receiver to feel pleasure. Gifts may only be given by certain people to other certain people, and the gift should be of a certain quality. A return gift should not be given too soon or be over-generous. And these nuances of practice, while known to both parties, should not be acknowledged. Checks are vital. We need our self-respect, but we need to ensure that others through whom we obtain this do not lose face in our so doing.

THE PRIMACY OF SOCIALITY

We can return to these cognitive structures in a short while, but first it is necessary to look at an issue which is at the heart of my philosophy, namely the primacy of sociality in human lives. How is it, when we spend so much time and energy in social engagements, that environmental archaeologists have almost completely ignored this in their interpretations? The establishment, maintenance and reproduction of social relations in humans and human communities is the fundamental programme of their lives. We are reflective beings, whether alone, in groups or as communities, and we spend a lot of time in managing our relationships. We love talking, if not so much listening – as Jane Austen (1818: 48) tells us in *Northanger Abbey* of Mrs Thorpe and Mrs Allen: ‘talking both together, far more ready to give than to receive information, and each hearing very little of what the other said’; we love watching, if not always being watched, with an endless fascination for faces and the personalities behind them (Zebrowitz 1998); and we love reading, most of all reading about people and their relationships, as of E. M. Forster’s ‘round people’ (1927: ch. 4), even if most of us do not write about them as much as we would like.

For me, sociality is the building of relationships between people or groups through a medium of mutual concern. This is agency theory (Ch. 1, p. 14). It operates at every scale, from the individual exploring and making sense of his or her own life to the identity and security of nations. The exploitation of the physical environment for the practicalities of life – materials, energy, shelter and sexual reproduction – is a means through which society is established and propagated. To get away from the primacy of this material world in environmental archaeology is a fundamental tenet of this book.

We can explore these ideas through a style of cultural landscape typical of the British Isles, the enclosed agricultural field. Fields have a traditional role in the management of domestic animals, either in preventing them from straying or in keeping them out of crops. The boundaries also have a useful role in providing physical resources such as drainage, windbreaks, breeding grounds and shelter for game, as well as for growing secondary crops like timber, fruits and reeds. There is a huge diversity of siting and boundary which is related to the physical environment, the economy and historical drives like parliamentary enclosures and tenure systems, and the social structure of communities. But this is to see things passively, as a direct mapping of human actions onto the broader structures of land and society for purely practical purposes.

A perspective in which the origin of land partitioning is seen as of primarily social origin would be looking at the nature – and probably the *changing* nature – of sociality that is referenced at the time of the establishment of the fields. It might be something quite subtle, relating to tensions within society as of hierarchies or gender: intensification of sociality might require an outlet or means of articulation to release such tensions and allow deeper, freer, communication of people (p. 31 below). On the other hand it might be something more obvious like the need for a colonizing power to express order or opposition to a native population. This could work through material style – a new form of enclosure, alien to the native lands like the centuriation of the ancient Romans – or it might work through sheer monumentality, or in a more practical way as a means of breaking up traditional transhumance routes and seasonal pastures (Ch. 8, p. 194). Enclosure might have the appearance of being practical and worthy, but at heart it is created as a socio-political manipulation: parliamentary enclosure in Ireland in the eighteenth and nineteenth centuries was as much about English rule and parliamentary strength as about agricultural reform.

Within such origins, more conventional roles in agriculture took place. Yet still the physical diversities of the new agricultural landscape could be appropriated as foci of social discourse. Fields mark territory or belonging; in their monumentality, they help communities come to terms with deteriorating pasture, flooding and the spread of peat (Ch. 5, p. 104); and, more narrowly, the process of their creation and maintenance (Ch. 3, p. 63) enables expressions of identity by specific age-gender groups, as by young unmarried women to older males, and their emergence as a cohesive societal force. It may be the exploration of a particular gateway for a tryst with a lover, or the creation of secondary boundaries as a means of working out relations within families. Repair of a dilapidated wall could be an engagement of further sociality, such as mending a rift with a neighbour. There may be groupings that cut across those of more conventional age-gender associations, such as itinerant specialists in terrace maintenance carving out a supra-regional niche

of their own. Ultimately, through a total remodelling of the system, there can be the signalling of a new ideology.

In all of this, whether it is the initial layout of the fields at a regional or even national scale, the infilling of the structure with finer divisions, the maintenance and repair of the boundaries, or the remodelling of the entire system, it is the social world that is being referenced as a primary concern. However, in examining this idea, it is difficult to establish the sequence of events owing to the complex way in which different levels of cognition and engagement are adopted in working out social lives and how they are realized as functional and social structures. And so we return to cognition.

STRUCTURES OF COGNITION

In the examples of *hybris* and gift exchange discussed above, the small-scale, personal explorations and testings of character take place within a more general social domain, of *hybris* usually with the young and *nouveau riche*, and of both in morality and honour. Importantly, the link with honour sets *hybris* within broader social and moral arenas, as in the development of legal institutions and ideas, of religion and philosophical rhetoric (Fisher 1992: 5). At root, each individual act of *hybris* involved just two individuals, yet as a deeply felt concept it pervaded much of society in ancient Greece. Equally, gift exchange in Berber societies is an important influence in the regulation of power. Yet there is no clear chronological relationship (i.e. in a historical trajectory) between the establishment of these different levels of cognition, between the small-scale, personal, explorations and the bigger structures.

Individual attributes of personalities and relationships are explored during waking hours, such as in the assessment of an individual as a suitable target for an act of *hybris* and the consequences to his character, or the weighing up of the nature of a gift that is to be given and the likely response to it. These are small-scale, individual assessments of the consequences of particular instances of behaviour, attempts to explore social relationships in the light of information in specific circumstances of place and personnel. They are actions of an exploratory kind, although with different scales and qualities, from raw meetings with entirely new kinds of people or situations in which no kind of prior experience can be relevant, to more repetitive meetings and establishments of relationships in which some previous knowledge about specific individuals is brought into play. These are usually very short-term activities.

'Schemas', in contrast, are heavily influenced by organized prior knowledge, from experiences built up generally over a period of time, for example that a particular type of person will be more susceptible to an act of *hybris* than another, or that a specific gift and the timing of its giving is likely to elicit

a favourable response. 'A schema [*pl.* schemas] may be defined as a cognitive structure that represents knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes' (Fiske and Taylor 1991: 98). 'Schemas facilitate what is called top-down, conceptually driven, or theory-driven processes, which simply means processes heavily influenced by one's organized prior knowledge' (*ibid.*). Schemas are recognized in cognitive psychology largely at the level of individual and small-group behaviour, but there are the grander embracements – or what we like to see as embracements – of ideology and social structure, which often lie at the edge of understanding, like angels between God and man. These are the areas that are often forgotten in more mundane matters, as when the Sunday Mass is lost in the godless days of the working week. It is in structures such as these that there is an understanding of *hybris* as a link with honour and an engagement with wider worlds of justice, or of gift exchange as an association between communities in the establishment of status.

In theoretical archaeology there is a similar disjunction (Barrett 1997), although here it is the schemas, especially of ideology, that tend to be foregrounded. Personal attributes, daily fears and decisions, and the ways we explore our lives through individual relationships tend to be forgotten. We have cosmologies of house use in relation to the movement of the sun and the points of the compass or as metaphors of the female body, but little engagement with the way people understood and used these in their lives (Tilley 1999). We have metaphors of the human life-cycle in iron-working (Hingley 1997) or of natural landscape features in our burial mounds (Tilley 1994, 1999), but not so much of how these are articulated in practice. This, admittedly, is harsh, and I have deeply benefited from both these authors. But I want to make a point, a point which Alasdair Whittle, in relation to the deposition of bone in the ditches of Neolithic causewayed camps, specifically at Windmill Hill, also seems to be making: 'The particular format of such patterned disposal is, however, constructed through routine reproduction of specific sets of cultural values' (Whittle *et al.* 1999: 355).

Yet routine fits uneasily in this contrast. In its very nature of constancy and predictability, it lies firmly as a schema, yet in being 'relatively unthinking and sub-conscious' (Whittle *et al.* 1999: 355) it would seem to belong in a less directed realm. Certainly it lies more in social anthropology than with social cognition; it goes unindexed by Fiske and Taylor (1991). And while practising archaeologists, as opposed to theorists, are involved primarily in the practicalities of the past, in routine matters such as the construction of houses, the quarrying of stone, and cooking, there is yet to be written an archaeology of the individual from a socio-psychological point of view.

The diversity of cognitive structures is complex, nor do they exist in isolation, there being a continuous switching between them. Links are often established through the environment as an aid in accessing these abstract worlds of the mind. For example, cues are needed to access religion during

the days away from prayer, and one of the ways in which different faiths are characterized is through these different materialities. The Church of England has few of these, especially material ones, the Roman Catholic faith more, as seen in the contrast in the living rooms of the domestic houses of these different faiths or the presence of roadside shrines in Ireland and their absence in England.

Then there is the question of the order in which these different levels of cognition are established. It might seem, for example, that the small-scale, individual, explorations are secondary to the bigger structures: 'We are, paradoxically, more aware of the contributions of the world out there than of our own contributions to our cognitive processes. As structured knowledge that we bring to everyday perceptions, schemas emphasize our active construction of reality' (Fiske and Taylor 1991: 99). This is reinforced generally by the fact that causation is deeply embedded in our minds as a concept from early childhood (ibid.: 58). There is an unquestioning acceptance of linearity here, and that this runs from the bigger-scale schemas to the smaller-scale assessments of behaviour. Yet is this really so? It seems quite reasonable to reverse the order and suggest that things arose at the level of individuals – of many individuals throughout society – testing their skills in social relationships, establishing small edges of respect and power. Yet how can this be outside of an overarching framework? Perhaps it is better to see individual attributes, the myriads of individual explorations and knowledge, as being expressed and understood through the medium of schemas as the schemas themselves are being created. *Hybris* could have developed as a social system from the exploration of young men in the area of honour and respect within such an infrastructure as it arose, gift exchange as a means of relieving tensions within society as ideas of respect and wealth crystallized. Individual explorations and bigger schemas are created only as they are brought into action, with the switching between different levels of cognition, between attributes and schemas, between everyday routine and higher planes of ideology, and the environments through which they are played out, as one of the ways that culture and society are brought into being.

THE FUNCTIONAL AND THE SOCIAL: SOME PERSPECTIVES

It is important to understand that different universes are being accessed here. We have made a contrast between the functional and the social, but this is not equivalent to any contrast in the various cognitive domains, between everyday explorations and schemas, between routine and cosmology. Different styles of cognition can be employed equally in both the material and social worlds: the continuous roving of the mind among different cognitive roles and their bringing into action through the environment makes

pinning down primacy in relation to functionality or sociality difficult. Indeed, in this may lie an entry into how these different worlds are to be characterized at all. It is a bit like trying to define atoms in their role in reactions; or identifying sensory or motor-specific activity areas in the brain as they are brought into action: 'perhaps neurons in the visual cortex form transient groups for processing highly specific patterns under particular circumstances' (Greenfield 2000: 72); or even, as we saw earlier, like defining society as an engagement in its exploration (Strum and Latour 1987) (Ch. 1, p. 15). Creation is mobilization.

Some definitions are in order. Partly this is a question of the biological perspective we put upon human behaviour; partly it is how individuals perceive different activities; partly motivation or direction are important; and there is also a question of semantics.

In one way, accepting an opposition between 'functionality' (or the practical order) and 'sociality' is an issue of sociobiology in that some would see all social behaviour as rooted in a Darwinian evolutionary framework and, in this sense, as being adaptive or functional. My view of animal behaviour (Ch. 1, p. 11) disallows any sharp distinction with humans so that even with an origin in our animal past much of that behaviour is non-adaptive. Outside of such a link, it is clear to me that there is a distinctive socio-cultural part of our lives which has nothing whatsoever to do with biology (Sahlins 1977). Moreover, does it really matter in the context of a book about relations with the physical environment whether human behaviour is evolutionarily adaptive, grounded in our animal past, or of a cultural origin, arising *de novo* in the immediate human condition?

Definitions are also a question of the constructions that we as archaeologists put on these terms, of how we interpret relationships. For some people the distinction is straightforward. Here is Wendy Davies (1982a: 51) on people shopping in modern Britain: 'they buy food; the act of buying it is neither an aspect of some other relationship nor an obligation to continue the relationship'. No confusion there! The relationship between shopping and people is purely functional.

Yet shopping may be a way of establishing sociality, of making us feel easier with our lives, even if we do not actually understand this or do it discursively. It may also be of a deeper societal origin, relating perhaps to the decline of local facilities or increasing unemployment, both of which trends can be of relevance in the establishment of social ties. Here is William Rees-Mogg (*The Times*, 6 September 1999) on just such an issue in relation to anxieties over the decline of town centres: 'Voters experience shopping as a social activity; there is therefore potential pressure behind these anxieties.' In this view, what is undoubtedly a functional activity is seen as lying within the social domain. Childhood experiences, of a direct or indirect kind, can also have a psychological bearing on our willingness or otherwise to engage in shopping. Or shopping may be more about the trips

to and from the shops and the socialities they entail than the actual business of shopping. Both the historical trajectory and the dynamic medium may be more significant than the locale of the shop itself and what goes on there.

Motivation is also important, whether the purpose in establishing socialities is discursive or not. The problem here is that, even in our own lives, the difference between the subconscious and actually knowing why we are doing something (discursiveness) can be blurred (Ch. 1, p. 17). We impose order through our desire for it, especially in the security of causation – cause and effect – which is a basic human need from our early years. But this is a construct, and if we are to understand the origin of particular social and material structures, we need to get underneath such schemas or at least incorporate them in our theories of what went on. For example, it is functional to move out of someone's way as they approach you in the street, and from that a social engagement may follow: here functional considerations are primary to social ones. But is this true? Maybe we are walking in the street in order to establish some kind of sociality in the first place so that the business of getting out of someone's way, although functional, lies *primarily* in a social objective. Intentional behaviour allows choice in relation to the environment, and that allows decisions to be made in relation to other people as well; non-discursive behaviour, on the other hand, may be more in the domain of instinct and lead to more environmentally mapped, determinist, behaviour. But I am not sure how useful this difference is.

Partly, too, the distinction is a matter of semantics. You could say that all kinds of relationship and practice are functional, if by this is meant that they function in relation to the quality of life, that they ease the condition of an individual or group. If self-respect allows us to function better, then its acquisition or diminution is functional. Even if it is through behaviour that does not involve anyone else, it is as much functional as our state of physical fitness. For me, on the other hand, all behaviour – all interaction with materiality and the raw business of life – lies in the social domain. I see absolutely no activity of even the smallest, most practical, kind as lacking a social component. Ultimately I see no room for a separate functional domain at all.

ENVIRONMENT

Environment can be the physical or the social environment: I make no distinction between these when I refer to 'environment' in an unqualified way. It can even refer to one's own inner self: that is still environment. But to socialize within a wholly social medium is difficult: usually some sort of interface with the physical world is necessary. At its most basic, environment is where things happen, what Erving Goffman (1969) calls the 'setting', Peter Dickens (1990) the 'locale'.

The simplest way of looking at things is to see the same locale as being differently used. Thus an English cathedral, like Salisbury, is a centre of Christianity and worship, a shrine for saints and a resting place for bishops, knights and kings. More mundanely it is where local people, through this grander symbolism, make sense of their everyday lives. Even if some of their activities are only marginally related to religion and burial, or not at all, like alcoholics drinking in the precinct, the Mothers' Union meeting in the Dean's chambers, or two people talking in the graveyard, they are still constituted in an understanding of the locale as a cathedral. This may seem determinist, but we cannot deny the role of environment in this way when such a concept is so deeply held in the human psyche.

Mostly, however, an environment, as well as being variously used in the mediation of human relations, is variously perceived in the first place as, or even before, it is brought into use. The setting or locale is not neutral, so in a way the contrast between 'locale' and 'locality' is too harsh. People choose where they do things, partly as a means of controlling a situation, partly to be easy in association with particular kinds of behaviour, and partly as a prescript of tradition.

History and tradition are important. In the case of land enclosure, people may use walls and fields to structure relationships among themselves, but they choose these areas because they already relate to them in their social lives, as with age or gender oppositions during the harvest, because they are familiar with them, and because the fields were themselves constructed as a means of social engagement in the first place and so have their own depth of meaning in the social domain. To this extent, the setting is socially constructed, or at least understood, even before any explicit social engagement starts.

So with the City of Cardiff, which most people see as being sited at a facility for the global trade of coal and steel: there was a Roman fort which itself probably related to an Iron Age presence in the region, there were road links to the west, the east and the north, and later there was a fourth-century strengthening of the fort to counter the threat of seaborne raids from Ireland. A small Medieval town had little to do with coal and steel but it was one more accumulation of meaning in a past which led to the ultimate building of the Cardiff of the Industrial Revolution. Of course there was a practical part to all this in the taking in of existing urban facilities, but it was its deep and layered history that drew the Victorians to establish their town on the pre-existing site. Even today, with the present commercial and university city prone to extensive flooding and atmospheric pollution, with soft subsoils unsuitable for the foundations of substantial buildings, and a fragmented and impractical Victorian core, inertia in moving the entire city to a greenfield site rests more in an attachment to the place and its history than in the problems of relocation.

It is easy to see a linearity in these different influences, with the physical environment preceding the establishment of sociality, yet we need to think

about this in terms of the relationships between different kinds of social cognition.

There is no problem in seeing religion, ideologies and big social structures like urbanism as originating in a bottom-up way, through the influences of many individuals across society; even if such structures were the genesis of single individuals, such individuals themselves arose as a function of society as a whole. Likewise, it is easy to suggest that such monolithic entities could be deployed as a means of social hierarchical enhancement and the bringing into being of one or a few high-status individuals as their servants. Equally, the material manifestations of such entities can be seen as coming into being in an agency-centred way, that is as media of social expression. What is not so easy to understand is how these materialities – the cathedrals and the diocesan structure, the extensively planned field systems, and the towns and cities – could have been created through the social relationships which were ultimately to be played out within them. Yet this is what may have happened. If we can see ideology and religion, for example, as originating not just in major driving influences of a unitary kind like slavery or famine but as the wishes and needs of all members of the community, then it is equally possible to see their material reifications as originating in a similar way. The materiality of urbanism, religion and ideology was brought into being as a means of satisfying the diversity of small-scale socialities, and those right across society, which they ultimately experienced.

Cardiff of the Industrial Revolution may have been a suitable location for a port and a taking in of history, yet its growth was enhanced in a deeply felt need for civic expression in rivalry with adjacent steel and coal ports like Port Talbot and Newport, a need, moreover, which echoed a similarly expressive origin in the earlier Roman forts. Yet these forts and towns were merely the surfaces of engagements in a deeper sociality, with Roman settlement and the Industrial Revolution themselves coming about as a means of satisfying tensions in society and thus, too, being of agency-centred origins. Why, otherwise, did the coal and steel industries arise at such a late stage in history when the technologies for both were well known centuries earlier, including deep mining back into the Bronze Age? Why, otherwise, was the Roman settlement of Britain so long in coming?

Equally, although I am not saying Salisbury Cathedral was built as a meeting place for the Townswomen's Guild or as an arena in which the Bailiffs of the Close and the resident alcoholics might engage in their daily social skirmishes, reading William Golding's *The Spire* makes one realize how much was entailed in local social relationships at all scales, at least during its construction:

Jocelin knew these men better than he had ever known anybody in his life, from the dumb man, to Jehan. He was a part of the crew. Clinging, crouching in the lee of the skin, his angel always at his

back, he began to handle wood and stone, to lay his hand to a rope, or his weight to the end of a crow. As for the men, they called him 'Father' but they treated him jocularly, like a child.

(Golding 1964: 153)

Future needs and use at the local level may have been foreseen, wittingly or subconsciously, and fed back into the construction of the completed building, completely negating any ideas of a linearity from high schemas of religion, through the construction of a cathedral, to its lesser use in everyday lives.

So, also, it could be with the fields where we started this inquiry. The usual scheme sees enclosed landscapes, such as those of the Middle Bronze Age, Roman centuriation, or eighteenth- and nineteenth-century Britain, being established in a framework of regional or state ideology and government. These may have been agency-centred in being expressions of power, difference or monumentality (i.e. they were social rather than functional engagements) but they are still seen as creations from the top. But it need not have been like this. It may have been that the later activities of people at the individual level of trysts, repairs, exploratory engagements of any kind, may already have been in place in society generally (indeed almost certainly were) before enclosure came about, and that the specific materiality of enclosure was a recognition of this emplacement and future satisfaction. Even if secondary infilling lay within a scheme of partible inheritance, this itself can be seen as an enabler of these more local relations rather than their cause. It may even be that in their construction, fields were envisaged and planned as to how they might be seen and used in their ruin, centuries and millennia into the future.

We can push further back and look at the origins of sociality in humans, a state that would seem to relate to our habit of living permanently in close communal groups. Biologically, one might say that this aids in the long period of the dependency of children on their mothers while the brain is developing and the complexities of social life are being learned. On the other hand, sociality may have emerged from nothing and be a basic universe within which everything else is set – including the long dependency of children on their mothers.

SOCIAL INTENSIFICATION

In our discussion so far I have concentrated on fairly major changes or differences in social and functional states, but we can also think about changes that went on within these, and especially in the social domain. 'Social intensification', a term already introduced in the preceding section, is about an increase in the numbers of social contacts in a given place and over a particular time, as well as in their focus and demands. It is especially

about contacts that people bring into action as a means of maintaining and reproducing their social lives. An increase in the frequency and numbers of people involved in a gift-exchange system would be a case in point, as would the move to more public engagements seen in early cities, with their dense housing, market places and stoas. Similar public intensification took place at the beginning of the Neolithic with the creation of public monuments, specifically in the forecourts of chambered tombs (Figure 2.2) and the embanked circuits of the causewayed camps (Gosden 1994: 162). Archaeologically, intensification is best identified through the number of nodes in particular processes, as arises in the domestication of cereals with their strict and complex scheduling (Ch. 10, p. 231). A general consequence of intensification is specialization, a concomitant loss of knowledge by individuals of the full range of processes in production, and the feelings of alienation that this entails (Dickens 1996).

In a way, each of us is a nucleus of intensification, greater in our sociality than as a neutral individual. Certainly, for a given group of people, the degree of sociality reflects a wider world than the area in which the group is situated, and to this extent, too, constitutes social intensification. Small interactions of meetings, conversations and visits always acknowledge a broader framework of where the members of the gathering live in a city, their wider family contacts, their friends and colleagues, and even their compatriots from their wider country of residence whom they do not know. People construct their individual and local lives in the image of these wider worlds as a means of security in themselves and as signals to others. In that individuals and groups draw in influences and meaning from the wider world, intensification is a pervading feature of society. It occurs as nuclei of varying size and intensity in a wider, less densely social, world.

In some ways, 'social tension' might be a better phrase than social intensification, especially where change occurs as a build-up within groups or communities. We can liken it to the processes which go on in an individual where there is a build-up of tension in the desire to do something, such as taking drugs or committing a deviant crime. Or we can find a parallel in groups, such as rave parties or dances where hallucinatory practices can lead to intense levels of urgency and arousal. At root, this kind of build-up is endocrinal or neurophysiological, and indeed in prisoners and addicts this is often the origin of such tension, with suppression as a contributory factor; but often there is a social or psychological component as well, and in society that is largely where such tensions lie.

Thus social intensification is not just a concentration of people and their relationships but of societal and psychological essences as well. In the narrow and dense environments of inner cities with their dense and crowded housing, there are often higher suicide rates and civil unrest than elsewhere (Saunders 1985). These are seen as having been brought about by the specific environment of the inner cities, with their tensions, intensities of rela-

tionships, higher local temperatures, and better opportunities for expression, but at the same time they originate in a reflection of wider societal ills. They are only inner-city phenomena in the sense that they are developed there. The inner cities are not their genesis. In other words, the relation between town and country is not just a purely spatially interactive one but one in which there is a drawing in of sociality, an accretion as knots of intensification (here in the dense housing areas of inner cities), reflecting both the wider urban and rural environments as a whole.

Returning to our earlier discussion, there is no intimation of causation here. Intensification of subsistence or the development of urban life are not seen as bringing about social intensification, even though they may enhance and maintain it. It is the development within society of tension in the first place which is satisfied through a particular material form rather than the other way round: intensification is an exploration of the domains of sociality and materiality through the mutual needs of each. Thus change may come from within society, even in societies of a quite extensive trajectory, as in some generalized hunter-gatherers or small religious communities who experience considerable social engagements in conversations and daily routine. The changing facial structure of hominids in the European Palaeolithic from the Neanderthal form, with its strong lateral emphasis, to that of the Cro-Magnon with its greater presentation of the frontal view may have been a development of this kind (Ch. 9, p. 209), perhaps a means of dealing with some sort of social discomfort. Later on, in the Upper Palaeolithic, the development of formal camp-fires with stone settings and seating was another engagement of social intensification which could have been a means of concentrating and expunging some damaging, but otherwise invisible, social force. So, too, with the development of crowding in cities: this was a means of aggregating general essences of society and spilling them out literally onto the streets, almost so that society could be purged. It puts a different light on the use of these inner-city areas as living laboratories for human population studies, as done by Malthus and Darwin.

Social intensification is established in more than one place through people's lives so that different styles can be experienced, as in daily movements around the home and annual ones in the agricultural cycle. In practical terms, this ensures that we are not doing everything in precisely the same place and, in the case of hunter-gatherers or agro-pastoralists of semi-arid lands (Ch. 8, p. 189), it lends itself to the optimization of resources as they become available through the year. But I would see these movements as lying basically in the social domain. They ensure a diversity of locales and meetings between people, thus enriching their social lives, especially in respect of the exchange of experiences which can be valuable in later life. Even today, there is little education about impending life-cycle events, especially those that are likely to cause trouble. We try and combat things when they go wrong, for example with psychoanalysis, but there is little preparedness.

There is, it is true, the concept of 'social storage'. This is the establishment of social relations as insurance against harvest failures or floods, an affected family being helped by an unaffected family close by, or, in regions of sparse resources and widely flung communities, the use of common styles of artefact to signal mutual recognition (Ch. 5, p. 113). But social storage is about the maintenance of material needs rather than social ones, and even though the former may assist in promoting the latter, there is no explicit focus on learning. True, too, there are 'rites of passage' but these are formal and ritualized, relating to very specific and narrow life stages: they do not satisfy the more pervasive societal needs for being generally prepared throughout life.

I see a domain of social intensification in which learning about the future is its heart. This often works best through activities which draw together combinations of individuals who are unfamiliar to each other and in settings and with material accoutrements which are outside of the daily routine. In childhood, close relatives who are not the parents or siblings of the people concerned, such as grandparents, uncles or homosexuals, people who have the experience and the knowing, yet are distant from the daily routine of the families in question, provide an education of this kind. For adults, it can be much easier with strangers. Dog people know this well and can talk to other dog people in the park, people whose names they never know, about the most intimate problems and details of their lives. The most public places often allow the most private conversations and engagements. It is the same in inns. In archaeology we have strange arenas like oppida and causewayed camps which provide locations for communal gatherings. Or there are the upland meadows or lowland coastal saltmarshes where the family goats and cattle are taken by the young people from several farms at certain times of the year, thus allowing exchange of ideas and experiences of their burgeoning sexuality. Much of Jane Austen's writings are about just such annual gatherings, but in the locale of spas or other centres for 'seasons' in which families who were normally strangers met up with the express purpose of learning about marriage. On becoming old, there is need for serenity and communion with fixed and ancient places in the land, like the trees and barrows along parish boundaries. There is a need for examining one's life, as in the setting of a temple or some peripheral arena like a smithy or a mine, and as so beautifully brought to life in the fictional autobiography of the Emperor Hadrian by Marguerite Yourcenar (1959).

TAKING IN TIME

The use of environment in the mediation of socialities – what we have called 'agency' (Ch. 1, p. 14) – goes along through time. The relations that take place in locales and their constructions as localities are linked in a spatio-temporal development in *chaînes opératoires* (Dobres 2000). These are the

sequences of social meaning and relationships which are mediated through different stages in the manufacture and use of tools, constructions and landscapes, as well as in the reproduction of more abstract schemas, including social relationships themselves. It is this use of the environment that constitutes the *chaîne opératoire*. The *chaîne opératoire* is not just the sequence of manufacture but the development of social relations at different points along it and through it (ibid.: 154). People can plug into these at any time and at any stage as a means of engaging with each other and establishing socialities.

Importantly, engagement can take place before the relevant processes are manifest – for example, just by sitting around a camp-fire *thinking* about hunting – and, indeed, the processes may be originated in the desire for some kind of social interaction in the first place, be agency-driven. And it can survive in memory alone for centuries, brought into being through the social manipulation of decline or decay – of broken pottery, regenerating weeds in abandoned land, the long years after a coronation. In J. H. Fabre's (1937) opening lines of *Social Life in the Insect World*: 'In the world of creatures, as in the world of men, the story precedes and outlives history.'

The concept of *chaîne opératoire* is often used in connection with the manufacture of small artefacts, especially in the Palaeolithic – which is where the term was originally used by André Leroi-Gourhan (1943). But moving around annually and supra-annually brings into being another, grander, *chaîne opératoire*, one of places and lands which can be immense, and in which the lesser ones of artefacts, structures and landscapes are embedded. We can most usefully extend the meaning of the term to encompass these wider, longer, processes of engagement. And this is not just a matter of tidiness: it allows us to understand activities in different levels of time and space, like the three time levels of Braudel, as operating through the single medium of social expression, while yet retaining their individual relationships with the social or physical-environmental worlds (Ch. 1, p. 5) (Braudel 1949; Bintliff 1991; Gosden 1994).

The concept of the *chaîne opératoire* entails an accumulation of meaning, so that abandoned fields and dumped rubbish, for example, can be more meaningful than their initial creation and use. We find active engagements with dereliction and antiquity, with dumped materials being preferentially used in new structures (Figure 2.1) and ancient Neolithic tombs being specifically selected for the siting of later buildings (Figure 2.2). In early Anglo-Saxon England in the sixth and seventh centuries, churches were built of stone taken from Roman ruins. This was not just the re-use of 'impressive building dedications, architectural ornament and massive blocks of stone' (Eaton 2000: 128) but the entire fabric: nothing was quarried from virgin rock. 'Not only were the builders of the church targeting the most monumental Roman settlements ... they were targeting the most impressive buildings within them' (ibid.: 129). Sometimes Roman styles were used in new buildings, as later in Neo-classicism (Figure 2.3), and as further



Figure 2.1 The re-use of antiquity. Late Roman wall in the Athens agora, built around AD 280, showing the re-use of ancient building materials, including column segments.

appropriation, Roman sites themselves were often selected for the places of new churches (Figure 7.5). This was a part of a wider appropriation of *Romanitas*, seen in the taking of estates and elements of the former legal system (Ch. 7, p. 165). Far from being a cost-effective way of using existing resources, this appropriation of the Roman past was about the legitimization of Anglo-Saxon social order in status and authority and its endowment with greater meaning in history (*ibid.*: 124). Could it be, even, that this was the origin of these early Anglo-Saxon churches in the first place? In the tenth and eleventh centuries these practices fell into abeyance, not because the sources of Roman stone were used up (*ibid.*) but because of changing ideologies and different ways of referencing them, for example in the newer trend to documentation (Ch. 6, p. 132).

These ideas suggest that dilapidation and decay (or what we consider as such) can be of greater meaning than the pristine artefact or land. They also indicate a conscious understanding of the wider spaces and longer durations of *chaînes opératoires*, and an active engagement with them. Some of the Roman materials re-used by the Anglo-Saxons were selected from sites 40 km distant, and in the Roman world as a whole, quarries for specifically important stone were established in distant countries, as with the quarrying of granodiorite (a coarse-grained, highly decorative, igneous rock) at Mons Claudianus in the Eastern Desert of Egypt for use in buildings in Rome.

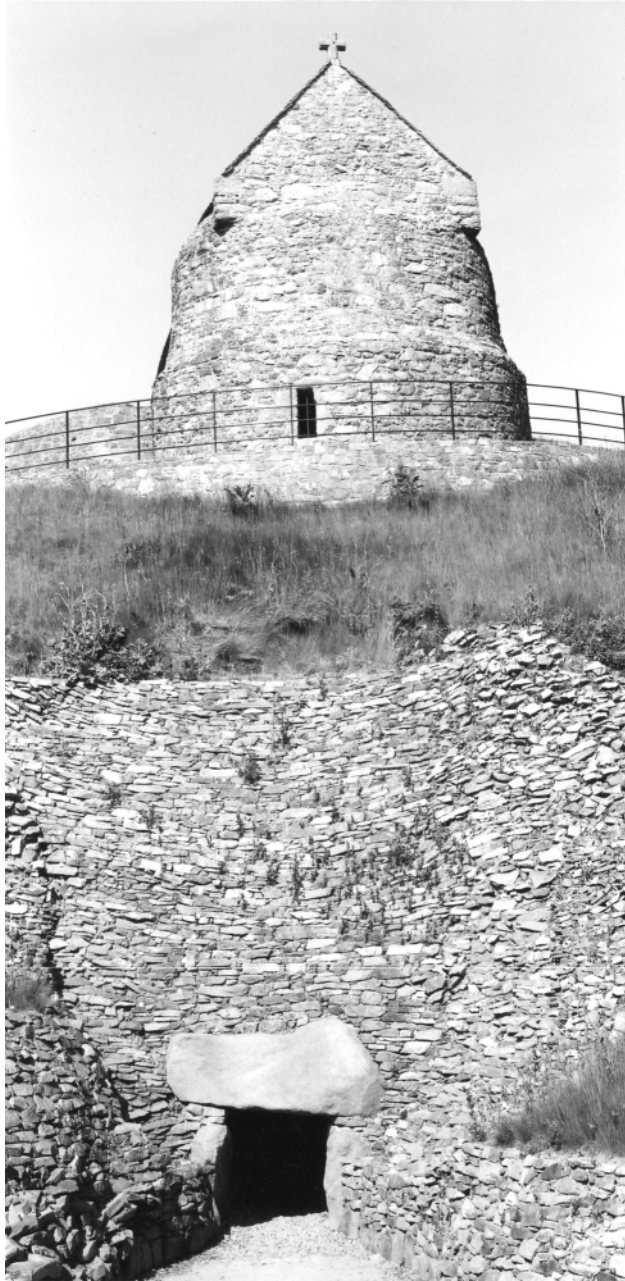


Figure 2.2 The appropriation of antiquity. Neolithic entrance of La Hougue Bie passage grave, Jersey, and the Jerusalem Chapel on the summit of the mound, built in around 1520. The chapel incorporates the twelfth-century Chapel of Notre Dame de la Clarté; the Tour d'Auvergne was built in the later eighteenth century and demolished in 1924; the base of the mound was used as a German communication centre in the 1940s.



Figure 2.3 The influence of antiquity. Sphinx and Neo-classical façade at Harewood House in Yorkshire.

In addition, antiquity may have been not only appropriated but deliberately created, as prehistorians have long suggested for Neolithic long barrows where dumps of stone (known as extra-revetment) were placed over the dry-stone walls and façades to give an aura of dilapidation (Figure 2.4) (Grimes 1960). It can even be that future dereliction was engineered. This is how Adolf Hitler and his architect, Albert Speer, saw their planned architectural edifices in Nuremberg and Berlin, not as flourishing architecture but as a memory of the Third Reich in Neo-classical ruins. It can apply to landscapes as well. Maybe the creation of fields in the Bronze Age was planned as a future dereliction; this at least would explain why their banks and walls are so insubstantial.



Figure 2.4 The creation of antiquity. Ascott-under-Wychwood Neolithic long barrow, Oxfordshire, cross-section at the edge of the mound. The excavator Don Benson, to the left, and W. F. Grimes examine the stones of the ‘extra-revetment’, possibly put in place to give the monument an ancient look.

In these ways, *chaînes opératoires* are consciously being brought into action over wide areas of land, both at the scale of regions and in long durations of past and future time.

DIFFERENT MATERIALITIES

We need to look at physical environments, the materialities through which we implement social engagements, in the wider scheme of things (Figure 2.5). First we need to ask about world views, why their adoption is necessary at all. Clearly individual choice as much as the spirit of culture or political institution plays a part and there are different intensities and levels of involvement; yet all peoples have a cosmology. More particularly, the question of having a world view is not separate from an inquiry into the adoption of specific kinds of world views, why some people’s lives are based in religion, others in more secular ideologies like climate change. Nor is there a hard-and-fast distinction with the choice of materiality used to implement such schemas, although we tend to think of this as coming further down the chain (Figure 2.5). Social articulations with materiality, for example in slavery or

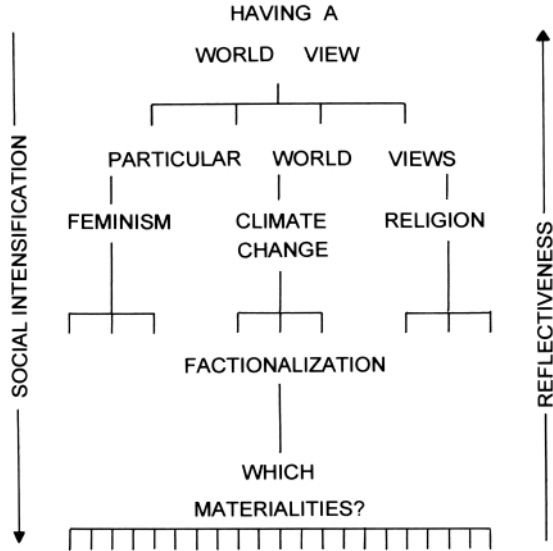


Figure 2.5 Relationship between world views and the materialities through which they are realized. The scheme is hierarchical but, importantly, it is not progressional since materialities can reflect back and influence the world view.

famine, can bring about infrastructures like new religion. But still, as different kinds of identity, abstractions like local community, nationalism and gender must be considered as more deeply embedded than engagements in the specific materialities of everyday lives.

History is a part of it, as Sarah Delamont (1995) in her anthropology of western Europe shows. Cultures cross national boundaries and to understand this we may have to look back over hundreds of years. Often it is change that acts as a trigger. In today's trends of devolution and the break-up of empires, nationalism provides a bond, especially for peoples who are still a part of larger states, like the Welsh and the Basques, or where a people are embraced by several, as with the Kurds. Technology and understanding are also significant. The rise to prominence of global conservation is in part a result of satellite images and measurements of global atmospheric changes; more generally it is a result of images of distant galaxies and the discovery of planetary systems other than our own. Yet the recent trend to an interest in ecology, such as in various styles of global climate change, seems to be under reversal as interest in Islam refreshes the relevance of religion.

Once broad schemas are in place, factionalization ensues, providing more diverse cosmologies, as with the current complexities of difference between

Islam and Christendom or the branches of Christianity and the vicious sectarianism they have evoked through history. The Green movement is equally divided in its aims and values, while the lay public vacillate over the relative relevance of global warming and new ice-ages according to the prevailing weather. Sometimes these factions reflect socio-cultural diversity, as with different branches and directives of the feminist movement, sometimes they reflect power struggles within the ideologies as a whole as with the fragmentation of some nationalist movements, and sometimes they are related to different strands of economic history as in different styles of Christianity.

There is also a question of how real these entities are and how stable. We need to ask about identity and community as concepts at all – rather than as their specific styles. People may identify with particular ideologies as an exploration of society and their selves without retaining a longstanding membership thereof, identity as ‘identification with’ or ‘opposition to’ being more important than specifics. The fact of difference, opposition to a stronger neighbour, is what matters; whether of fission or fusion is immaterial. Much ethnic tension is about difference generally, fear of difference and fear of the ‘self-confidence in knowing’ which pervades other cultures. Yet still the specifics matter because they give societies their cultural essence and are the media through which socialities are articulated.

At the level of materialities themselves, choice may be more directed or cognized than with the higher abstractions of ideology and religion. It often originates in specific articulations with the social world that is being referenced, and with more discursive management. In a way it must be so if we are to retain our *raison d’être* for archaeology as an accountability of cultural diversity in materials and practice. Two kinds of articulation can be recognized. One is a response to general trends across the core of society, as with social intensification; the development of cereal agriculture with its sequences of multiple engagements in the processing of grain is a good example (Ch. 10, p. 231). The other is more specific, relating closely to the changing social order – ‘social archaeology’ as so often understood – as in the development of surpluses of wealth and their manipulations by just a few individuals in the creation of status and power (Ch. 10, p. 223).

Then we need to ask why particular materialities and not others are incorporated in social interactions, why the Classical Athenians used *hybris*, the Berbers of Algeria subtly nuanced gift exchange, the Inner Maniats of the southern Peloponnese war-towers and revenge killings – all bottom-up schemas of individual relationships and acts – to articulate their will to power. Why do we find one or a few dominant modes of expression in society and many subsidiary ones (Ardener 1975)? Clearly there is only so much materiality, including that of the social and ideological domains, that can be brought into our lives. This, for example, is a big problem today in education, of deciding what is generally known, what is relevant to the future and what to discard. It is also one of the reasons life in cities is so confusing: we are so

overburdened by the multiplicity of ways in which sociality can be accessed that we are losing direction. This is an important question, practically, because it helps to address the materiality of environmental archaeology, and more fundamentally because choice in the media of social expression is related to how people see their worlds and how those worlds are reproduced. It is crucial that we understand this, otherwise we will end up with a kind of Giddensian abstractness of agency practice where any materiality serves. The idea that specific materialities arise randomly (within the pre-prescripts of technology and the practical order), that relationships are played out through a neutral materiality, cannot be sustained. People and their culture are a lot more imaginative than that.

There are two perspectives here, one, that of the nature of the social group itself, the other, that of condition or state, essentially the abstract environment.

Taking first the nature of the social group, at base is social structure, dominant groups (where they occur) deploying dominant modes of expression, subordinate groups muted ones (Ardener 1975; Bailey 1994: 196). Then, the size and nature of the group are relevant. For individuals, interests are in the self and may thus be of an existentialist or at least singular kind. Culture and history may be subordinate to the influences of personality and personal psychology. Age and condition in personal life-histories are important. People with families and a busy working life find importance in practicality, something they can articulate and are familiar with. In contrast, specific age-gender groups which lie within or cut across family and kin, like sexually mature but unmarried women, newly married brides relocated to their husband's home and clan, ageing men close to the end of their lives, and other interest groups like lesbians, religious and criminals, are more anchored to fashion than life's practicalities. For the young, in contrast, novelty, as with strange religions, is important, as in the adoption of Islam in Britain today, especially by young women. Minority groups, or groups with a minority say, also favour religion because unlike politics or Green issues there is no necessary involvement of other groups. Religion is self-contained: other ideologies often need opposites for them to work. But groups with a minority say can also use means which involve directly the nature of their marginality, like feminists engaging with the issues of feminism. In all of these, expressive responses may be driven and coloured adventitiously through whatever means are at hand rather than by closely tied self-interest or traditional culture. Some adoptions may be quite unconscious, like fashion in clothes or first names, while others may be seriously directed, like nationalism. This is all very contemporary and familiar, yet in environmental archaeology these issues have hardly been addressed. Hodder's (1990) study of early agriculture in Europe as situated in the ideological realm is perhaps the closest, broadest, treatment, while local studies have suggested relevances of woodland clearance and other forms of landscape modification as relating to gender identities.

Then there is the abstract environment. Choice is often driven by practicalities and familiarity, especially where there are economic and social benefits, as with the taking in of the Roman world by the early Anglo-Saxons (p. 35, above). We see it in stately homes where a conflict between the deep history of aristocracy and the trim of post-modernity is played out in their changing roles, difficulties of maintenance challenged through the fabric – literally – in a diversification of use but one which is yet dependent on the nostalgia of history. Culture is important. In Britain we are highly constrained by bureaucracy – in examinations (Britain’s children are the most tested in Europe) and in an Orwellian intensity of closed-circuit television cameras – so a physical response in the enclosure of land, for example, is unsurprising. A period of education or propaganda is often necessary in order that new modes can be understood, which is why technological change usually takes place incrementally instead of as quantum leaps. The long public debate in nuclear physics and atomic weapons eased the social acceptance of the bombing of Hiroshima and Nagasaki. Timeliness – or a perception of timeliness – is also relevant: new modes of expression must be *felt* to be needed for them to be successful, as with research grant applications. You have to be ahead of the game, but not too far ahead. Style needs to be within the consciousness, but *just* within it: it is a question of striking a balance between eccentricity and the ridiculous. We see this in the fashion in Chinese furniture and other material culture in late-seventeenth- and eighteenth-century Britain, and in the succeeding Japanese vogue in the 1880s after Chinoiserie had waned. Much materiality is covert and subversive, for example of women’s fears as Hodder (1986: 105) discusses in the decoration of calabashes in the Baringo district of Kenya; in the Breton Mesolithic (Ch. 1, p. 16) where women from inland areas maintained their land-based diet in a predominantly littoral cuisine; and in the emergence of national languages as a result of oppressive regimes as Figes (1996: 73) discusses for nineteenth-century north-central Europe: ‘as in Russia, literature in Poland served as a metaphor for politics’. Materials and concepts can also work in a subconscious way: awards in the media and ratings in education serve to legitimate the system but, at the same time, deflect pressure from a questioning of the very existence of the media and education as institutions at all.

These are only some general considerations, and there is much flexibility through different qualities of cognition. Groups of different sizes and interests occur in relationship to each other, so it is meaningless to address specific groups and conditions in isolation. Nevertheless, the kind of response we find in material culture and environment in the establishment of social relations is not utterly random but related, at least in part, to the nature of the social identity or need and the nature of the group that is being referenced.

CONCLUSIONS

- 1 In human lives, social relations are primary to the practicalities of economics and procreation. The minutiae of sociality, its atomic structure, comprise relations of power and respect between individuals. These are brought into being through the interplay of various cognitive domains, such as large structures of ideology, smaller ones of routine, and the explorations of totally new situations and experiences.
- 2 Their establishment and reproduction take place in mediatory engagements with the environment (known as 'agency'), which is mainly through the physical environment but can include such abstractions as demographics and ideology.
- 3 The chronological order of development of functional and social articulations and different scales of cognition is difficult to pin down because they are brought into action through mutual use. Nevertheless, it can be argued that big structures of environment and cognition were created as a result of individual referencings across the board of society, and that what we see as secondary articulations are in fact of primary relevance.
- 4 Social intensification, the process whereby concentrations of sociality form at particular times and in specific places, allows various kinds of relationship and social tension to be explored. The release of general societal malaise in inner-city environments, the exploration of future life-cycle problems in the unusual aggregations of transhumance, and the evolution of facial profiles in early hominids are likely consequences of social intensification.
- 5 Relationships are established through time and place as *chaînes opératoires* of technology and environmental manipulation, as well as through wider movements over the landscape at an annual and supra-annual scale. History is especially important in this. If we view history in environments as being used in a socially mediatory way, then different levels of time can be integrated in a single structure of relationships.
- 6 The precise nature of the references that people and communities use in the reproduction of society relates to a variety of factors. Different styles of religion or ideology are established in relation to current articulations with the social and political world. Equally, the nature of the material world is not neutral, selection of specific styles of materiality in the environment through which to engage in the social world being related, for example, to familiarity and practicality as well as personal or group condition.

3

TEXTURES HELP A PERSON THINK

The fine texture of the land surface is an important referent in terms of its visuality and feel. This is at the scale relevant to the soil scientist, the ecologist and the farmer, the scale of the soil and the vegetation itself (Figure 3.1) rather than the bigger undulations recorded by archaeologists in their topographical surveys. It is the scale experienced by the agriculturalist when tilling the soil, weeding and harvesting, or that of the gleaner of grain. It is the experience of people collecting surface mineral ores, or dung or dead wood for fuel or fertilizer. It is the closest, most intimate, scale with the land surface that can be experienced under everyday practices of living. At its greatest it encompasses natural features like ant-heaps and termite mounds which could be recorded by field archaeology but which usually are not.

Often we think about soil surfaces in terms of agriculture (Figure 6.2), and it is true that this is an area where texture has widespread relevance; even for those of us who are not involved in farming, walking over cultivated land in the wet is an encumbrance of clodden boots. But other kinds of surfaces have just as significant textures, like woodland, meadows and the pavements and tarmac of our urban and village lives, and there are many parts of the world, the arid and semi-arid lands, where a permanent and continuous vegetation cover is quite exceptional (Figure 6.9).

The experience of textures beneath our feet at these qualities and scales is rarely acknowledged as a medium of social agency. The colours, consistencies, textures and stoninesses of the soil surveyor, the fabrics and micromorphological descriptions of the soil scientist, or the vegetation cover-scales of the ecologist (Magurran 1988) are used in an agendum of description and analysis of processes and history rather than as characteristics of human experience. But this, surely, is a mistake. It is at its surface that we are in constant, immediate and close physical contact with the land, so it is inconceivable that there is no relevance in this beyond that of sheer materiality or function. Land-surface textures can be used in the business of manipulating social expression.

Textures help a person think.



Figure 3.1 Texture in vegetation in the Preseli Mountains, Pembrokeshire. Different styles of gorse bush, *Ulex* sp., one young and closely cropped by sheep, one old and straggly, and one dead with the branches snapped off for firewood.

EXPERIENCING TEXTURE

We need to understand texture in terms of individual particles, in terms of the conventional meaning of the word for soil scientists, sedimentologists and ceramicists, as particle-size distribution (Figure 3.7) (Courty *et al.* 1989: 35). This is not to exclude looser interpretations of texture, like the crumb structure of soil, its consistency and how it feels, or the surface conformations and break of pottery, but it is for the purposes of getting down to basics. It is an exercise in exploring the ideas of archaeological theorists like John Barrett (1997) who have proposed that there is no such thing as an archaeological record: anything we use as a way into the past was perceived and actively embraced by people in the past as well (Ch. 1, p. 17). This is more difficult to grasp with texture, which is not a big social issue, than with climate which is (Ch. 5). True, much of our lives is about texture and we actively create texture in wall surfaces, flooring, fashion and dogs, as did people in the past in the building stone of monuments (Cummins 2002; Whittle 1997) and likely in the coats of their cattle. But these are not issues of deep socio-political or even environmental significance: governments do not stand or fall on issues of texture.

The smallest particles, those of clay and silt, cannot be seen with the naked eye and were unobserved by humans before the pioneering work on microscopy, by Anton van Leeuwenhoek and others, in the seventeenth century. But the idea that stuff like pollen and loess, stuff which people experience as dust clouds, was made up of particles, was probably present in people's understanding early on. Partly this could have been with reference to larger grain sizes like sand and pebbles which are obviously particulate (Figure 3.2, upper): as sand is made up of particles, it is not difficult to envisage finer sediments like loess and mud as being similarly composed. And partly this is a question, as for Democritus, of philosophy. As a child, I was constantly taking pieces of grit out of my knees from falling on the path outside my home: I knew well the difference between paving slabs and grit. Texture is experienced when pebbles and boulders pummel our legs as we cross a fast-flowing river, when our bare legs are stung by sand as we walk along a beach (Figure 3.2, lower), or when dust gets into our eyes in a storm. We experience particles as irritation in our mucous membranes, even as sound (Ch. 7, p. 149), of sand grains hissing through the air. Like atoms leaving their trace on a tungsten plate, we do not need to see the particles to experience their effects and understand the particulate nature of the stuff.

Two important components through which texture is given greater meaning and understanding are spatial difference and time. In rock we see the environmental subtleties of its formation in different lenses of colour (Figure 3.3) and the way it is eroded by waves and animals millions of years on. In an eroding sand cliff we see the exposure of snails as protruding layers where they were laid down several millennia before (Figure 3.4). Under the electron microscope, the shells themselves are seen to have a textured surface of ribs (Figure 3.5A, B), hairs (Figure 3.5D) or papillae (Figure 3.5F), while corrosion and cracking give a depth of time (Figure 3.5C, E).

We can examine the use of textures in the social domain through pottery. Particles are included by potters in their clays. These can be of a diversity of materials – from chaff, ground-up pottery (Figure 3.6A), modern shells from rivers or more ancient ones from ground-up rocks, slag particles from metal-working, and mineral grit and sand (Figure 3.6D); they can occur in a diversity of sizes (Figure 3.6A, C, D), densities and sortings – poorly sorted (Figure 3.6B, E) or well sorted (Figure 3.6D); and they can be of a diversity of origins. Importantly, the particles can be seen and their origins understood.

Medieval fabrics from southern England often have large and diverse inclusions. Particles may be from river deposits already in the clay, of rounded quartz and recent shells, of various sizes (poorly sorted), and seemingly not introduced specially into the clay; there can also be fragments of ground-up pottery from the pottery-manufacturing area, of chaff from unswept floors, and large pieces of flint. Such diversity betrays an apparent randomness of clay preparation. In contrast, other fabrics have uniformly distributed and similarly sized (well-sorted) angular quartz grains, which give the appearance



Figure 3.2 Texture in beach sand. Upper: sorting of light (pale) and heavy (dark) mineral grains, Benbecula, Outer Hebrides. Lower: sorting of peat pebbles and mineral sand, Co. Mayo, western Ireland.



Figure 3.3 Texture in rock. Holes made by limpets for their homes in limestone (Old Red Sandstone age), Orkney Mainland; some homes are occupied by limpets, others have been abandoned and colonized by barnacles, and there are dog whelks. The texture of the rock is seen in the lower part of the photograph in lenses of paler material.

of having been specially ground and sieved or carefully removed from specific stages in the levigation of the clay. Much more trouble has been taken in the preparation of this kind of clay with its uniform texture than of the former with its diversity. But is this functional analysis the actual basis of these differences? True, more trouble is taken in preparing the second sort of fabric – the one with the well-sorted, well-distributed, angular quartz – than the first, but trouble taken in manufacture may not be as significant as trouble taken in *deciding* what sort of fabric to use in the first place and how to present it. Is it not more likely that the texture of these fabrics was used as an expression of sociality, as of the identity of the people making the pots or of the people by whom they were destined to be used?

For example, people could find satisfaction in understanding the diverse origins of the different kinds of inclusions – fragments of pottery from older vessels, fragments of iron slag and furnace debris, and material from flood deposits which has connotations with fertility. Some of these inclusions can be huge, especially in the large vessels of the Aegean Bronze Age, and can themselves include an earlier history of texture. Understanding could be enhanced through a knowledge of the spatial connotations of the different

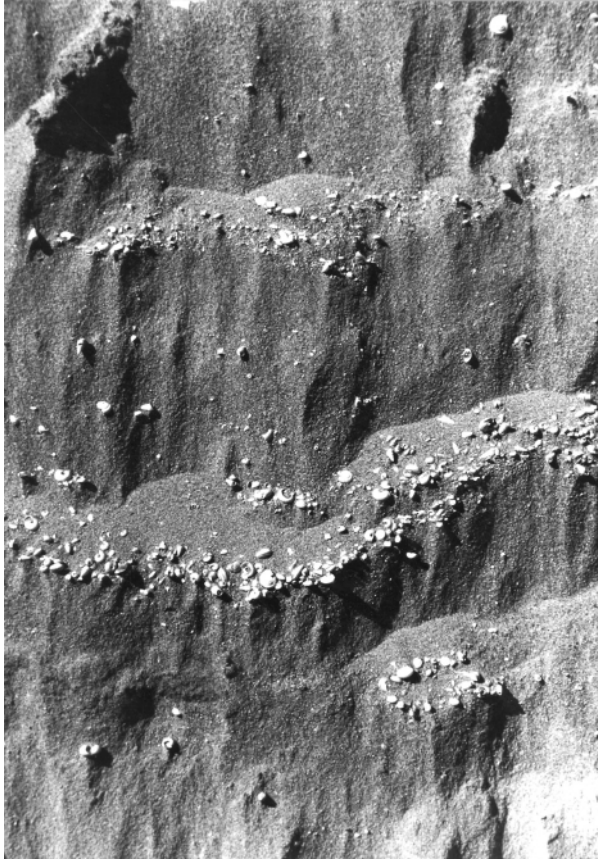


Figure 3.4 Multiple textures in fossil sand, erosion exposing layers of land snails, Stackpole Warren, Pembrokeshire.

grains, especially where they are from distant and recognizably distinctive geologies. Through these properties, pottery could be used in social expression in quite subtle ways.

Where the included material derives from local sources, the different inclusions may have meaning in terms of their context and social referencing in discard around the home and workshop (Figure 4.6) (Moore 1986). This would apply particularly to fragments of waste materials which have specific connotations in their use and disposal, such as slag and ash, chaff, and ground-up bone. Thus to include these materials in pottery is not just to give the fabric a general essence of space and time but to give it meaning in more socially immediate ways as well. The use of the pottery in a mediatory way is more focused in specific socialities.

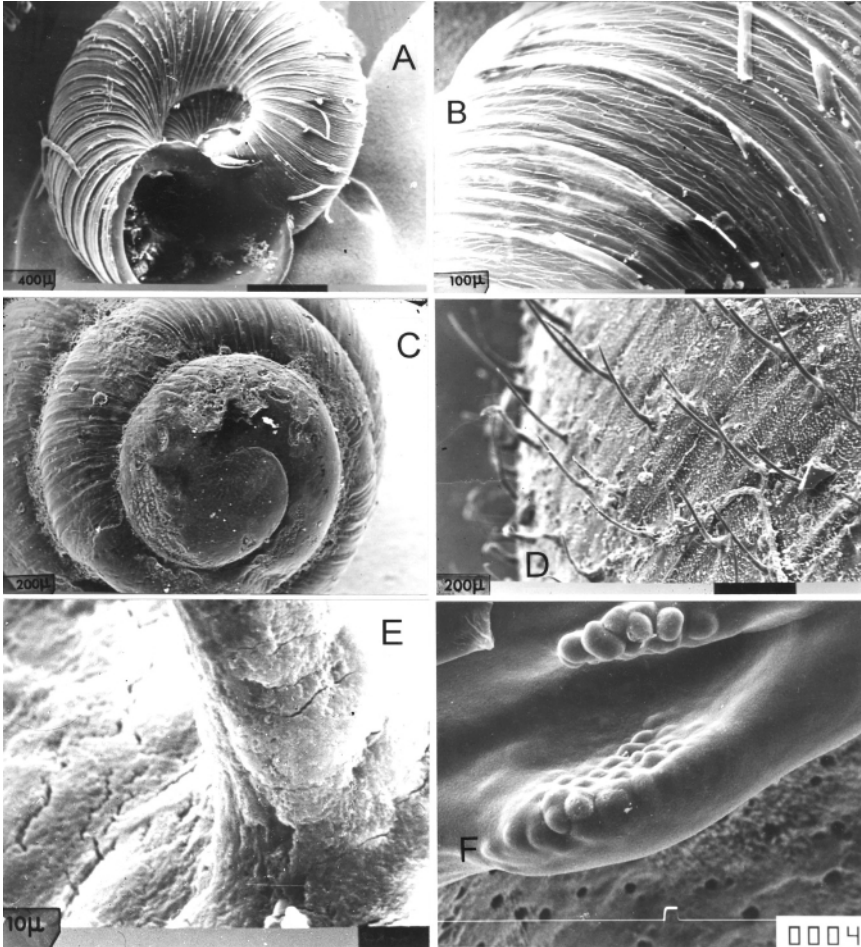


Figure 3.5 Texture in shell surfaces seen under the electron microscope: A and B, *Vallonia costata*; C, *Pupilla muscorum*, with corroded areas; D, *Ashfordia granulata*; E, *Ashfordia granulata*, a single hair-base showing cracking; F, *Pisidium nitidum*, 'teeth' showing papules of the locking mechanism.

Or it could be a lot simpler. With the non-standardized fabrics, one group of people may be expressing an opposition to society generally, in the same way that people today use untidy dress or are consistently late for lectures. Viking pottery from the Scottish islands, and probably from Viking lands generally, is poorly made, undistinguished, and with fabric textures that hardly make an obvious statement. But this is probably a carefully positioned opposition, and by a particular group in society, for these people were perfectly capable of beautiful craftsmanship as is seen in their antler- and silverwork.

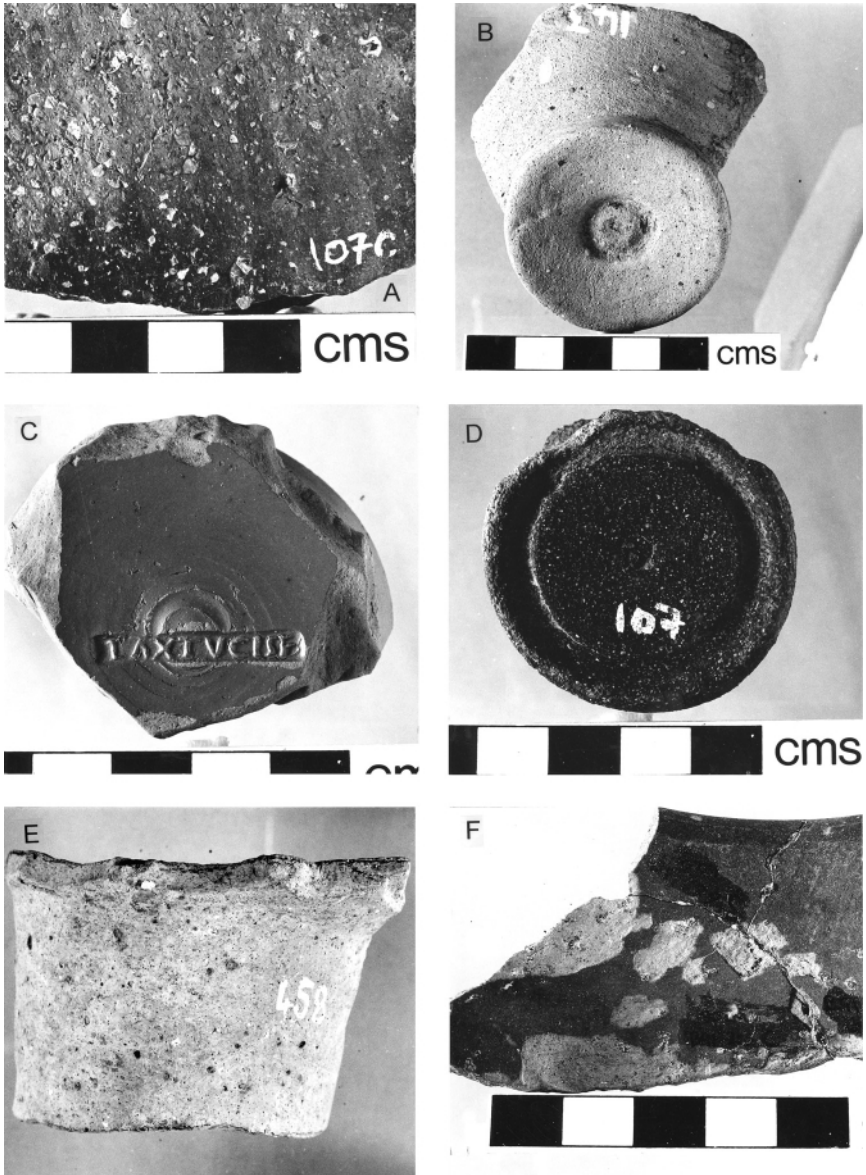


Figure 3.6 Texture in Roman pottery fabrics, Bossington, Hampshire: A, red grog-tempered ware, outside surface; B, grey-ware base with scattered and variously coloured grog; C, Samian ware base with the maker's mark, *Lxstucis fecit*, secondarily chipped into a roundel; D, quartz-tempered, black-ware lid; E, flagon neck with scattered and variously coloured grog, chipped around the flare; F, New Forest ware, exfoliated from secondary contact with heat.

At a wider scale, when pots are broken into sherds, meaning is enhanced in secondary use. This can be by heating the sherds, as seen in their exfoliation (the detachment of small flakes from the surface), revealing a different texture in the underlying cortex (Figure 3.6F) – curiously similar to the corroded shell of *Pupilla muscorum* (Figure 3.5C), although the latter effect is caused by acids in the soil; or it can be by chipping small pieces from them to convert them into roundels (Figure 3.6C, E). Even more widely, sherds can be used in the texturing of land, but we come to that later (Ch. 4, p. 81, and Ch. 6).

Texture is used in a socially manipulative way at the macro-scale as well. Different kinds of deposit, of different textures, bury the activities of ancient human communities and when this happens we usually say that the processes that created these deposits – like flooding, vulcanism or sandstorms – and the deposits themselves were responsible for the preservation of these activities. But this is to look at things in the conventional ways of archaeology, to think about the remains and the activities they reflect as neutral in relation to the overlying deposits. This is to forget John Barrett. The influence of the deposits which ultimately bury archaeology is usually felt *before* the burial process, so that the activities which are buried can be a response to the deposits which bury them, not their unrelated precursor.

Take loess. This is a wind-lain dust, finer than sand, coarser than clay, which blows around, often for hundreds of miles, in the atmosphere of dry continental interiors, especially around ice-sheets. It forms deposits upwards of a hundred feet thick and is responsible for the burial and preservation of soils, land surfaces and their archaeology, often of the Palaeolithic period. But initially it is laid down as infinitesimally thin layers, hardly more than a chemical influence, and because it is often calcareous and fertile it enhances the growth of the vegetation and the animals like snails and mammals which live off it. It was felt as an ecological influence before it was seen as texture. People were drawn to these productive areas and can have used them in expressing difference and strength, for example in big-game hunting as a means of establishing social prowess. There was a socially active integration of loess deposition into people's lives. So it may be no coincidence that deposits of rich faunal and archaeological remains at the cave of La Cotte de St Brelade on Jersey in the Channel Islands (Figure 9.3, no. 2) lie directly and precisely beneath layers of pure loess (Callow and Cornford 1986). In Moravia there is Dolni Vestonice and in the Ukraine there is Kostenki (Gamble 1999), just two of many Palaeolithic sites intimately associated with loess, and returned to time and again over millennia.

In general, people often choose to live in areas which are dangerous, like floodplains and the slopes of volcanoes, because of the potential that the soils in such areas provide for both practical and societal needs. Ecologists call the maintenance of such environments 'pulse stability' because their stability is ensured through the input of pulses of fertile materials. Often such environments are at the junctions of big ecosystems, as between dry-

land and lake, where they are known as ‘ecotones’ (Evans and O’Connor 1999: 53). The changing distribution of environmental patches within ecotones allows not only for significant partitioning of activities but for significant potential in social expression. There is probably an attraction, too, in the general sense of danger, which itself has socially expressive potential. Yet even at this landscape scale, it is still the particles, the texture beneath one’s feet and in the air, that matter, so we have come some way in understanding how they are drawn into people’s lives.

SOME STRUCTURE

Let us look at some structure. I see three trends in the incorporation of texture into human social action (Figure 3.7).

First, there is the trend from particles to structure as understood by scientists (Figure 3.7, no. 1). Properties of the particles such as size, distribution and diversity can be easily quantified, properties of structure such as consistency, crumb structure and surface roughness less so. The latter tend to be more subjective in their designation, more susceptible to social construction, than the raw properties of the particles themselves; they are the properties we experience in ploughed soils, eroding sediments and broken pottery.

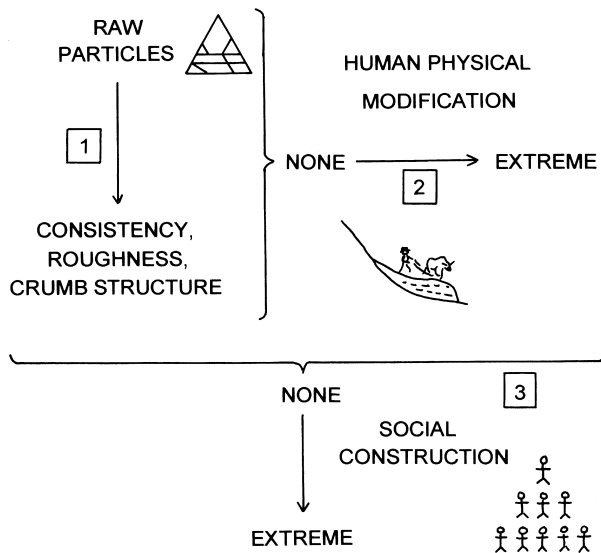


Figure 3.7 Different kinds of texture and their modification: 1, conventional modes (including the triangular diagram) are only a small part of texture; 2, modification through agriculture brings texture into the human sphere; 3, only in its role in establishing socialities can texture be fully understood.

Then there is the trend of human change of a soil or sediment (Figure 3.7, no. 2). At one end there is texture without any human change at all; in the middle there is texture that has been brought about by modification incidental to another process, such as ploughing as a means of fragmenting and aerating the soil; and at the other end there is texture which has been deliberately created for the properties of the texture itself.

The third trend is of perception and use in the social domain (Figure 3.7, no. 3). At one end there is the functional view, texture as relevant to agriculture, building foundations or thermal properties in pottery manufacture; this is the end that is relevant to most archaeologists and people whose lives are motivated through cost-effective terms. At the other end is texture as a social (or some variety of socio-political) construct where the quality of material, with or without physical human modification, is seen as a means of establishing understanding in people's social lives, as we saw in the case of loess.

Putting these three trends together, we can look at the combinations of extremes. Thus at one end is cold description – particle size and distribution, materials utterly unmodified by humans, and a lack of interpretation as to even functional significance let alone social construction. Even this, however, is not neutral, for it is only through western science that we know it as impersonal objectivity: it takes a certain kind of person to embrace the kind of raw ideal seen in triangular diagrams of texture (see also Ch. 5, p. 98, in relation to climate change). The other extreme is where texture is made up of properties like feel, appearance and consistency, in material which has been deliberately modified by human activity as a means of exploring social relations.

Interpretation begins at once. A simple situation is represented by the sand of a beach. At first we seem to have all the environmental information in front of us – the sand, its biology, the geomorphological context, the sea and the waves. But even at the start there are different perspectives, for example one's personal agendum and one's research agendum, which involve interpretation. Sedimentology of modern beaches as a means of understanding past systems entails quite a different style of engagement from that of their phenomenology, for example in understanding the loss of a human life. Scale is a further constraint. Strategy and sampling are related to this, and thus interpretive. For molluscs living in the sand, it is nutrient content, density and aeration that are relevant; in a wider study on the littoral fauna as a whole, a transect from the high- to low-tide zone in acknowledgement of the relationships between exposure, sediment gradient and biology is in order; while an interest in human safety entails measurements of density, water content and thixotropism. Recording is determined, too, by interpretational philosophy. Do we adopt an inductivist approach, treating the data in their own terms as of grain diversity, in which case we become susceptible to endless data collection, although ultimately with interpretive freedom? Or are we to make comparisons with analogous systems, where we stand closer to the

interpretive ideal but are constrained by a preconceived paradigm? And even if we draw on statistics, which may seem the raw soul of objectivity, we find Bayesian statistics, in which both data and *a priori* expert knowledge are the basis for interpretation (Litton and Buck 1995; Buck *et al.* 1996).

Yet while these issues break down the division between description and interpretation, in the end they are skirting round the core. Human beings cannot describe neutrally because being human entails interpretation. Interpretive archaeology, about making sense of things rather than about causal explanations, about creativity and so with no definitive account (Shanks and Hodder 1995: 5), is a part of this humanness. It is about how people, including archaeologists, use their surrounds, including archaeology, as media of social expression. And it is a question of how we write. We can describe a beach sand in detail, its organic content, how it might smell. We can envisage the responses of human beings to these as they walk across or disturb the sand while collecting lugworms and we can imagine the different discussions that might ensue. But none of this takes us far until we know how these sensations allow an individual to understand his or her life or how they are used by two or more individuals to establish a relationship between them. This is why I like the narratives of Mark Edmonds (1999b) or the diary entries of Barbara Bender *et al.* (1997) of their fieldwork on the stones at Leskernick on Bodmin Moor.

The girl Theresa walked her horse along the beach. The tides were thin, or so she thought of them, tides which barely fell before they returned; occasionally they stood still. Thin pools of water separated the drier sands in the near distance, although when she got to them they too were wet. Lugworm holes and casts were abundant and she stopped to dig out some of the animals. She felt free. But by experience she knew this should not make her sad: she could come here any time and her true home was inland.

Even back into deep geology, description has a human programme. In the end, raw description fails because it is meaningless. It can also be infinite, so where we start and, even more pertinent, where we stop are themselves interpretive.

NEOLITHIC AND MESOLITHIC TEXTURES OF SOIL

Breaking the soil

In temperate regions of the world the vegetation cover is often more or less complete, or at least it was before people started to cultivate the land. In woodland, there can be a closer vision of the soil, since it is often more easily

exposed beneath a litter of dead vegetation and mould, than in grasslands where the mass of tillers and rhizomes provides a shield. Even so there is intactness about these woodland surfaces because of the stability of the crumb structure of the soil. Slicing into this surface, as Neolithic people did, with flint knives or wooden ards, seems a crime. Even today, tilling land for the first time can evoke horror (Figure 3.8). In Britain, the earliest tillings of the land are associated with people who constructed monuments. Some of these are mounds, huge and architecturally refined, like New Grange in Ireland, Maes Howe in Orkney and West Kennet in Wiltshire and which served as tombs. Others are more subtle in their expression, in the form of enclosures defined by low banks and causewayed ditches, as at Windmill Hill by West Kennet and Etton in the Cambridgeshire Fens.

A lot of our information about the agriculture of the people who built these monuments is derived from contexts within them – cereal-grain impressions on pottery, the charred grains themselves, the bones of the animals they slaughtered and, in the wet conditions of sites like Etton where, accordingly, timber survives, their abilities in woodland management and use. The locations of these monuments helps as well. This is partly in relation to features of the topography as in phenomenological accounts (Tilley 1994), partly in relation to arable land and other agricultural resources like good grazing as seen through Site Catchment Analysis (Davidson 1979; Davidson and Green



Figure 3.8 Woodland edge and clearance, Bargrennan, Galloway, showing the contrast between woodland and the disorder of fallen trees and tree-plates.

1989), and also in relation to each other in territorial modes (cf. Figure 6.12). But it is also about the texture of the soils themselves, for in the case of some mounds there is a precise location at the junction of disturbed (or cultivated) and undisturbed soil.

One site at the southern edge of the Lincolnshire Wolds, Skendleby 2 long barrow, shows a part of the mound overlying a thick stone-free turf, even to the extent of being almost decalcified by long weathering, while another part was underlain by rubbly soil as if cultivated a short time before the barrow was constructed (Evans and Simpson 1991). At another site, Ascott-under-Wychwood long barrow in Oxfordshire, the mound lay at a junction of rubbly limestone soil, which had clearly been disturbed and supported grassland, and stone-free undisturbed soil (Figure 2.4) (Evans 1971). At a third site, the South Street long barrow in north Wiltshire (Fowler and Evans 1967: plate 36a), there were deep grooves cut into the chalky subsoil about 30 cm below the surface of the ancient soil in a criss-cross pattern, and Colin Bowen has suggested to me that this pattern was caused by the turning of the plough at the cultivation edge. The location of a fence line beneath the barrow at a stage even earlier than the ploughmarks and the evidence of molluscan faunas for a similar sort of boundary beneath another barrow at Easton Down only a few kilometres away strengthens the case for a boundary siting of these mounds (Whittle *et al.* 1993). Under the Beckhampton Road long barrow (Ashbee *et al.* 1979), situated on a boundary of chalk and clay, ox skulls were laid down (Figure 3.9) which are a part of this boundary symbolism.

This discussion suggests that barrows were sited in relation to previous land-use, but another possibility is that the disturbance of the soil took place not for growing crops but for the creation of the textures themselves. Textural difference may have been created by Neolithic people as a means of coming to terms with their feelings of guilt for the clearance and cultivation of the land and their displacement of indigenous people. Indeed, these boundaries of texture may have been created as a prelude to long barrow construction, however far ahead into the future that was to be, and at a precisely pre-planned location rather than having been formed in the course of agriculture. These textures, then, were an integral part of the long barrow, and the ploughmarks underneath the barrows created specifically as a part of the ground preparation even though preceding the barrow by many years (Barker and Webley 1978).

These sitings in relation to soils are part of a wider boundary setting (Figure 3.10), as seen in asymmetries across the mounds themselves and in their siting in relation to the landscape (Cummings 2002; Cummings *et al.* 2002). In the Severn–Cotswold group, the front of the barrows often faces away from the most impressive view. Those on the Cotswold escarpment are good examples, often sited with their entrances or façades towards the hinterland, away from the impressive Severn plain. We need to consider the soil boundaries in relation to the wider setting.



Figure 3.9 Beckhampton Road long barrow, Wiltshire. Ox skull lying on the Neolithic soil beneath the mound. (See Ashbee *et al.* 1979.)

Of course there are other possibilities for this kind of siting, such as the demarcation (through monumentality and its legitimation through ancestor worship) of home land which was intensively looked after by just one community, from common land that was less intensively used and came under the aegis of several communities. But I like the idea of guilt assuagance because it allows articulation directly with the texture of the soil. A flint knife from South Street made from a blade struck from a polished stone axe epitomizes the transition from woodland clearance to harvesting, and there was another with silica gloss: used as sickles, these were discarded but then perhaps picked up and used again for a different purpose. Here is a community telling itself and others through the texture of the soil that they are aware of the damage they have done to the land and that this is being taken into their lives through the softer medium of the harvest and the siting of the tomb.

Subsequent use of an area may be different from the initial engagement with texture. The siting of long barrows, especially at the boundary of virgin and cultivated land, may have been seen by people as a metaphor of their passage through life, especially in the easing of loss. A young girl, newly circumcised, may have softened her loneliness in knowing that the long barrow of her community had, too, been sited in relation to pain.

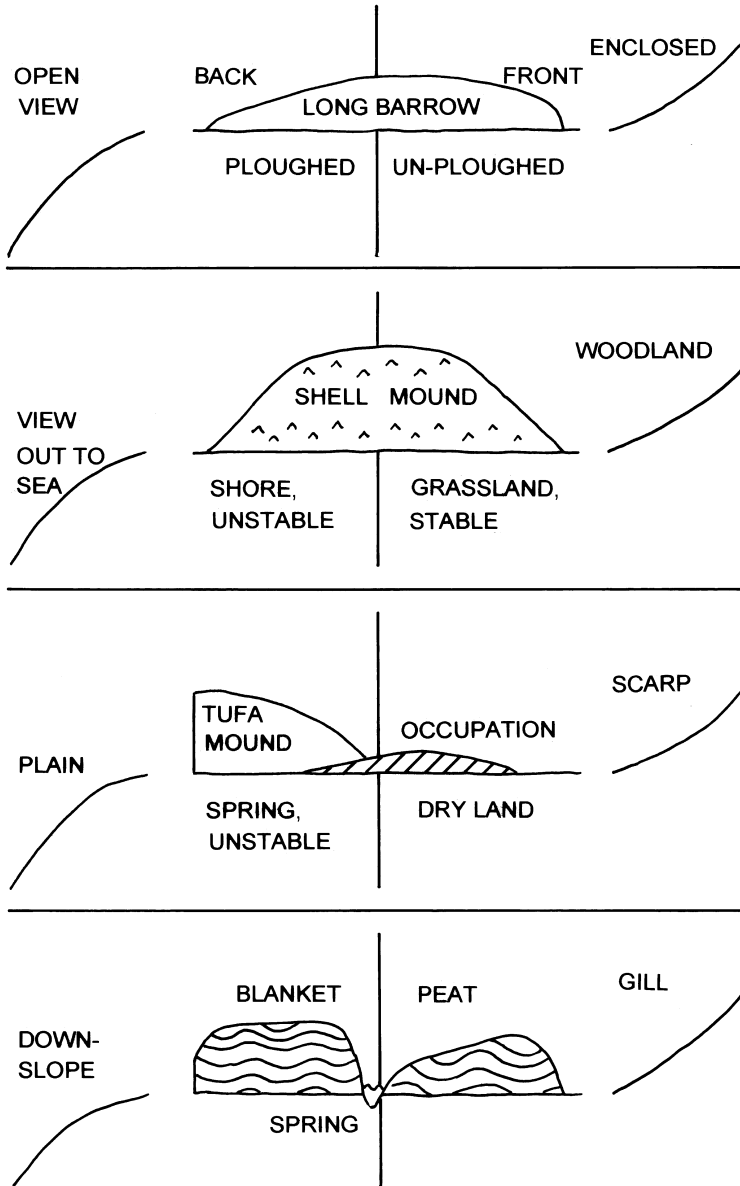


Figure 3.10 Edge locations of sites in Neolithic and Mesolithic Britain, showing the asymmetry achieved in combinations of different soil types and view. In each case, to the right is a stable land surface and a restricted view, upslope, woodland or inland; to the left is unstable land and an open view, downslope, open vegetation or the sea.

Before agriculture

We can understand these textures more easily when we see that similar contrasts occurred naturally in the period before agriculture. This was in the Mesolithic, a time of fewer opportunities for guilt from damaging the land and displacing people. Even so, several sites of stone-working and shell and bone accumulation, places of occupation and monuments, were set at boundaries of texture. Often such sitings are seen in terms of resource use like water, as in the case of sites at tufa springs, like Prestatyn and Caersws in North Wales or Cherhill in Wiltshire (Figure 3.10). But texture *per se* may have a lot to do with things. At Cherhill, there was a clear boundary between intact soil and broken areas where the spring water came through the ground, and the settlement location was precisely at this point, as well as being more broadly situated at the foot of a steep chalk escarpment (Evans and Smith 1983). So the situation is similar in its multiplicity of referencings to the long barrows. Cherhill consisted of a concentration of worked flint and animal bone, and the numerous narrow blades remind us again of female circumcision. Equally in upland moorlands, there is a correlation between the occurrence of Mesolithic flints and the junction of small-scale diversity around springs where there was broken ground, mineral soil and encroaching blanket peat, as in the North York Moors and the Pennines (Figure 3.10) (Simmons 1996). These sites are ecotones, places of pulse stability, where there is ample fertility and small-scale landscape diversity, so that as well as the symbolism of the textural boundary, the broader diversity could have been used in a socially mediatory way as well.

The pattern is repeated in the context of coastal shell mounds and cemeteries (Figure 3.10). They occur from southern Sweden to Portugal. Seals and fish were exploited as well as the shells that went to make up the mounds. But these are odd sites. In the Inner Hebrides, the Oronsay shell mounds are localized and discrete, and it has always seemed strange to me that they were formed by the incidental disposal of shells after meals. Surely these are deliberate constructions, and even if the molluscs were eaten, the collection of their shells and their use in the construction of mounds seems much more like an active policy of building rather than as a result of casual disposal. There are five of these mounds on Oronsay within a few hundred yards of each other and yet very few other signs of long-term occupation and structure such as would seem to be entailed if the mounds were thought to have been formed by disposal at a living site (Mellars 1987). Much more likely is that they are referencing some kind of textural boundary in the land, only here a natural one between land and sea. Some of the Oronsay mounds overlay beach gravels and so were positioned at the very edge of the high spring tides, while one at least was at the edge of woodland, as the land snails show. Human hand bones in the mounds attest to their significance in ritual, the hand perhaps a symbol expressing change (Pollard 1996). Hand

stencils occur in Upper Palaeolithic caves at change-over areas between passages and grand salons, so perhaps we are seeing in both these, albeit quite different, contexts an enhancement of boundary environment through monumentality and hands.

What was being referenced here? Transition periods in life are significant foci in a discussion of these sites (Pollard 1996), and again we may look at the lives of women. In the coastal sites of southern Brittany, the greater dependence on land foods than sea foods of the young women (Ch. 1, p. 16), as shown by the stable isotopes of their bones, suggests that they had come from inland communities (Schulting and Richards 2001). The boundary zone of shore and land provided a comfortable likeness of their own changing lives. This may have been directly through the texture of the ground, especially as these people experienced it directly through their bare feet. Shoes may have been a luxury or absent altogether for these people: footprints from the muds of the Severn Estuary of Mesolithic age show that at least a few individuals went without footwear at this time, even if the Neolithic Ice Man, Ötzi, of the Italian–Austrian border wore shoes at a somewhat later time. Waris Dirie describes her fear of showing her feet, so cut and malformed they were from the first fifteen years of her life when she walked barefoot, tending the family goats in the deserts of Somalia. She describes how she was taken out at first light some distance from the huts to be circumcised at the age of five, how the pieces of her genitals lay on a rock, drying undisturbed in the sun, and how two weeks later she returned to the rock, to find them gone, probably eaten by a vulture or hyena (Dirie and Miller 1998). The women of the Breton coast may have suffered similarly, perhaps as a means of maintaining a tradition of their inland origins in an opposition to their husbands and their new coastal lives. Or they may have been the children of those early wives. Eating food from the land (and not the sea) and the circumcision of their female children may have helped maintain their inland identity. As with Somalis and other African groups in Europe and America today, such practices may have got stronger, the weaker the links with their parent origins became. An environment of difference helped to see these practices through: textural differences of the land surface – the leafy forest floor, the coastal turf, the pebbles of the storm beach and the blasting of the sand – were likenesses of women’s suffering as they crossed the boundary from infancy to childhood.

STONES

Under natural conditions, in temperate climates (and I suspect in Mediterranean and semi-arid climates as well), the land surface is covered with vegetation. There are places where the soil and geology show through, as with tree-throw pits and landslides, but in general the surface is unbroken.

Overgrazing by goats and clearance of woodland and scrub breaks open the soil in places while cultivation reveals it more continuously. The underlying geology, which was previously masked by soil and vegetation, at least in a mature or climax state, is brought to the surface by ploughing so that there comes about a diversity in the texture and stoniness which is now quite visible (Evans and O'Connor 1999: 34). Now there are new soil and land-surface textures for people to explore. An immediate consequence of these processes is that stones are revealed. Whereas under natural conditions, vegetation and litter conceal even the stoniest of soils, and the largest stones, as may be seen today on parts of the Dartmoor woodlands with their thick blankets of moss, once break-up of the land surface starts, stones that had lain hidden, often just below the surface, are revealed.

Erosion can strengthen this effect, with the separation of soil from stones and boulders creating increasing contrasts of visuality, feel and even sound. Erosion comes about when the soil structure breaks down, when the crumbs which allow free drainage are reduced to the mineral particles and humus of which they were originally formed. Texture is experienced as the sorting of sediment and soil by the surface movement of air and water into a paler mineral and a darker humic component as the water runs over the surface of the ground (Figure 6.2, upper). Often the soil that is piled up against a wall or hedge as a result of wind erosion is no more than powder. It is the same with water erosion. First rilling, then gullying, scour the soil, moving fine particles downslope while leaving the coarser material and stones in place. The eroded material builds up against a boundary and creates a localized levelling of the land.

The areas from which soil has been removed by erosion display new resources of stone. These can be collected as building materials, as mineral ores, or as materials like flint and chert for manufacturing artefacts. The land takes on new meanings and reveals new locales for social movements. Stones can even be collected from the surface and piled into low banks at the edges of the cultivated areas in order to make them more distinct and the soil more tillable. There are some good examples of this happening in the Dorset Ridgeway in the Bronze Age (Woodward 1991).

In semi-arid countries, the situation is different: stones are more generally visible because of the sparse vegetation. Nadia Seremetakis (1991) describes how Maniat women collect stones from the ground surfaces in the areas around their homes in Inner Mani, southern Greece, and build them into terraces and walls (Figure 6.11). In this way they not only extend the land taken in from the wild but reinforce their place as women in society within what is really the men's domain. It is not just a question of collecting stone in order to construct agricultural land: moving stone around entails a construction of social complexities. Metaphors of order and women's work, like the equivalence of the pain of life and the pain of suffering of the bereaved, are played out in funerary rites; the inclusion of land with stones by women is

paralleled in the exclusion of men from the funeral laments; the stones of the fields and their emplacement as walls are likenesses of exhumations of the dead and secondary dealings with bones and skulls. It is all quite complicated. But maybe that is the point – scope for multi-semantic interpretation in ever mobile hierarchies of expression.

In the Isles of Scilly off the western tip of Land's End, prehistoric walls make up a system of fields which extend out onto the intertidal zone which was once dry land. Querns for grinding grain were incorporated into some of these walls (Figure 3.11). At Bar Point on St Mary's, the largest of the islands, the manipulation of stones went on hand in hand with the accumulation of soil and wind-blown sand in the development of the prehistoric boundaries (Evans 1984) (Figure 3.12). The location of this particular system may have been related to the blown sand which overlay it, just as we have already discussed for sites buried by loess, for the upper part of the buried soil profile was slightly sandy. The main lines of the field system were laid out on virgin land, as shown by the pollen from the buried soil. They are orthostatic in their architecture yet with a variation in stone settings that hints at an interplay of sociality at even this early stage. Cultivation led to some erosion and the formation of slight banks of soil between the main walls. Stones were collected and dumped on this material, often in basket loads as seen in their discrete distributions, to form secondary cross-walls. It was all quite complex. It may have been a convenient way of getting rid of stones or splitting up land where boundaries were becoming more frequently required through, for example, partible inheritance. But the individuality seen in the original boundaries and the discrete dumps of stones in the secondary ones hint that other things were going on and that the boundaries were in some way being used in a socially mediatory way. In modern boundaries in western Britain, the small-scale diversity of sequence in construction allows similar social referencing (Figure 3.13).

A similar kind of thing occurred on Skomer Island off the coast of Pembrokeshire (Evans 1990) in what was probably a Middle Bronze Age field system. Small dumps of stones still lay on the surface along the tops of slight banks of soil precisely where they had been put in prehistory. Around the periphery of the system, perhaps significantly in the more dramatic coastal areas, the boundaries consisted of large stones, each stone separated from the next by a substantial gap and so quite useless as barriers to sheep or cattle. We thought about robbing, but this seemed unlikely when there was stone in the boundaries closer to the modern farm buildings; sometimes modern and Bronze Age walls even ran next to each other. So maybe these orthostatic rows were original in their form and represented symbolic boundaries, like those proposed for Bar Point and Inner Mani. Today, seagulls enhance this symbolism, perching on the stones, marking them with their faeces, and working out their own relationships with their cries.



Figure 3.11 Isles of Scilly. Prehistoric field wall exposed at low tide and incorporating a large granite quernstone. Note the large felspar crystals in the granite.

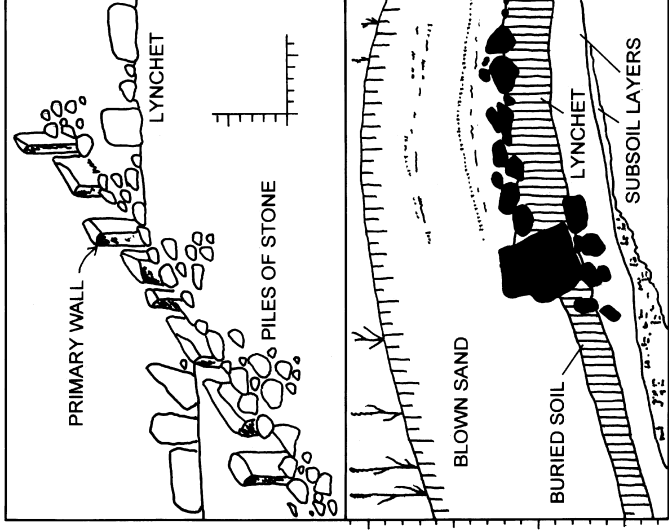


Figure 3.12 Bar Point, St Mary's, Isles of Scilly, excavation of prehistoric fields. Upper: primary wall with two secondary walls and lynchets. Lower: cross-section of secondary wall and lynchets showing the complex build-up of, successively, small stones, the wall itself, cultivation soil of the lynchets, and further stones. The dark lines in the blown sand are thin humic layers. Scales in 10-cm intervals. (Based on Evans 1984: fig. 9.)

TEXTURES HELP A PERSON THINK



Figure 3.13 Tresyssylt, West Wales, field walls showing a diversity of sequence. Upper: gorse, thorn bushes and fencing. Middle: large grounders, smaller stones and turf bank with gorse. Lower: stone bank, turf bank, thorn bush and fencing.

MARGINAL LAND: A DIVERSITY OF VISUALITIES

Lynchets

The downwash of soil over the land by processes which do not involve streams is often the result of cultivation. Some people call this 'colluviation', but when tillage is involved 'ploughwash' is a more useful term. Some of the terraces which are formed by this process, where the downwashed soil builds up against a barrier of vegetation, a hedge or wall, or just at the edge of cultivation, are monumental. Often they are on steep slopes or buttresses so this visual effect is enhanced, and there is a particularly striking series on the west side of the Test Valley in the vicinity of the Danebury hillfort (Palmer 1984: map 1). Perhaps in a sense they *are* monuments, deliberately created to express some kind of community identity. In the Middle Ages, huge terraces running parallel to each other, called 'strip lynchets', were created around the buttresses on the chalk and limestone escarpments of many areas in England and around the heads of dry valleys. Preservation is so good that the sloping ramps where terraces were joined so that agricultural teams could move easily from higher to lower levels can still be seen. The effort that was put into these endeavours was huge, yet the actual surface available for cultivation was minimal and can hardly have been justified in terms of returns in grain. It is certainly difficult to see these as a response to the conventional reasons usually given for their construction, namely of population increase and land pressure.

Plaggen soils

Another kind of land intake is on acidic soils in areas which are today heathland or lowland moors of gorse or heather. This has happened in The Netherlands, where the turf and soil is removed from outlying areas and transported to fields and land nearer the settlements where it is relaid to increase the fertility of the land. Such soils build up to considerable thicknesses and can be recognized by their thick humic layers, much thicker than a conventional brown-earth soil, and sometimes by the inverted profiles of the constituent turves. They are called *plaggen* soils (Groenman-van Waateringe and Robinson 1988). Sometimes the transported soil material was first used as turves for roofing or as bedding for cattle in byres, and only after this was it put on the fields where it had an enhanced fertility from these stages in its history. Thick soils of this kind are also found in some of the Orkney Isles, especially on those where an alternative form of fertilizer, shell sand, is in short supply (Davidson and Simpson 1984). One of the consequences of this practice, of course, is that there develops an increasing disparity between the high fertility of the soils near the settlements and the low fertility of the soils further away from which the turves are being

removed. Unlike the situation with the lynchets, there is no topographical variation here, except to the practised eye, but in terms of productivity the contrasts are monumental.

Alluvium

Finer material from erosion is incorporated into rivers where it is redeposited on the leaves and stems of the floodplain vegetation, often seen as a white film when the water subsides. This material can be quite fertile, and it could be that its deposition was deliberately brought about by encouraging slope erosion and the incorporation of sediment into the river in order to stimulate the growth of vegetation on the floodplain. As a distinctive visuality, it would also have the effect of drawing attention to the land, and of expressing its productivity and the ability of the farmers to harness the waters of the river. Deliberate flooding of riverine grassland probably goes back to Saxon times in western and north-west Europe. In some communities, allotment of land took place annually, and this had the added benefit of bringing together farmers from widely dispersed areas, which in itself was a social occasion. What was allotted as a poor parcel of land one year to one farmer would be re-allotted the next to another, so there was a constant repositioning of influence through the medium of the grasslands.

The deposition of sediment on floodplains not only gives a whiteness to the vegetation but over the years leads to a build-up of the level of the land. As with strip lynchets and *plaggen* soils, this is largely a feature of the last few centuries in western Europe, although it has been going on for much longer in the Nile Valley and Mesopotamia. In these desert areas the floodplain is the life of the people, but in more mesic lands where there is a less strong contrast between valley bottom and the slopes of the catchment, the rivers are not quite so important. Yet watermeadows often occur throughout the entire middle reaches of lowland rivers. They involved massive input of skill in engineering and management with their almost contiguous coverage of carriers and drains over the floodplain. Engineers were brought in from the Low Countries to advise on their construction, and maintenance involved careful levelling by hand. Why was so much effort involved in their intake?

Management of the valley bottoms was about agriculture, no doubt, but it was also about the creation of new arenas of social expression. At first this may have been directed by whole communities, through the novelty and visuality of alluviation, brought on by allowing eroding soil from valley-side cultivation to reach the valley bottom. In the active creation of new conditions, the taking in of land in its early settlement was legitimated and community identities were forged. Later, with the construction of watermeadows in the period of agricultural improvements, it may have been more about individual families maintaining the condition of their lands through clearing out drains

and keeping the gradients of their watermeadow systems working properly, for it was important that water flowed slowly enough to fertilize and warm the soil but quickly enough that it did not stagnate and spoil it. There was scope here for the creation of individual identities through the employment of specialist skills and knowledge. Ultimately, diverse parties were involved and diverse interests at stake. Maintaining the condition of the valley floor through water and sediment control, making sure the different users of the rivers, the millers, pastoral farmers, foresters and fishers, were all cared for, and allotting land annually in a fair but socially stimulating way gave the reproduction of socialities a core role in the lives of the valley communities.

These different kinds of intake of land that is marginal in cost–benefit terms involve colossal amounts of work. The consequences are also strikingly visual, partly because the land is often in a fragile state (by definition), with interference having significant ecological and visual consequences, and partly because it is used so infrequently (again by definition) so that any changes that do occur remain visible indefinitely. In both these aspects, the amount of work involved and the resulting visuality of the land, intake was like the creation of a monument. Thus it could be that such lands were exploited with the creation of visuality in mind as a means of establishing various forms of social expression, such as family or community identity, or in the manipulation of different interest groups. Other kinds of influence such as famine, population increase or war may have stimulated the use of these areas, but their use in the reproduction of socialities may have been just as important.

Once these contrasts in landscape texture were in place, they were used in further engagements, the strip lynchets by young men for ploughing matches or archery tournaments, the sparse grasslands of the areas beyond the *plaggen* soils by tinkers and gypsies for grazing their horses, and the opened-up river valleys for fishing. It is likely that new tensions between these activities and the established farming communities would arise, although these might just as likely have been actively created as opportunities for social expression in the first place. Today on marginal land we see the establishment of travellers' encampments, the dumping of household rubbish like fridges and mattresses, and the burning and abandonment of stolen cars. It is the same sort of thing. None of it would work without the strong visuality and without the opposition to people of better means who use such areas for recreation. Dumped fridges and burnt-out cars are making the same general statement as strip lynchets, *plaggen* soils and watermeadows.

A VERY DIFFERENT ERA

We have spread a little away from surface textures, although not very much. This has been about soil changes and the ways people might have used such

changes, especially the increasing diversity they so often entail, in an expressive or agency-centred way.

Stones are a big part of this, but one thing we have not yet mentioned is that they, like the inclusions in pottery, can be of different qualities and origins. People can recognize different origins and types of stone, as seen in the richness of common names used to distinguish quite subtle differences of geology. Often this has practical relevance, as when different ores or other types of rock for tools or building stone are being gathered, or when the fertility of the land is being judged. But often, too, these differences can be more subtly used, as for establishing where you are and for establishing, in a more proactive way, a sense of identity about the land, as Richard Bradley (2000: 92) has proposed for Neolithic Europe. From the nature of the stones on the land, their geology, their shape and their texture you know where you are, whether you are in a foreign country or at home. And the fact that stones can also be modified by humans gives us an added dimension. People went to much trouble even as far back as the times of the Neanderthals to travel long distances in order to locate particular types of rock for their tools (Ch. 9, p. 212). Often these were modified many tens of kilometres from the home settlement, and often it was the case that the more refined technologies were used on these far-travelled rocks (Gamble 1999: 205, 241).

These ideas can be traced back to our earliest tool-using ancestors. At one of the oldest sites in the world, or rather group of sites, Olduvai Gorge Bed I in the East African rift valley, stones may have been used more than 1.8 million years ago to actively entexture the land. Stones were carried by the people, a species called *Homo habilis*, for several kilometres in an unmodified state and accumulated in small areas along with the modified stones which were used for various purposes and the bones of animals which had been butchered and eaten. These unmodified stones are called 'manuports' and they are thought to have been accumulated as caches for manufacturing into butchering tools when an animal carcass became available (Potts 1988).

But they may also have allowed a sense of belonging to a site or area even if their transport in the first place was for purely utilitarian purposes. Technological modification, raw geology, and even the state of physical weathering all give a sense of geography and history to the land, and a sense of deeper identity and being to the people in it. Bones also helped, for these people were bringing animal carcasses, or bits of them, to these places. Sometimes there was a single carcass, a place where an animal had died or been killed and butchered without further transportation or addition, but in other cases there were bones of several animals, and often species from different habitats. So here, as with the manuports, a wider geography is reflected. Furthermore, different stages of weathering and destruction of the bones allow an addition of time depth and this too would surely have been recognized and its meaning understood. Any one site might not contain all

the stages, but some combination of fresh limbs with no bone exposed, joints with meat still on them but with bone clearly visible, joints with the bone obscured by dried meat, raw stripped bones, and ancient fragments and splinters partly-buried in the soil would be a guide to the antiquity of an accumulation and its depositional history. Smell was likely an important symbolic referent, as too was the visibility of scavengers, especially of vultures flying overhead and which allowed the hominid geography to be accessed from afar. Plants in different stages of succession could have refined the details on the ground; maybe some species were encouraged. And maybe some of the bones and stones were broken and worked deliberately and then partly buried to add an artificial depth of time.

Perhaps creation of societal information in these accumulations was their primary purpose, and the butchery of carcasses was a convenient way of reifying this. People lived in small groups, and mates were exchanged between the groups. They gathered plants, scavenged carcasses, even hunted according to some of the evidence, and they used stone tools to butcher carcasses and process plant foods. Some way in which presence and belonging could be signalled was needed, and these accumulations provided that. It was not necessarily a rigid spatial or territorial structure in the land but one which allowed a referencing of the group to strangers when they were elsewhere.

Interestingly, this is all very reminiscent of our ideas about pottery, the way in which different kinds of inclusions in terms of their geographical origins, their geology and history gave space and time meaning to pottery and, when broken, to individual sherds. Differences of geological and ecological diversity at Olduvai Gorge could be seen in terms not of economic strategies or cognitive abilities but of individual or group expression. What we see as single kill or scavenger assemblages could have been symbolizing efficiency or a narrow group identity, while sites with manuports and animal remains of diverse ecologies could have been about reflecting a more haphazard life, yet one which had been carefully thought out as an opposition to another. Here we are getting away from technological difference – groups without pottery or groups with it – and comparing means of societal expression, even across 1.5 million years. In their use as a medium of social expression, there is nothing really different between the collections of bone and stone from Olduvai Gorge and the pottery sherds from a Bronze Age Cretan palace.

CONCLUSIONS

- 1 Soil and land texture are important referents for social expression. Particular textures were understood and used not just for their functional attributes of fertility and knowledge but also as a means through which people communicated with each other.

- 2 Textures are enhanced and can be monumentalized through the use of pottery, stones and bones, and deliberate soil movement. These allow a diversity of social expression in the establishment of individual, family and wider identities.
- 3 Sites are established where they can be seen or otherwise sensed and where these perceptions last. Often this is on marginal land, and so the abundance of archaeology on such land may be considered as an active policy in which visibility was being managed.
- 4 Differences in the diversity of concentrations of bone and stone assemblages at the Lower Palaeolithic sites in Olduvai Gorge can be similarly seen as an active expression of identities and communality with reference to geography and time.

CHALKLAND LANDSCAPES

In this chapter I look at the way some of the ideas about texture can be used in a wider, landscape, setting. I do this mainly in the context of the chalklands of southern Britain, and in particular in relation to the river valleys (Figure 4.1).

RESEARCH STRATEGIES

The area where these valleys occur is a part of the Lowland Zone of Britain, contrasting it as such with the Highland Zone to the north and west. The physical geographer, Halford Mackinder, and the archaeologist, Cyril Fox, both used this contrast in their explanations of culture and economy (E. E. Evans 1975), and so have many later archaeologists and environmentalists. Nowadays there is a tendency to see land not in such large blocks of environment but at a more local or regional scale (Evans and O'Connor 1999: 94). Clearly there are general differences in economy and farming between the Highland and Lowland Zones, but what is going on in particular valleys or small groups of settlements is more important because of the links at these smaller scales with the social domain. That is certainly how ethnographers and social anthropologists are viewing Europe (Delamont 1995). There are also differences which are more important than being highland or lowland, such as the close proximity of the Lowland Zone to mainland Europe (a part of Mackinder's positional geography) or the relationship of the Highland Zone to the Irish Sea and Scandinavia. Environmental diversity within the zones is also marked, as with the many areas of highly fertile soils and sheltered lands in the Highland Zone or the rapid succession of scarplands, often of limestone, and vales, often of clay, in the Lowland Zone.

Evans and O'Connor (1999) argued for a research strategy in environmental archaeology based on areas which encompassed the entire activities of one or a few human groups. Big movements of people were envisaged over several tens or even hundreds of kilometres, even for subsistence farmers, and accordingly we saw research taking place over areas of such sizes. I now

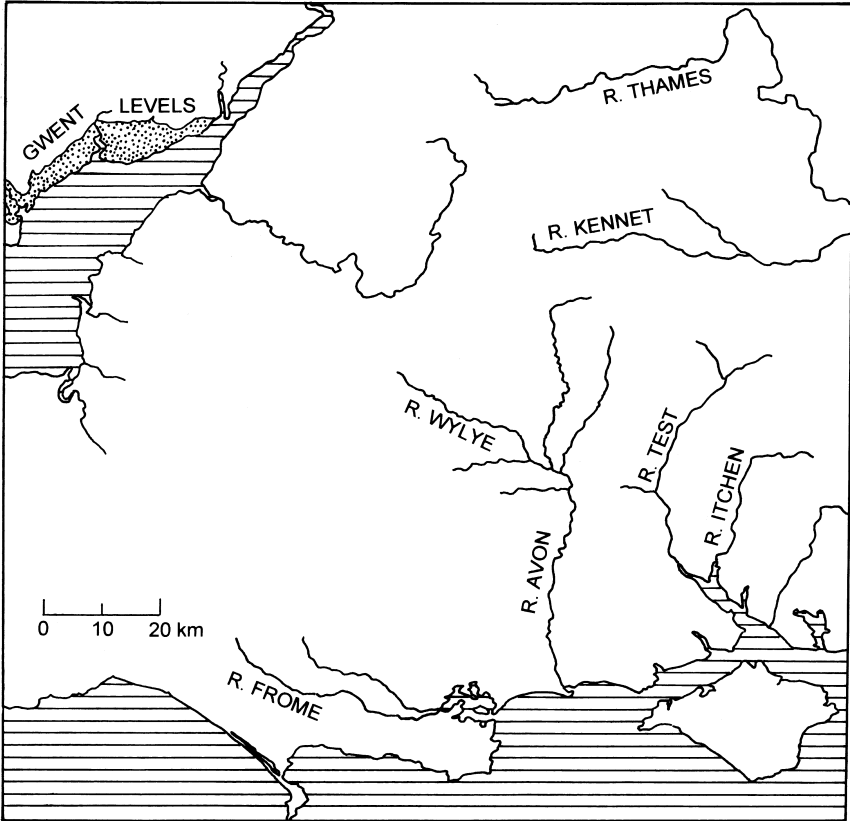


Figure 4.1 Central southern England showing some chalkland river valleys. The area of the Gwent Levels is discussed in Chapter 8 and shown here for convenience.

think this decision was misjudged because the idea of being able to tackle a region comprehensively was over-optimistic and damaging to an understanding of the greater significance of its local diversity. Now, I would not be having preconceived ideas about territories bigger than a commune or parish, even though I would still be thinking about wider distributions and how they might translate into units of regulation and power.

We also felt that environmental units like the chalklands and river valleys were an unsuitable basis for such research because they presupposed a relationship with the physical environment. If chalklands were to be studied then they should be compared with different environmental blocks to explore the contrasts that might emerge. But again, I now think it is over-objective to think about the chalklands of southern England as anything other than a reality, not least because that is how they are perceived and known.

They are distinctive in their dryness and in the fertility of the soils. Their rivers respond slowly to rainfall changes because of their dependence on deep reservoirs, while they have a distinctive, if diverse, settlement pattern and history. Their agriculture and their vegetation are like no other region in the British Isles. There are strong contrasts, too, with adjacent heathlands and the gravel terraces of big rivers like the Thames, and indeed it is at the boundaries with these other lands that the chalklands are so deeply visual and most deeply understood.

In the end, Terry O'Connor and I never presented a clear strategy, and in retrospect I think this was the right decision, even though it was not made deliberately. Altogether, I would now advocate a small-scale, or particulate, approach, but over a wide area, accepting a reality of the chalklands and examining their diversity, and especially the comparison of different kinds of river valley. People's lives were led in the immediate confines of their homes and villages with journeys to adjacent towns, even though some people moved around quite widely. I would explore a variety of contexts in terms of their archaeology and environment, adopting a bottom-up or inductive strategy. I would be especially interested in the visuality of different kinds of materials – small artefacts, individual monuments, settlements and territories – and how these might have been used in the landscape in a socially expressive way. I would also explore the settlement through time, which is what many survey archaeologists are now advocating in spite of their initial interests in a single period, for only in this way can the significance of single-period distributions be fully understood. So this is what I am going to do here.

The one omission is an inquiry into the essential nature of the chalkland environment and its settlement, for this has never really been thought out and is far too big a subject to examine here. It will soon become apparent, for example, as I focus quite locally in a framework of valley topography, that the physical basis of the chalklands *per se* is sometimes a bit remote.

RIVER VALLEY ENVIRONMENTS

Rivers and their valleys are virtually ubiquitous so one could ask whether there is justification in singling them out for study. Really it is a matter of proportions, the proportion of valley to plateau, and the frequency of rivers in the landscape (Evans 1992). On chalk, where there are relatively few rivers and there is an absence of fine dendritic patterns of rivulets in the headwaters due to the porosity of the rock, rivers are especially important. They are likely to attract settlement and other kinds of attention from people (and animals) to a much greater degree than in other areas because of their rarity, the wide extent of unwatered land between them, and the considerable contrasts between the valleys and the plateaus.

Then we need to consider the question of the changing significance of the river and valley bottom environment through time (Evans 1992). A cross-section of a valley between its watersheds is a useful way of understanding human activity and settlement (Figure 4.2). In the chalklands of southern Britain, mostly beyond areas that have been glaciated, the valleys are broad. The slopes of the upper valley sides are convex and grade gently upwards to

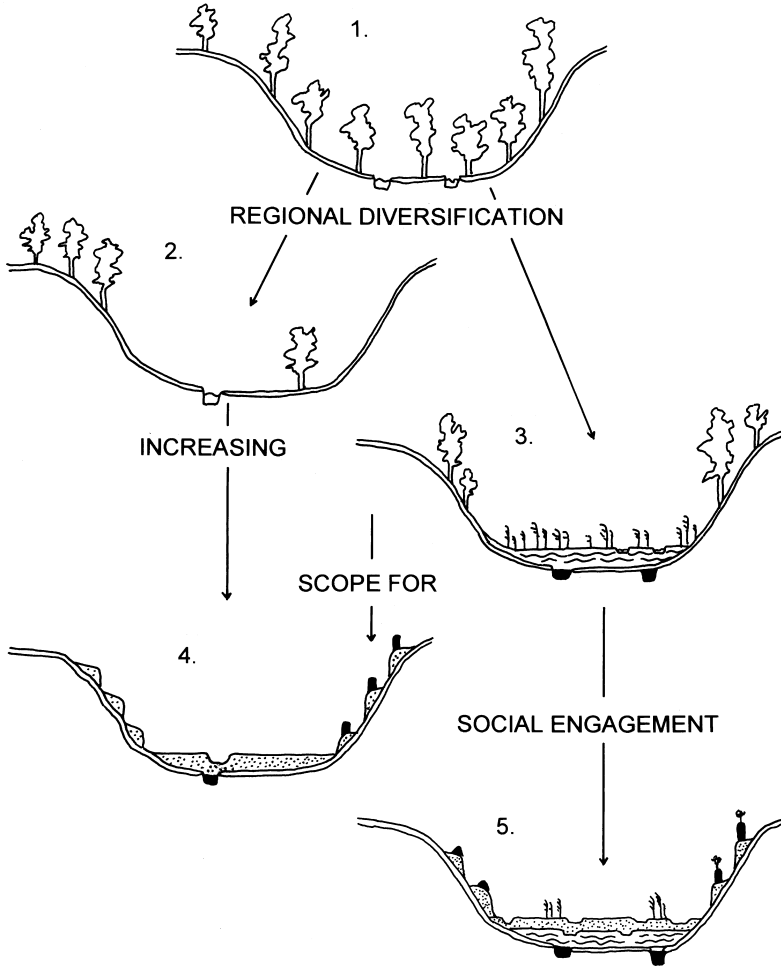


Figure 4.2 Scheme of valley modification in the Holocene, showing diversity between valleys and increase in the scope for social referencing with time: 1, uniform woodland, no sedimentation; 2, some clearance but no sedimentation in some valleys; 3, clearance and peat formation in others; 4 and 5, cultivation of the valley sides and alluviation across the valley bottom.

an almost imperceptible summit, a plateau without any definite crest or watershed. Such profiles are usually signifiers of extreme age, unlike the V-shaped valleys of young rivers or the U-shaped profiles cut by glaciers.

Today, river valleys are complex environments with substantial diversity at the landscape scale. Watersheds comprise plateaus of woodland, often on thick deposits of clay-with-flints, or downland; slopes are variably arable, pasture and copse, often with quite chalky soils; lowest slopes are zones of villages, roads and railways; while the valley bottoms are pasture, water-meadow or swamp, gleyed (semi-waterlogged) soils, prone to flooding, and peats (Evans *et al.* 1993). But this was not always so. At some periods there was a much greater uniformity of soils, vegetation and land-use, with woodland and brown earths extending from watershed plateau down to the river itself (Figure 4.2, no. 1). The contrasts and diversity we see today (Figure 4.2, nos. 4 and 5) are a product of millennia of history and largely due to influences like farming, climate change and sea-level rise.

ENVIRONMENTS OF HUNTER-GATHERERS

Early in the Holocene, archaeologically in Mesolithic or hunter-gatherer times (around 9,000 years ago), the only contrasts were between the river itself and the ambient woodland (Figure 4.2, no.1). The different parts of the valley profile mattered only from the point of view of distance from water, nothing else. Yet this was still a significant contrast because of the rarity of rivers generally. The rivers were used for water for drinking and cooking, for transportation and for game like beavers and wild boar; they were used for their symbolic and metaphorical powers; and they were used for their many opportunities for social expression. Diversity in the landscape lay largely along the river, on banks where trees had fallen, in beaver lakes, in former beaver lakes where the trees had been killed by waterlogging and which were now grassland, and at the edge of the channel itself, especially point bars – gravel and sand areas on the inside of meanders. Nowhere else was there such a range of landscape visibility or scope in this for expression.

Undoubtedly this is a simplification and there was likely some diversity in the woodlands of the slopes and plateaus, but this was probably local – wind-thrown trees, red-deer feeding areas, the disturbed ground around a badger's sett, areas cleared by people and, as the woodlands aged, areas that thinned naturally. A few Mesolithic sites are known, significantly, from infilled tree-throw pits. Undoubtedly, too, as the river moved in its channel and deposits began to form in the valley bottom there was added diversity, contributed in tufa mounds, reed-swamps and other open areas where trees had been destroyed. Sea-level rise or ponding up of the river by the debris of fallen trees or beaver dams caused peat deposits and calcareous tufas to form

in some of the larger valleys like those of the Test and the Kennet (Figure 4.2, no. 3), and settlements at the edges of such deposits are known from a number of areas, for example at the Mesolithic site of Thatcham on the Kennet. Yet in terms of using the land as a means of social expression, the focus remained largely along the river course itself and the valley bottom (Figure 4.2, nos. 2 and 3).

Stone tools of distinctive type, charcoal and bone debris were left as a signal of presence and identity, visually accentuating slight landscape features. Such materials were often deposited just where the peat or tufa was thinning out onto the dry land, for example at Thatcham (Healy *et al.* 1992), places of instability, where the vegetation was sparse or absent, and where, accordingly, the deposited flints and charcoal were most visible. Bones can be particularly common on point bars where they have been brought by scavengers. This kind of location is possibly a deliberate enhancement (by animals and humans) of the local landscape, the whole effect being one of highlighting areas of the landscape where there was already a significant visibility. These were places, too, where people saw stability being threatened as the river eroded its banks or peat encroached onto grazing land.

We have yet to find a Mesolithic cemetery in Britain equivalent in size and density to those of southern Scandinavia, but they are almost undoubtedly present. Cemeteries at Skateholm in southern Sweden and Vedbaek in Denmark are in similar edge locations to many of our Mesolithic sites, namely on the lowest slopes of land where they grade down into meres or lagoons (Larsson 1990). In these locations, they serve to enhance the topography through their presence, their history and their reference to people who once used the land where they are now laid to rest. The cemeteries are symbols of stability and permanence and, as such, a contrast to the small artefacts which are more associated with instability.

Yet these artefacts in their abundance and flexibility of deployment in the landscape allow the large, more stable structures to be brought into being in the first place. The flint cores from which the blades for making arrowheads were struck, are usually asymmetrical: one side has parallel fluting which is often quite distinctive, the other is rough and with cortex of the original flint nodule (Figure 4.3C). Only a very few have fluting all round (Clark 1955: 7), yet there seems no functional reason for this. A likely possibility is that it gave the cores a bilateral symmetry, a front and a back, which allowed their accession into a less material world than that of flint-knapping. Cores are not the only items of the debris of flint-working that have the potential for stylistic investment, for tranchet axes (Figure 4.3B) can be similarly asymmetrical, and there are smaller items like the arrowhead parts or 'microliths'. But the cores are the only artefacts that are produced in sufficient abundance and large enough at the same time to be used in a landscape context of visual expression. Indeed, we might even see them as having been created for such

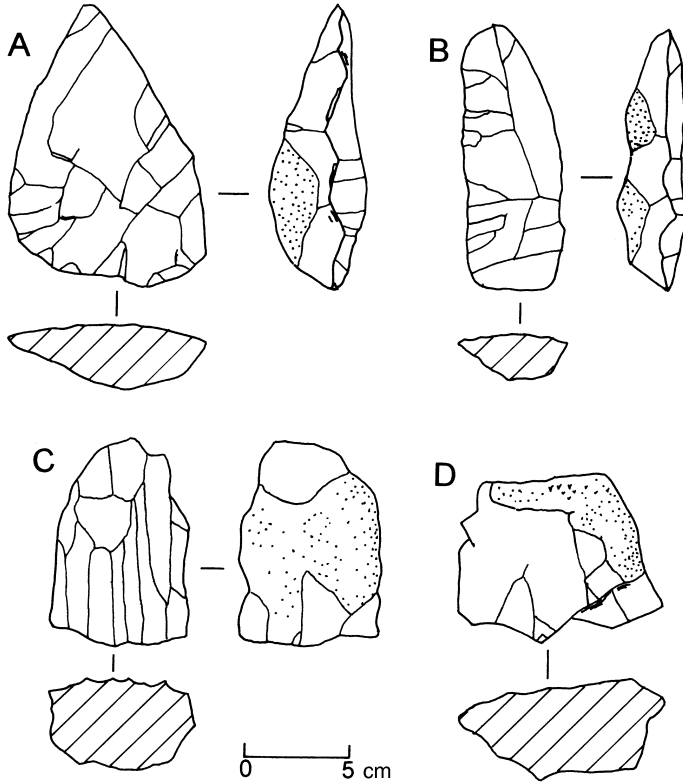


Figure 4.3 Flint artefacts (cortex stippled) showing different degrees of symmetry: A, Palaeolithic handaxe, showing asymmetrical side view on the right; B, Mesolithic tranchet axe, showing a similar asymmetry; C, Mesolithic or Neolithic blade core showing the 'front' (left), where a number of parallel blade removals have been made, and the 'back' (right), with cortex (cf. Clark 1955); D, later Neolithic or Bronze Age core showing apparent disregard for style or symmetry.

a role in the first place. As Hodder (1990: 283) puts it of the much earlier Lower Palaeolithic handaxes, which too are often noticeably asymmetrical (Figure 4.3A), 'The ordered flaking helps to create a certain prestige, a social desire'. We could also look at wider distributions of artefacts in different topographical locations, but since most of the land was covered with vegetation in the Mesolithic the visibility of these would have been limited. Perhaps this is why Mesolithic flints are sometimes found in tree-throw pits where they would be visible, at least for a while; and tree-throw pits are another kind of unstable context. Tilley (1999: 194) sees a symbolic significance in the use of certain types of stone like Portland chert, but that was more likely in domestic use rather than as an entexturing of the land.

A DIVERSITY OF VALLEYS

The textures that we are now exploring are at the landscape scale of settlements and artefacts and the ways they were used in social expression. In these, different kinds of river valley are usefully compared. During the period of early agriculture, the Neolithic, there was an increasing diversity not only in individual valley profiles, but along the valleys and from one valley to the next. This is partly a contrast in size, with headwater areas and smaller valleys like the upper part of the Kennet above Marlborough contrasting with larger valleys like the Test, although the situation is likely more complex. Management style by individual communities probably had a lot to do with local differences. In some smaller valleys there is a terrestrial brown-earth soil right across the valley bottom, broken only by the course of the river and its immediate banks, and this was occupied by successive phases of human settlement from the Mesolithic to Bronze Age periods, with flints, Neolithic and Bronze Age pottery and field-walls. There is no contrast between the valley bottom and the valley sides in these distributions (Evans *et al.* 1993). There was little lateral movement of the river and little permanent swamping (Figure 4.2, no. 2).

In some of the larger rivers, in contrast, there was considerable lateral movement of the river or the environment was more or less permanent swamp (Figure 4.2, no. 3). This is the situation in the Test Valley at Bossington (J. G. Evans and C. Harris, unpublished). For the Mesolithic period there were a few flints within the tufas of the valley bottom, well away from the edge, but the main flintwork of this period occurred at the base of the valley slopes where it gave way to the peaty deposits of the valley bottom. Generally throughout prehistory, the valley bottom was not settled, being a swamp of reeds and alder woodland, with meandering river channels. Along the valley sides, in contrast, there was intense activity in the Neolithic and right through into the Iron Age with arable cultivation and the accumulation of deep deposits of ploughwash in dry valleys and along the sides of the main valley as lynchets (Figure 4.2, no. 5). None of this material got into the main valley. There was thus considerable contrast between the valley bottom and the valley sides, both in its environment and use, and this intensified as land-use proceeded. The valley sides became more open and the soils drier as ploughing and erosion cut deeper into the chalk, while the valley bottom became wetter as the river was impeded by the build-up of peat and tufa and the creation of beaver dams. It was virtually monumental in its visuality, and we can see that the cultivation of the lower slopes could have been done deliberately to enhance the difference with the swamps of the valley floor. Monumentality lies as much in the landscape as in the barrows and tombs, and this is not just in the natural rock outcrops as Richard Bradley (2000) has proposed, but at the scale of the landscape as a whole.

In Neolithic settlement, the visibility of the landscape was actively created. This was not just in the siting of tombs and the positioning of other kinds of monument like stone circles in relation to landscape features, nor was it just a question of people responding to the differences of physical environment between the valleys. This was about building whole landscapes in the reproduction of social lives.

PLOUGHMARKS AND POTSDHERDS

Entexturing of the land by ploughing took place in the Late Neolithic and Early Bronze Age in the upper part of the Kennet Valley (Ashbee *et al.* 1979) and at Maiden Castle in the Frome Valley, Dorset (Sharples 1991). This was similar to the process which took place in the earlier part of the Neolithic (Ch. 3, p. 58), only in this case a distinctive type of Beaker pottery, of fine orange fabric and fine impressed decoration, was included in the soil giving it added visibility and meaning. When I was excavating the South Street long barrow in 1966, one of the sites where this pottery occurs, it was important for me to be able to recognize the sherds, for as a non-specialist it gave me security in knowing precisely where I was in the stratigraphic sequence. It also allowed an understanding of processes, for I could grasp ideas about it being introduced to the fields in domestic or farmyard waste; and it gave me personal security in an involvement in prehistory. Several decades on, I now realize that the people who introduced this pottery onto the land may have seen it in precisely the same way, namely to understand the land, to understand the processes by which the land was being managed, to understand their place in the scheme of things historically, and as a symbol of their own security. Niall Sharples, with whom I have discussed these ideas, has suggested the same kind of deliberate introduction of Beaker sherds into ploughsoils in the Outer Hebrides. It may even be that Beaker pottery was made with this specific intention in mind, to break it up into small yet still quite recognizable fragments and scatter it on the soil.

In some of the sites, Beaker pottery occurs in soils which formed across ditches of monuments constructed several decades or centuries earlier and which were then ploughed over. This suggests that the ploughing and the pottery were symbols of opposition or cancellation, ways of eradicating the past. There were changes in the vegetation, too, with scrub or woodland converted into open land (Whittle *et al.* 1993), thus enhancing the visibility of the Beaker pottery in the ploughsoils and, though reduced in height, the long barrows. People could again view the barrows in an open landscape, but their surfaces were now entextured with the new ceramic style.

Changes of soil distribution and texture also took place more generally through erosion and alluviation. One of the consequences of the Beaker ploughing in the area of the Marlborough Downs was the downwashing of

soil into the rivers and its redeposition over the valley bottom as alluvium. This can be seen along the River Kennet between West Overton and Avebury (Evans *et al.* 1993). About a metre thick, it overlies the Neolithic and Mesolithic land surface and soil, and it continued to form into the later Bronze Age. At West Overton there are lines of huge sarsen boulders on the valley floor completely buried and invisible beneath this material, perhaps originally part of a system of walls built in an attempt to stave off the destruction of the land (Figure 4.5, lower). The alluviation, however, may have been as deliberate as the ploughing and deposition of pottery across the barrows. Certainly it led to a greater distinction between valley sides and valley bottom which had not been present in the Neolithic period in these smaller valleys. It was possible to use the valley floor because the flooding and alluviation were seasonal, but it was wetter than previously.

BRONZE AGE VISUALITIES

By the Bronze Age, the valleys were quite open, with extensive vistas. Grassland was widespread, even if some of it was becoming rank and unpalatable and the soils decalcified. Still the bottoms of some of the wider valleys like the Test and the Dorset Frome were covered with reed-swamp, alder woodland and peat, but the lower slopes of many were well cleared of woodland and cultivated. Expression could now be at an increasing scale of visibility.

Round barrows were becoming widespread. This was a new visuality, different from that of the Neolithic in that groups of monuments were involved. It was still a visuality of texture, only now there were clusters (or cemeteries) of barrows in which, as with inclusions in pottery, there were differences of density, type and age. The cemeteries and barrows were used in several topographical situations as seen in the Marlborough Downs (Figure 4.4). Some of the barrows were situated in relation to earlier monuments, like a group associated with the causewayed camp of Windmill Hill in the upper Kennet Valley, and several in relation to individual long barrows which provided a focus and an axis for their development (Figure 4.4, nos. 4 and 7). Sometimes, earlier round barrows were taken in, rebuilt and aggrandized, and with the meanings of the Beaker ploughsoils and pottery covered over by a newer referent. In some cases, earlier settlements provided the location for barrow groups (Taylor and Woodward 1985).

More widely, there was a relationship with contemporary field systems, the two kinds of earthwork being complementary in their distributions (Figure 4.4, nos. 3, 4 and 5). Some were placed along the lower convexities of the river valleys where they could be seen from the valley bottom, some as dense clusters along ridgeways, others around the heads of dry valleys, and a few loosely distributed over the plateaus. Along the Kennet Valley, it

CHALKLAND LANDSCAPES

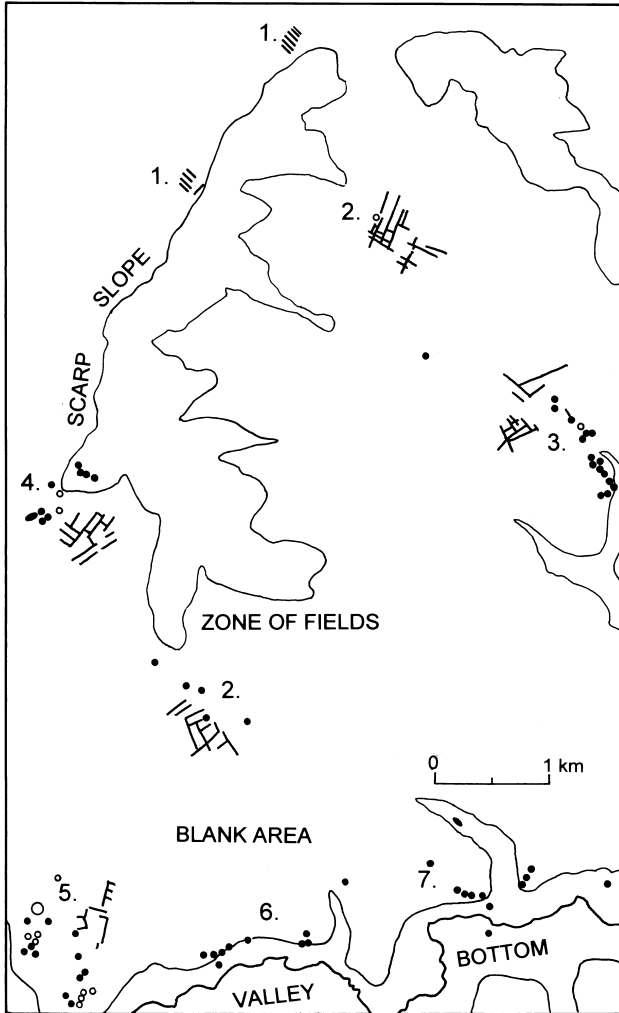


Figure 4.4 Different styles of landscape referencing on the Marlborough Downs, Wiltshire: 1, Iron Age potsherds on steep scarp slopes; 2, barrows dispersed among prehistoric fields; 3, concentrations of barrows giving way to fields higher up; 4, adjacent concentrations of barrows and fields on a prominent butress, focused on an earlier long barrow; 5, similar to 4, but along a prehistoric ridgeway; 6, round barrows just above valley bottom, no fields; 7, as 6, but barrows set either side of an entrance to a dry valley, with a long barrow at its head. Only selected groups of earthworks are shown. Black circles = bowl barrows; small open circles = saucer barrows; large open circles = disc barrows; ovals = long barrows. Contours: upper, 244 m; lower, 152 m. (Based on Gingell 1992: fig. 96.) For 1, see also Sharpley (1991: figs 16 and 17); for 3, see also Woodward (2000: fig. 45); for 4, see also Palmer (1984: map 1); for 6, see also Green (1974: fig. 23).

is as if the grazing land around the barrows was in one area, close to the rivers, and the arable in another, on the upper slopes and plateaus. This association is seen clearly in the Test Valley around Danebury, although the barrows there are a lot higher up (Palmer 1984: map 1). There is a similar arrangement in Dorset in relation to the Frome and South Winterborne, and also along the Great Ouse River in Bedfordshire on a gravel terrace in an area which is just beyond the chalk scarp (Green 1974). This was a very tight relationship, its linearity almost monumental. Only a few barrows were set among the fields themselves.

In the initial and early history of these groups of barrows there may have been no grand plan of a cemetery, and Ann Woodward (2000) has shown how the groups can develop over centuries. More likely is that there was an informal association with the land types and that through this relationship the cemeteries were gradually brought into being. In this respect, the incorporation of turves into the barrows may be more than the use of a convenient building material; the removal of turf from big areas of land, rather than its concentration in small areas such as the barrows, may have been the main end in itself. Some of the areas that were stripped of turves are huge, 1.2 ha for a single barrow of the King Barrow group on a ridge above the River Avon near Stonehenge, and 7.2 ha for a group of six (Woodward 2000: 52). That is the size of an entire farm. It is as if people wanted to create visuality or monumentality not just by constructing mounds but by changing the whole distribution of fertility within the land, just as we saw with the *plaggen* soils (Ch. 3, p. 67).

There was a much greater diversity in the barrows, in their relationship with earlier and contemporary features, and in the landscape than there had been in the Neolithic. This was enabled by the greater vistas, so that although there was more cleared land, there was also more opportunity for its diversification. The construction of the field systems brought vast tracts of chalklands into a group belonging and identity, closing off access to the commonweal. The fields in general have an orientation which is south-east to north-west, one which is seen across Wessex and in other areas of the British Isles. This was a wide cosmology. After its establishment, smaller social articulations gave rise to more local field-bank constructions, as we saw in the Isles of Scilly (Ch. 3, p. 64), with trackways and round barrows allowing a diversity of relationships to be explored at the very local scale.

Small depositions of sarsen stone and flint enabled detail to be added. In some barrow ditches and at field edges in the Middle and Later Bronze Age large quantities of flint, much of it worked as cores and flakes, was deposited. The quality of this flintwork is poor, lacking in consistent directions of flaking, and with large rounded flakes and deep scars resulting from hard-hammer work (Figure 4.3D). It is in contrast to the finer flintwork of the earlier Neolithic and Mesolithic. One suspects that this poor-quality flintwork was deliberate, rather than a loss of skill, its deposition in the barrow ditches

an opposition to a past ideology. It is interesting, too, that these cores lack the distinctive asymmetry of those of earlier periods as if there was no front region being used to face the world, only an anonymous sameness all round.

The edges of the valley where the soils of the dry slopes met the alluvium of the floodplain had become especially sharp. Indeed, because floodplain surfaces tend to be slightly domed towards the middle, the edges were likely the wettest part of the valley bottom (aside from the stream itself) with standing water present for longer periods through the year than elsewhere. At the edge of the Kennet Valley at West Overton (Evans *et al.* 1993), precisely where the slope meets the bottom, small heaps of burnt sarsen were piled up (Figure 4.5, upper), perhaps the debris from stones heated in fires and then used to boil water in pots for cooking; at one place, a small pot, crude and poorly decorated, and containing cremated human bone and charcoal, had been buried upside down in a pit with a small sarsen stone on top of it (Figure 4.5, middle); at another there was an ox skull below the corner of a stone wall. All these features were ultimately covered by the alluvium. This activity was probably Middle Bronze Age, the same sort of age as the fields higher up on the downs.

It is all small-scale and nuanced: the pot, the flintwork, the somewhat irregularity of the walls, the burnt mounds of sarsen, the cremation pit. Even if the fields cover a wide area, their banks were never high. It looks as if several interests were involved, people developing ideas about themselves and others at the level of individuals or small groups. The activities at the valley edge, especially, might be referencing or relating to the boundary between the more extensive landscapes of the floodplain and the downs. It was not a very important area of the land, it did not make a powerful statement, and in this it gave a kind of security. It is the same sort of comfort you get when talking to people who have not got very much to say. People who were at times of change in their lives, like puberty or impending marriage, may have taken ease in these areas as a means of understanding their feelings of confusion. Or, we might be dealing with something a bit more substantial, and be seeing people at the edge of society making a living from peripheral activities like gleaning corn or collecting dung from the pastures of the valley bottom. Their activities at the edge of the floodplain especially were a reflection of their position in life, their flintwork and its deposition in the barrow ditches an opposition to a more extrovert and confident style.

IRON AGE SETTLEMENTS: TRACKS OF POTTERY

'The British Bronze Age has not ... been a focus for theoretical or interpretative debate since the earlier 1980s', research into the period seeming to have had a sense of fragmentation and a lack of identity (Brück 2001a). However, as an outsider, one does wonder whether such a state is not a

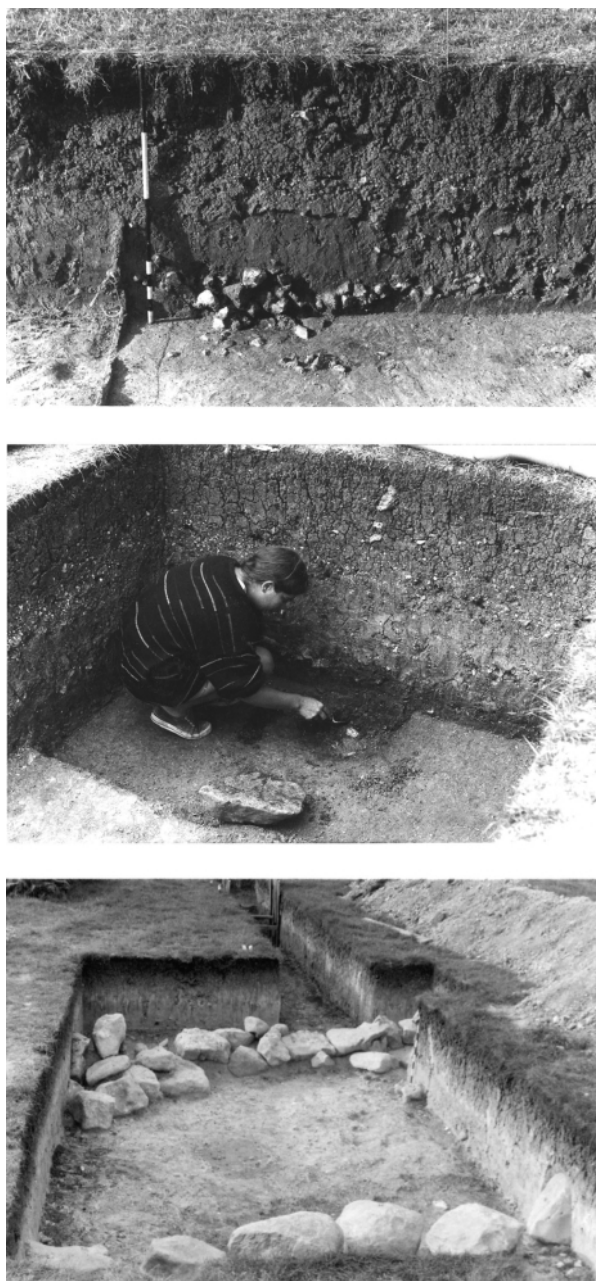


Figure 4.5 West Overton, Wiltshire, Neolithic to Middle Bronze Age valley bottom archaeology, buried beneath alluvium. Upper: burnt mound of small sarsen stones. Middle: cremation pit with capstone removed, being excavated by Julia Roberts. Lower: stone banks.

real reflection of the period, for fragmentation, certainly diversity, is a hallmark of the landscape at least. Of course the period is very long, several centuries, maybe a millennium and a half, so one cannot embrace it within a single spirit, but the idea that we are dealing with a kind of Post-modernism in at least the later part of the period is appealing. We can hardly be the only people to have experienced such a genre in human history.

For the Iron Age, things are more focused. There is also a greater range of textures. Mineral particles are present in numerous ploughwash and alluvial sediments in dry valleys and river valleys; concentrations of pottery scatters are present on the land surface; small artefacts are used in the contexts of pits and ditches in settlements as referents of different conditions of sociality; the settlements themselves have distinctive architectural features in their houses, enclosure boundaries and entrances; their sitings, often on the brow or slopes of valleys, are particularly visual; in their spacing the settlements give a wider texture still; and the orientation of settlement and house entrances towards the south-east allows an articulation with texture at the cosmological scale (as with the Bronze Age fields).

In the upper part of the River Itchen in Hampshire where it flows westwards towards Winchester there are numerous Iron Age settlements, especially along its northern flank (Fasham and Whinney 1991: 155). The locations of these substantial settlements, places with palisades, earthworks, houses and dense occupation layers, are on the bluff of the valley side. In functional terms this is an odd place for a settlement, even a single one, let alone several covering a stretch of several kilometres and for a pattern that is repeated in other valleys. They should, one feels, be lower on the valley sides, closer to water and in the ecotone of valley bottom and valley side. On the other hand, the settlements might have been at the centre of the arable land, where the most intensive work took place, or at the junction between arable and upland sheep pasture, while water and the small-scale diversity of the valley floor may not have been so important. Or again, as Andrew Fitzpatrick (1997: 75) has reminded us, people can have used more than one settlement in their round of agricultural activities; what is lacking in the Itchen settlements, for example, are foci for the exploitation of the valley floor pasture and hay meadows.

An alternative explanation for these sitings is in their visuality, for the settlements could have been seen from along the valley and from the valley bottom when their palisades and thatched houses were still intact. The portals were often particularly striking, with splayed façades channelling people into the entrances, and they were frequently remodelled. This is significant, too, in the contrast with the weakness of the rears of the enclosures where the banks and palisades are often undeveloped.

At Winnall Down, the buttress of land in the Itchen Valley where the river turns south, an Early Iron Age enclosure was established (Fasham 1985; Hill 1995). The entrance faced west over the valley of the Itchen. In the interior of

the enclosure there was asymmetry in the distribution of materials, and since this applied variously to different categories we can suggest an early separation of these in their disposal – bone from pottery, pottery from loomweights, and so on. The large size of potsherds, for example, suggests some kind of conservation after their initial breakage, otherwise they would have been more fragmented had they been left lying around. Indeed, ‘disposal’ may be the wrong concept here: ‘curation’ might be better (Hill 1995: 38–40). Different categories of materials occur in specific ditch and pit layers; even different fabrics of pottery and different groupings of animal species occur on opposite sides of the enclosure; while the entrance ditches are referenced through the burial of human skulls (Fasham 1985; Hill 1995). Knowledge of these distributions, even if they could not be seen, might enhance the visibility in an extra-sensory way, especially if embedded in a sequence of added meaning prior to their deposition. Peculiarities of siting that cut across the grain of common sense; visibility of entrances seen from the lower valley slopes as one moves up towards the settlements, and their enhancement through the deposition of skulls; asymmetries in the substantiality of palisades and ramparts with front areas and backs; and contrasts across the interior of the enclosures in the siting of particular styles of pottery: all these could have been established as metaphors of asymmetries and oppositions in life, and used in a variety of ways.

Meaning was extended beyond the settlements, in field systems, the different distributions of arable and pasture, and in the deposition of broken pottery. In some sites, linear earthworks channel people along the divisions of arable fields and pasture in a way which uses the texture of the land as an additional referent. The location of particular styles of land-use can have been as much to do with the visibility of social expression as it had with crop growth and animal husbandry *per se*. In the area of Maiden Castle, Iron Age and Roman pottery is narrowly confined to the areas of fields and settlements of these periods (Sharples 1991: fig. 17), a distribution which is all the more significant in the light of the much wider spread of pottery of the Middle Ages. A similarly narrow distribution of Iron Age pottery is seen along the lower part of the chalk escarpment of the Marlborough Downs where it looks westwards over the upper reaches of the River Kennet (Figure 4.4, no. 1) (Gingell 1992: fig. 96). Are these distributions delimited by the areas of Iron Age and Roman settlement and fields or are they much more narrowly confined? One suspects the latter, and if so are we not seeing again, through the use of this material and as I suggested for Beaker pottery, an enhancement of the visibility of the land?

The work at Winnall Down and Hill’s analysis of these settlements generally is very important for field survey because it allows the meaning of the pottery which we find on the fields to be identified at source. If we could isolate the reasons why and the ways in which broken pottery was separated from other materials in the settlements, as explored by Moore (1986) for the

Marakwet of Kenya, we might understand its significance on the land. At Winnall Down there was a clear separation of different pottery fabrics across the settlement and specific associations with other kinds of materials like antler and different styles of human bone (e.g. complete skeletons, partial skeletons and charnel deposits). Decisions made in the settlements about where to deposit specific kinds of pottery, bone and other sorts of materials, and the nature of the associations of these with each other, relate to the meanings these materials hold. And as Moore (ibid.) has discussed, these meanings can change depending on the social context and situation at the time of their involvement (Figure 4.6).

Yet we should not be too quick to see these schemes as implying a consciousness of the symbolic and socially expressive worlds which was at the surface of everyday lives. It is easy for us to suggest and find such meaning in archaeology, but we should examine how much could be made of our own lives in the same sort of way before we jump to too many conclusions. This is not to say that the orientation and organization of houses, the way we dispose of rubbish or the patterns of our fields are not embedded in a social world; but it is how aware we are of these structures and how explicitly they are used every day that I am urging caution over. In an area of the Cambrian Mountains above Llanfair Clydogau, close to the upper limits of cereal cultivation, there are two farms on either side of a small valley. One of these grows oats in fields enclosed by high hedges of beech trees, the other barley in quite exposed fields. These cereal plots are intervisible, being on the

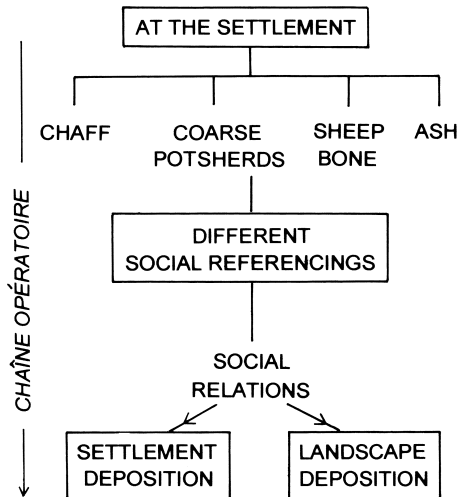


Figure 4.6 The meaning and social use of different kinds of materials through a *chaîne opératoire* between settlement and the land. Loosely based on ideas in Moore (1986).

plateaus and bluffs of their respective sides of the valley, and the differences of crop, indeed the growing of cereals at this altitude anyway, might be deliberate acts of expression. But how conscious are the farmers of this articulation? That is what we need to be asking about our Iron Age landscapes. Just as we cannot embrace the Bronze Age in a uniformity of theory which did not exist, so, too, it may be a mistake to endow the Iron Age with a generally discursive symbolism.

THE MIDDLE AGES

Trying to understand the pattern of downland settlement in prehistory, especially distributions well away from rivers, is made difficult by our familiarity with the pattern in the historic periods and our sense of continuity with this in the present day. By comparison with prehistory, the settlement patterns of the Middle Ages make sense. Villages are located close to water, in sheltered valleys, in easy reach of both the floodplains with their haylands and pasture and the drier arable lands on the lower slopes, and linked to each other and the market towns by tracks and roads. But this relationship with the practical world could be illusory.

In the Wylde Valley west of Salisbury, where there is a similar pattern of Iron Age settlement to that in the Itchen, the valley-edge settlement of the Middle Ages presents a stark contrast of style (Figure 4.7). The siting of the villages is usually at the edge of the dry land where it abuts the floodplain, as if the villages are emphasizing the slight topography of the natural terrace edge. The close relationship to the floodplain edge seems to be more than just a passive mapping of resources, like water and land diversity, and could be an expression of identity. The Wylde Valley is extraordinary in the way its villages alternate either side along its length, each vying with its opposite. They vie too in style, especially in the distinct contrast between 'compactly nucleated agglomerations' and 'regular rows' (Lewis 1994) as well as in the different orientations of the latter in relation to the valley axis. Perhaps this characterization of the villages works through an opposition to the river and the threat of flooding, and this can be seen in another context at Avebury, further north. Here, the Medieval village is sited not inside, as usually stated, but just *outside* the Neolithic enclosure, yet so close to the bank that it has actually cut into it at its western entrance. The henge is like the river, dangerous, but still a draw, and, in this opposition, a medium of expression. Interestingly, Saxon occupation at Avebury was lapped by the Winterbourne a few hundred yards to the west of the present village, so there was a changing dynamic in the focus of opposition between the river in the earlier and the henge in the high Middle Ages.

In these early Medieval settlements, there was a clear splitting up of the land from valley floor to watershed plateau, embodied in records like the

CHALKLAND LANDSCAPES

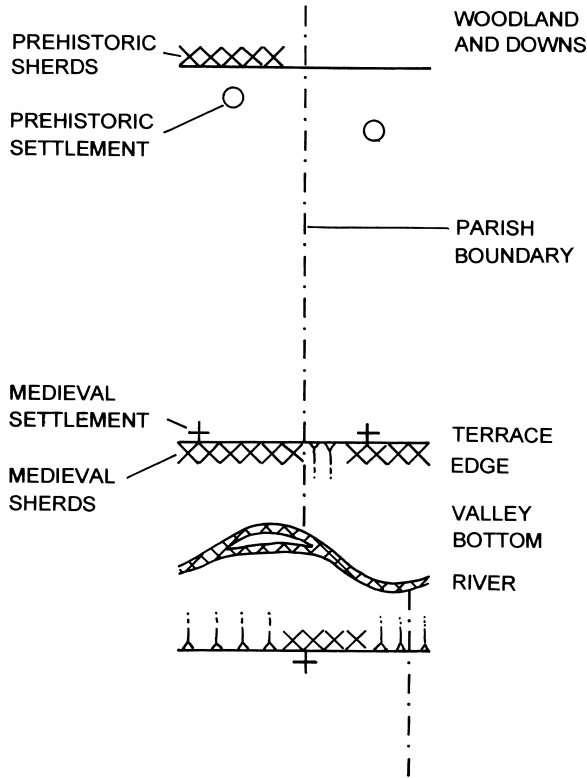


Figure 4.7 Schematic plan of a chalkland valley side showing contrasting visual components of Iron Age and Medieval referents in relation to the topography.

Domesday Book and in charters as the 'parish'. As with the siting of the settlements, the shape of these parishes and the distribution of land-use within them can be explained in practical terms: the most intensively used land is closest to the settlement, the pasture is in the valley floor where it is prone to flooding or far away on the plateau downland as befits its un-intensive use. The distinctive elongation of parishes, 'thereby containing a selection of all the soil types locally available' (Chisholm 1979: 108), is seen also along the chalkland scarps, as along the Berkshire Downs (ibid.).

Today we are captivated by these structures of geography and embedded history. Some boundaries are at right-angles to the contours and exceptionally visible; others, the more irregular ones, are on flatter land and less apparent, so there were opportunities here for the creation of identity through similarity or difference. The boundaries were renewed at intervals by walking around them, the ritual of 'beating the bounds', affirming the

features of the original charters, and which themselves take in old barrows and other earthworks, notable trees and streams, and other features of history. Where there was a knowledge of particular kinds of hillslope or water management or species of tree, and where the etymology of the names given to these was understood, then there was understanding, too, of one's self and one's place in the community. On the parish boundary of Muston in the Piddle Valley, Dorset, I saw the severed head of a roe-deer in the crook of a walnut tree, and on a boundary at Penistone in the moors above Sheffield, several dead moles tied to a gate. It is not just the boundaries that are being affirmed. Community identity and social needs are satisfied in a structure that had a clear relation to the land and its past, as it is today with local historians. Even amidst the seeming uniformity of ridge-and-furrow in the open fields, patterns are quite diverse, almost like a bar-code (Hall 1982: fig. 1; Aston 1985: fig. 73). Various combinations of narrow, medium and very thick ridges are played out across the land, detail being added in the way in which land of different tenants or institutions like the church was partitioned among the fields (Hall 1982: fig. 21). The relationship of land-use to the physical distribution of ridges, the details of tenure and the records of these in field books are enormously complex.

In a historical context, the parishes are the settlements of colonizing peoples, and as such their presentation may have been more than usually expressive. Certainly that seems to have been the case with the locations of the settlements in these chalkland valleys, for although there were some Iron Age and Roman sites in the lower parts, these were not especially anchored to the valley bottoms as the Medieval villages were. Valleys which show a striking contrast of topography in the cross-profiles may have been actively sought out as locales in which demonstrations of difference might be most successfully achieved.

On the other hand, some of these land divisions may have been in place in the Roman and even Iron Age periods, thus giving the Medieval parishes an even deeper meaning in history. This is hinted at in the coincidence of Roman estate and Medieval parish boundaries (W. Davies, 1979b; Hingley 1989: 102, 184), and in a similar pattern of prehistoric boundaries along the scarp of the Berkshire Downs near the Bronze Age and Iron Age settlement of Rams Hill, seemingly pre-empting the later parish organization (Bradley and Ellison 1975). There may even have been continuity in the use of Roman fields into the furlongs of the Medieval period (Taylor and Fowler 1978), and commonly in the Wiltshire valleys small quantities of Roman pottery are brought to light on the sites of Medieval villages and fields (Mark Corney, personal information).

Even more widely, the chalkland pattern of settlements, tightly confined to the rivers, contrasts strongly with the situation in the north of the county where, in a land of many small streams and ponds and not such striking contrasts of soils and topography, there is settlement pattern which consists

of more irregular parishes. It is likely that these big areas of distinctive and contrasting distributions across the county were actually experienced in terms of the sizes of the areas themselves, that what we as archaeologists see as distribution maps were understood in their entirety by the communities of the time. These grand contrasts were actively established and actively used in social expression, just as surely as were the smaller materialities of individual valley settlement, parish shapes, village locations and pottery fabrics.

CONCLUSIONS

- 1 Big blocks of landscape are suitable units for the analysis of human settlement because they were perceived as such in the past. This idea is explored through the Wessex chalklands and especially their river valleys.
- 2 However, changing attributes of the landscape through time, such as in soils and vegetation, entailed different means through which people brought these lands into their lives. River valleys, especially, presented different environments at different periods.
- 3 Features of the topography, soils and the rivers themselves could have been enhanced by human activities and even deliberately created in the first place. In combination with cultural attributes, they were used to create landscapes which were brought into the social domain.
- 4 This took place at various scales from the residues of Mesolithic flint-knapping on river point bars, through the structure and siting of settlements and the shapes of parishes in particular topographies, to the overall distributions and their contrast with (or opposition to) patterns outside the chalklands. Significant differences between later prehistory and the Middle Ages indicate a socio-symbolic, rather than raw functionalist, use of the land.
- 5 In the light of these ideas, patterns of human settlement and land-use must be seen at least in part as a result of social mediations rather than as a mapping of the environment for food, defence and communications.

CLIMATE

Climate is too important in our lives to be excluded from a book about human environment. It is something that practically everyone is aware of and that many people consider very important. It is not only in the realm of high science but in everyday consciousness that climate has a part to play. The Tower of the Winds (or Temple of Aiolos) in the Roman agora in Athens, built in the first century AD, depicts representations of the winds in reliefs around its eight sides (Figure 5.1). It was created as a meteorological station and clock, and is one of the earliest indications of an interest in climate in the western world.

Much about climate is explicitly determinist. At least in the western world, we see a relation of climate to racial features, ethnicity and national character (e.g. temperament, activity), and to economy, architecture and life-style. The differences between the intensity of north-western European people and the more laid-back approach of the Mediterranean world are seen by many as related to climate. And the same was true in classical antiquity (and likely back to Homer and Mycenae), as Hippocrates in the fifth century BC proclaims: 'everything in Asia grows to far greater beauty and size; the one region is less wild than the other [Europe], the character of its inhabitants is milder and more gentle' (Hippocrates I. *Airs, waters, places*, XII), as does Strabo in the first century BC: 'an architect in constructing a house, or an engineer in founding a city, would make provision for climata [belts of latitude] as well as matters of heat and cold' (Strabo, *Geography* 1.1.13). Even if not susceptible of scientific proof, these are relationships that are useful in our understanding of the world. You cannot grow maize in the arctic or build igloos in the jungle, and although such determinism is eschewed by academics, it is a meaningful way for children and people who are not climate specialists of relating to distant, less accessible, parts of the globe.

People in the past knew about climate because of stories from travellers. The word 'climate' is from ancient Greek, ultimately from the word for a slope – referring to the relationship between climate and the angle of the sun's rays (or perhaps the gradient of prevailing weather conditions across



Figure 5.1 Tower of the Winds or Temple of Aiolos, Roman agora, Athens, an octagonal tower with depictions of the winds on its eight faces. It was used as a sun clock in the manner of a sundial, and some of the inscribed marker lines can be seen on the nearest face.

big areas of their world) – so the idea was perceived at least that far back (likely Eratosthenes, 276–194 BC). It is doubtful that big climate regions were generally understood in prehistory, but at least some people would have been aware of them. The idea of difference was likely embedded in myths and origin stories as well (p. 114 below). From the Middle Ages, increasingly, climate differences have been experienced and known about from pilgrims, explorers, traders and ultimately through colonialism. Study of climate was driven by the needs of seafarers especially, and weather forecasting and the Beaufort Scale of winds were inventions of the navy (Hamblyn 2001: 195).

In the nineteenth century, the growing popularity of exploration, the Grand Tour and Alpine climbing increased knowledge of climates, especially of cold-climate and glaciated areas, and at the same time the idea of past ice-ages and glaciations in what are now temperate regions became accepted. The idea of climate *change* took hold and today there is a general knowledge of past ice-ages and the likelihood of their return. Different styles of future change are now embedded in popular culture as explanations of the past and predictions of the future – melting ice-sheets, advancing ice-sheets, rising sea-levels, desertification. There is foregrounding, politically and environmentally, of acid rain and global warming.

But climate, and especially climate change, has an appeal beyond these practical matters. One reason for this is that it is external: climate is composed of influences that are outside society and outside our control. That satisfies us because we can understand climate change as a process of cause and effect. Climate is also free of guilt – or has been until the last few decades. As an extreme part of this there is catastrophism which we also like because it is about great power running out of control, sometimes seeing the ruin of civilizations. And it does not really matter whether these events have already taken place or are still to happen: if we cannot identify them from the past we predict them for the future. Climate, too, is something we do not *quite* understand. It is a simple concept yet its intricacies and causes are beyond most of us. It is like the idea of ‘time’ – easy to understand and use, difficult to explain. A bit like God.

BUT WHAT IS CLIMATE?

Yet we still need to explore what climate actually is. Most obviously, it is an averaging over years of atmospheric conditions – weather – which give rise to big areas which are our climatic zones. Some of our first experiences of climate are in maps of vegetation in school atlases which are presented in a climatic framework. It is satisfying to see zonations of plant life-forms being repeated in the different continents, yet through different species. Yet climate itself is an abstraction. In this respect it is quite the opposite of soil texture. It is still texture, but a texture of experience, for while soil texture can be felt immediately, climate cannot, although we come close to it in the measurement of comfort. Thus with reference to relative humidity, climatologists can plot maps and bar-charts showing the intensity of discomfort, even stress, at particular places and times. During the period 1961 to 1987, Stornoway in the Outer Hebrides was a much more comfortable place to be in than Oxford (Figure 5.2), especially in the summers of 1975 and 1976 (Barrow and Hulme 1997).

But this is still a physical measure of an abstract idea: the chain from what we experience as climate to the abstraction of climate is complex. You cannot dig a hole in a peat bog and find an ancient climate like you can find an ancient insect. You can say that something was caused by climate, as of a changing species distribution, but not that something *was* climate. Palaeoclimatologists fail to understand this when they talk about the ‘proxy’ evidence for climate: there is no other sort of evidence. All data for climate, past and present, even the measurements of barometers and thermometers and all the statistics and mathematical analyses that are applied to them, are proxy. More fundamentally, climate is defined as the way these data are brought into being, it is constituted through them: the data are not evidence for climate, they are part of it.

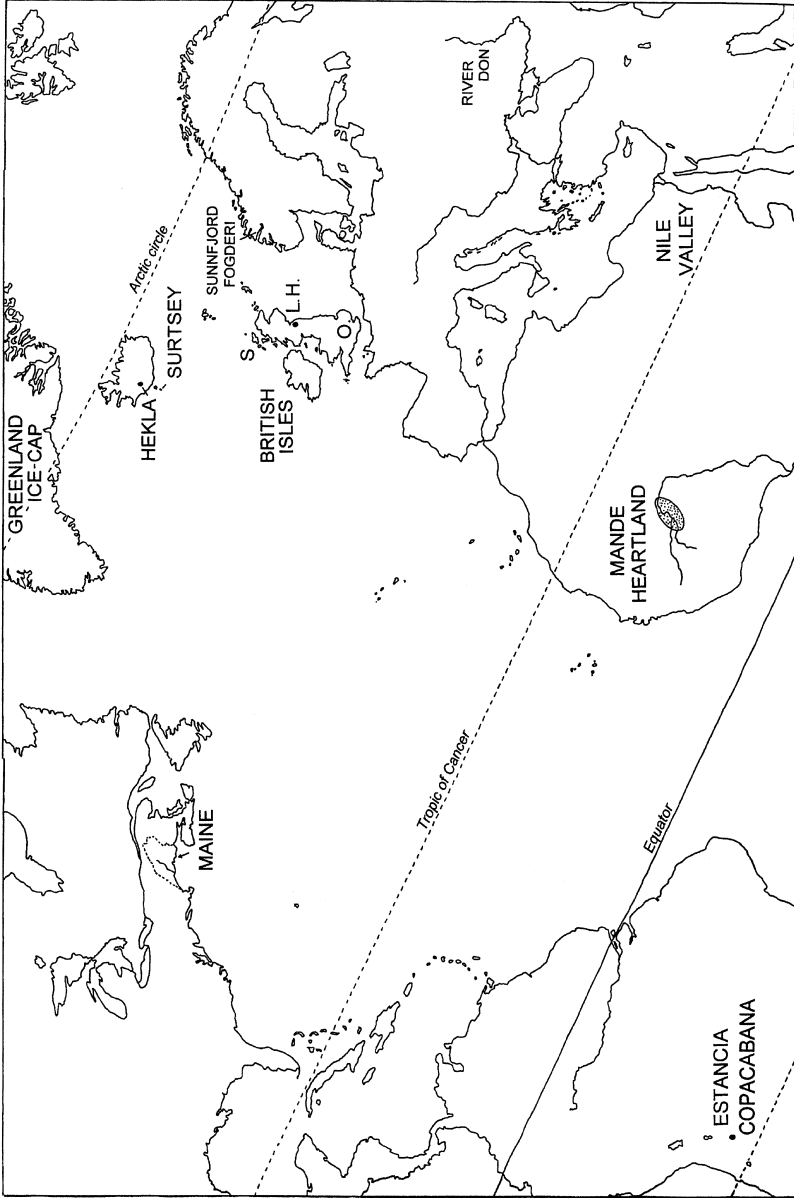


Figure 5.2 Location of sites and areas discussed in Chapter 5. Sites in the British Isles are: L.H., the Lammermuir Hills; O., Oxford; S., Stornoway in the Outer Hebrides; in Maine, the focus of the study, the Kennebec River Valley, is indicated. The Estancia Copacabana, dealt with in Chapter 8, is shown here for convenience.

Importantly, the relationship between climate and sociality is not just about the effects of climate on human communities. In a study on the depletion of grain stores in ancient Egypt through drought (Hassan 2000: 136), however distant we go along the chain of consequences from this particular climatic disaster – the consumption of seed corn, the loss of revenues, the failure to support non-food producers, the undermining of pharaonic authority (here of Djoser), the breakdown of social and, ultimately, cosmic order – there is a passive mapping of social events onto climatic ones. Involvement with climate in the social domain is more interesting than this. It is about how people explore themselves and manipulate others through their constructions of climate (McIntosh *et al.* 2000). So the crucial point in the above example is that the priests and pharaoh used climatic stress to engage in power play and that ultimately there was a donation of revenue to the temple and an acquisition of privileges by the priesthood. Rather than being a part of a unilineal chain of cause and effect, this involved active social manipulation of the effects of climate change (Hassan 2000).

Take the following series in relation to a grain crop in an area over a few years:

- 1 Physical measurements and graphs.
- 2 Written records, like weather diaries.
- 3 Phenological observations, as of crop-ripening times.
- 4 Harvest properties, such as quantity, quality and dates.
- 5 Grain harvest prices and tithes.
- 6 Taxation levels and records of public disorder.

This could well be a sequence of involvement in causation, with climate affecting crop ripening and productivity of the harvests, and these having economic and social repercussions, as we saw with Djoser and his people. But it is also a sequence of different styles and interests of recording in which climate is constituted, and this in three ways: as the observations themselves of climate or weather and the different ways in which they are recorded; as the interest of the recorder in the observations; and through the materiality of the record itself. The fact that none of these is neutral enriches our characterization of climate.

First, with regard to observations. For science, instrumental measurements of rainfall, temperature and wind are the usual way in which climate is recorded; for naturalists, length of growing season or the appearance of a particular migratory bird may be more relevant; to the farming community, frequency of the failure of harvests is much more useful as an index of marginal land and its management than knowledge of a particular isotherm of accumulated summer warmth; while for the urban population there are greater implications in taxation. Importantly, any one of these manifestations can be as relevant and meaningful as any other in a given context.

Then there is the degree of interest of the recorder. Thus while weather diaries and phenological observations can be made in a near-neutral environment for curiosity or science, harvests may be timed in order to make a socio-economic statement – like delaying them in order to enhance the impact of wet and stormy weather in order to bring down rentals. For similar reasons, the actual record of the harvest dates may be deliberately falsified, while civil unrest and its reporting can be equally manipulated.

Third, the materiality of the records themselves can also provide a medium for social positioning. Detailed and continuous records, for example, are just one, and a somewhat esoteric, manifestation of climate: they are as much about particular kinds of individual and organization satisfying their lives in a need for precision as they are about objective recording (cf. Ch. 3, p. 55, in relation to texture). Or it may be how the graphs and charts are used, how they are presented beyond the individual recorder or institution in the academic and lay domains, that is important. In one case, a person may construct and use records as a personal gratification of precision, while another might use them in an engagement with an audience, more as an art form than a raw record. Nor is this an academic point, for people have used the materiality of texts in ways that were not so much about their content but about the sheer existence of the text alone from the beginnings of text itself (Ch. 7).

Crucially, although these influences have to be considered in reconstructing past climates (climates as scientific fact) (Ingram *et al.* 1981b), they are all a part of the characterization of climate in its use in human social worlds.

CLIMATE AS A SOCIAL CONSTRUCT

Experiencing climate

A useful entry to climate as a medium of social agency is through different temporal and spatial scales. Generally, what climate is and whether or not it has an effect on people are the same question. Climate can be understood only where it is an influence in human lives: ‘We are collectively all paleo-climatologists’ (McIntosh *et al.* 2000: 24).

At a slightly lesser scale, climate can be drawn into people’s lives as long periods of stability and big areas of uniformity. We might think that such scales, while visible to us through science, were imperceptible to people in the past. Yet even for people living sedentary lives and with no long-distance communications or knowledge of the distant past, or those living in regimes so vastly uniform that there was no known edge to their climatic universe, there was still perception of this scale of climate distribution and change through myths, origin stories and the place of these in religion. Indeed, origin stories may be stronger in maintaining the relevance of climate history than short-term memory: ‘A major portion of any human response to climate . . . is

through the cosmology that defines the place of humanity in nature' (McIntosh *et al.* 2000: 6). Long-term change or distant climates have a role in human lives when held in memory, legend or the subconscious, and kept alive through creation stories out of lands quite different from their own (*ibid.*: 24–32). We need only to think of the durability of the biblical flood story even in science, as with William Buckland's *Reliquiae Diluvianae* (1823) (just a few years before the recognition of past glaciations and their link with climate by Louis Agassiz) and the modern expeditions from the USA to find Noah's ark, to see how easy this can be. Where such stories are used in engaging in social relations, the significance of these ancient and far-flung climates is strengthened and their memories more deeply maintained (p. 114 below).

Small-scale and short-term variability is more easy to understand because the influences of climate are physically experienced. Such conditions occur where weather is harsh and seasonal, where subsistence is linked closely to the seasons, and where there is a visible link with plant and animal phenology. Most obviously, they are a feature of short spatial differences, as in mountain or maritime areas, for in such areas there are marked falls of temperature for only moderate increases in altitude. Figures of Gordon Manley, cited in Parry (1978: 79), compare 'a ten-day reduction of the season over an altitudinal rise of only 76 m in southern Scotland with a similar reduction over 230 m in the Harz Mountains'. In the same way, only slight secular changes of temperature can lead to a marked reduction in the length of the growing season, and there is also greater unpredictability in the climate of such areas. People may have sought out such areas in their opportunities for social expression as an enhancement of social intensity, as we discuss later for the Lammermuir Hills (p. 108), and if this is indeed the case it lends an additional perspective to the meaning of marginal land (Ch. 3, p. 69).

Climate and science

Interest in climate change in the scientific community has had a patchy history and, like many scientific endeavours, has been related to perceptions of its importance in human lives. These vicissitudes show the duality of the climate concept – as scientific fact and social construct. Interest in climate as an influence on culture has not been uniform, with many people denying it at all, while the relevance of climate change has not always been of such interest for society as it is today.

The long-term changes of the Pliocene and Pleistocene, especially those of the ice-ages and interglacials, now seem linked to changes in the tilt of the Earth's axis and the shape of its orbit as calculated by Milankovitch in the 1920s and 1930s (Imbrie and Imbrie 1979). Interest in the theory lapsed in the 1940s because of the complexity and time-consuming nature of the mathematics involved, and probably too because of all the problems in Europe, but it was championed again in the late 1950s by Frederick Zeuner (1959).

However, Zeuner and his global dating schemes were unpopular with the rising and powerful pollen-based school of the Sub-department of Quaternary Research in Cambridge University (e.g. West 1963) and interest in Milankovitch (and Zeuner) lapsed once more. Zeuner was a maverick, not attached to any particular school of ideas, without a big team of research students, and critical of scholars who did not apply rigorous methodology to chronology building. He also lacked the continuous sequences needed to really check the Milankovitch scheme. So it was not until the 1960s, when these sequences began to emerge in the loess of Middle Europe and the oxygen isotope record of deep-sea cores, that serious consideration of Milankovitch was renewed (Imbrie and Imbrie 1979).

Much of the recent interest in climates comes from the foregrounding of global warming in the political and environmental domains (Schneider 1990). Temperature measurements for central England had been made on an almost daily basis since the late seventeenth century, and short-term annual and seasonal discrepancies from the mean were well known. But it was not until the 1950s, when Gordon Manley (1974) started to put together a continuous record of these, that the long-term fluctuations which they held were revealed (Figure 5.3) (Jones and Hulme 1997: 173). Especially, there has been sustained warming since the 1930s and it is likely that mean annual temperature in central England will reach 11°C for the first time in the next few years (Jones and Hulme 1997: 195) (although it has not done so yet, with a value for 10.5 in 2002). Thus, the erstwhile isolation of the historical climatologist Hubert Lamb in his early research on long-term climate change (Lamb 1977; Lamb *et al.* 1997) and his later rise to prominence embody not only his tenacity and direction of purpose but two changing global climates – one physical, one social – thus neatly embracing the duality of the climate concept as a whole.

Communicating scientific data through the media of newspapers, radio and television can be dangerous. It certainly results in alterations of the message. This should not surprise scientists, yet it does. Ann Henderson-Sellers (1998) details the misrepresentation of her research on a possible increase in cyclones in the framework of global warming. In the local Melbourne press, her guarded press release ‘no evidence for major changes in area or global location of tropical cyclone genesis’ became ‘Super cyclones on horizon, say scientists’ (Nicholls and Kestin 1998: 417). Prediction of tropical cyclone genesis is significant for the insurance business, even outside of a context of global warming, so the press is bound to exaggerate the picture: their job is to sell newspapers. And there are almost certainly political and environmental interests as well: no news story is neutral. Climate change is being constructed in order to satisfy diverse interests and variously reinterpreted. ‘Journalists loved it, environmentalists were ecstatic, many meteorologists were quite upset’, wrote Stephen Schneider (1990: 195) on global warming, and, we could add, ‘politicians were ambivalent, industrialists

horrified'. Global warming is an actuality, as shown by the record of global near-surface temperature change from 1856 to 1995 (Barrow and Hulme 1997: fig. 0.1; Tol and de Vos 1998: fig. 1), but it is also a strong social construct.

DIFFERENT SCALES OF TIME

Different scales of time in climate change and the ways they can be recorded are usefully discussed in the book *Late Quaternary Environmental Change*, by Martin Bell and Mike Walker (1992: ch. 3).

The sun

Climate is driven primarily by the sun. There are long-term (Milankovitch) cycles of radiation which are related to the changes in the Earth's orbit and spin which generate the ice-ages and interglacials (Imbrie and Imbrie 1979). Shorter cycles of several millennia may be related to the strength of the Earth's magnetic field which determines the amount of solar radiation reaching the Earth. This is seen in the climatic optimum of the Holocene (around 7,000 to 5,000 years ago) in which a weakening of the magnetic field allowed increasing solar radiation to reach the Earth (Eddy 1988). It is seen, too, as a period of enhanced radiocarbon, where again a weakening of the magnetic field allowed greater penetration of the cosmic rays responsible for the formation of this isotope (*ibid.*).

Most climate signals show a smaller-scale patterning, of a few decades to a century. This is a pretty constant feature whether we are measuring rainfall, sea-ice, tree-ring widths or grain harvests, or the incidence of climate-related hazards like landslides, avalanches and floods as seen in the Sunnfjord Fogderi of western Norway (Figure 5.2) in the seventeenth and eighteenth centuries (Grove and Battagel 1981). It suggests a common origin, probably in the sun, even though internal variations of the climate system and oceanic processes are likely involved as well (Tol and de Vos 1998; Hunt 1998). The sun in climate change has been underrated until the last two decades; now scientists are coming to realize that it may be a major driving force at the scale of decades and centuries (Stephenson and Wolfendale 1988; Pecker and Runcorn 1990). It is even being suggested that an increase in solar radiation rather than the industrial production of greenhouse gases is the cause of the current global rise of temperature, although this is unpopular since it has no socio-political content.

The 'wiggles' in the radiocarbon calibration curve are also likely of this origin, even if indirectly (Suess and Linick 1990; Wigley and Kelly 1990). Strong solar output deflects cosmic radiation and thus reduces the rate of radiocarbon formation. (The effect is opposite to that of the longer-term trends generated by the Earth's magnetic field: for the wiggles, high solar

radiation = low C-14 production; for the longer trends, high solar radiation = high C-14 production.) There is also a relationship with sunspots, periods of reduced sunspot activity such as the Wolf (AD 1290 to 1330), Spörer (AD 1450 to 1540) and Maunder (AD 1645 to 1715) minima being coincident with periods of high C-14 production and thus low solar output (Wigley and Kelly 1990), and the last coincided with the nadir of the Little Ice-Age.

If this relationship is correct, the wiggles in the C-14 calibration curve can be used as an indicator of solar radiation. Importantly, they record periods when there was little change and periods when things happened rapidly. Thus the period from about 2500 to 1000 BC was relatively calm although with a weak but distinct cooling (C-14 maximum) at 1350 BC. There were also in this period at least two horizons of volcanic ash, or tephra, in Irish peat bogs indicating volcanic dust veils which can also cause brief but widespread climatic cooling. One, for 2310 ± 20 BC, is from the Icelandic eruption of Hekla 4; another, at 1159 BC, coincided with a year of narrow rings in Irish oaks and enhanced Greenland ice-core acidity, both effects probably correlated with the Icelandic eruption of Hekla 3 (Baillie 1995; Pilcher *et al.* 1995). Subsequently, to around 200 BC, there was a quite variable period, with two strong swings from warming (C-14 minima) to cooling (C-14 maxima); each couplet took place over just a few decades, the first from 900 BC to 750 BC, the second, which was sharp, from 400 BC to 370 BC.

Peat bogs and lake sediments

The radiocarbon calibration curve is not the only index of climate change, even if a useful one in being global (or at least northern-hemispherical) and independent of topography. In areas of oceanic climate, precipitation is a major component, and although high rainfall and cold often go together they need not always be coupled. Other measures are needed, and signals of peat growth, peat humification, and the various species of *Sphagnum* moss are valuable here.

In northern England, at Bolton Fell Moss, there were periods of increasing wetness over six millennia, between 5500 BC and AD 950, with a periodicity of about 800 years (Barber *et al.* 1994). In northern Scotland, there was a shift to wetter conditions in the earlier part of the second millennium BC as indicated in the hydrology of lake sediments and peat bogs. The episode was dated to between 1950 and 1550 BC, although probably taking place over just a few decades. Comparative evidence from Alpine Europe and deep-sea cores suggests that this was of North Atlantic relevance, possibly linked to cooling sea-surface temperatures (Anderson *et al.* 1998). At Talla Moss in the Scottish Borders, there was a series of wet shifts on a cycle of around 210 years from 1505 BC to AD 1410 and which were apparently independent of vegetational changes (Chambers *et al.* 1997), although it is odd that widespread and distinct climatic change in the middle of the sixth century AD is not recorded

in this series. Thus changes of peat humification in blanket mires from the northern and western British Isles and Ireland show a change to wetter conditions around AD 550 (Blackford and Chambers 1991), reinforcing evidence from north-west Europe, and maybe linked to a year of fierce and sudden cold recorded in the tree-rings for AD 536 (Baillie 1994). But blanket peat began to form in various places from at least the Neolithic period onwards (Chambers 1983), and in a few areas is of Mesolithic origin.

Tephra and peat bogs

At the scale of individual years, tephra or volcanic ash – sometimes as little more than enhanced acidity in peat, lake sediments or annual layers of ice in the Greenland ice-cap – represents volcanic eruptions whose effects in creating an atmospheric dust veil were global. Cool summers and reduced growth, leading to very thin rings in trees (frost rings) or even their absence, were consequences of the darkened skies (Baillie 1995). In some cases, tephra occurs as two or more closely successive layers, reflecting the influence of a dust veil over a few years (Stothers 1999). This has been suggested for the AD 536 event which may have continued for over a decade (Baillie 1994). It may be significant, too, that tephra is preserved in peat bogs, so that a general trend of increasing rainfall as indicated by the growing peat was punctuated with a few years of sharp cold as indicated by the tephra. Of course, the tephra is being deposited everywhere and only preserved where there is a suitable medium, like peat, while the peat, although reflecting a more widespread increase in precipitation, is only present in suitable depositional contexts: the association of peat and tephra is purely related to the preservational context.

But is this absolutely true? Peat bogs are often common land, carefully managed for their resources, with people attracted to them as places to socialize in contexts different from those of the usual farming environment (cf. Ch. 8, p. 194). In exploiting bogs for their peat and timber, people became very familiar with the way they grew, especially since specific areas were allotted to individual families. They knew how the layers recorded history. Most significantly, people saw how the peat bogs expressed the physicality of climate change, overwhelming their grazing land and their arable and clogging up their lakes and rivers, all kinds of livelihoods being taken away. Round barrows may have been built close by as monuments to lost grazings, standing stones set up to mark trackways which were becoming bemired, and ridges of upland cultivation created as an opposition to the encroaching peat – which indeed in many upland areas, like the Lammermuir Hills, has now swallowed them up (Parry 1976). Peat bogs do not record climatic changes neutrally: they enhance them in a way that makes them more meaningful to the people whose lives were affected by them. When we record climate change from a peat bog it is as a record of

something which the people themselves saw as a record of climate change. It is specific to the peat.

This allows us to consider the dust-veil events in the same way. Tephra is often invisible to the naked eye, as with layers in raised bogs in the Lower Bann Valley, northern Ireland (Hall *et al.* 1993), or in parts of northern Scotland and the islands (Dugmore *et al.* 1995) where it occurs as layers only half a centimetre thick. Tephra layers, if they originated in dust veils (which is not the case for all of them), were probably associated with cold winters, and possibly with famine and epidemics of plague (Stothers 1998, 1999); other physical effects varied from unpleasant and darkened atmosphere to dry fogs and even the deposition of ash. A perception of peat bogs as reservoirs of environmental change could, then, have allowed an understanding of how the strange atmospheric effects of dust veils were drawn into and trapped in the growing peat. The atmospheric effects are also likely to have been more striking and better noted in open areas of boglands – especially those of the extensive raised lowland bogs along estuaries or blanket peats in upland plateaus – in contrast to more enclosed environments of farmland or woodland. Darkened skies and reddened suns also allowed sunspots to be more easily witnessed with the naked eye, so if the dust veils coincided with periods of high sunspot activity there was added meaning. Smoke from forest fires or funeral pyres also enhances sunspot visibility. So does viewing them in the evening.

So when we analyse our layers of tephra, microscopic though they may be, we should not assume they were unfelt at their time of deposition. Nor should we imagine that they were a general feature of the landscape and only preserved in peat bogs because of the suitable context. No evidence is neutral, not even layers less than a centimetre thick and made up of particles no bigger than 40 microns, totally invisible to the naked eye.

Seasons and documents

‘Singularities’ or very short periods of exceptional weather that often recur year after year – like the mid-June shift to westerly weather in the British Isles (Kelly *et al.* 1997: 166) – could have served as useful anchors in the past, especially for societies without calendars. However, singularities are very short and, unlike the seasons, do not always recur. It is the seasons that in many parts of the world give climate its most familiar timbre, as in coastal regions where tidal extremes, temperature and storminess can be detected in the form and growth lines of mollusc shells and corals and by oxygen isotope analysis (Andrews *et al.* 1985; Deith 1983, 1985; Ekartne and Crisp 1982). Other components include frost and snow, and significant events such as leaf-fall or the first appearance of migratory birds (phenology). Variability in intensity is significant. As one moves eastwards across Europe, the continental climate experienced is characterized not only by increasing dryness but by

increasing extremes of summer warmth and winter cold. Limits to plant and animal distributions are related to where their tolerances lie in the annual cycle: a species susceptible to frosts will tend to have a westerly, maritime, distribution but one which can be quite northerly, while a species whose growth depends on summer warmth will be happier in the continental interiors but confined there to the more southerly parts.

Seasonality is registered in documents (Ingram *et al.* 1981b; Ogilvie and Farmer 1997), for it is often as seasonality, rather than annual averages, that climate is experienced and remembered. This is seen in the (seemingly endless) inclusion of pictures of frost fairs in publications on climate change. In London, the frost fair on the Thames of 1309 to 1310 lasted so long that 'the people indulged in dancing in the midst of it near a certain fire ... and hunted a hare with dogs in the midst of the Thames' (cited in Parry 1978: 34). Different indicators tell different stories. Summer responses are to growing-season temperatures and may therefore be reported more frequently in manorial account rolls, especially dry summers and wet autumns since these have the most impact on agriculture. The activity of vegetation and animals, especially where they are unusual, is often related to the growing season, and so of relevance to, and recorded by, farmers and landlords. Winters, rather, are about freezing events and other visual extremes and are favoured in narratives; the amount of snow and its duration are more noticeable than many phenological occurrences and therefore receive wider, but less critical, documentation. Freezing lakes, rivers and canals, while not so common, are spectacular and usually recorded somewhere when they occur (Ogilvie and Farmer 1997: 118; Pfister *et al.* 1998). There are also differences in attention at different periods: writers on Medieval Europe, AD 801 to 850, paid most attention to cold seasons, while narrators of the High Middle Ages present a more balanced view (Pfister *et al.* 1998: 357). Different seasons show distinct patterns of temperature variation in the physical data as well. The pattern from the Dome Summit ice-core from eastern Antarctica over the last 700 years showed little change in the summers but significant fluctuations in winters (Morgan and van Ommen 1997).

Seasonality is a significant part of the characterization of the 'Medieval Warm Period' of Britain and western Europe (eleventh to early thirteenth centuries) and the subsequent Little Ice-Age, yet both periods are increasingly in question (Jones and Bradley 1995; Ogilvie and Farmer 1997). This suggests that our blocks of climate change on the scale of centuries may be a construct of our needs for order (and subconsciously a determinism), especially as they so often fit with archaeological periods, while their recent deconstruction could be as equally a construct of Post-modernism. Yet this, in turn, suggests that it is worth thinking about such constructional uses as a feature of the past as well and that people then, just as much as in more recent times, manipulated climate in similar ways. Our big blocks of culture-related climates may not be so far off the mark after all.

A FEW BAD YEARS: HOPE AND DESPAIR

Single seasons and years, however severe or extreme their weather, have little or no long-term effect on what people do. Permanent abandonment of settlements and land, or at least a complete change in the direction of use, is only brought about by single extreme events if they are utterly annihilating. Even then, the human spirit is remarkably resilient. On the other hand, groups of extreme years are likely to have had more effect (Ingram *et al.* 1981a: 30), as perhaps was the case with the succession of bad years and failed harvests invoked by Parry and Carter (1985) as one of the triggers of desertion in the Lammermuir Hills (p. 108, below). More seriously, these clusters often occurred in a general trend of deterioration. In the case of the dreadful years of the 1690s in the Scottish Borders, the 'seven ill years' (Figure 5.3), the two previous decades had also seen poor farming weather which seriously affected livestock and hay production as well as cereal crops (Whyte 1981: 20). And then, the whole period was the nadir of an even longer downturn of the Little Ice-Age. Clusters of dust-veil years could have had the same effect, the final nail in the coffin of a more general increase in wetness, cooling and the spread of peat. Indeed, this could be a structure which is widespread – a period of general cooling or of greater rainfall, then some years of greater extremes, and one or a few frost years as an ultimate nadir of desolation.

An added twist is that sudden, short-term, downturns can be preceded by short periods of just the opposite sort of climate, exceptionally good

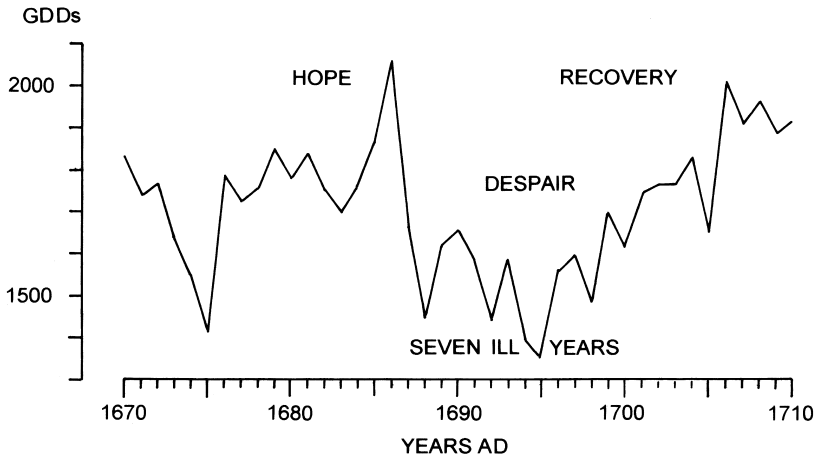


Figure 5.3 Graph showing a distinctive pattern of climate change and human responses to it, based on the period 1670 to 1710 in south-east Scotland; GDDs = growing degree-days. (Adapted from a part of Parry and Carter 1985: fig. 1.) For similar patterns see Bell and Walker (1992: fig. 2.33), Ingram *et al.* (1981a: 30) and Smith *et al.* (1981).

conditions, as suggested for England in 1546 to 1553 and 1618 to 1625 (Ingram *et al.* 1981a: 30) and recorded for Egypt in Genesis 41, 53–54: ‘And the seven years of plenteousness, that was in the land of Egypt, were ended. And the seven years of dearth began to come, according as Joseph had said’. In Maine (Figure 5.2) in the 1820s, new adventures with crops and farming technology were tried when a brief period of climatic warming entailed population movements into the area and saw farmers moving from subsistence to large-scale commercial agriculture (Smith *et al.* 1981), particularly in Kennebec County, ‘the finest agricultural valley in the state’ (*ibid.*: 451). Maize which had formerly been a marginal crop in the area could now be grown on a commercial basis, and there was even a ‘silkworm craze’. But expectations were not realized as the climate reverted to the familiar cooler and wetter conditions, so that things came to a sticky end in less than a decade, and hope was destroyed.

Thus in a background of slow deterioration, a short period of good climate can bring hope and planning, with a short peak of economic boom; this is followed equally suddenly by depression as a few successive years of extremely bad climate set in, so consolidating the despair of the broader decline. Such a structure (Figure 5.3), covering perhaps no more than two or three decades, has likely been important as an intensity of experience of human–climate relationships throughout history. We have seen it as couplets of warm then cold in the C-14 calibration curve for the first millennium BC and in the changes from dry to wet in the peat bogs, which could be quite sudden; and we shall encounter similar sharp downturns in the earlier Upper Palaeolithic later in this chapter (p. 113) and at the beginning of the Younger Dryas period in relation to early agriculture (Ch. 10, p. 224).

THE LAMMERMUIR HILLS

An excellent study on climate change is that on the abandonment of high-altitude settlements of oats farmers in the Lammermuir Hills in south-east Scotland (Figure 5.2). It is set in a trend of decreasing warmth and increasing risk of harvest failure in post-Medieval times, and illustrates different perspectives on the significance of climate change from long-term (Parry 1975) to short-term (Parry and Carter 1985). The work has also been placed in a global setting of climatic change and agriculture (Parry 1978) (mostly in the period from the Middle Ages onwards, and mostly from the Alps, northern Europe and the USA), with a discussion on harvest failure, and there are associated papers on research strategy, methodology (Parry 1981) and relevance to prehistoric upland settlement (Parry 1985). The area was chosen because (a) it was at the upper limits of oats cultivation and therefore sensitive to climate change, (b) its low relief allowed a response over a broad area, (c) there is good field archaeology of fossil cultivation ridges and settlements,

and (d) there is good documentation on farming and weather events over the past three centuries.

Restraints on oats cultivation in uplands (allowing for differences in type of oats and oats husbandry between now and the past) were identified in the form of summer wetness (potential water surplus), exposure (mostly wind speed) and accumulated warmth (as growing degree-days, GDDs) (Figure 5.3). The isopleth, or altitude for combined values, above which oats cultivation was impossible was plotted for the later nineteenth century, for which there are records for the upper limits of oats cultivation and climate, while a lower isopleth was identified above which commercial (as opposed to subsistence) farming is non-viable. These delimited a zone of land that was considered marginal for oats cultivation. This was translated into risk of harvest failure, established statistically from variations in GDDs (Parry 1978: 88) and from the instrumental Central England Temperature Record from 1659 to 1981 (Manley 1974), because risk is more relevant to farming decisions: it is easier to understand a one-year-in-five harvest failure than an isopleth of 1,100 GDDs (Parry 1975, 1978: 87). The zone of high risk had a lower limit where the probability of harvest failure was one year in 15 (equivalent to a mean of 1,200 GDDs) and an upper limit of one year in 3.3 (1,050 GDDs); for two consecutive harvest failures the figures were, respectively, one in 210 and one in 11. This high-risk zone could be tied in altitudinally (between *c.* 215 and 300 m above sea-level), although there was not complete coincidence of isopleths and individual contours owing to differences of maritime influence and topography: risk increased with altitude less rapidly on gentle slopes (e.g. a ten-fold increase over 10 km on the gentle southern slopes) than over steeper ones (e.g. a twenty-fold increase over less than 5 km on the northern scarp) (cf. p. 100).

Now the zone of marginality, in terms of risk to the oats harvest, could be located to particular altitudinal bands through an assessment of the prevailing climate, and the effects on farming estimated accordingly. Secular climate change was determined from original weather records for the period 800 to 1750 (Lamb 1977) and from actual measurements of temperature and rainfall since the later part of the seventeenth century (Manley 1974; Jones and Hulme 1997); part of the Manley curve, translated into GDDs, is shown (Figure 5.3).

Finally there is the crucial stage of showing whether the cause of settlement and land abandonment was the increased risk of obtaining a successful harvest. First of all, there are no settlements or cultivation ridges above the climatic limits to cultivation in AD 1300, so that is one benchmark. Between AD 1150 to 1250, at the later nineteenth-century upper limit, the average growing season was 15 per cent or 150 GDDs higher (Parry 1975: 8), equivalent to an average crop failure of less than one year in twenty. Even commercial cereal cultivation would have been possible at this altitude of over 300 m. Unfortunately, dating the ridge cultivation and settlements is not very tight

(Parry 1975), although in a later paper Parry (1976) discusses a typology of cultivation ridges. Still, there is some documentary and archaeological evidence to suggest that land at or above 300 m was taken in during the twelfth century, especially by monasteries. Then, between 1300 and 1400/1530, the climatic limit to cultivation fell (from 450 to 310 m) and there are fifteen settlements and much high-level cultivated land between these two limits which were abandoned before 1600. So there is a correlation here between the lowering of the high-risk zone, due to climatic deterioration, and land abandonment (Parry 1975, 1981: 13). Between 1600 and 1750 several farmsteads and almost 3000 ha of cultivation were abandoned, again linked to climatic deterioration of the sixteenth and seventeenth centuries.

Later work (Parry and Carter 1985) suggests that abandonment was related to short-term events such as a few years of bad harvests. Transposing the year-by-year (indeed season-by-season) Central England Temperature Record from 1659 to 1981 to the Lammermuir Hills (with suitable allowance for latitudinal and altitudinal differences), Parry and Carter (1985) fine-tuned some of the correlations with abandonment. Most certain is where there are actual accounts which refer to single years of poor weather as the cause of late harvests and then non-payment of rents, bankruptcies and the amalgamation of holdings (*ibid.*: 101), yet single years of hardship had little long-term influence. In contrast, for two or more successive years, there are correlations between runs of cool summers and the actual upper limit of cultivation, e.g. for the period 1688 to 1698 which was particularly bad. These are not records of actual abandonments but they come pretty close. There was considerable, but not total, abandonment of farms (the actual buildings) at the highest altitudes in the Lammermuirs between the seventeenth and eighteenth centuries, but there is no actual documentation for harvest failure as the direct cause of abandonment. In 1782, 1799 and 1816 the oats harvest was delayed until December. In the late nineteenth century, 'adverse weather and depressed grain prices were reflected in the long-term change of arable to permanent grassland and rough pasture' (Parry and Carter 1985: 101).

Parry (1978, 94) suggests changing farming systems and better opportunities elsewhere as additional or alternative causes of abandonment, as well as more direct influences such as new and hostile landlords, increased rentals, or the ravages of an English army. But abandonment must also be considered among the reasons why people were in the Lammermuir Hills in the first place, for if this was in order to explore their potential for enhancing social relationships and not for economic considerations, then debates about climate change take on a different flavour. The settling of these marginal lands with their differences of land potential and harvest quality could have been a deliberate act of engaging with a deeper, more intensive, social world. The diversity of harvest times and harvest success over short distances demanded interdependence of households at different altitudes, with help and

exchange in various produce according to the weather of the year. Even harvest failure is not an all-or-nothing business: there can be partial failure with low yields (which may involve the use of stored seed corn for food), failure of the grain yet a good crop of straw (which can be used for bedding, fodder or thatching), and in any kind of crop there are always opportunities for gleaning of grain and straw. Cooperation was needed between neighbouring farmsteads, so sociality was intensified. Far from being poorly adapted to these upland areas and living at the edge of subsistence levels, these farmers were actively using the marginality of the land to engender cooperation, greater social intercourse, opportunities for expression and the emergence of new ideas. The lands may have been economically marginal but socially they were at the heart of things. Abandonment can then be seen in internal societal origins, perhaps reversals of the trend which led to the demands for social intensification in the first place.

Another reason for people to adopt a life in climatically marginal lands is as an opposition to communities in other environments. In this, hardship and visuality (and the visuality of hardship) were important, and the fluctuations of the high-risk zone and the prominent ridges of these uplands may have been a part of this. So once again, we are seeing our data as having been actively created, and the engagements of people in the past as taking place for precisely the same reasons as the study was undertaken in the present. The ridges are surely substantial beyond the needs of the subsistence cultivation of oats; indeed they may not have been for cultivation at all. One suggestion, in the case of ridge-and-furrow in the Tweeddale uplands of southern Scotland, is that ridges were formed in the reseeded and limed land for sheep pasture (Carter *et al.* 1997). The mould-board plough of the Middle Ages may have been a product of technology but it also allowed the monumentalizing of great tracts of upland through the creation of the distinctive, 'high-backed', cultivation ridges. There is also visual expression in the crop itself. Oats, while eminently suited to the harsh upland climate, gives a significant visuality to the land in its nodding heads, quite unlike other cereals, and its reflecting silver glumes. In the nineteenth century in the Hiraethog region of North Wales, the chaff of oats was deliberately kept in the flour to give the bread a visual texture (Evans 1948).

The concept of abandonment also needs examining (Ch. 8, p. 189). People may have gone into marginal areas not only as a means of social intensification or in opposition to other forms of livelihood but also in order to leave a record of their lives. In marginal areas this would have been well preserved (Ch. 3, p. 69). Monumentality is about visual expression in life but it is also an acknowledgement of a future after death. This is not so much about the immediate time when abandonments were fresh in people's minds, when houses were used as barns and byres, and when the freshness of the ruins was used in an articulation of societal and environmental ills, but the longer

perspective of writing history, just as some societies, like the Mormons, do through the creation and analysis of historical texts. If we see the farms and barns and the agricultural traces as a deliberate record for the future – analogous to a written text – then we must view the leaving of these lands and this way of life as a part of the recording process, as something done actively as in the establishment of an archive (cf. p. 38).

PALAEOLITHIC EUROPE

A second case-study illustrates ideas about long-term memory and vast areas of land, just what the Palaeolithic is all about, occurring as it did through hundreds of thousands of years, perhaps more than a million even for Europe alone. Environments included continental glaciations, huge expanses of steppe right across to the Bering Straits, and periods of mixed deciduous woodlands stretching from the Baltic to the Mediterranean. One grand scenario is human evolution and technological change, but the former is uncertain and the latter of uncertain significance. There were different kinds of people, that is true, but whether they were related in an evolutionary scheme or contemporary races moving around Europe is not clear (Ch. 9, p. 210). As for technological development, that is not in doubt but its relation to mental abilities is. Differences in the diversity and sophistication of material culture are as much to do with different media of social expression as with the evolution of the brain. The rudeness of Lower Palaeolithic stonework in comparison with the art and refined bone, ivory and stone inventories of the Upper Palaeolithic can have been compensated for by sophisticated articulations with the environments – including climate – which we are unable to identify at all.

Correlations have been made between climate and the absence of humans, usually in relation to extremes of environment. There certainly seems to have been an absence of Lower Palaeolithic communities from extensive areas of dense deciduous woodland, while intense cold and glaciation itself were deadly. Changing sea-levels were also a product of climate change, mainly as a function of the waxing and waning of continental ice-sheets, and this had implications for the movements of people globally. The colonization of North America was probably only possible across the Bering Strait land bridge (Beringia) at times of reduced sea-level and hence glaciation, and the same probably applied to the islands of south-east Asia and Australia.

Movement in the low-productivity lands of cold climates needed to be over vast areas to obtain the necessary food, but this could only occur where human sociality had developed the necessary mechanisms for widespread recognition. The absence of such mechanisms may be one of the reasons for the (supposedly) relatively late colonization of Europe (Gamble 1999). Thus out-migration is not just a question of leaving the tribe or community: there

must be some way of interacting as groups in order for viability to be maintained. Without sociality, there can be no spread. Indeed, what was going on at the edge of human populations may have been more dynamic than at the heart, with more opportunities for social expression through the medium of uncertainty, environmental novelty and challenge, and population expansion itself. Any link with climate may be tenuous, and there are clear parallels here with the farmers of the Lammermuir Hills whose activities at the high-risk zone of the upland edge not only allowed for enhanced sociality but may even have been designed for such in the first place. When the Pilgrim Fathers set out in the *Mayflower* to settle in the New World or the Mormons moved across that continent to set up their cities in Utah, the external drives of persecution and religious intention held hands with opportunities for diverse social expression in the journeys themselves. These were not just treks in order to get to a place: they were experiences where people and whole communities learnt about themselves and others. Population edges, especially, allowed for social expression through the media of challenge and difference, and it is this as much as any factor of external influence that brought about the extension of ranges.

Clive Gamble (1986: 33 and 51 ff.) has articulated climate and material culture at several episodes of the Palaeolithic, often with the help of ethnographic exemplars, especially from Aboriginal Australia. Productivity is especially important. During periods of dry or cold climate when productivity was low, the need for ranging widely in search of food and other materials and the consequent likely encounters with strangers was met by various recognition strategies which served to stave off hostility. Unusual and distinctive raw materials were more widely moved around in the cooler, less productive, regions of north-east Europe in the Middle Palaeolithic than in the warmer and more oceanic west and south; in the Saalian cold-stage (or penultimate glaciation) an esoteric technique of working stone, the Levalloisian, appeared for the first time and was later used more intensively on the more far-travelled geologies (Ch. 9, p. 212) (Gamble 1999); and in the Upper Palaeolithic, there was the use of distinctive artefacts which would be widely recognized, such as the small carvings or, occasionally, fired-clay models of naked human females (Gamble 1982, 1986: 324 ff.). The last, albeit of a variety of styles and raw materials, have several peculiar features in common, such as the lack of feet, attenuated forearms resting on or below unusually heavy and pendulant breasts, and a lack of facial features yet elaborate coiffures (Figure 5.4), that allowed immediate recognition over wide areas. People could carry them around, and, significantly and unlike cave art, they are usually found in domestic contexts. They are, too, mostly from the colder parts of Europe, notably the zone north of the Alps, and from a fairly tight period (tight in Upper Palaeolithic terms) of just a few millennia around 26,000 years ago which saw a steep downturn of climate as it dove towards the Ice Age.

These figurines and other artefacts, although working at the local level of social storage, were part of a widespread schema of social memory. We do

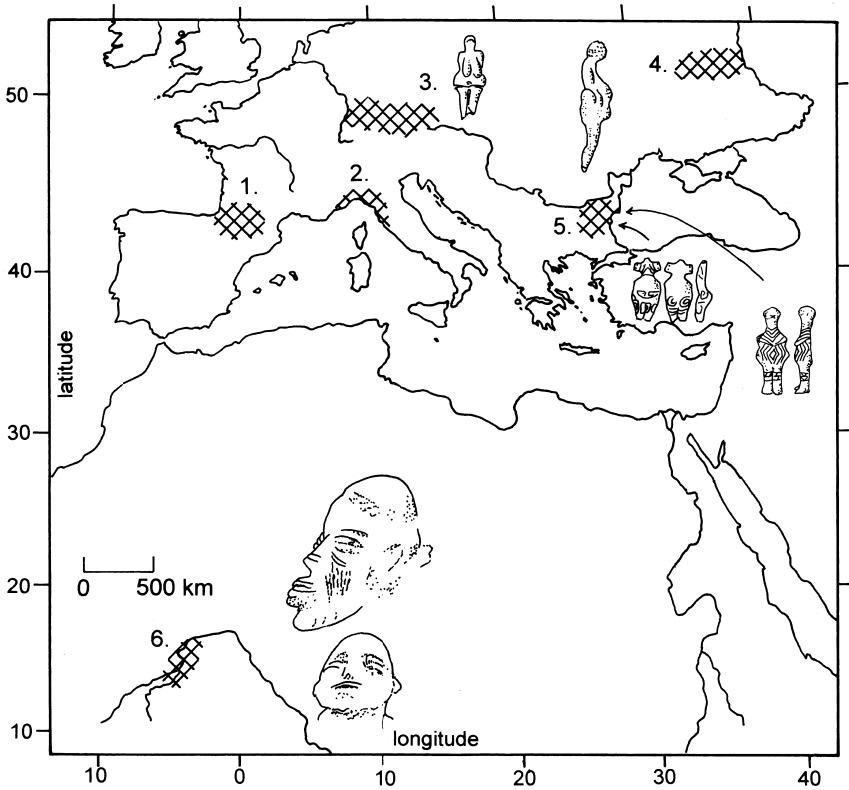


Figure 5.4 Distribution of female figurines possibly related to climate prediction and other social referencings: 1–4, Upper Palaeolithic (after Gamble 1982: fig. 2): 1, south-west France; 2, north-west Italy; 3, Germany and Moravia; 4, the Don Valley; 5, eastern Bulgaria (after Bailey 1994); 6, the Mande heartlands of the Middle Niger (after McIntosh and McIntosh 1988: 154). The illustrated figurines are (clockwise from top left): Dolni Vestonice, Moravia, Upper Palaeolithic, fired clay; Avdeevo, European Russia, Upper Palaeolithic, ivory; Balchik, Bulgaria, Chalcolithic, terracotta; Golyamo Delchevo, Bulgaria, Chalcolithic, terracotta; Jenne-Jeno, Iron Age, two terracotta heads.

not actually know this, but it is likely that Palaeolithic people related to climate history through myths and origin stories, which perhaps allowed the unlocking of such information about past climates. At times of social turmoil or climate stress, such artefacts may have allowed certain people or groups the authority to access action – action which related to (?secret) social memory of long-term climate change – and establish themselves in that way securely in society.



Figure 5.5 Jenne-Jeno, Iron Age terracotta human head from the Middle Niger. (Photograph and copyright, R. McIntosh.)



Figure 5.6 Jenne-Jeno, arrangement of sandstone slabs, waste iron, statuette fragments and ceramics with snake and headless-human appliqué. Identical to ethnographic blacksmith rainmaking altars used by the Dogon on the eastern periphery of the Middle Niger in recent times. (Photograph and copyright, R. McIntosh.)



Figure 5.7 Jenne-Jeno, terracotta statuette buried in the foundation of a house in an assemblage of ritual ceramics. (Photograph and copyright, R. McIntosh.)



Figure 5.8 Jenne-Jeno, terracotta purposefully decapitated body, found with head shown in Figure 5.5. (Photograph and copyright, R. McIntosh.)

For the Mande people of West Africa, who also have significant traditions of terracotta figurines (Figures 5.5–5.8), social memory is seen by McIntosh *et al.* (2000: 24) as ‘the ways by which communities curate and transmit both past environmental states and possible responses to them ... in the long-term’, meaning more than three generations. Social memory ‘is largely ideological or mythological. ... It may allow the community to designate those of its members who have authority to act in times of stress ...’, with such action being legitimated sacrally through climate-embedded legend. Importantly, social memory is not just about the carrying over of information and the knowledge of the kind of climatic circumstances and timing when its application is relevant but also about how, through its use, power can be acquired and enhanced and societal programmes changed. Social memory in its fullest sense works as agency, as societal transformation – usually of an individual and in the enhancement of power – through predictions of climate change: ‘it allows for many of the key transformations of history, for the recasting of core ideas from the deeper past so they can be used to respond to the new circumstances of the moment’ (*ibid.*: 25). In the hands of ‘Men of Crisis’, men who have supernatural knowledge of climate and power to make decisions in relation to it, social memory allows their status to be maintained (McIntosh 2000). In the Mande world, terracotta figurines are associated with rainmaking altars and, even today, blacksmiths use similar shrines during rainmaking ceremonies (Togola 2000), well reminding us of the figurines of the Upper Palaeolithic.

Other cultures use small bone and terracotta human figurines in their social engagements, such as the people of the Chalcolithic period in north-east Bulgaria (Figure 5.4) (Bailey 1994). Although in this case they are about gender manipulations rather than climate change directly, nevertheless their employment as a means of easing social tensions is similar. Their involvement in shorter-term constructions also prompts us to see memory of any kind as being social, or at least as having a social component.

CONCLUSIONS

- 1 Climate is a human construct which is used as a means of social engagement. This is active and known about at scales which range from individual events of single years, seasons or even tides to periods of millennia and areas the size of continents.
- 2 Climate is constituted in its relevance to human action, to how it is registered and recorded, and in the materiality of the records themselves.
- 3 Society engages with climate as a means of establishing community and individual identities, as in the settlement of uplands; as a means of brokering power of certain individuals, as in the prediction of climate

change; and as a way of fostering political and economic ideals, as in environmental movements and journalism.

- 4 Different scales of climate change can be identified from glacial and interglacial cycles, through century-long trends of warm/cold and wet/dry as seen in peat bogs, to seasonal and tidal oscillations. A particular set of conditions in which a few years of good climate are rapidly followed by downturn is identified as being significant.
- 5 Two case-studies, one from the Lammermuir Hills of south-east Scotland, the other from the Upper Palaeolithic of Europe, illustrate some of these ideas. In the former we see the settlement of marginal land as a means of enhancing social engagement, opposing other communities, and creating a monument for the future. In the latter, the likely widespread preservation of long-term climate change in human affairs is a timely antidote to the current emphasis on short-term extreme events. It gives us hope that the big waves of climate change in Pleistocene Europe could have been consciously experienced and understood by Palaeolithic people and actively used in their lives.

6

SURVEYS IN TEMPERATE AND MEDITERRANEAN COUNTRIES

The first truth of effective propaganda: the propagandist must
hide his hand.

(Matthew Parris, *The Times*, 12 May 2001)

The word 'survey' covers a variety of methodologies, for example the study of the regional distribution of buildings, roads and aqueducts as pioneered by Thomas Ashby (1927) in the Roman Campagna. In the current context, it refers to the systematic mapping of pottery and other materials from the surface of the land through 'fieldwalking' (Figure 6.1). It is quite sensitive in its dissection of chronology and practice, and can be applied at various scales and contexts. The maps in this chapter illustrate these, in order of increasing scale, as follows:

Individual activity at the farm or field scale: East Brittany (Figures 6.6 and 6.7)

Urban: Askra in Boeotia (Figure 6.10)

Micro-regional: Maddal Farm and Ashdown Park villas (Figure 6.4)

Regional: East Brittany communes (Figure 6.5)

Regional: Boeotia city states (Figure 6.12)

Continental: in relation to climate (Figure 6.3).

Other methods like phosphate analysis and geophysics can be incorporated (Figure 6.6), along with the traditional recording of the surface remains of earthworks and walls (Aston 1985; Evans and O'Connor 1999: ch. 9), while the starting point for some surveys has been documents. Methodology, with the 'big bang' being in the early 1980s, has been concerned with sampling and representativeness, and there has been a significant shift from the use of surveys for finding sites to their use in analysis. There is now a consensus that surveys need to be intensive and complete; otherwise unexpected distributions, for example of a socially expressive kind, may not be found.

One thing, however, that is lacking in all surveys is an articulation of the materials with human agency. There is no sense of the potsherds or fragments



Figure 6.1 Fieldwalking near Torricella Peligna, Abruzzo, in August 2002 (Juvanum survey, directed by Guy Bradley and Oliva Menozzi, Cardiff and Chieti Universities). Thin marl over limestone, about two weeks since ploughing, and much rain.

of slate or stone-working debris having been created deliberately, distributed deliberately, and used thus on the surface of the land as media for the creation of social relations. 'Survey, manifestly, is not about the beautiful *objet d'art*; the material finds generally are fit only to serve as a means to an end' (Alcock *et al.* 1994: 189). 'Another strength [of archaeological surface survey] is its ability to encompass the material results of a wide range of human behaviour, *directly countering the inbuilt biases of most documentary evidence*' (Alcock 1993: 34, my italics), as if there is an objectivity in the sherds, a kind of rift between behaviour and data. I see pottery sherds as a statement of sociality, a means of relating to condition and identity, and at various scales of social group and land. Sherds are as biased as historical sources.

People in the past experienced the texture in the sherds and other materials, in the soil itself, and in the plants, with the same sensitivity and understanding that archaeological fieldwalkers do. Thus in East Brittany today, March and early April are best for fieldwalking,

with the fallow fields not yet spring ploughed, and with the planted fields showing a winter crop through a surface weathered over the preceding... months;...slightly later the fallow fields were freshly ploughed and the planted fields had too high a crop.

(Davies and Astill 1994: 13)

Fieldwalkers can see pottery 2.5 m either side of them, recognize sherds from different types of pottery, and articulate with different intensities of visibility. Sometimes sherd concentrations are present one year and gone the next according to conditions of the soil and weather, as Bintliff (1988: 138) notes for Boeotia. This too would have been noticed in the past; it may even have led to the addition of sherds to the land in order to renew the areas in years of low visibility or absence. People understood different kinds of texture in the soil as it weathered after ploughing (Figure 6.2). The plants and flowers which grew up among the stubble gave additional visibility in their often striking colours. They may even have been encouraged, putting a new meaning on the weeds of cultivation which environmental archaeologists use as indicators of farming strategies. Different times of year and different agricultural activities created different visibilities for people who scrutinized the land surface intensively, such as those who weeded or gleaned.

There are also differences in meaning in different kinds of sherds, depending on manufacture (e.g. commercial or backyard), origin (e.g. local or import) and social context when in use as complete vessels (e.g. kitchen, dining room or storage); context is also important in the initial disposal of sherds and discarded vessels (e.g. farmyard midden or rubbish pit). We may even ask whether the primary purpose of pottery manufacture was about the creation of broken sherds in the first place. Another concern is the area that the sherds cover, whether in terms of a few square metres, several hectares or hundreds of square kilometres. As we have discussed with climate, people can have had an understanding of the wider picture, a mental map, like the maps archaeologists create today. Pottery is integrated in human social engagements throughout its life-history, from the raw clay to the smallest eroded sherd and the widest distribution in the land.

Novel reassessments have often come from individual surveys and I have chosen three to illustrate some of these (Figure 6.3). They are: Maddie Farm, where the micro-regional scale was deliberately designed to identify activities on a single settlement and its farmland; East Brittany, where intensively farmed land was deliberately selected and where documents were closely linked to the field data; and south-east Greece, where surveys of cities have been integrated with the data of rural sites.

MADDIE FARM

The site is a Roman villa complex in the chalklands of the Berkshire Downs (Gaffney and Tingle 1989). One taking-off point for the work is the view that people do not live in a single site and do not exploit the land around it with decreasing intensity with distance from the settlement. Settlements may be permanent in that there can always be someone living in them, but some people may move to distant areas to exploit particular resources

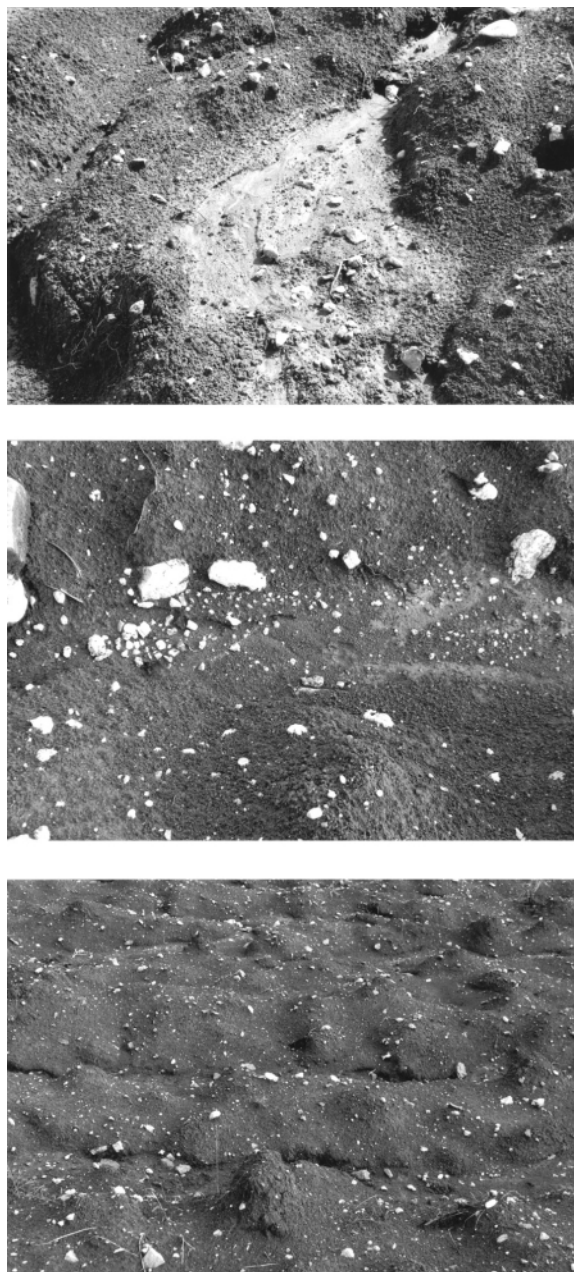


Figure 6.2 Juvantum survey, field surface textures, the same field as in Figure 6.1. Upper: small mud fan. Middle: degraded soil crumbs, sorting of stones, and animal footprints. Lower: degradation of ploughsoil clods into low cones, and rilling.

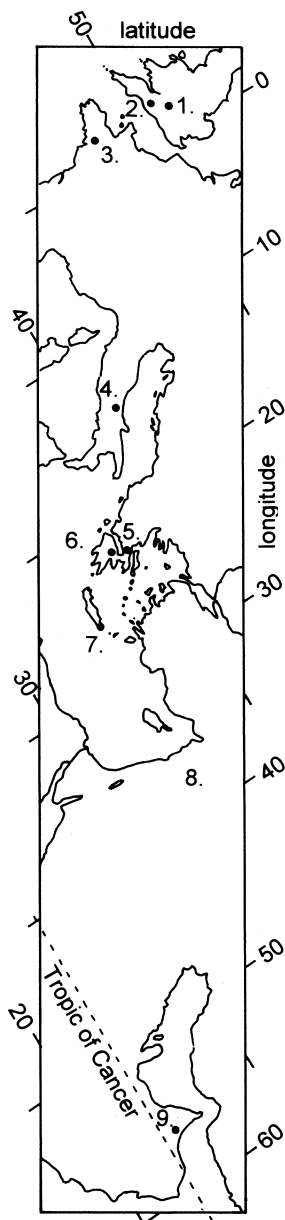


Figure 6.3 Location of some significant surveys: 1, Maddle Farm (Gaffney and Tingle 1989); 2, Maiden Castle (Sharples 1991); 3, East Brittany (Davies and Astill 1994; Astill and Davies 1997); 4, Biferno Valley (Barker 1995a,b); 5, Boeotia (Bintliff and Snodgrass 1985); 6, Nemea Valley (Alcock *et al.* 1994); 7, Praisos, East Crete (Whitley *et al.* 1999); 8, Tell Sweyhat, Syria, and 9, Sohar Oman (Bintliff and Snodgrass 1988b).

on a temporary basis. Several instances of this kind of logistic behaviour are cited, from Nunamiut Eskimos of the Arctic to agro-pastoralists of semi-arid areas in Mexico (Ch. 8, p. 189) and, more relevant to the present study, Iron Age and Roman estate centres from which several farms were run. But more closely, in the case of Maddie Farm, is the concern with land-use diversity around a single villa farm, and it is these activities which the authors of the project say are being missed in other kinds of survey. So the main theme of the survey is the micro-regional scale (Gaffney *et al.* 1985), looking at things not from the point of view just of the structure of local concentrations of artefacts, nor from that of regional distributions, but from an intermediate scale.

There is an interest in the different ways in which pottery sherds, which form the main data of the survey, got onto the land. Pottery is densely concentrated around the villa buildings (Figure 6.4) and interpreted as discard from storage areas, kitchen breakages and other domestic activities. Then there is a fall-off for some distance away which is interpreted largely as areas of arable fields where pottery was dumped in the process of manuring, having been incorporated into the farmyard manure at the settlement. Presumably domestic rubbish (including bone and less durable materials) is

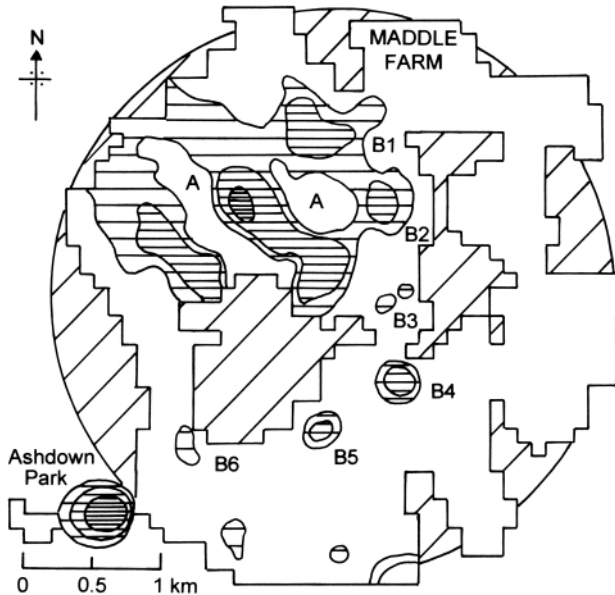


Figure 6.4 Maddie Farm and Ashdown Park Roman villas, Berkshire. Sherds per 100-m square: blank = less than 5; light rule = 5–9; medium rule = 10–49; heavy rule = more than 50; oblique rule = not surveyed (pasture or built-up); A = very low densities close to the main settlement; B = secondary concentrations. (After Gaffney *et al.* 1985: fig. 8.5.)

mixed with the muck from shippens and the farmyard before it is taken onto the fields. Beyond these, there are blank areas (Figure 6.4, A), interpreted as land where animals were kept, often quite close to the settlement. If these areas were cultivated then the animals themselves would have provided the manure for the land and there would have been no need for additional components from the farmyard. There were also small concentrations of pottery in the background (Figure 6.4, B1–B6), and these were considered to be manure heaps, with their attendant pottery, that had been established prior to the material being strewn onto the land. Other focal points of a similar size might be hayricks, toolsheds and sheepfolds, all areas where people might have stopped for a short time and discarded broken pottery.

However, it is a problem as to how and why the household rubbish from some sources – storage areas, kitchens and dining rooms – was mixed with farmyard manure from other sources – shippens, stables and the farmyard itself. They are of such different origins. It is likely that there were dumps of separate materials in farmyards or around buildings, one for dung, another for household rubbish from the kitchen and storage areas like broken pottery, carcasses and bone, and another for building materials, although where animal houses were a part of the human dwelling it is likely these materials were close together or even mixed. Brick and stone were also incorporated, as was tile, and these too would have been accumulated first of all on stone heaps, again separate from the manure heaps and the middens of broken household waste. Archaeologists have looked at different tracks of manure incorporation (Bintliff and Snodgrass 1988b) and different origins of building materials and pottery (p. 140 below) (W. Davies, 1993), but not how the different materials are brought together. Maybe the mixing of these different materials was deliberate, designed to entexture the manure so that when it was taken to the fields it held a deeper visuality and significance. It may have been as an extension to the introduction of visible tempers already in the pottery, especially when these tempers themselves held a history (Ch. 3, p. 49 and Figure 3.6A).

Through the sherds and building materials on the ground, people could explore themselves and their social ties to each other and the land, and gain an understanding of the origins and ownership of the land. Different types of pottery and the different proportions of the fragmented remains of brick and tile were understood through their former practical uses in the settlements, their recycling potential (especially with tile), their social and symbolic context and meaning, and their depth of time. It is like the texturing of walls in rooms: bare brick or stone, plaster, the introduction of stained timbers, or different textures of wallpaper, each entails a different feeling of belonging and ease, and each puts out a different social message. These ideas are familiar in the context of interior texture: the social construction of a room, as a locale, is begun even before any interactions and its development as a locality take place. But we do not think about them so much in agricultural

environments, and certainly not as a deliberate entexturing of the ground. Furthermore, just as the texture of a room lies within a grander social domain of house architecture and location, so too the significance of pottery on the soil lies within a framework of farming and economic practices which worked in a similar way. The pottery and building materials in the manure heaps and on the soil would have enriched the visual diversity and created places for social interactions already established through the haystacks, manure heaps and small buildings and the wider distribution of land-use around the villas.

Returning to Maddle Farm, in the post-Medieval period there were contrasts in manuring practice and an interesting complementarity of sherd distribution (Gaffney *et al.* 1985). Land close to the villages, further down the slope than the villa and where the Roman sherd density was sparse, was manured directly from the settlements with manure mixed with household rubbish, including pottery. In contrast, more remote areas on the downs which had been the core area of Roman settlement, although taken in for arable in post-Medieval times, were not strewn with pottery but were manured by sheep kept on the stubble after the harvest. It was as if the Roman pattern was actively used by these later farmers. As the abandoned Roman lands and decayed buildings were ploughed out, different proportions of pottery and other materials became visible on the land, and perhaps their ancientness was understood. So, too, may have been the differing weathering states of the materials, for these are related not just to past spatial activities but to the mechanisms of storage and release from the ground. Thus analysis of the weight:numbers ratios of the sherds showed that areas of larger, less weathered, sherds were usually to be found associated with the settlements where they were being released from stratified deposits whereas the smaller, more eroded, sherds came from the unstratified arable soils which had been subjected to considerable attrition by ploughing in Roman times (Gaffney and Gaffney 1988). Building materials like tile and brick add another dimension. In the area of the settlement, where the surface survey was complemented by excavation, it was shown that, while pottery decreased from the surface downwards, brick and tile were most abundant in the topsoil (Bowden *et al.* 1991: fig. 9.2). We can imagine people in the post-Roman eras moving some of these materials around over the land surface to create their own meaning of antiquity, just like they did with building materials (Ch. 2, p. 35).

EAST BRITTANY

The East Brittany survey used a combination of techniques, was framed in a clearly defined research strategy, and is fully published. The fieldwork and analytical data are in one volume (Davies and Astill 1994), the landscape

history in another (Astill and Davies 1997); there is a specialist paper on stone re-use (W. Davies, 1993); and there is an earlier book on the documentary evidence for the ninth century (W. Davies, 1988). The area consists of four communes on the Oust-Vilaine watershed, Department of the Morbihan (Figure 6.5), chosen to examine a well-used landscape where the results might be typical of a wide region, in contrast to a more usual practice of studying marginal land. A second purpose was to correlate the rich documentation of the area, which was more or less continuous from the early Middle Ages, with data from fieldwalking, building surveys and limited excavation and geochemical analyses. The monastery of Redon, housing an important cartulary relevant to land-use in the area during the ninth century, lies 25 km to the south. There was a combination of intensive and extensive techniques, some areas being walked in 5-m squares with all artefacts on the surface recorded, others at 50-m intervals. This allowed sparse scatters and uncommon styles of pottery to be identified as well as the details of denser distributions (Figures 6.5 and 6.6).

The Roman period

Most of the evidence for Roman occupation belongs to the first to early third centuries. Surface distributions of Roman pottery, tile and building materials provide a means of identifying particular activities and sites such as actual settlements, areas of arable and other kinds of smaller site. This facility is

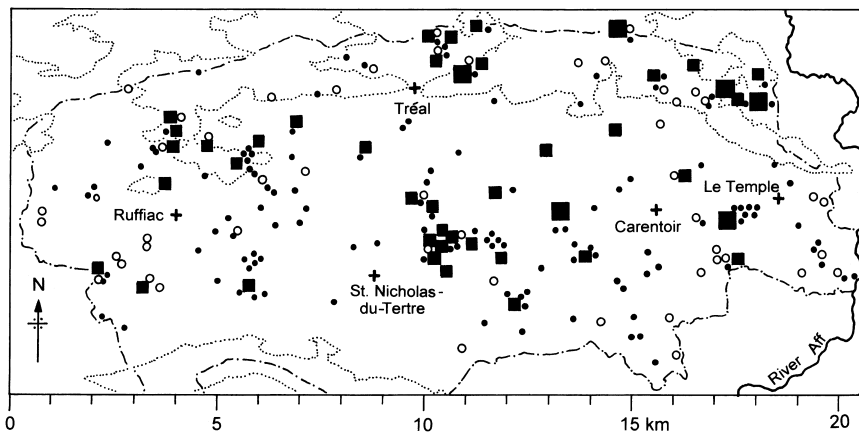


Figure 6.5 East Brittany survey area, delimited by the dashed-and-dotted line. Black dots = Roman pottery; small squares = Roman tile, 1–10 kg; large squares = Roman tile, more than 10 kg; open circles = fabric 10 findspots; crosses = later Bourgs. Contour, dotted line, at 75 m. (After Astill and Davies 1997: fig. 5.3.)

enhanced by a distinctive diversity among the different materials. Thus there are at least three types of tile – roofing, flue and floor or hypocaust *pilae* – sixteen pottery fabrics including a significant proportion of imports and local fine-wares, and at least four kinds of building stone. Concentrations of tile usually represent buildings, and excavation shows that the material occurs at destruction levels overlying infilled ditches. This is similar to the situation at Maddle Farm. Scatters of tile representing manuring debris occur around the settlements, up to 350 m and 500 m in two cases; sometimes these are associated with weak scatters of Roman pottery (Figure 6.5), also interpreted as from manuring as shown by their decrease down the modern soil profile. Some concentrations lack the surrounding scatters and are maybe from small buildings away from the main settlements; indeed, wider survey from aerial photography and excavation reveals different styles, sizes and complexities of buildings, thus adding to the diversity of the materials.

These different combinations of pottery and tile suggest that there was selection of materials, perhaps at source, perhaps somewhere along the journey to the land. There are many interesting associations. For example, the diversity of pottery scatters interpreted as from manuring is much less in terms of fabrics and imports than from the settlements. Roman roads were an important influence and there is likely significance in the close proximity of villas and dense tile scatters to roads. An association with topography and soils sees areas of pottery but no tile as often more low-lying and more fertile than areas with tile alone. These distributions could have been created quite deliberately. Even if this was not the primary intention, such patterns could have been noticed and used to lend a visual identity to the various kinds of land around their settlements. The tile distributions were particularly noticeable when fieldwalking. It may be, for example, that people of the non-villa settlements deliberately added tile and fine-wares to the land to give an impression of enhanced status, while more subtle manipulations might have been through particular fabric associations, as indicators of ownership or wealth.

As at Maddle Farm, these patterns could result in different, yet equally distinctive, signals during later land-use, including patterns whose origin lies in the ways in which pottery and tile are released into the ploughsoil because of different preservational contexts and histories. The close association of certain Medieval pottery fabrics, for instance the rare but distinctive tenth-century fabric 10, with earlier Roman locations (Figure 6.5) may have been actively created precisely through the influence of the pottery scatters themselves.

The Middle Ages

Patterns of the central Middle Ages give rise to similar ideas. The work done on the area around Coetion and Bourgeix is stunning. In the eastern part of

the field A116 (Figure 6.6), on a shallow north-facing slope, there is a concentration of Medieval pottery, many squares with up to twenty-five sherds, and this is considered to be a site of a building, not a manuring scatter, for the sherds are unevenly distributed. The western part of the field had enhanced magnetic susceptibility readings and there were other areas of high readings too, all of which alternated with, rather than overlapped, the pottery concentrations. High phosphate readings occurred in areas with both low pottery and low magnetic susceptibility. The lack of pottery in the western part of the field may be due to its ill-drained nature and the greater depth of deposits, while the absence of phosphate there and the high magnetic susceptibility might relate to ploughwash. The erstwhile presence of a boundary between the high phosphate area and the high pottery area is likely, the former where animals were stalled or penned, the latter a workplace or settlement.

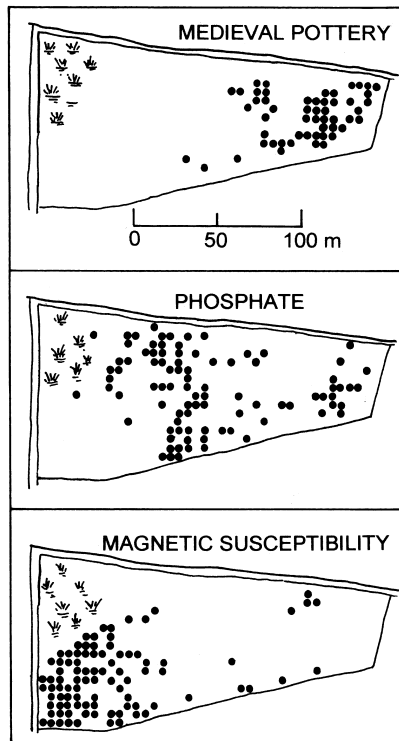


Figure 6.6 East Brittany survey, field A116. Distributions per 10-m square: Medieval pottery, 16–25 sherds; phosphate, more than 350 ppm; magnetic susceptibility, more than 50 SI/kg. North is at the top. (Simplified after Davies and Astill 1994: fig. 3.2.)

There are plenty of topographical and toponymic associations. Thus the common and local fabric 1 occurs significantly with early 'wood' names like *touche*, with places with names denoting poor land like *friches* and *roche*, more frequently on south- than north-facing slopes, and within 250 m of water. It occurs as dense concentrations covering a few hundred square metres in association with several other fabrics, one of which, a thin-walled tableware, is never found outside such associations. These are likely settlement cores. Around them, in zones of about 50 to 60 ha, there are looser but still discrete distributions, recalling those at Maddie Farm (Figure 6.4, B1–B6) and the 'haloes' around settlements in Boeotia (p. 135). As with the Roman pottery, these looser distributions are likely from external sources rather than from the ploughing up of deposits, since the number of sherds decreases with depth. Manuring with farmyard waste seems likely. But again, the deliberate creation of visuality may have been a part of all this, especially on steep slopes and stony land (*friches* and *roche* names) where it would have been most apparent. Around the fringes of the fabric 1 areas are often to be found fabrics 4, 6 and 23 of later Medieval times but no fabric 1, or there are instances when these later fabrics are found with fabric 1. Sometimes the ceramic diversity of the land was being enhanced in the later Middle Ages, sometimes it was being created afresh. Demographic changes (Astill and Davies 1997: 129) cannot really account for these differences. More realistically they are different ways of expressing diverse socialities in relation to the land.

The post-Medieval period

In the sixteenth to eighteenth centuries, there is less pottery on the land – fewer fields with sherds and in smaller quantities. This is odd in view of the rising population as evidenced by the records of baptisms and burials, although these records themselves, an innovation at this time, perhaps provided an alternative medium for attention. Also at this time, the reduction in the quantity of pottery on the land is countered by a higher proportion of imported wares of regional origin from Normandy and Saintonge, including quantities of visually distinctive stonewares and glazed white pottery. There is also a less uniform distribution in the survey area as a whole, with concentrations in the central and eastern parts. This is all in contrast to the Middle Ages. And, as with the parish records (see below), there are different timings to the start of these, so perhaps different kinds of identity were being referenced, different links between the communes and the outside world. Of course, with the pottery, this could be through the pottery industry and exchanges themselves, pottery as whole pots, but this would only make the significance of sherds on the fields stronger.

In this post-Medieval era, sherds are often found closer to settlements. Areas which are known from documentary sources to have been cultivated

have no sherds while newer lands on marginal *terres froides*, not cultivated in the Middle Ages, do. Pottery, or its absence, is being used to mark and contrast the land. The reduction in pottery is seen by Astill and Davies (1997) as a reflection of changing settlement structures with an increasing separation between household domestic areas and those where animals were kept so that manure and household waste were less likely mixed. Indeed, some localized sherd concentrations of high diversity and unusual content, often near buildings (between 10 and 150 m away), are interpreted as rubbish heaps, and these do not occur in the Middle Ages. Household rubbish was being dumped in the neighbourhood of buildings but not taken any further, recalling the interpretation of some sherd concentrations at Maddie Farm as manure heaps (p. 125) – staging posts between the settlements and the arable. But this does not explain the presence of pottery on marginal lands. Perhaps these new lands and landscapes were established as a means of signalling community identity, perhaps at a time of rising population, and the spreading of pottery onto them was an enhancement of this, as I suggested for the creation of ridge-and-furrow in the Lammermuir Hills (Ch. 5, p. 111).

Stone and slate

Roofing slate, and rarely building stone, were spread onto arable land, although not onto all of it and especially not on marginal lands at high altitude, land that was waterlogged or land with rocky obstructions. The different colours of the slate allowed different visualities, especially in different combinations with pottery, both contemporary and Medieval, and different kinds of land (Figure 6.7). Thus there are fields with black slate and sherds (almost always with post-Medieval fabrics) and fields of black slate and no sherds. There are fields with pink slate and sherds (the pink slate late Medieval to early modern, and earlier than the black) and fields with both black and pink slate together. The slate is not associated with other building debris and it decreases down the soil profiles so it is obviously being introduced onto the fields as old slate from dumps somewhere else. Indeed, it often occurs in such quantities that it is suggested as having been introduced deliberately for the purposes of lightening the soil.

The slate, like the sherds of pottery, has an accumulated history of meaning. In the first place, there would certainly have been preferences for particular kinds of material beyond the raw economics of suitability and supply. Then, the slate was cut from quarries which had meaning through their geology and which quite soon became landscape features themselves. It was used as roofing material where it made a striking visual statement, and was often re-used for the same purpose in buildings of newer style, and in combinations with other kinds of slate. It accumulated as dumps in certain parts of settlements or away from them, on land where it could

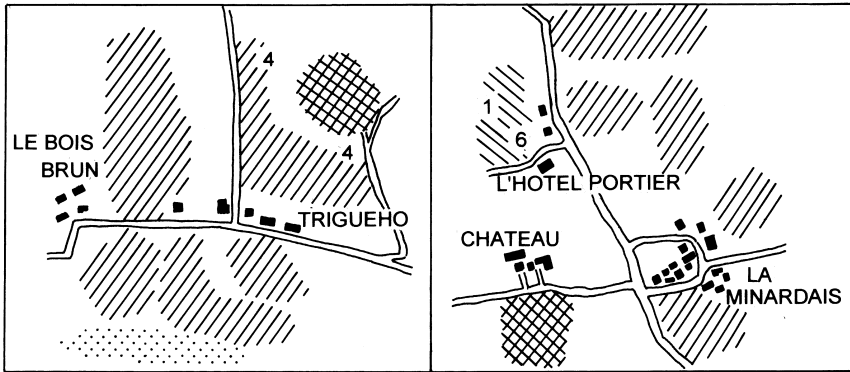


Figure 6.7 East Brittany survey. Slate in two areas: oblique hatching, top right to bottom left = fields with black slate; oblique hatching, top left to bottom right = fields with pink slate; cross-hatching = fields with black and pink slate; stipple = fields with no slate; blank = unwalked; nos. 1, 4 and 6 are fields with large accumulations of fabrics 1, 4 or 6. (After Davies and Astill 1994: fig. 4.11.)

remain for decades with its own visuality of remembrance. Ultimately it was distributed onto certain fields which themselves held ancient signals in their distinctive pottery or tile, topography, toponymy and land-use. The use of these different associations in social agency and their build-up of meaning through time is classic *chaîne opératoire* formulation (Ch. 2, p. 34). How can we fail to notice these fragments of foreign materials, especially working so close to the land, and feel their history? How can we not use these fragments in expressing ourselves to others, or in our own understanding of our lives?

Document-making

A very interesting feature of the East Brittany work is the complementarity between the strewing of pottery on the land and the intensity of document-making. We see this from AD 500 to 900, a period bracketed by late-Roman pottery and the distinctive tenth-century fabric 10, but with an absence of pottery in itself and yet with an abundance of charters in the ninth century (the Redon cartulary) (W. Davies, 1988); and we see it in the post-Medieval period when the decline in pottery sherds is complemented by a massive increase in parish records of births, marriages and deaths (Figure 6.8) (Astill and Davies 1997). In this respect, there are some interesting similarities between the two media. Both have different traditions in form, for example there is a distinctive 'Celtic' charter tradition (W. Davies, 1982b) as there are distinctive traditions of ceramics, and both media have fabric, pots in their ground-mass and temper, charters in their formulae. Both can embody the present, charters where they describe a transaction in the process of enact-

TEMPERATE AND MEDITERRANEAN SURVEYS

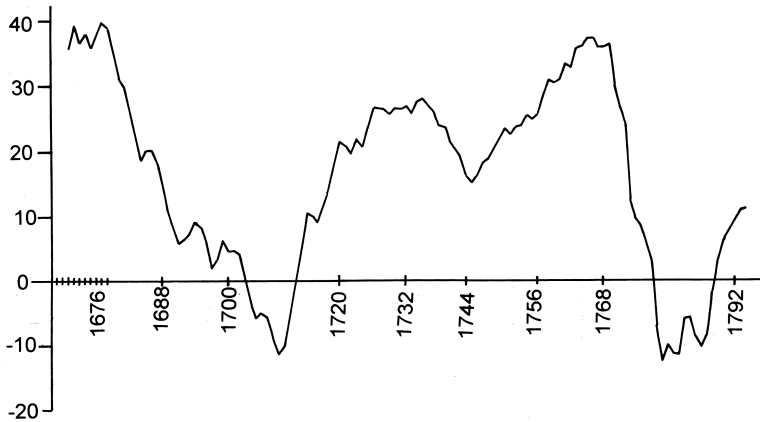


Figure 6.8 East Brittany survey. Record of parish registers, baptism/burial ratios for Ruffiac, 1668 to 1794; above the line = a surplus of baptisms, below = a surplus of burials. (After Astill and Davies 1997: fig. 8.3a.)

ment, pottery when incorporating expressions of agency in its making. Pots embed a history in their materials from earlier cycles of pottery-making, precisely as charters do in their mix of contemporary and more ancient phraseology and archaic formulae or in their description of events in retrospect.

Thus the documents could have served as a means of social mediation in a way in which pottery and the other materials which we find on the land did. Both media entail the workings of a deep *chaîne opératoire* in their technology and manufacture, media for social expression in owners, tenants, artisans and scribes, media for establishing conditions such as being female, being literate or being a part of a religious order. Significant differences only serve to link them, some pottery and some documents being relevant to high-status matters, other kinds of pottery and other documents like parish records referencing lower social levels. Both, too, can be related to history in the way they are used, pottery sherds on the land as mixed-age assemblages, charters in their boundary clauses referring to ancient landmarks. And, in their details, both detract from deeper issues – not who owns or leases or gifts which bits of land – but the fact of any kind of landholding at all. As Matthew Parris says: ‘Good PR doesn’t show’.

But the different media also had different meanings; they were not precise equivalents. It is not just the tracking of the materials and their material context, unravelling them to identify the social interactions they entail, but the tracking of their social meaning through all the stages in their life-histories, from the manufacture of pots or making of charters to their destination on the land or records office. As we saw with the making of climate records (Ch. 5, p. 98), taphonomy is negated through symbolism. The

different materials were imbued with different social essences, and this would make a difference to their fate, first in the dumps around a settlement and later in their transport to the land. Some pottery was likely of female essence, even if manufactured by men; other pottery would be in the male domain. Slate was likely quarried by men but with help from children, yet the choice of its different colours may have been in the gift of women. A large manure heap could be of greater social significance and status than a heap of rotting butchery waste. Similarly with the distinction between pottery and charters: pottery was held within a common domain, accessible to all; charters were the province of scribes and a notariate, often within the prescripts of royalty or the church. Pottery was closer to the fabric of the land; charters removed that essence to a less accessible domain (Ch. 7, p. 169).

SOUTH-EAST GREECE

John Bintliff and Anthony Snodgrass (1985, 1988a, 1988b) in their Boeotia survey have identified different kinds of settlement, especially the smaller farmsteads, as well as off-site background like manuring scatters. The intensity of fieldwalking is similar to that of the East Brittany and the Maddle Farm surveys, with the area covered being *c.* 100 km² as compared to *c.* 200 km² for East Brittany and 40 km² for Maddle Farm.

Unlike the situation in East Brittany, much more of the terrain in Boeotia is available for survey because of the more or less continuously broken soil. This is a function of widespread arable farming and a semi-arid climate (Figure 6.9). Bintliff and Snodgrass (1988b) suggest that soil-surface instability is the reason for the abundance of pottery in these semi-arid lands (Figure 6.3, Table 6.1).

Locally, densities in Aegean countries can be in the order of a few hundred sherds per square metre, inconceivable in temperate western Europe. In urban sites, often at least a third of the surface is sherds, and sometimes more or less the whole surface is covered with pottery. However, I suspect that pottery production and the quality of pottery are

Table 6.1 Sherd densities in field surveys (per 100 m²) in relation to annual mean rainfall (mm)

<i>Region</i>	<i>Rainfall</i>	<i>Sherd densities</i>
Southern England	750	0.007–0.5
Southern Italy	600	0.7
Boeotia	500	0.4–40
Tell Sweyhat, Syria	200–300	20–100
Sohar, Oman	80	100 to ~ 4,000



Figure 6.9 Ancient urban sites in Boeotia. Left: Thespieae, showing broken ground surfaces on limestone slopes and the valley bottoms. Right: Askra in the Valley of the Muses, showing a landscape of small stone-walled and lynched fields, and with most soil surfaces exposed.

much higher in Mediterranean lands in the first place, over a longer period and in many more cultures than in north-west Europe. This may not be unrelated to the varying visibility of sherds, for pottery on land surfaces in semi-arid countries can be more easily brought into people's lives than in temperate lands.

The rural landscape

The Boeotia landscape, especially in Archaic-Classical and later Roman times, was densely packed with sites, almost it seems to capacity (Figure 6.10) (Bintliff 1988: 135). Most of these are small farmsteads with manuring scatters around them, often on the better soils, off-site activity beyond, and areas on the poorer soils which could have been used for grazing where there is no pottery at all. Each farm holding might not have been greater than 5 ha. Different kinds of settlement and farming are suggested. In one rural area of good soils, remote from the influence of cities, there was intensive land-use from a cluster of hamlets; in another rural area of good soils there were small farms with less intensive use; around some cities there was a denser pattern of farms, with people drawn there by the

diverse possibilities of urban life (Thespieae and Askra), while around another (Haliartos) there were no settlements at all because the land was farmed from the city itself. Especially important as a result of intensive survey is the discovery of the 'small rural site sector', almost as a ground-mass to the land, which fluctuated in the size of the settlements and their density over many centuries, from Archaic to post-Roman times (c. 700 BC to AD 600), while the 'dominant nucleated site network' of village communities, some of which ultimately became cities, remained more or less stable.

Susan Alcock for the Classical and early Hellenistic periods discusses different farming strategies (Ch. 8, p. 187) (Alcock 1993; Alcock *et al.* 1994: 147). The one which equates best with the fieldwalking data for the Classical and early Hellenistic periods saw intensive cultivation from dispersed small farms and a generally isolated life-style (Alcock 1993: 48). Intensive manuring took place with domestic rubbish and farmyard manure while the animals could be let onto the stubble fields to feed and enrich them with their dung; there was 'close symbiosis of animal husbandry and arable cultivation' (*ibid.*: 60). Manure heaps were a visual feature of the farmyard in this type of economic system. On the other hand, what is known as the 'traditional' system was clearly in use in Boeotia around Haliartos. In this, there was spatial separation of farmer and land, extensive cultivation of scattered holdings, and most of the population was resident in villages or cities. Animals were not important, except perhaps in a separate enterprise of long-distance transhumance.

Another possibility is that there was more mobility than in either of these two systems. There was movement of stock at certain times of the year to pastures away from the home settlements, while single farms, with their decreasing intensity of use from the centre, were part of a more flexible pattern (Ch. 8, p. 188). Or there could have been long-distance movement over several months or even years, with either entire communities or households moving, or at least specific parts of them. This is all quite different from the 'nucleated small-scale communities' in 'village-hamlet networks' of Bintliff (2000: 137), with settlements in a dependent hinterland, defined by territories of space (e.g. Thiessen polygons) and time (e.g. walked radii) (Figure 6.12). But this is within distances of a few kilometres, epitomized in the concept of a 'core survey area', when perhaps we need to look to more remote areas over tens or hundreds of kilometres linearly, and covering several distinct kinds of land.

Urban surveys

A context that has provided an insight into the bigger scales is the urban one, with surveys revealing significant relationships between the countryside and cities in eastern Greece (Bintliff and Snodgrass 1988a; Alcock 1991). Urban

sites have been drawn in only lately to the survey genre, it being previously thought that intensive excavation and geophysics could reveal all the necessary data about them. But excavation is expensive and slow, even if it does reveal house structures and economic activities that no survey ever could. Survey, on the other hand, gives a rapid indication of the extent and density of settlement, as well as changes in these, even though some of the cultural levels may be buried by later ones in multi-period sites (including modern cities like Thebes). Survey, too, is the only way in which surface pottery can be recorded, and just as much as in rural contexts pottery in urban sites may have been deliberately emplaced.

In ancient Greece there was often not a close separation between cities and the countryside. Many farmers lived in towns. In both town and countryside there was public and private space, although the arenas were different. There were differences in style of ownership and rebuilding, with more flexibility in rural than urban areas. In towns, people needed to be more careful about fire, about keeping dangerous animals, and about sociability generally; land ownership was constrained, and rebuilding usually took place directly over earlier buildings. In rural sites, on the other hand, while the general location of the settlement was maintained, direct superpositioning was avoided. Likewise with rubbish: on farms, it could easily be disposed of or accumulated in middens and dung heaps; in towns, it was subject to tighter laws, although as a direct link with the countryside it could be removed and distributed onto the land or sold by townspeople to farmers (Alcock *et al.* 1994: 149). Yet in many Greek cities changes in settlement size and the position of the core were spread over a wide area, for example at Phlius (Alcock 1991) and the cities of Boeotia, like Askra (Figure 6.10). It seems as if more space were enclosed than was needed at any one time, and one wonders if the movements of settlement were about social expression and the large size of the towns purposively planned for this.

A key aim of urban surveys, as with Susan Alcock's work at the city of Phlius in Korinthia in the north-eastern Peloponnese (a part of the Nemea Valley Archaeological Project) (1991), is to examine demographic change and settlement patterns at the scale of regions. The sites of cities can remain constant over long periods, but there are fluctuations within them and between them and the surrounding land. In the Boeotia survey, the cities are Thespieae (100 ha), Askra (11 ha), Haliartos (30 ha) and, slightly outside the survey area, Thebes (Figure 6.12) (Bintliff and Snodgrass 1988a). Survey of Askra showed discontinuity in its settlement history, fluctuations in settlement size and a more gradual shift in the settlement heart (Figure 6.10). Rural decline between late Hellenistic to early Roman times was a part of a general depopulation as seen in a contraction in the size of Askra and Thespieae and a reduction in artefact densities. In contrast, rural depopulation in the Nemea Valley to the west of Boeotia between



Figure 6.10 Survey of the city of Askra. Density of finds in modern fields and intensive samples (rectangles): blank = none; light stipple = low; medium stipple = moderate; heavy stipple = high. (After Bintliff and Snodgrass 1988a: fig. 2.) The overall picture in south-west Boeotia is shown for comparison: G = Geometric; C-EH = Classical/early Hellenistic; LH-R = late Hellenistic/Roman; LR = late Roman; EM = early Medieval. (After Bintliff 1997: fig. 5.)

Classical and early Roman times was due to migration into the city of Phlius (>100 ha) as shown by expansion of the settled area. The same effect in the countryside in different regions can have different origins, one the result of general depopulation (Boeotia), the other of an intra-regional shift in population (Nemea Valley).

The social domain

The differences between town and country – indeed the very fact of the dichotomy at all – may have been created through social agency. Cities are

'the top of the regional hierarchy' (Alcock 1991). Ancient sources laud the cities while playing down the countryside, although these can be biased (Alcock 1993: 27), and accounts of early-modern travellers display similar expectations. Prominent sitings and massive perimeter walls extending natural cliffs upwards may have been as much for show as defence. Monumental gateways and an acropolis at the highest point, enhanced by distinctive ceramics and, in one ancient account of the acropolis of Phlius, a sacred grove of cypress trees, added to their visuality. While build-up was not a feature of rural settlements, in towns accumulation of rubbish and building debris could lead to the formation of mounds or tells. This enhanced their visibility and could have been a deliberate monumentalization, yet it did not happen in southern Greece, even though there are some deep urban stratigraphies as at Thebes. There was monumentality, too, in an understanding of ancient occupation. Thus of Haliartos: 'As in many cities with a Bronze Age forerunner, the prehistoric site was located entirely within the area of what was later to become the acropolis' (Bintliff and Snodgrass 1988a: 62). The shifting distribution and density of settlement in the towns and cities created a visuality of buildings, decayed buildings and old and broken artefacts as reminders of history. They refreshed the meaning of the town or city while at the same time consolidating its permanence. Urban occupation was more or less continuous, and over long periods; Phlius has continuous occupation from the third millennium BC to the Middle Ages (Alcock 1991: 432).

At lower levels of this 'settlement pyramid', links between farmsteads and the neighbouring city might be perceived as being of a grander way of living than that of a more isolated existence in the distant countryside. Changes between urban and rural were about different styles of social expression, attitude and personality, just as they are today. But these life-styles, although giving satisfaction for a time, eventually wane. Cities represented a permanence, whether flourishing, withering or abandoned, against which the fluctuations of demography and settlement style in the countryside could be played out without the threat of serious social disruption. Urban-rural interplay is as much about social expression as about economics and demography. Perhaps cities were created with this in mind.

Pottery sherds, too, were involved in agency-centred relations, and their retention within the urban confines or removal onto the land was related to this as much as to urban hygiene or rural fertility: in any system where there was movement of people and in which homesteads and land were flexibly occupied, it would make sense to signal one's claim to the land and one's identity with it. More vaguely, periods of stress or uncertainty, as when communities were under threat from neighbours, or during the initial intake of the land and breaking up of the soil, might have been eased in this way. Bintliff (1988: 141) notes the continuous disequilibrium of settlement and resources in Boeotia between the Bronze Age and early Byzantine era,

and this might have something to do with the large amounts of pottery in the area from so many periods. All this puts a different light on demographic inferences from pottery densities, such as the picture of a 'very populous, to alarmingly over-populated Classical landscape' suggested for Boeotia (Bintliff 1988: 140). Far from being a map of site densities and human demography, pottery distributions reflect active establishment of territoriality and identity at times of demographic and settlement disequilibrium or change.

POTTERY SCATTERS

We still need to explore the ways pottery gets onto the land, both the mechanics and the meaning of it all. We need to get away from ideas of primacy, for example that manure is a by-product of animal husbandry or that broken pottery in rubbish pits or *koprone*s has been discarded: manure may be the main object of animal husbandry, sociality the object of producing manure, while pottery in *koprone*s may have been deliberately broken and accumulated there. Indeed, the *koprone*s themselves can have provided a social focus in houses (even perhaps constructed as such in the first place) in the same way that rubbish disposal constitutes such an important part of our social world today. The word 'manure' is a social construct, implying at the least a human–animal–crop interaction and likely, too, a deeper use in expression, while 'sherd', too, is a construct, otherwise why have the word at all? The tracks through which manure and broken pottery came onto the land (Bintliff and Snodgrass 1988b; Alcock *et al.* 1994) are linked to how these materials were seen and used in an agency-centred way in their manufacture, in the settlements, during transport and on the land itself.

Rubbish is used both in an active social role and almost unconsciously in everyday lives. We only have to think about the different meaning we give to different kinds of rubbish – ash, faeces, plastic, kitchen waste, disused cars – the different tracks through which we dispose of these, and the socialities that are built as we do so, to know that this is true. In a study of the Marakwet of Kenya, the meaning of particular materials and social attitudes to these were identified as multiple and charged (Moore 1986). Rubbish was created in a medium of formal structures as within marriage, as control over production (*ibid.*: 113), as a part of intra-household expressions of sociality, and as ways of dealing with ontology and security, all within the domain of everyday life. Perceptual schemas, for instance, how gender was organized spatially through individual males and females and used in the more abstract concepts of maleness and femaleness (*ibid.*: 107), were identified as important in how materials moved through the environment.

Pottery manufacture lay in the male domain in Classical Greece, but there is no firm association through history as a whole between this technology and a particular gender. How pottery was acquired in a household, whether

from local kilns or markets or more distant trade, is relevant to attitudes to it and its later history. We need to understand social structure in Greek households. Activities involving specific materials in particular areas of the home had certain connotations. Bradley Ault (1999) lists pottery by function from two *koprone*s in the Argolid city of Halieis: cooking and other kinds of food preparation constitute 41.3 and 32.7 per cent, serving and eating 27.4 and 23.6 per cent, drinking 21.3 and 26.4 per cent, and storage 7.8 and 13.2 per cent (with a small undefined category in each). Most pottery would seem, in these instances, to come from the kitchen and dining room, with some contribution from storage areas and maybe a small quantity from workshops. Can we, then, assume that most of it reflects the workplaces of women and slaves and the eating areas of the family as a whole? There would seem to be definite distaff connotations here. Eating and drinking were likely felt as essentially male, and there may have been considerable, ritual, breakage in this domain. Broken pottery was almost certainly generated in the kitchen in a female context because it was here that pottery experienced its most diverse articulations with the physical environment and for the longest time in its life. Decisions to discard pots even when not broken probably lay, too, with the women. Ault (1999), however, is silent on the social connotations, and, unfortunately, all these different categories end up in the same *kopron*.

The distinction between private and public areas was significant. Items of private use, kept in private areas or shrines, would be well distinguished from those of more public activities, and this distinction followed through into the fields. Yet this particular opposition has an odd dialectic, for while the most private rooms in the home provide utter secrecy from the outside world, conversations and activities there are fairly predictable. In the fields, in contrast, where private places are created just by distance, meetings and conversations can be quite unpredictable and utterly private (Ch. 2, p. 34). With the removal of the rubbish, meaning that had been enhanced through use in the household now entered the more public domain of the farmyard or street. Strangers became involved. Dung heaps, for example, were rarely mentioned in polite sources (Alcock *et al.* 1994: 150) but the details of their construction and siting were important and written about. Manure was considered good, yet the ancient sources (Alcock *et al.* 1994) do not draw attention to the symbolic visibility of manure heaps at all, let alone the differences in meaning around the farm or on the land.

Mixing of pottery with manure took place in the farmyard. This related not only to the significance of the materials gained in the household and in the farmyard or streets but also to perceptions of their social presentation in the future. Broken pottery from one social context could be deliberately mixed in with material from another in a way which was to make sense in its distribution in the land. But in spite of considerable writings on manuring practices there is little information about the incorporation of pottery. There may have

been deliberate mixing of potsherds and dung, 'either in the dung heaps or elsewhere in the farmyard' (Alcock *et al.* 1994: 150). The materials may have been kept separate, and the observation that *human* dung required diluting is possibly relevant, as is the rank order of different strengths of dung presented by Theophrastus. There is also a reference from Epictetus to the casting of a broken pot onto a dunghill, but then there is another from Cato advising 'cleaning manure of foreign matter before applying it in the fields' (*ibid.*). Some materials may have been perceived as dangerous and disposed of separately. Others may have had dual significances for outsiders, reflecting the benevolence of the household institutionally but its nuisance as an immediate neighbour.

The transportation of broken sherds was likely male business, the manure and sherds being carried physically by the men or in carts drawn by animals, which were also overseen by men, while the chucking of the pottery onto the fields was also likely a male job. There may have been intermediate dumps of waste between the cities and the farmsteads, like those identified in East Brittany in the post-Medieval period (p. 131) and suggested for Maddie Farm (p. 125), and these might account for some of the concentrations of pottery identified in the surveys, especially where they are without indications of buildings.

Interpretation of the haloes of pottery, the looser distributions around the settlement nuclei, is difficult. Importantly, they are not uniformly present. Household waste is only one source of fertilizer so it is not automatically distributed onto the land. In East Brittany little of it got onto intensively cultivated land in post-Medieval times, and none at all in the earlier Middle Ages prior to the tenth century. In Boeotia, sherds can be absent from good land near to settlements while being plentiful further away (Bintliff 1985: 202). There may have been other sources of manure like dunging by grazing animals on the stubble after harvest, fallowing or crop rotation, or collecting dung from the pastures and redistributing it onto the arable. Nor is it automatic that the most intensively worked land was the most intensively manured. Alcock *et al.* (1994) indicate that excessive manuring can be detrimental and quote Theophrastus: 'one should (they say) manure poor country more but good country less'. Far away in the Orkney Islands, in another climate, on farms with richly fertile soils, waste materials accumulate as 'farm mounds' often several metres high, whereas on poorer soils the material is spread onto the land (Davidson *et al.* 1986).

The sherds by this stage would have accrued meaning through many spheres. For men, the act of strewing pottery onto the fields could be about the neutralization of female power in the home or in political interests, while once on the fields, the sherds were experienced by the women during activities like sowing and weeding. Ploughing is the activity where pottery is least likely to be observed, or so our fieldwalkers tell us, and the one, too, most likely entailed to men. Yet could it be that women were deliberately

mixing broken pottery from their world with manure which was destined for the world of their men in order to make some sort of statement to counter this gender bias? But then the times of greatest visibility – when the frost and rain (or the sun and wind) had broken up and washed down the soil crumbs, exposing the sherds – were the times when women were involved closest to the soil surface, of thinning, weeding and gleaning. Did it make them easy to see the broken fragments of their domain in a man's world and in the new life of the stands of grain? Maybe this was where they came at menstruation.

RELATIONS WITH SOIL EROSION

Erosion and terrace histories need to be explored, for these, too, encompass changing relationships with the land surface and with stones. There is also a change in visibility of sherds when erosion occurs, with an increasing contrast between valley bottoms and sides. Thus in alluviating or aggrading land, pottery becomes covered over, its visibility is impaired and, if used as a referent, needs to be replenished. On eroding surfaces, by contrast, pottery becomes increasingly visible, and this can be accompanied by an increase in age diversity, thus giving the land surface a time depth as well. Slopewash moves sherds down to terrace or cultivation edges where people could collect them and pile them up in small cairns at the edges of cultivated areas, thus adding to this visibility and meaning (cf. p. 63).

When I first saw eroding slopes of marl in southern Italy I thought they were the spoil heaps of mines, they were so fresh. But I was brought up in the stable grasslands of the Chiltern Hills of England. Mediterranean lands are characterized by high susceptibility to erosion because of the semi-arid climate, dry unstable soils, grazing of goats, and strong contrast of seasonal climate. There is a strong contrast, too, between valley sides where erosion is commonplace and the valley bottoms and alluvial plains where surfaces are more stable and there is a gradual build-up of soil (Figure 6.9, left). But valley sides are not continuously on the move. For decades they can support stable soils with a developed crumb structure and humus content: their stony surfaces are a relic of former erosion and a product of the absence of burrowing worms, without which the stones remain unburied. Equally, valley bottoms are not continuously 'aggrading'. More likely, there are 'events', short periods when severe erosion takes place, often followed by flooding and alluviation, and then long periods of calm (Bintliff and Snodgrass 1988b: 509). Recurrent erosion events since the Bronze Age, with recurrent truncation of the soil profile, can be correlated with climate change or land-use. Work in two regions of south-east Greece, the Argolid (van Andel *et al.* 1986) and Attica, has shown a number of phases of instability in the later prehistoric and early historic periods, attributable to either heavier rainfall or neglect of agricultural terraces.

Soil erosion is an emotive topic, with many socio-ideological interfaces, and this was as likely true in the past as it is today. Erosion is detrimental to crop growth or the development of pasture. In ancient times it would have been perceived as a lapse of responsibility, neglect of terraces or, before terraces were built, neglect of the soil. Individual farmers would have been blamed, or, if erosion were widespread, affecting the lands of several communities, then likely the climate. People arrested erosion and alluviation, with cooperation between neighbouring farms, through the collection of stones and the construction of terraces, and it would be interesting to find records of disputes in relation to this. The terraced landscapes came to be enriched with meaning, reflecting the societal interactions that took place as they were being constructed and maintained as well as the ways in which the soil erosion and the creation of the stony land were perceived. Terraces allowed different styles of social engagement to take place on the slopes in contrast to the topography of more rolling land, especially where constructed in relation to a striking visuality of the settlements (Figure 6.11); perhaps they functioned in an equivalent way to sherds. This sort of comparison could provide a line of inquiry into the origin of the terraces and why people sought to take in and cultivate the steep valley sides. For example, soils underneath terraces may have an accumulation of sherds, collected off the eroding slopes to enhance the visuality of the cultivation edge before the building of the terraces got underway.

Local and regional sequences of terrace construction and erosion are better models than general ones because of the influences of factors at these scales, whether of land-use or climate. Clearly it is not always the case that erosion gives rise to alluviation because the material does not get into the rivers but is banked up on the valley sides as terraces, so there need not be a match between valley-side erosion history and alluviation. This is how research is going in the Mediterranean lands (Lewin *et al.* 1995) and in river valley investigations generally (Brown 1997; Howard and Macklin 1999).

A BIGGER PICTURE

Territories or parishes were established in relation to population, resources and other settlements and it was likely understood that there was a theoretically perfect size and shape to these, just as we today can understand this through the use of Thiessen polygons (Figure 6.12). The mismatch between the theoretical ideal and the actual limits, for example the larger size of Thebes and the smaller size of Haliartos, was likely understood and exploited, even created as such, as a means of establishing city-state identity. It was not just that bigger territories were more powerful, it was that they were perceived as such through their exaggerated expansion in relation to their population and settlement size. It was a deliberate



Figure 6.11 Inner Mani, southern Peloponnese, in the south-west part of the peninsula. Upper: abandoned cultivation terraces against a backdrop of a village with tower-houses. Lower: village with tower-houses and war-towers; note the walls on the limestone slopes in the background.

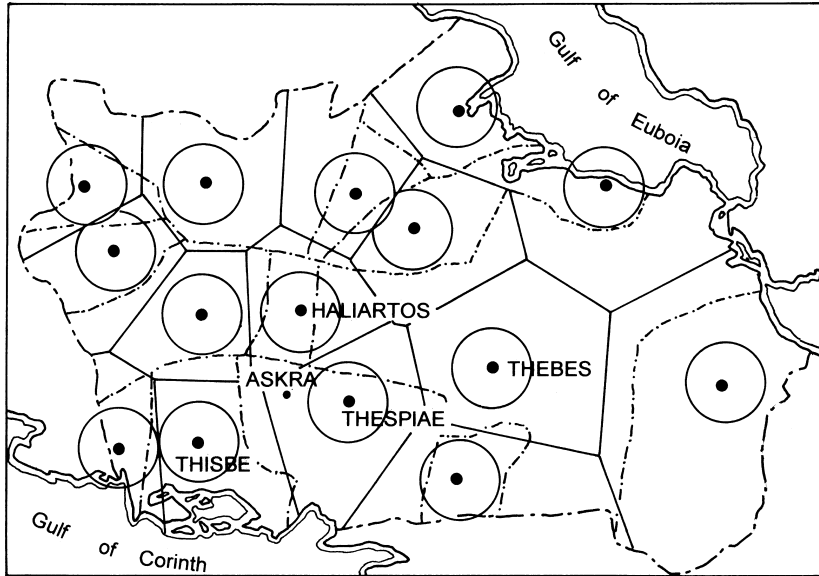


Figure 6.12 The city states of early historic Boeotia, showing discrepancies between boundaries as determined from historical sources (dashed-and-dotted lines) and theoretical boundaries as suggested by Thiessen polygons (continuous lines) and 5-km radii. These discrepancies were a defining part of the character and identity of the city states, not a passive reflection of power relations. (After Bintliff 1985: fig. 59.)

creation of differential which was used in socially expressive and power-manipulative ways.

At a bigger scale, mismatch between land-use and settlement histories in some city states of Greece may be due to the widespread movement of resources at the inter-state scale and a differential distribution of power (Bintliff 1997). A core area of cultural wealth might be dependent on a periphery for grain, metals and timber (*ibid.*: 20), with minimal environmental impact in the core but significant environmental impact, including soil erosion, in the periphery. The core–periphery must be seen as one system of state management. But there is more to it, for like the differences in state territories between theoretical and actual that we have just discussed, these large asymmetries, too, could have been established deliberately as a way of expressing power.

Where we see local agricultural and demographic cycles and modes of production operating within a macro-regional socio-economic system (Bintliff 1997: 17) we can understand this as a dialectic of local diversity tempered by regional tradition. Where we find core–periphery situations we can see each part – core, periphery, and especially the buffer zone

between the two – as functioning in a role of uncertainty within a system of stability as a whole. Boeotia, even though having some contacts with Athens, maintained an internalized economic system hardly spurred on by core–partner interactions (*ibid.*: 21), suggesting that core–periphery relationships elsewhere were actively generated. Equally, where situations seemingly worked against ecology, these may have been actively created with such an opposition in mind, as in the control of Messenia by Sparta where the ecological advantages were countered by an exploitative policy ‘that created under-development’. There was a similar situation in Crete, where under-development – ‘more proper to a marginal landscape’ than to the natural fertility of the island (*ibid.*: 23) – was related to an archaic system of social control.

CONCLUSIONS

- 1 Pottery sherds on the land were deliberately distributed in acts of social engagement and used there in a similarly involved way. However, we need to theorize the meaning of pottery in the household and the tracks of these meanings to the land in order to understand how these distributions were engaged with socially.
- 2 Pottery sherds can have different kinds of articulation with socialities from other media like text, monuments or terraces, because of their origins and their nature in use as complete vessels.
- 3 Sherd use in the social domain must be seen within a more deeply layered and wider materiality of architecture, settlement, subsistence and demography. Context is also important, for there are practicalities in the immediate distribution of broken and discarded vessels from their place of use, as with the distinction between towns and the countryside.
- 4 Erosion histories are important in understanding sherd distributions and relevance.
- 5 Large areas of distributions – at the regional scale – were understood, as we would understand a map, and maybe even deliberately created, as a means of referencing larger social worlds.

TEXT, MONUMENTS AND LAND

This chapter is about text – documents and other media which support writing and inscriptions, like tablets, stone monuments and coins. The focus is on materiality, text itself, as opposed to the literal meaning of the words. The sense of the words is, of course, a part of its essence, but I am not especially concerned here about the information that can be gained from this. This may seem strange in a subject which uses documentary evidence so much in the reconstruction of past environments, and to be stretching understanding of the physical environment beyond its normal limits. But text can be understood as a medium of expression and in this respect is very relevant to the theme of this book. Moreover, the very existence of written records is bound up with how land relates to people. In the landscape, inscriptions were not just information – who lay in a grave, which governor was responsible for a gateway, how many lengths of sea defences had been constructed. Inscriptions, through their use in social mediation, brought information into being. Text as text was significant. Likewise in the business of transacting land, writing held a key place in the making of charters. Yet these, even if not always used as records and consulted in disputes, involved significant referencing from the level of individuals to that of entire social systems. People did not need to understand the writing but they had to know it meant something. And it was not just the texts themselves, but the act of writing or engraving, the materials used, the media of presentation, and just their very existence, whether in private or public – as a stone monument in a market place or behind the walls of a monastery – that allowed expressions of sociality and articulations with people's lives.

More generally, we need to be thinking quite laterally about environments, away from conventional subjects and scientific methodology, so that we can push forward ideas about relationships with people. As with potsherds on the land where we cannot assume their only significance is in manuring or the presence of settlements, so with a text we cannot assume it conveys 'the message of its written content without any further meaning' (Thomas 1992: 74). In fact we need no other justification for including a section on texts in a book on texture than that many monumental and ancient writings are inscrip-

tions and thus textured. Indeed the origin of the two words text and texture – in a way so beloved of Ian Hodder – is common in the Latin *textere*, *textum*, to weave, and *textura*, weaving.

A third reason for including text is that many inscriptions and writings were designed to be read aloud or sung. They could not fully function otherwise. This introduces us to texture of sound, which has so far been absent from this book.

An individual text can have a multiplicity of meanings, even when it can be read and understood, relevance being dependent on who is reading or interfacing with it, their degree of literacy, and issues of cultural and social status. Text articulates with land in three ways: it enhances the meaning of monuments; it allows the development of locales, *sensu* Peter Dickens (1990), at which social interactions (localities) can be explored and reproduced; and it involves relationships to land which are different from those in societies without writing.

TEXT AND MONUMENTALITY

In considering text and monumentality, this relationship is not being explored as an intermediary stage between raw, untexted, monuments and fully texted documents but as an insight into some of the more unexpected uses of text. Texts enhance monumentality, whether as inscriptions on cliffs (Figures 7.1 and 7.2) or doorways in public places, or as documents in libraries. The monument gains in meaning and depth by virtue of what is on or in it: 'The inscription is usually isolated in modern collections from the surrounding material, thus the total impact of the memorial is lost. But the importance of the whole memorial, visual impact, imagery as well as writing, also cannot be ignored' (Thomas 1992: 63). In some cases, text gave an artistic dimension to an object or monument. But more than this, text can actually create monuments, give monumentality where without it there would be none.

Writing cannot exist just as writing: it must have a medium. To this extent, inscriptions can only *add* meaning. The same applies, it is true, to stone monuments – there is a reciprocation of meaning in their context, be it landscape or building. Large stones in the landscape, in towns and in military establishments, incorporated into buildings or on their own, even without inscriptions, can be monuments. This is partly through their massiveness and an essence of durability and ancientness, partly through the decorative properties of particular types of stone, some of which like travertine, granite and labradorite felspar have a coarse textural beauty, and also through metaphorical associations of stone itself, as with death and ancestors at Stonehenge (Whittle 1997) and in present-day Madagascar (Parker Pearson and Ramilisonina 1998). But the association is less tight than that between text



Figure 7.1 Yazilika rock sanctuary, Hattusa, Turkey; late thirteenth century bc. In this scene the god Sharuma leads the Hittite king, Tudhaliya IV, placing a protective arm around the king's shoulders. Short texts in Hittite hieroglyphs above the figures give their identities. (Photograph and copyright, Roger Matthews.)

and monument, for while monuments may replace other forms of expression, so that the complexity of nodes through which socialities can be explored remains more or less the same, this is never the case for text. Text always adds.

In the public domain, the sense of an inscription may be unimportant: it is the fact that there is a coded or symbolic message as such that gives meaning. Being able to read a text and understand it may give greater articulation, yet this need not be so, for not being able to read a text allows a greater diversity of interpretation, and attendant uncertainty and alertness. And this could be the point, for text that cannot be read but which is clearly a message gives the writer or engraver power. We understand this well in a foreign country

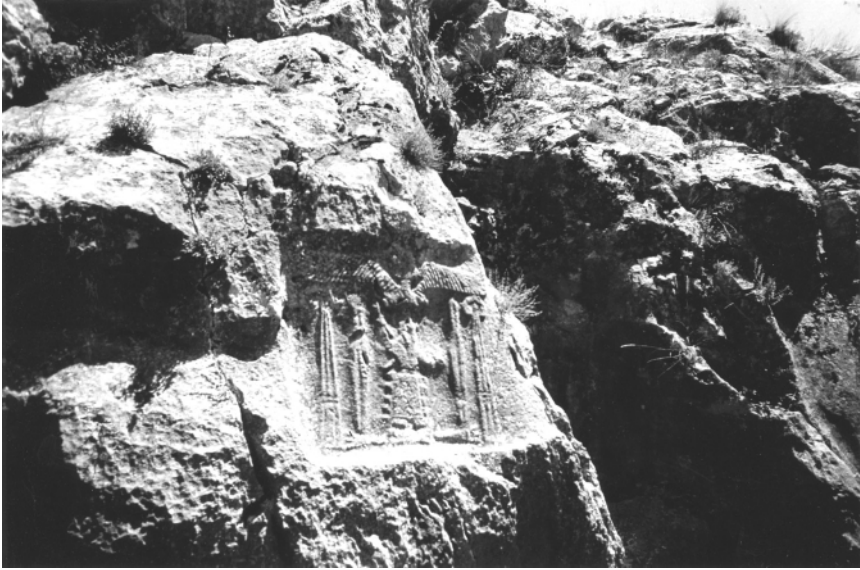


Figure 7.2 Yazilika rock sanctuary, Hattusa, Turkey; late thirteenth century bc. Text in Hittite hieroglyphs giving the name and titles of the king, Tudhaliya IV. This inscription may originally have identified an adjacent cult statue of the Hittite king. (Photograph and copyright, Roger Matthews.)

whose language we cannot read: a notice at the edge of land can prohibit entry, be a threat to shoot dogs that worry sheep, or contain information about a nature park, but unless we can read it we usually interpret it in a prohibitory way. Different styles of letter in the ancient world convey the same ideas, with the use of pictograms or ideograms conveying at least some identifiable meaning, as with Linear B in the Minoan Bronze Age or Hittite hieroglyphics of the eighth century bc, and in contrast to cuneiform whose signs, in its advance stages, are utterly cryptic. Sometimes help was given where earlier pictorial forms of certain signs were used alongside more cursive equivalents (Hawkins 1969a). Thus the style of the letters, whether they can be related to actual objects or whether they are purely abstract, can convey meaning without the need for translation. Density is relevant too, and again it is not important to be able to understand the literal meaning. Clive Gamble (1991) has made the same point about Palaeolithic cave art: where there was a lot of it, something serious was going on.

Inscriptions on stone, whether private (Figure 7.3) or public, were an important part of life in the ancient Graeco-Roman world (Thomas 1992: 66). Here, inscriptions gave monuments a texture of orality, speech, for their use entailed their being read aloud or sung – reading texts aloud in public was necessary to their use. Such monuments had a texture in sound.



Figure 7.3 Tombstone, with formal dedicatory inscription, by a road in the Greek agora, Athens.

'It was not a simple matter of recording speech but rather of poetic utterance' (ibid.: 63). The use of the first person singular in tombstone inscriptions in Archaic Greece has similar implications of engagements with orality, especially when seen in a trend to the use of the third person in the later fifth century. But these uses of text 'at the service of speech' may be context-specific and not a stage in the development of how text was used generally, for at the same period casual graffiti indicate diverse relationships with speech (ibid.: 65). It is almost as if there were a dichotomy between the maintenance of tradition through the spoken word in the public monuments and the exploration of new ideas through graffiti, although the latter, more widely, are themselves diverse in signs and meaning and in some cases can be quite monumental (Figure 7.4). A similar diversity is seen in inscriptions on the Propylaea of the Athenian acropolis.



Figure 7.4 Graffiti in a public park, Llandaff Fields, Cardiff. Upper: sequences of formal, public, presentation and more casual, personal, signatures. Lower: note the association with the panels in the building in the formal presentations, and the ignoring of these in the more casual ones.

Texts can also be seen in the context of the building in which they are incorporated, as we saw with the appropriation of significant Roman inscriptions into Anglo-Saxon churches in England (Ch. 2, p. 35). The Church of the Holy Apostles in the Greek agora in Athens incorporates Arabic writing motifs in tile in its fabric (Figure 7.5) in combination with a variety of spolia. The Byzantine Church of Panagia Scripou at Orchomenos in Boeotia (Figure 7.6) is a remarkable example of this phenomenon. Here there is a diversity of inscriptions, some original to the church, some incorporated in re-used stone, and some added later. They can only be understood in the context of an equal diversity of spolia, including the imaginative use of tile, different qualities of stone, column sections from the Classical acropolis and theatre, and a sundial (Figures 7.7 and 7.8).

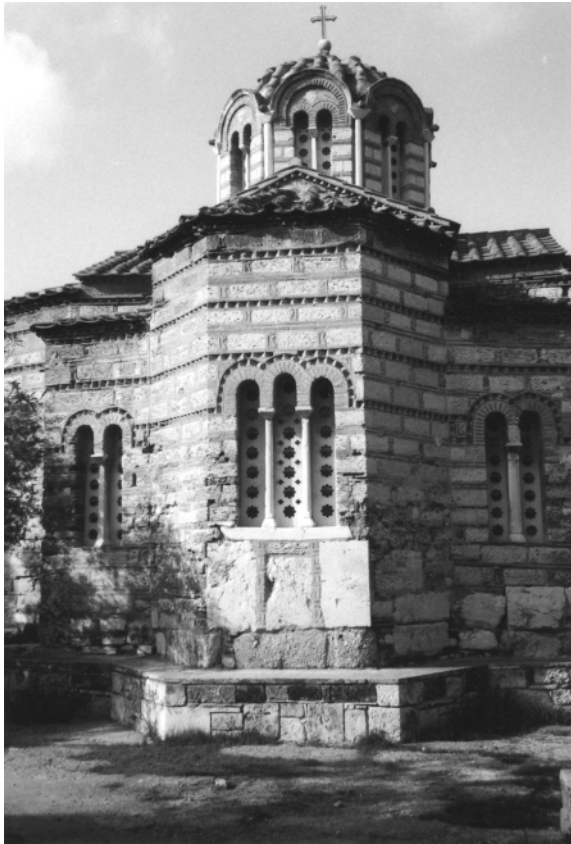


Figure 7.5 Church of the Holy Apostles, from around AD 1000, in the Greek agora, Athens, showing the use of a diversity of stone and tile (spolia) from earlier constructions which includes Arabic writing motifs in tile, and the appropriation of a significant ancient site.

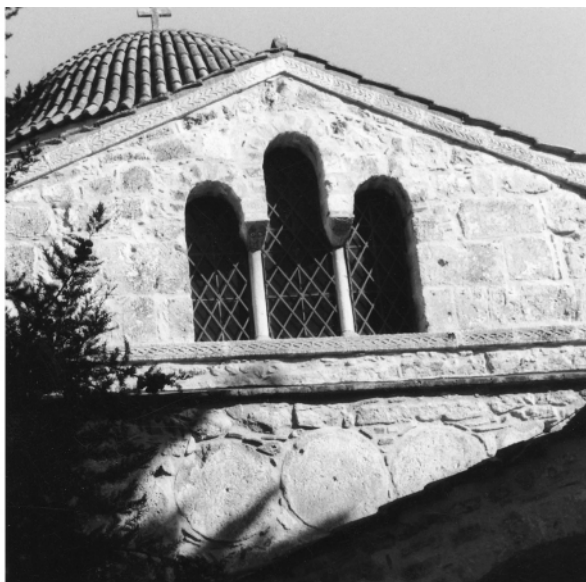


Figure 7.6 Byzantine Church of Panagia Scripou at Orchomenos, Boeotia; inscriptions were incorporated in the wider context of the re-use of spolia from the ancient acropolis and theatre. Upper: detail of column segments, tile and stone. Lower: general view of the west end.



Figure 7.7 Panagia Scripou, Orchomenos; inscriptions on the outside of the church. Upper: use of tile and small stone. Lower: use of tile, carefully prepared blocks, and irregular stone.

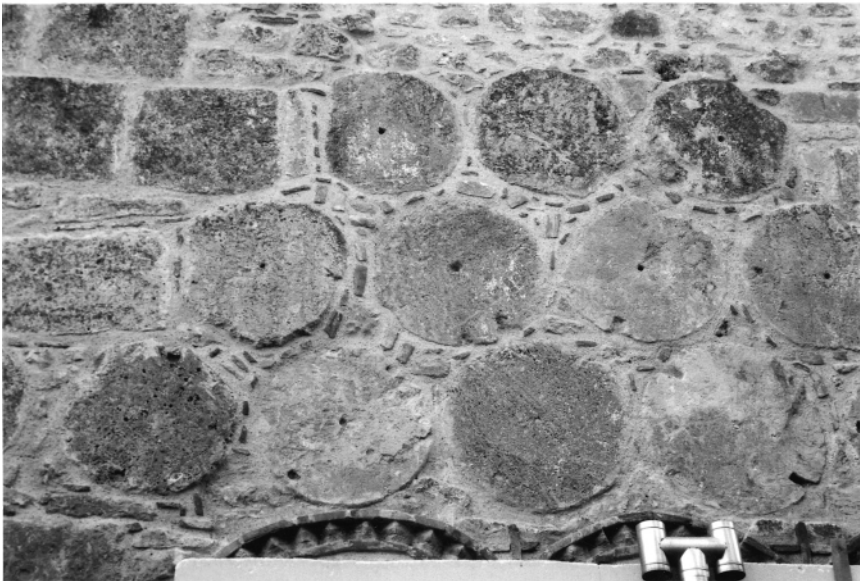
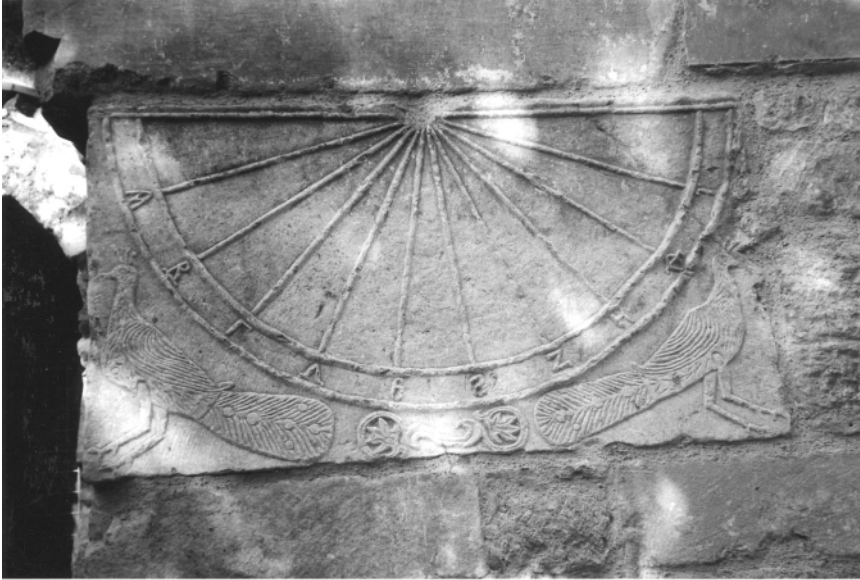


Figure 7.8 Panagia Scripou, Orchomenos; a diversity of spolia. Upper: a sundial, with carved peacocks. Lower: column segments and tile.

According to context, text did or did not give permanence and stability, and in this lay a further significance in social agency. Inscriptions may deliberately record uncertainties, laws or decrees where a situation was not universally agreed (Thomas 1992: 71). It was as if the purpose were to create media for debate. In the case of laws of Archaic Crete inscribed in stone blocks at Gortyn this worked at two levels, one through the inscribed blocks themselves as an expression of the legal authority of the state, the other through the arbitrary judgement of officials in their interpretation (*ibid.*: 67). And again there is a kind of dichotomy here between stability and flexibility. Rosalind Thomas shows, too, how inscriptions were used by public secretaries and scribes in the Greek city of Teos to gain power – as in the unfaithful reading out loud of an inscription – and, more subtly, how the citizens used their anxieties about that misuse of power to curse it through further inscriptions (*ibid.*: 68–70, 81). There is an undercurrent of social agency in the relationship between text and monuments which is quite complex. And, again, in all these examples it is the materiality of the text that is important as much as the sense of the words.

Text can also enhance monumentality through the use of history, although some knowledge of the words is needed for the significance of this to be understood (Figures 7.1 and 7.2). In the first millennium BC, Assyrian stelae with cuneiform inscriptions were set on the boundaries of territory, so they were about physical boundedness as well as socio-political identity. Significance was enhanced by placing them in historically or geographically significant places, in conquered cities or at the sources of rivers (Hawkins 1969b), while even more historical intensity was achieved through the inscriptions themselves which were often of long genealogies and historical achievements and sometimes referred to earlier inscribed stones in the same place: ‘At the source of the River Subnat where stand the images of Tiglathpileser and Tukulti-Ninurta, kings of Assyria, my fathers, I fashioned an image of my royal person’ (*ibid.*: 119). There is history in Saxon parish charters, perhaps appropriated in legitimation, certainly giving depth of meaning, with ancient features like trees and even more ancient ones like prehistoric burial mounds being incorporated in the bounds (Ch. 4, p. 91). Bronze Age tumuli were used by pagan Saxons to bury their dead in. And there is history, often explicitly (unlike the Llandaff Charters – see below), used as propaganda. Matthew Paris in the *Life of St Alban* shows Roman bricks and round arches in St Alban’s Abbey in his drawings alongside more contemporary features of the thirteenth century (Clanchy 1993: 256). The benefactors of Crowland Abbey, portrayed in a roundel, range from eighth to eleventh century or even later and each holds a scroll recording his gift – documents within a document – legitimating the abbey’s weak claim (*ibid.*: 257).

Neither monuments nor texts stand on their own or even together. There is always a link through human action, sometimes in relation to legal or philosophical issues, often in relation to land. In the features taken in by Medieval

parishes, like boundary stones, although not always inscribed, there is still an articulation with text in their incorporation in charters, while text and monument, disassociated spatially, are brought together in beating the bounds. It is the same with charters which record the gifting of land to monasteries. Neither the monasteries which house the texts nor the collections of documents themselves are especially significant on their own: it is the link with the land, which was gifted to the monastery and to which the charters relate, that allows a perception of this entirety. But it is how these associations were incorporated in the creation of human socialities that provides the ultimate meaning.

TRANSITIONS TO TEXT

As archaeologists, we tend to think of the beginnings of a historical record as a watershed – the invasion of north-west Europe by the Romans and their introduction of writing, the invention of writing in Mediterranean countries in association with palaces and cities as at Knossos with Linear A and at Uruk with cuneiform. In Britain, the beginning of the Roman period marks the beginning of written history, with other significant boundaries being the Anglo-Saxon Chronicles and the Domesday Book. But in terms of everyday lives, these had little impact, being more in the way of political power, constructs of the monarchy:

Clanchy even suggests that Domesday Book was in fact of very little use as a contemporary record despite its obsessive attention to detail: it was not referred to until it had become valuable as an antiquarian record of property ownership. Yet it had a great impact at the time as a monumental and no doubt awesome symbol of William the Conqueror's possession of England.

(Thomas 1992: 77)

It was not really until Edward I's time that most of England's people left prehistory. Until then, texts were used more as symbols of transactions or dispute settlements, like the Gospels or a knife, and not as proof of the act. In the early stages of writing – either its invention or introduction – it was likely in the domain of scribes themselves and their patrons and the institutions that it served. For them, texts were records, even if for everyone else they were documents, symbols rather than proof. Furthermore, texts served in the enhancement of these people and institutions, the keepers of the cartulary, the notariate, and the broader effigy of the church. They had a role in agency.

In England, early on there was a similar uneasy tension as occurred in the ancient Mediterranean world between the importance of writing and oral tradition (Clanchy 1993). Use of words like 'seeing' and 'hearing' in

documents shows the difficulties of accepting the new medium of transmission, and even with documents there was still room for argument over meaning. Before writing, land was transferred through oral ceremonies and the giving or exchange of small artefacts like a riding whip between participants. A sod or hazel rod could serve the same purpose:

Before conveyances were made with documents, the witnesses 'heard' the donor utter the words of the grant and 'saw' him make the transfer by a symbolic object, such as a knife or a turf from the land. William the Conqueror went one better and jokingly threatened to make one donee 'feel' the conveyance by dashing the symbolic knife through the recipient abbot's hand.

(Clanchy 1993: 254)

Witnesses allowed a record of the transactions to be held in the community as a whole and handed along orally through generations. Yet importantly, the early charters were still more symbolic than juridical in the way of modern property deeds (Clanchy 1993: 256). Later, as writing took hold, symbolic objects were inscribed with details of the transaction. Charters formalized things not only as a physical and lasting representation of the transaction, although this was still accepted only slowly (*ibid.*: 256), but also in the wider sphere of the community as literacy and bureaucracy came into being. Wise old men became less important.

Yet we should not think about writing too much in a broad historical development. No doubt there were watersheds at a countrywide or even continental scale, but within them local trends occurred. The emergence of general literacy in England in the late thirteenth century, more than a millennium after the introduction of writing, was preceded by several periods – for example in the third and seventh centuries – of local development. The beginnings of writing anywhere, whether as invention or introduction, created arenas of diversity and uncertainty – dualisms, oppositions, parallel unfoldings with orality. It would seem to have arisen in a sphere not of increasing technological or bureaucratic efficiency in a general environment of urban growth or military rule but of social intensification. Writing was an engagement of new and challenging means of social intercourse.

TEXT AND SOCIALITIES

The development of socialities through writing

Writing entails engagement in a wider diversity of materiality and sociality than does orality. It articulates people's faculties – through languages, scripts and the material media of texts – more physically than speech alone. From

the start, document-keeping could have played a role in countering risk aversion, especially when it is seen in the form of lists as in the Minoan Linear B. Later, we see complex legislation and rules, the familiar hallmarks of risk aversion, of societies unable to pursue flexibility of action. 'The numerous surveys of Edward I's reign suggest that the bureaucracy's appetite for information exceeded its capacity to digest it. Making lists was in danger of becoming a substitute for action' (Clanchy 1993: 6). Sounds familiar! But there is more to it than therapy.

The early use of writing in a country, or the early usage of writing generally, lay in the domain of specialization and elitism. Later on in the development of a script, where pictograms give way to more abstract signs, as happened with cuneiform or with objects, animals and human heads on Celtic coinage, knowledge of historical context allowed the accrual of power. It has even been suggested that some Palaeolithic abstract signs are simplified from animals or human genitalia, understanding of which required a tradition of oral education. However, there were equally inevitably contingencies, like the widespread use of Latin in early Roman Barbarian Europe (e.g. Bowman and Thomas 1983), although even this, in resting largely with the army, was restricted to an elite.

Diversification was also a hallmark of early use, and in this, too, we may see an agendum of agency, but now in a wider spectrum of society. In the British Isles and Ireland, languages included branches of Celtic, then Latin, and a few centuries later those of Scandinavian and Germanic origin; English developed out of the last, yet with French and still Latin in different spheres. Scripts were the Latin alphabet, but also Runic and Ogham, while media included monumental stone, hazel rods, coinage and parchment. Perhaps this diversity and succession were a historical consequence of different cultural influences, but more likely they were entailed in a spirit of exploring new forms of expression at a time of population movements and change (Ch. 4, p. 92); in which case the various building materials and inscriptions in Anglo-Saxon churches (Ch. 2, p. 36) can be seen in this wider diversity.

In the material nodes of the *chaîne opératoire* – the preparation of the materials, the act of writing, the documents themselves, the curation of texts as documents and records in the muniment rooms and cartularies of monasteries, and by specialized personnel – there was accumulation of meaning and the development of new socialities. At every stage there were opportunities in writing and record-keeping for social engagement and the reproduction of identities and power, much more so than with orality alone because of the anchors of the physical environment and the longer *chaînes opératoires*.

There was also brought about a wider sociality through gifting, itself partly enabled by text, in the relationships of landowners to the patronage of church – both episcopalian and monastic – and the nobility. This was developed as authority and power in the clerical stratum of scribes and notaries,

the librarians, the abbots and the parent institutions of the church and monasticism as a whole. Religion, in particular, was close to the business of charter-making, even if many of its practitioners were from the lay community. As Clanchy (1993: 255) points out, some of the words at the heart of writing have dual meanings, one in the materiality of it all, the other in religion – lay clerks *contra* religious clerics, letters as individual signs or as religious epistles, scripture as writing or as the Bible itself.

Roman property laws

Specialization, social structuring and the construction of power in the document-makers and managers are seen well in ancient Roman property laws. These were so complex as to need managing by professional lawyers, utterly divorced from the workings of the land they legislated for (Levy 1951). True, these laws marked the culmination or ‘final climax’ of long oral traditions which themselves were complex, but once enshrined in a document the complexities took hold. Many of the terms and ideas remain in legal currency today. Periods of slackness and elision alternated with periods of tightness and segmentation and even these, we may propose, developed in the context of enabling different degrees and facilities of expression. In the earlier Republic, magistrate and *pater familias* were guided by extra-legal forces such as usage and morals, favouring a promotion of the best of their subjects; later, under Marcus Aurelius, there was government interference on a large scale, with ‘credit only for acts serving the common weal, denunciation for those not aimed at a social end’ (ibid: 108). Ownership was not an intrinsically unlimited right: it could be overridden by public interests.

Interplay of expressive interest continued into the Dominate – ostensibly as public security versus the interests of individuals, but in actuality as power of the emperor, of other authorities, and of the public purse. Individuals were protected by laws forbidding the construction of buildings that might block views of sea and mountains from another’s land; communities were safeguarded by legislation which forbade the sale of land to outsiders unless no fellow villager exercised his prerogative. Private interests were protected by the legislation of Justinian which forbade the construction of buildings that might bar the wind from the threshing floors of others (ibid.: 122); public interest was acknowledged in laws of Constantine barring the building on one’s own land in the vicinity of public granaries, with any building so erected and all its appurtenances confiscated (ibid.: 114): even constructing a balcony within 15 feet of a public granary led to its being pulled down and the house seized by the treasury. ‘Private ownership . . . though upheld as an institution . . . primarily served the general welfare or the authorities, and only within these qualifications might it serve the advantages of the individual’ (ibid.: 110). For the later Roman Empire, ‘Under the impact of totalitarian interference and compulsion the growth of private initiative was cramped

and stunted. The individual expected the authorities to take care of his needs' (ibid.: 120).

Land was held in various ways in Roman law (Levy 1951: 52). *Emphyteusis* was a perpetual right in a piece of land, for which a yearly sum was paid to a proprietor. *Ius perpetuum* was a stronger right (until merged with *emphyteusis* in the fourth century AD) and could not be rescinded except by imperial decree; it included even the right to manumit slaves adscript to the soil. *Superficies* – a word absent from the sources of the later empire – was a common inclination by jurists of vulgar law to look upon inheritable rights as ownership. This is relevant to building by private individuals. On public land, the erected building and fenced land are equalized and belong to the builder, but on private land, although the rights in the materials of the building are retained by the builder, the rights of the building itself accrue to the owner of the land. This has relevance to whether a building is constructed of wood or stone, the level of investment made in more exotic building materials, and any changes that may take place in these during the life of a building. Decisions about building materials and style related to the law and the ultimate ownership of the building, not to the materials, the function of the building or its status. Later, where a landowner gave consent to the construction work taking place, the building came to belong to the builder anyway: 'The normal contract or lease or sale which the classical system had required to establish *superficies* was replaced with the mere consent of the owner of the ground' (ibid.), a satisfying disintegration of bureaucracy.

Early charters

The formality of early charters really brings home to us the many nodes of social engagement, including the appropriation of history, that can occur along the course of their making. In this, they show the distance between what should be a simple relationship between a man or woman and their land and the complexity of that relationship as portrayed in the documents. Having one's hand slashed by the Conqueror's knife would seem highly preferable to the rigmarole of drawing up a charter. They bring home to us, too, the actual complexity of the business of ownership and prevent us from becoming twenty-first-century complacent about what is in effect a highly complex philosophical engagement.

Charters are documents of land transfer, of ownership and bounds, with details of land areas, their location and extents. When they are retrospective, they could legitimate land claims as did those of Llandaff in south-east Wales in the early twelfth century, and that may have been the primary purpose of that particular collection. But the actual business of land transfer often took place on the land itself or in some special place, 'a Cléguérec grant, in 833, was made in front of the machtiern Alfret, sitting on a three-legged seat in front of the church' (W. Davies, 1988: 109), with the transfer of a symbolic

artefact like a knife, a hazel rod or a whip rather than through a charter. The knowledge of the transaction was witnessed and the witnesses themselves, not the charters (even though the witnesses were listed therein), were consulted in disputes.

Charters functioned in an important socially mediatory way. In the first place, the gifting or selling of land likely had a reflexive relationship with charter-making: each entailed the other. Charters, to paraphrase Wickham (1988: 210) in his study of the Tuscan Appennines in the early Middle Ages, are as much about patterns of gift-giving to monasteries as they are about patterns of land-ownership. Especially, land alienation was encouraged by charter-making because where there was a document, even if not regularly consulted, the gift was felt more secure. We must see charter-making and land tenure each as a part of a single, combined, enterprise, just as we saw earlier monuments, text and land. This is important. And the gifting, donation or sale, too, was a symbiotic relationship, with both village or individual landowner and monastery benefiting. Monasteries gained land (and authority and power); in some parts of Medieval Tuscany, gifting was from specific social groups, not the whole social spectrum, so it worked to enhance such distinctions; and villages established feelings not just of a general spiritual goodness but of community, especially where there was a specific link over several generations with a particular monastery (ibid.: 194). Cycles of gifting in the Casentino Valley of the Tuscan Appennines (ibid.: 190–204) likely, too, originated in the working through of socio-political relations.

At the level of charter-making itself, charters gave substance to the scriptoria where they were drawn up and to the muniment rooms where they were kept. They gave influence to the notariate in the idiosyncrasies of style and formulaic they could apply, for example in the change from representing alienations as gifts to sales, sometimes even concealing loans and at particular stages in a gifting cycle (Wickham 1988: 195). There were even separations between the scribes and those whose business it was to formulate the charters, and in the latter we find considerable regional diversity (Davies and Fouracre 1986: 210) which could be interpreted as a means of community identity (although not so by Davies and Fouracre). Charters could also be 'lost' deliberately, i.e. destroyed, where 'the reservation of private *ius patronatus* in texts was inconvenient or embarrassing', something, again, in the hands of the notariate (Wickham 1988: 201). Through the charters there could be the wielding of considerable power.

In providing a parallel materiality, a monument, to land-ownership – *in sempiterno graphio* – charters were an important bridge between land and religion. Yet in all this, charters were documents; they did not serve as records. Like stone monuments, they were, at least in the earlier Middle Ages, in a largely prehistoric world. It was the materiality of the text, not what it actually read, that was important together with its relationship to the land that bestowed the development of socialities.

The Llandaff Charters

The Llandaff Charters record property and estate ownership transfers, usually as donations, to Llandaff Cathedral in south-east Wales (W. Davies, 1979a). They were probably drawn up in the early twelfth century but incorporate material going back to the mid-fifth century as a means of legitimating Llandaff's claims to land. Put bluntly, they are forgeries. But the charters are important in that much of the material used was probably genuine, or at least taken from genuine earlier documents (even though the latter may themselves have been written in retrospect of the events rather than being contemporary records), and in addition it has allowed historians to show that many of these early Medieval landholdings had themselves appropriated earlier Roman estates. The coincidence and style of the two periods of settlement can hardly be explained otherwise (W. Davies, 1979b). Roman estates, post-Roman land appropriation, retrospective charters, twelfth-century forgeries: an appropriation of history in a grand-scale *chaîne opératoire*.

There is considerable detail about the land, yet as in England between the eleventh and fourteenth centuries, the Llandaff Charters may have served more within the medium of social needs as a fashion statement than as a mechanism of transferring land. To start with, the concentration of charters in this corner of south-east Wales may not be a relic of a more uniform distribution, but an actual concentration brought about as a socio-political response to the border nature of the region and the high level of activities there. This had been an active area in Roman times and the tensions of politics and kingdoms were maintained into the early Middle Ages, whence the expression of these in some kind of visual display. More locally, there were changes in the nature of the charters through time. Early grants were only made by kings, were of big estates (hundreds to over a thousand acres), of good land and through units of *ager* and *uncia*, which tells us something about the type of land and its manner of inheritance (ibid.: 156). The early grants are steeped in the Roman past. There was a specific tenurial structure with ownership less than total, multiple rights in single parcels of land, limitations on alienation, etc. 'The very mechanism of donation, involving charter writing and the meticulous recording of witnesses as proof of the act and as sanction, has a late Roman origin in the insistence on registration of property transfers noted by Constantine' (ibid.: 158). The tenurial structure in question is noted, too, as being 'strikingly reminiscent of the tenurial complexities of Merovingian France' (ibid.), precisely the area from which came exotic imported pottery, known to archaeologists as E-ware, at this time. These early grantors were appropriating more than Roman land; they were importing the descendants of Roman fine-wares and they were adopting their juridical practices too. Later grants, after the eighth century, involved the non-royal laity, were of smaller land areas, and recorded through units of *modius* and *uilla* (ibid.), with evidence of a shift in settlement locations to something

we know as more familiar today – as if this, too, was a part of a new order, an opposition to the earlier order yet whose general style is maintained. Here, the charters were perhaps being used in a more practical way. There is a mass of detail about properties conveyed, their boundaries, the relation of these to earlier Roman estates and the changes that ensued in the later centuries, so the charters are an engagement with the physical environment, that is true, but far deeper than environmental archaeology usually recognizes. Taking all this in and using it in yet another degree of layering was a master-stroke of enchainment by the twelfth-century bishops of Llandaff – far beyond the stelae of the Assyrians of the first millennium BC or the more nearly contemporary roundel of the abbots of Crowland (p. 158, above). There is much more in the Llandaff Charters than a collection of documents redolent in multi-layered time: there is a whole philosophy of relationships with land.

The complexities of the business of charter-making itself and its formality are awesome (W. Davies, 1979a, 1982b), and this is not just in the diplomatic but in the concepts they entail of dependency in history and genealogy, of religion and truth. Typically, a charter begins with a notification or preamble – a kind of narrative background of justification. Then there is the disposition, a section that draws in widely from the past (with a clause expressing religious motivation for the gift), the present (*verba dispositiva* or words describing the gift and words describing the beneficiaries) and the future (clauses elaborating the nature of the gifts and rights and liberties appurtenant to it). Interestingly, the concept of ‘disposition’ is used in military circles in the same area of Roman Wales (Jarrett 1969) in the stationing of Roman forts and their rebuilding in stone, clear parallels with the multi-layered positioning of the charters. The attestation follows, this being the lists of witnesses, clerical and lay. The concept of witnessing, in entailing the truth of a charter, the transaction between people in relation to an area of land and property, is central. It embeds the idea of relationship (not *a* relationship, but relationship at all) between individuals in respect of land as trust. Only for Llandaff in the twelfth century there were no lay or clergy, no witnesses at all to the days and months of scribal toil. Then there are the boundary clauses, a description of the physical boundedness of the property. But this materiality, this literal bringing back to earth, is a respite – if often lengthy – and we are finally taken through the sanction which invokes the wrath of God if the terms of the charter are broken. ‘*Qui custodierit, sit benedictus; qui uiolauerit, sit maledictus. Amen*’ (W. Davies, 1982b: 263).

In relation to the wider world, charters (as well as other sorts of documents concerned with the settlement of disputes) were drawn up especially in boundary regions, as with the cartularies of Redon along the Breton March with Charlemagne’s empire (with a proliferation in the ninth century). It is as if tensions in these areas engendered the need for particular styles and intensities of social expression which, in these two cases, were served by

charters. In boundary regions, too, at an earlier time, stone monuments, notably those with Ogham writing, were established in western Britain, as in the Usk Valley around Brecon, again in the same general region of Wales as the Llandaff Charters. Some of these were about land transactions and a very few even have charter form and formulae. The similarity of charters to stone monuments, even without inscription, is strong. There is the trust entailed in the communal effort of production, the public display and, in their permanence, the anchoring in history and the future. The multitude of witnesses in charters may be as much about monumentality as unease in accepting the written form. Why a particular form emerged when and where it did and how it was subsequently used are issues of technology and culture and also of deeper relationships with gender and the other socialities which they served (Ch. 2, p. 41). What would be really interesting would be to examine the different kinds of material culture – pottery and parish registers (Ch. 6, p. 132), charters and stone monuments – in particular areas to see if they fluctuated in any way in relation to each other. Then we might be able to say whether the intensity and complexity of charter-making at certain periods was a replacement of more conventional kinds of materiality. For example, the cycles – or, perhaps better, pulses – of gifting recognized in the Casentino Valley of the Tuscan Appennines (Wickham 1988: 190–204), where in each there was upturn, a peak and then an ultimate dearth, lasted several decades or generations and provide an interesting link with the fluctuations of other kinds of materiality in the area (Ch. 8, p. 187). It may even be that these archaeological dark ages of charter-making were intended to mask a richness of people's engagements with the transactions of land.

TEXT AND LAND

There are equivalences of materiality in the use of texts as media of social expression, such as orality versus text, different languages and scripts, and different media of support such as place names, monuments, charters and graffiti. They involved different functions and different kinds of personnel. This is seen especially in the distinction between high status and more lowly members of society, the difference for example in the use of charters and parish records, or of Latin in ecclesiastical texts or French in the Medieval court as opposed to various forms of English as the vernacular. There were alternations, too, between text generally and other materials such as the distributions of potsherds on fields and perhaps with materials used in building and crafts. The rarity of stone buildings in the early Middle Ages in some countries in north-west Europe comes to mind. In early Medieval Wales there were timber buildings and elaborately embellished wood carving, metalwork and stone sculpture (Pryce 1992: 66), although this, disappointingly, is seen

in practical terms alone: 'That no Welsh church has as yet yielded evidence of pre-Norman fabric is surely ultimately explicable in terms of inadequate resources' (ibid.: 27). That may be, but it is how these fashions or necessities were used in social reproduction that is the more interesting question, and we can remember in this the constraints of Roman law (p. 163, above).

The Anglo-Saxon period saw a contrast between an earlier tradition of metalwork and jewellery succeeded by a later one in which these were poorer but in which there was a rise in the use of stone for building. This may be associated with the development of towns and their sanctions on trade in metalwork but not stone, and we note later (Ch. 8, p. 186) how another means of expression, transhumance, may also have developed through the influence of towns. Such an alternation may have been facilitated by the cyclic destruction of settlements, their levelling with rubbish and their subsequent re-establishment, as took place at Flixborough in eastern England. At this site there was a change from an early phase when there was high-status consumption of cattle (which were unusually large), certain wild birds like cranes, and bottle-nose dolphin, but little emphasis on craft-working, to a later phase when pigs and sheep became important, and there was emphasis on textile production and craft-working especially in fine metals (Loveluck and Dobney 2001). Individual or family identities may be witnessed in the diversity of house foundation styles (Loveluck 1998: 152). This site is of interest in the present context in that there may have been a scriptorium there in the later phase, even a monastery, for several styli of iron, bronze and silver have been recovered along with a lead plaque incised with the names of seven individuals and an alphabet ring showing the first eleven letters of the Latin alphabet (ibid.: 154–5). But this was all between the seventh and ninth centuries and it was not until the early eleventh century that there was the *floruit* of building in stone. In terms of historical scales of time, these equivalences of materiality probably belong with the *longue durée*, while the actual making of individual texts reflects the short duration (or event). Flixborough, in its cycles of destruction and rebuilding, and in its possible function as a scriptorium, allows a link between these two Braudelian levels (Ch. 1, p. 5), although this is a simple physical link. What we need to explore in these equivalences is the changing nature of sociality and where, in the material world, its different forms lay.

When orality gave way to text and records as a means of land transaction there was a change in the nature of expression and in its positioning in society. Practical matters like charter-making and record-keeping involved a new social order in the notariate and in its parent institutions and a new materiality through which this might be explored. It is not so much changes in communications that matter but the redistribution of sociality among different interests and ultimately the new ways land was thought about. None of this implies precedence of the practical over the social: it is not a sequence of cause and effect, texts invented, then record-keeping, then novel socialities.

Rather, text emerged as a means of exploring and resolving tensions within the society of the church and monasteries, and was deployed in this as a suitable medium for recording land transactions and the settlement of disputes. But at the moment, the issue is rather about shifting socialities than chronology.

Basically, there were trends in two areas. First of all, texts, and especially as records, allow secure management of land transactions. There was a physical bounding of the land, a tighter and more partitioned attitude; units of measurement and boundary clauses allowed stricter definition of the areas in question; ideas about community could be strengthened, as in the beating of parish bounds; and ideas of ownership emerged. Monuments of stone – in western Britain with Ogham, Latin or Celtic inscriptions – were a small part of this, although the main link was with the documents. But the fact that there was a written record meant that people did not have to maintain the course of that event in their heads, and this led to a loss of bonding between people and the land and with other people to whom the event related. There were also different feelings about land. Even if people could not read, the existence of records and the fact that they were held in an elitist (or at least specialized) domain gave land an essence of formality.

A significant influence was the specialization of writing, partly in the technicalities and skills entailed in the manufacture of paper or other text supports, the illuminated letters and manuscripts, and the places of keeping and curation, and partly in the personnel, the professional scribes and librarians. This led to a loss of contact and, inevitably, a loss of trust. In embedding transactions more in the hands of clerks, notaries and lawyers, and in keeping the deeds of ownership in specialized places and in specialized hands, the hands of people whose job this was and no other, there was less involvement of personal relations.

The other, and more serious, trend was in the redistribution of socialities among different interests. In resting the business of charter-making with scribes, clerks and an even more specialized notariate, bureaucrats could use the need for written records – or the value of them – to position themselves in society, along with their patrons and institutions like the church to which they belonged. The business of writing, keeping and dealing with documents became not so much about the transactions and the documents and the land, but a means of social expression in itself. Here perhaps lay the real origin of alienation, in one of the senses used by Karl Marx (Dickens 1996: 52 ff.), between the people who managed the land and the land itself. This was not so much about a loss of knowledge in the pedigree of land (its history and genealogy) or the fact that ownership or tenancy resided in an intermediary form, but about a bureaucracy that was seen to be furthering its own interests rather than those of the people and land it served.

It was an appropriation of the sociality which had formerly rested with the land. How strange it is for us for there to be land which was not owned, or

even used. Yet before writing, certainly before records, there was likely a stem relationship between people and land in which it was how a person used land as a means of constituting himself or herself that was the core. Interacting with land was a means of social constitution and reproduction. There were no set limits or physical boundaries and no ownership. As social and material needs arose and waned, so too did the kind of land and its disposition. Land comes into being as a means of establishing socialities, and this was the relationship which was lost when land became formalized in records. It was not just a loss of memory and trust or of some vaguely understood spirit, but an appropriation of an entire system of sociality in the service of a new social order.

It is fascinating how this word 'alienation' is so important in two such different contexts, the one of Karl Marx, the other of the lawyers and social anthropologists, yet how the two meanings ultimately are so closely linked. People saw the appropriation of their relationship to land by the bureaucracy and by the institutions of the state, church and aristocracy. They saw it in Roman times with the dissembling of authorities, ostensibly having the common weal at heart but in actuality their selves. They saw it in ancient Greece in officials who did not 'read out the writing on the *stèle* to the best of their memory' (Thomas 1992: 69). They saw it in the early Middle Ages with the developing influence of the church and in a notariate with its own states and say in how things should be done, even in regional styles of drafting and record-making. They saw it in the way post-Roman antiquity was taken over by Bishop Urban of Llandaff in the twelfth century, in his manipulation of ancient charters to establish bogus claims to property. In the later Middle Ages, even as orality was replaced by documents it retained its symbolic role, while later still there was the proliferation of lists. And we see it today where services like banking have become professions in their own right, more about establishing the lives of financiers than managing our money (Newton and Porter 1988). Alienation goes much more deeply than a breaking of the *chaîne opératoire*. It is about the taking over of sociality by service industries and their development as a way of life of their own.

CONCLUSIONS

- 1 Texts and inscriptions were used by people as a means of exploring their social worlds. This is with reference to the materiality of the texts and inscriptions themselves rather than the literal sense of the words.
- 2 Context is important in understanding the ways texts and inscriptions were used, whether as individual monuments, in the walls of a church or as a document in a cartulary. Text enhances meaning and itself is better understood in context.

- 3 If, as I have suggested, we see an equivalence in texts and pottery scatters and stone monuments in relation to land, we should be able to check this on the ground, as with the communities studied by C. J. Wickham (1988) in the Tuscan Appennines with their short cycles of gifting.
- 4 Engagement with texts as public monuments in ancient Greece and early charters in Medieval Europe through singing or reading them aloud contributes a component of orality to texture.
- 5 Through the making and curation of documents and records, the scribes, clerks and notariate and the institutions to which they belonged developed their own social worlds which were not directly about the content and purpose of the texts. This led to a view of land which differed from that when only orality prevailed.
- 6 Although it is not explored here, it is worth stating that one of the consequences of my ideas is that writing originated in an arena of social engagement rather than as a result of material needs or technological progress.

TRANSHUMANCE

This chapter is about transhumance, the way people move animals around in relation to the seasonal availability of grazing land and usually within a broader farming system. More deeply, the aim is to understand how these movements play a part in people's social lives, and especially how they bring together individuals of different age and gender groupings so that future life-cycle events may be learnt about. It is about meetings which are less frequent than those of a routine kind (school, workplace, home and recreation), which last for a few days or several weeks, and which are among strangers or at least among people who do not meet in daily life. These are associations that come about in relation to the annual subsistence cycle at particular times of the year and on journeys or when a part of a family is moving around.

In broadening things in this way it may seem that transhumance is superfluous to such a programme: other practices offer similar possibilities. We could examine systems of mobility like the student year, relationships between town and country, or the modern business world, each of which satisfies similar social functions. We might also show that there were relationships between some of these systems, as with solitude and simplicity in transhumance as an antidote to the intense communality of city life, and both of these institutions – transhumance and the city – developed in some areas at around the same time. But I want to focus on just one of these because the point is easier to make through exemplification.

Another reason for looking at a single system is that it allows us to explore the relative importance of different influences in its development and perhaps reveal unexpected ones. In a book on environmental archaeology, transhumance is particularly relevant because of the way it is seen as being at the service of environmental and economic imperatives. Transhumance is a strong construct even with people who do not practise it. There is an attraction in the idea of different transformations in a common subsistence structure; there is an attraction in transhumance being a consolidation in farming of a practice that is natural to animal flocks and herds; and there is an appeal in the way early agriculture may have developed out

of such a natural system (Ch. 10, p. 240). Yet we should not necessarily deconstruct transhumance in this way, for maybe, too, it was similarly used in the past.

LEARNING

The transient coming together of people in associations which go beyond everyday family and local community life allows learning and understanding about future states of being (Ch. 2, p. 34). Some of these, especially in the sphere of biology, like puberty, marriage, leaving the parental home and approaching death, are known about beforehand and there is some readiness for them, even if more in wonder than reality. But there are other happenings for which people are not so prepared, such as the emotional draining of illness, abuse in marriage (and not so much physical abuse but the years of being trapped in subtle plays of power), the realization of deviant sexualities, and the sheer transition to new states of being as when a new bride or husband enters the hostile circle of their spouse's friends and relatives. A third area is in the changing states of intensity and productivity in lives and their relationships with time. Childhood can seem endless but is a period of intense learning; early marriage is one where time slows down and where there is a shift from mental learning to biological and economic production; in the later stages of life, time can seem rapid, there is a slackening of production, and the mind understands more the lessons of history.

These states of future being cannot be learned about in the course of everyday life, for families and villages are narrow and conservative in their social relations and contacts. Families are formal with sibling rivalry and exasperation and embarrassment between parents and their children. Parents can be responsible for religious education but not willing to discuss sexual matters. The young age of parents often means that they themselves do not have the experience or knowledge of problems to come. They are often too close to children and too concerned with practicalities to consider less immediate matters. Children often stay around in their own age-gender cohort, playing and learning with people who were born in the same year, went to the same school, and went through particular rites with. In the Alpine valleys of Carnia in north-east Italy these cohorts are known as *coscrits*, 'people who see themselves moving together through time', and their cohesion is reinforced by rituals every few years (Heady 1999: 55).

There is a need for other kinds of arena, groups of slightly different ages so that the younger can learn from the older, or impermanent and unusual associations of mobility of which transhumance is one. The latter has the advantage of allowing people from distant areas to get to know each other, to learn about their societies, and to broaden the social realm. It is about finding

out about general trends that are going on as well as more immediate, not so distant, events in lives.

SOME GENERAL CHARACTERISTICS

If we need some definitions, then 'nomadism' is a state where people move over large distances with animals, not returning to the same area seasonally or even at all, 'pastoralism' is the farming of animals generally in any kind of regime, while 'transhumance' is more narrowly the seasonal movement of animals. In transhumance, movements take people to areas not physically linked to the home farm, hence the need to travel through common lands or lands owned by other people, with the attendant opportunities that arise for social expression. But reading an article by Stephen Hodkinson (1988) on transhumance in the Classical world made me realize how diverse the practice is in terms of personnel and time–distance aspects, and how strongly the Alpine system biases our perceptions of it.

Two extremes can be recognized. One involves short-distance movements in areas of sharp climatic extremes (Ch. 5, p. 100) and sharp contrasts in the seasonal availability of grassland. In mountains, this can involve crossing climatic zones. In the European Alps, journeys may be no more than two or three kilometres, yet the vertical distances may be over 1,000 m. In the Alps and the Andes, there is strong attachment to the local agrarian system. In winter the animals are stalled around the home farm and fed with hay or other kinds of fodder; numbers of animals are small and the movements are generally at a local, family or village, level. Another arena of local transhumance is provided by the contrast between coastal saltmarsh and inland grassland, as in south-east Wales (p. 194, below).

The other extreme involves long-distance movements, although there is considerable variation: in Classical Greece it was in tens of kilometres, by modern pastoralists in the northern Peloponnese it is around 100 km, for Varro's Italian flocks, distances were up to 250 km, and for flocks in the Spanish *Mesta* today, 800 km (Hodkinson 1988: 54). In east-central Italy, flocks and herds are moved around at several seasons to areas outside the local region, with routes being as much horizontal as vertical, and without the overwintering indoors of the Alpine system (Baker 1999). This type of transhumance is not especially tied to distinctive coastal or mountain topography, but it does seem to be confined to the Mediterranean and sub-Alpine zones, at least in Europe.

Embraced by these extremes are systems where there are moderate scales of movement, vertically and horizontally, and where there is integration of other styles of livelihood such as those of towns and the commerciality of monasteries. In upland areas of north-temperate Europe, the sheep are let out on the hills for a substantial part of the year in a free-range manner; in

winter they are drawn closer to the farmsteads, yet kept out of doors and fed with straw and hay. It is not the Alpine system and it is not perceived in the same structured way, but it is still a form of transhumance. Transhumance often has symbiotic links with arable farming. But sometimes it is quite separate (Skydsgaard 1988), either as a result of breaking away or because it arose *de novo*. Indeed there can be closer links between transhumance and practices carried out in coastal or upland areas, like salt-panning, tile-making or metalworking, than there are with arable farming. The possibility of an utter separation from crops allows flexibility in understanding how these different life-styles work, and we will be reminded of this in our discussions of the origins of agriculture (Ch. 10, p. 240).

Social articulations are equally diverse. The whole community can be involved, as at the start and end of the sojourns in the pastures in the French Pyrenees. The *Fêtes des Moutons* take place when the drive of the sheep up into the mountains begins in late May to mid-June and when there can still be quite deep and extensive snowdrifts; the sheep are decorated with flowers and blessed, left for several hours while Mass is said, and there is feasting. Then they are driven through the town. Shepherds, singly or in pairs, may be involved in the pastures themselves, each having responsibility for several hundred animals; they stay with their flocks for about a fortnight and then are relieved by other shepherds. In contrast, families or some members of them look after the cattle in the European Alps, either in groups from several families when the cattle from different farms are pooled, or from one family alone when the cattle from each farm are kept separately. Flock and shepherd can be bound by strong social and legal ties, and sold or stolen as one, or there need not be such close links. Whole families can be involved, as with herd-owning populations in the Arakatsani of the northern Peloponnese and Valtetsiotes of Arkadia in modern Greece (Hodkinson 1988: 56), or herdsmen can be with their own family or alone. Small-scale rural subsistence, bigger enterprises involving surplus and export of dairy products, or massive drives in relation to urban markets and productive specialization provide a wider socio-economic diversity. Transhumance is so varied it sometimes seems hardly worth having it as a concept at all.

It is important that we look at different styles through the ways they have been studied, because this is a part of their understanding by the people practising transhumance themselves. In the European Alps and Italy, ethnography, especially in household social systems, and the use of historical charters allow the bringing into being of transhumance. In south-east Italy, archaeology has helped in understanding the early beginnings, and monumentality in gateways, town walls and the *tratturi* or transhumance roads are a part of this. In ancient Greece, transhumance is an integral part of a literary construction of images of the countryside and was very much played out in the juxtaposition of different styles of farming and settlement. In the Estancia Copacabana, small dwellings and smaller items of material

culture across a broad, semi-arid, landscape of pastoralism and arable agriculture have firmly anchored the movement of people and their animals, and it is this materiality which is the basis of their study. Finally, in Wales, transhumance was used, along with settlement architecture and place names, as a response to the invasion by Rome, through the establishment of socialities in British lives.

THE EUROPEAN ALPS

Mountain systems that are young, like the Andes and the European Alps, and which have been recently, or still are, glaciated and thus have extreme and diverse topography, offer many opportunities for developing sociality. Altitudes are deep, climates extreme and understood. Gradients are steep, young river valleys in a trellised system provide contrasts of aspect, there are major transformations in vegetation and soils over horizontal distances of less than a kilometre, and villages are numerous and small, often with outlying hamlets. There are possibilities for the movement of animals over short distances to make use of seasonally available grasslands, either as pasture in summer or as hay in winter, as well as a wider diversification in other areas of farming. Transhumance is firmly embedded in the whole system of agro-pastoralism, called *Alpwirtschaft* in the European Alps (Figure 8.1). This can be seen in the way the numbers of cattle in the summer alps are regulated through the availability of fodder for their over-wintering (Viazzo 1989: 43).

In the Italian village of Alagna high in the Val Sesia beneath the peaks of the Monte Rosa the cattle are let out of their winter stalls in May to graze in the vicinity of the houses (Viazzo 1989: 110). In early June – although the time varies – and from a starting altitude of around 1,200 m, the animals are taken up to pastures at around 1,500 m for a week, then to the lower alp at 1,800 m and ultimately at the end of July to over 2,000 m on the upper alp, a vertical distance of as much as a thousand metres. Yet the horizontal distances are hardly more than two or three kilometres. The cattle are grazed until early September, so it is narrowly a summer activity. Individual households hold their own area of alp and the cattle are not tended communally or allowed to stray across to others' lands; they are looked after by an unmarried daughter of the household, perhaps aided by her mother, a maiden aunt or younger brother.

Finer nuancing and greater opportunities for the establishment of inter-family socialities are found in the different grazing needs of different kinds of animal – milch cows in richer grasslands than heifers, sheep and goats at high altitudes even close to the snow-line – so that the small numbers of animals in one farm are split up and combined with similar categories from others (Viazzo 1989: 22). There is diversity, too, in different lengths of the

TRANSHUMANCE

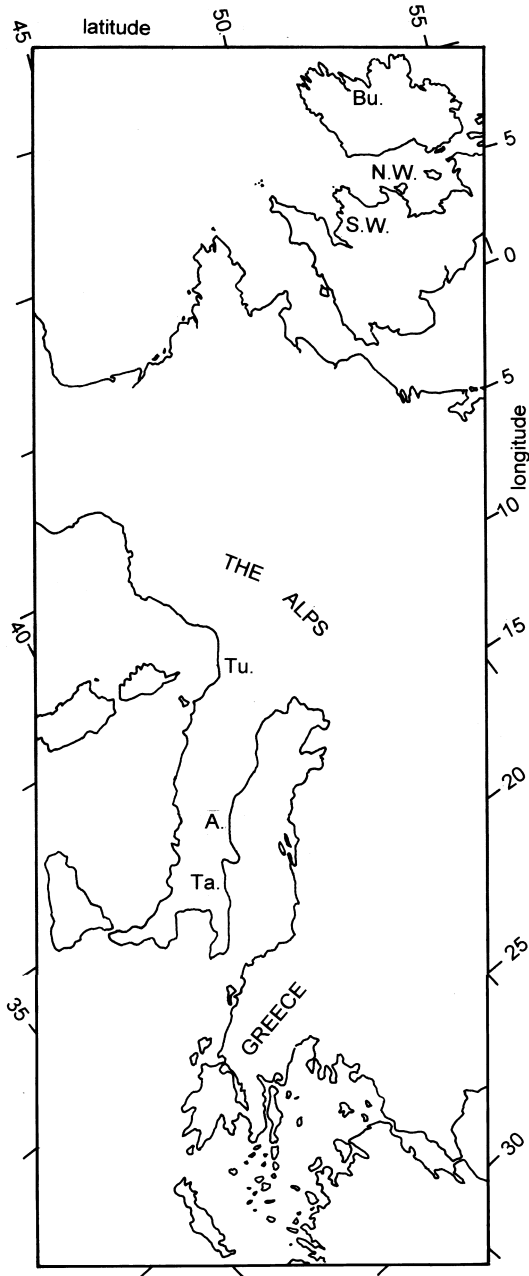


Figure 8.1 Location of areas of transhumance: Bu. = The Burren, western Ireland; N.W. and S.W. = North and South Wales; Tu. = Tuscany; A. = the Abruzzo; Ta. = the Tavoliere.

transhumance season depending on altitude along the valley where the farms lie (*ibid.*: 17). In Alagna specifically, between early September and the end of October, the cows are brought down in the same successive stages as on the upward journey and then turned onto the stubble of the hay meadows around the settlements until they are ultimately brought into their winter byres. In some towns, the cattle are decorated with garlands of flowers for their return journey, with the cow that has produced the most milk having the biggest brocade. They progress through the town streets, the traffic stops and the wayward animals nose around. The cheese can be sold commercially on the national and international markets, but much of it from the valleys of the highest mountains is sold in the parent villages alone.

In addition to transhumance, the farming year provides other locales of time and space, such as the winter butchering of animals, the summer tending of the meadows and crops, other activities of artisanry and, increasingly, tourism. There is a good deal of small-scale diversity, with the challenges of scheduling and integration presenting many opportunities for the establishment of relationships with people one would not usually meet up with. Even so, it is in the high pastures that extraordinary opportunities for social engagements arise.

But the situation is complicated. In the first place, there are different styles of animal care in the alps, with household structure being linked to this (Viazzo 1989: 94, 116, 246). With small nuclear families, as in the Swiss-German village of Törbel (Netting 1981), it is economically efficient for the alps and their cattle to be communally managed by a small number of people. There is pooling of the animals from several households which are looked after by a few women and children from the village. Equipment for cheese-making and milking can be shared too. Here there is potential for learning about issues such as sex and marriage and getting to know a range of people from a number of farms and villages and especially to be among young people and away from parental ties. In contrast, where there are more complex households each with several fit individuals, private management is more sensible, and again, as with Alagna, we find this in fact.

This presents an appealing complementarity for the development of socialities in just one arena, either in the alp, where households are small and nuclear (e.g. Törbel), or in the household, where these are complex (e.g. Alagna). But this does not always occur, perhaps because of a reluctance to match a historical trajectory of rapidly changing settlement structure with corresponding changes in the pastoring system. History, as Viazzo constantly reminds us, needs to be kept in mind. And this seems increasingly the case in Alagna itself, with a declining male population especially in the summer months, a reduction in household complexity, yet a maintenance of the traditional single-family care of their animals in the alps (*ibid.*: 115). Some of this (economic) irrationality could be about the maintenance of identity, especially in a trend of demographic decline and settlement change.

Yet this is not the end of it. There is a broader diversity of mobility within communities in which transhumance between settlements and alps is only one of a number of movements of stock and people during the year. Once again in Alagna, on St Joseph's Day, well before the cattle are let out of their stalls, one-third of the community move (or did so until recently) from the main valley floor at 1,200 m to a small valley, Otro, at 1,600 m where they remain until December (Viazzo 1989: 109). This is not about transhumance but the whole business of farming life, the area being a lot more valuable for cultivation and hay:

For nine months – from 19th March to the middle of December – approximately 200 people, who lived in six hamlets ... formed a small community within a community, with a little church, a chaplain and even a school with a teacher. They celebrated their own religious festivals and sang songs they alone knew.

(Viazzo 1989: 109)

And then, at the other end of the farming year, since the haycrop was insufficient to support all the animals over winter, many cows were taken to the lower part of the Sesia Valley or even further away to the plains of Piedmont and Lombardy. Regulation of cattle numbers to winter fodder seems not so secure after all. Beyond this, many Alpine villages have a tradition of emigration by male members for a substantial part of the year – in the case of Alagna to train and work as plasterers in Swiss and French towns. Many young men are away for most of the year, and some villages that have been unsuitable for tourism have seen a permanent trend to depopulation. On the other hand, foreign workers from towns and other countries are increasingly becoming involved in the summer work, so there is immigration too. It is almost as if settlement stability is quite unusual and mobility the norm.

SOUTH-EAST ITALY

In the southern Abruzzo of central Italy (Figure 8.1) (Baker 1999), sheep are taken in summer from lowlands between 40 and 200 km away to pasture between 1,700 and 2,000 m in the very uppermost reaches of the mountains. The sheep are herded with the help of white Abruzzi sheepdogs which may number around ten for a flock of several hundred sheep and a single shepherd (Figure 8.2). Some of the routes are even longer, extending right down into the winter grazings of the Apulian Tavoliere of south-east Italy. The Abruzzo contains the two highest mountain groups of the Appennines, the Gran Sasso and the Maiella massifs, with peaks close to 3,000 m. The pastures are unsuitable in winter but lush in summer, while the low-lying grasslands of

TRANSHUMANCE



Figure 8.2 Sheep grazing in the high pastures of the Abruzzi Mountains, accompanied by dogs. Upper: dogs maintain a tight front to the flock as a protection against predators. Lower: two flocks, kept quite compact and separate, again as protection against predators.

the Tavoliere are dried up in summer but excellent in winter (Latini 2000: 11). The routes are along green roads or *tratturi*, about 110 m wide, which have been established for centuries (Figure 8.3). The shepherds join up their herds, mostly sheep, but also cattle and goats, and stay in the mountains for ten-day shifts when they return to the lowlands. Baker (1999: 101) calls this system, and others in Italy, transhumant pastoralism in contrast to the Alpine system of *Alpwirtschaft* from which there are several significant differences. The most important of these are, in the Italian system, the use of open pasture throughout the year (although in some cases animals are kept in stalls below the houses in winter), the significance of horizontal routes and the links with areas outside the local region, and the lack of integration with cultivation; shepherds and herdsmen are exclusively men, usually adult and often alone. There is less integration with local, family, subsistence agriculture in the Italian systems generally than there is in the Alps. The long-distance transhumance movements are superimposed, as it were, on the local subsistence systems which include movements of animals within single valleys, more like the Alpine system.

The long-term history of transhumance in this area has been explored through archaeological survey. The different forms of transhumance – long-distance, shorter-term, and one-day journeys – in central-eastern Italy provided one of the jumping-off points for the survey of Graeme Barker in



Figure 8.3 A recently abandoned transhumant drove-road or *tratturo* crossing the Biferno Valley; the road is about 110 m wide. (Photograph and copyright, Graeme Barker.)

TRANSHUMANCE

the Biferno Valley (1995a,b). He was interested in the integration of different levels of history, especially the long term, and took the Biferno Valley as an area suitable for exploring the antiquity of transhumance through field survey. The survey showed that there were small farms with subsistence of mixed stock and crops and landscapes more diverse than transhumance might entail. Transhumance could not be traced as a significant practice back into prehistory. Yet in the higher reaches of the valley there is the Roman town of Saepinum with the Bovianum Gate bearing an inscription of the later second century AD about a dispute between the town and transhumant shepherds who were taking their flocks through it (Figure 8.4) (Barker 1995a: fig. 82).



Figure 8.4 Saepinum, Biferno Valley; the Bovianum Gate. (Photo and copyright, Graeme Barker.)

An assessment of ancient literary sources provides another means of exploring the antiquity of transhumance. Emma Dench (1995: 111) suggests that ‘the modern preoccupation with pastoralism in the central Appennines is not echoed by ancient authors’, at any rate for the Greek and Roman worlds. ‘Apart from . . . Livy, there is little in the ancient literature which positively invites association of peoples of the central Appennines with pastoralism.’ Even where it is mentioned, pastoralism may be socially situated, either to be used in a negative construction – pastoralism as primitivism – or linked to an ideal stage of development, ‘civilization without decadence’ (ibid.: 113). Still, Dench is cautious not to polarize the pastoralism and agricultural systems and suggests that subtler models of integration are well supported by the archaeological surveys, which in addition to the Biferno Valley include the Sangro Valley (Lloyd *et al.* 1997) and Aventino Valley to the north (Guy Bradley, personal information).

The dense scatters of pottery and tile produced by the surveys are extremely visual and project a marked essence of Romanization. It will be interesting to see how the record of later, Medieval and post-Medieval, pottery and tile scatters accords with changing patterns of agriculture and settlement and whether the advent of transhumance saw a decline in these scatters of ceramic material on the land. For example, widespread distributions of the distinctive African Red Slip pottery become more narrowly concentrated after the third century AD in sites which may be foci of power. Distinctive ridge and hilltop settlements (Figure 8.5) start to appear in the ninth century (the process of *incastellamento*), and although some of these towns like Montenerodomo may have earlier Samnite walling (Guy Bradley, personal information), similar to that of the undeveloped citadel of Montepallano (Figure 8.6), the *floruit* of establishment was in the eleventh and twelfth centuries, corresponding with an increase in the production of documentation for land transactions and disputes (Moreland 1992). Both these – the process of *incastellamento* and the production of documents – are seen as an engagement with social identities and power in different ways (see also Wickham 1986: 122), ranging from elitist to peasant, and we would like to know what the contemporary field record of ceramics is in the land away from these towns which must have been farmed but which was hardly settled at all.

WINTER TRANSHUMANCE

In south-east Italy there seems no significant contrast in the way the animals are dealt with between their summer and winter pastures, although in lacking first-hand experience this is probably naïve: individual shepherds must have closer links to a home farm in some parts of the routes than others. In some communities, however, it is definitely winter when animals are transported

TRANSHUMANCE



Figure 8.5 Hilltop settlements in the Abruzzo, central Italy. Upper: a village near Torricella Peligna; note the distant village to the right, which although lower down is still high up relative to the valley floor. Lower: Montenerodomo, on the site of an earlier, prehistoric, settlement, with traces of massive walling. (Compare Figure 8.6.)

TRANSHUMANCE

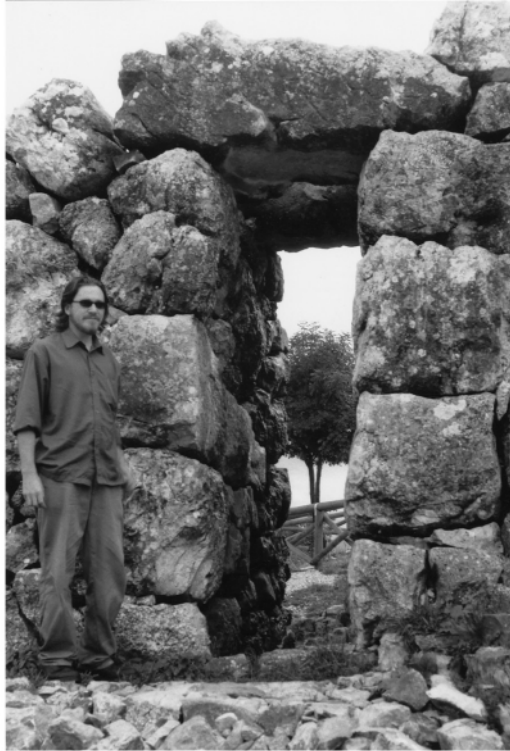


Figure 8.6 Prehistoric hill settlement of Montepallano in the Abruzzo. Upper: massive walling and gateway, with Keith Swift. Lower: view over the Classical settlement.

away from the home pastures, and then it is often to milder climates of the coasts. In the Cevennes, in southern France, prior to transportation to their winter pastures, the sheep have their wool tassled and painted in bright colours, and each sheep has a wide collar and a bell. In certain limestone areas where the soils are dry, animals are moved into these areas in the wetter seasons, as happens in winter on the plateau of the Burren in western Ireland (Figure 8.1).

The Garfagnana Valley in Tuscany (Figure 8.1) 'is a centre for pastoralism, with annual transhumance of sheep to every part of the sea-coast from La Spezia to Grosseto', that is around 200 km, in winter (Wickham 1988: 21). The extensive coastal marshes and sparsity of coastal settlement are very suitable for this. But it is a recent development, perhaps of the later Middle Ages, and back in the early Middle Ages the rich documentary evidence shows diverse subsistence, small flocks of sheep overwintered locally, and little evidence for transhumance, even though 'the long-distance infrastructure' was in place (*ibid.*: 25). Not until the mid-twelfth century does the long-distance wintering of animals become institutionalized. There is a relation here, not only with the lowlands – which one does not always get in the Swiss Alps, the Pyrenees or the Andes – but also with the towns and cities which lie at the entrances to the valleys and through which the flocks went on their way to the coastal pastures.

In another Tuscan valley, the Casentino, 'the pastoral economy is badly documented' in the earlier Middle Ages, yet it is unlikely that there was more than mixed pastoral, arable and woodland farming at this time (Wickham 1988: 162–3). It is unlikely, too, that social manipulation of the texts, perhaps through a sense that animal husbandry was a less noble subject than cereal agriculture, was taking place, with the scribes and notariate, themselves, creating an inner social world. Yet we would like to know more about changes in the culture of documentation in the late Middle Ages (beginning in the late fourteenth century), when there is a similar increase in evidence as took place in the Garfagnana for transhumance. From the start, in the early thirteenth century, it was embedded in social expression, with cattle raiding being 'used with enthusiasm' in disputes as an expression of village form. Two decades later, 4,600 sheep and goats were left in a will and fulling mills start to be mentioned. Ultimately, flocks of sheep and herds of cows were kept even for outsiders, there was an involvement of the monasteries, 'animals appear everywhere in the texts' and 'Casentino herdsmen ran the transhumance routes to the south Tuscan coast on almost the same scale as those from the Garfagnana' (*ibid.*: 164).

Differences in the timing of the onset of this practice between the two areas – in the Garfagnana by 1150, in the Casentino not before the late fourteenth century – may be about different ways of expressing regional identities, although Wickham sees things in environmental and economic

terms (*ibid.*: 169). There are also interesting differences in the materiality, and its social construction, of the documents themselves. The Garfagnana documents are largely archiepiscopal, those from the Casentino monastic, and there are distinctive chronological fluctuations in the abundance of documents for the two valleys which are a reflection of these different contexts (*ibid.*: 8–11). These differences could also reflect the part that document-writing played in social mediation, a complementarity in the different emergent socialities of city, archbishopric, monastery and rural peasant community.

The relationship with towns and cities can be complex. Pastoralism could develop to serve the urban centres, with animals being driven to the slaughter there – suggested in the bone evidence for certain English cities like York, Oxford and Exeter. This saved transport (i.e. of carcasses) but also allowed the development of significant social arenas in the lengthy distances involved, as with the droving culture of post-medieval Britain – and the history itself of which (like that of transhumance) evokes significant engagement among local historians and the lay public. Droving, of course, is not transhumance because it is a one-way enterprise (at least for the animals, if not the humans who accompany them), but it allowed the opening up of routes for transhumance, as happened in Tuscany where the meat and leather trade with Arezzo led to the opening up of routes to the coast (Wickham 1988: 169).

ANCIENT GREECE

For ancient Greece (Figure 8.1), transhumance should be considered in relation to differences of farming style (Ch. 6, p. 136) (Alcock 1993). Where people lived in villages or cities and went out often long distances to work the land, animals were probably only weakly tied to the arable or quite separate from it and thus easily released for journeys to distant pastures. This at least is what the literary sources indicate (Skydsgaard 1988: 79). Cattle were kept more for status and are mentioned in sales in their own right, not as part of landed property, and sheep too were sold as flocks with their shepherd apart from the land. Small numbers of animals could have been moved around between arable plots and grazed on stubble, but that is all.

Transhumance entailed the development of various socialities. Where single shepherds were in charge of flocks, as was often the case, transhumance allowed the exploration of individual persona. In Archaic and Classical times, shepherding was male business, with no records of shepherdesses (Grassl 1999). Where shepherds met up, their status – whether as slave, tenant or agent – could also be explored, and herdsmen, sometimes as free men, sometimes as slaves, are recorded in inscriptions (Hodkinson

1988: 51). Owners of animals, too, even where not actively involved with their care, saw the quality of the flocks as expressions of status and wealth (Alcock 1993: 88; Hodkinson 1988: 55). More widely, transhumance in Classical Greece brought possibilities for inter-polis articulation especially where moving across boundaries, intensifying or alleviating rivalries between city states. Squabbles arose in respect of remote common pastures, especially in times of war, even causing wars, while there was regulation by laws and treaties of the right to pass with flocks through foreign territories (Skydsgaard 1988: 80). Sometimes it was the winter grazing of a tiny island that was the focus of dispute (*ibid.*), demonstrating the active role of transhumance in the social as much as in the economic sphere, sometimes access to coastal marsh. Relations between rural and urban areas, where transhumance was a major resource for the cities, were also entailed – as in Medieval Italy.

In contrast, where animal husbandry was an integral part of subsistence farming, transhumance was not favoured (Hodkinson 1988). Dispersed farms, with the land of one family worked from them as a consolidated holding, needed a close association of animals, especially for their dung for manuring the arable land. Long periods of removal of stock from the arable fields to upland pastures did not occur on a regular basis. This is the situation suggested by field survey in many areas (Ch. 6, p. 136).

Neither strategy seems to have been used widely in an extreme form and both may have been used together, even by single farming families (Alcock *et al.* 1994: 148): what were at one time the farmsteads were at another the ‘field-shelters, sheds and outbuildings for use on a seasonal or occasional basis’ (Alcock 1993: 60). This sounds like the flexibility of the agro-pastoralists of Copacabana (p. 189, below). Animals were always more tightly bound to dispersed farms, while it was from the villages and towns that transhumance was run. Yet there was likely much individual practice and always some people with small flocks of sheep and goats moving around.

Diversity, too, allowed experiment in social expression, and it is interesting how the two styles of farming belong to the middle part of the social spectrum (Alcock 1993: 82), neither to people who were hugely wealthy with large rural estates or urban palaces nor to people who were utterly poor. They belonged to that class of citizen who had most to gain from a bit of social juggling and who had most opportunity for achieving this through farming. People might move from their isolated rural farms to take up a more intensively social life in town or city; released from the fields, they could accrue flocks and herds in a new spirit. Or, as Sarah Delamont (1995) describes, people who once forsook their rural lives and worked their land from bases in the towns, might ultimately return to a permanent life on the land. Fluctuations in transhumance here have a basis in wider social preferences.

THE ESTANCIA COPACABANA OF SOUTH-WEST
BOLIVIA

In some styles of transhumance, especially in semi-arid areas of sparse resources, residences may be left for extended periods because of fluctuations in household economy or demographics (Tomka 1993: 11). Equipment is also left behind when people move. This is called 'abandonment' by archaeologists (Cameron and Tomka 1993), but I see it as a continuity into the present, a way of continuously relating to the landscape and building up social worlds. Memories of the equipment, the residences and the land remain in people's minds and are used in understanding new places. The fact that there is often an anticipation of return to the sites that have been left, allows these ideas to be projected into the future and thus further consolidated in people's lives. Indeed, intensification of the social domain may be the aim, rather than the result, of these movements around in the first place. Leaving materials, settlements and land implies sharing and trust. In western Europe we are familiar with common land, land that can be used by various people in a cooperative way even if it actually belongs to someone. But the idea of ourselves and our urban lives being in such a domain is quite foreign. Yet this is what happens in some parts of the world, where movements of people are irregular, distances large and populations low.

Moving around over wide areas in a somewhat irregular and unpredictable way, as the agro-pastoralists in Estancia Copacabana in south-west Bolivia do (Figure 5.2) (Tomka 1993), enables the development of diverse locales, opportunities for sociality and arenas for learning. As in the European Alps, there are different scales of physical environment, material culture and movement of people. It may be that a richness of social and demographic symbolism is still to be unearthed, or that the emphasis on material culture in contrast to the situation in the Alps reflects the different ways in which the two peoples explore their worlds, but the study of Steve Tomka was done especially from this perspective, and that is what interests us here. This example differs from the previous ones, which were essentially historical or ethnographic, in being an ethnoarchaeological study, i.e., one that uses ethnography to illuminate archaeology, and this is in the spirit of the system itself where people are accessing the past material world as a means of understanding their present lives.

The area has a rigorous climate, being in cold temperate montane desert at between 4,000 and 4,500 m above sea-level in the Andes. The mean annual rainfall is 100 mm, 90 per cent of which falls between December and February, with other water being supplied by glacial meltwater rivers. Within this inhospitable land, and over an area of 1,000 km², two kinds of agro-pastoralism are practised, one seasonally transhumant, the other semi-sedentary. The main crops are quinoa (*Chenopodium quinoa*) and tubers, while the main animals are llama and sheep.

TRANSHUMANCE

There are several different kinds of residence situated in the different areas of agriculture and pastoralism. These are the aggregated main residences, isolated main residences, pastoral residences and agricultural residences; the last are in fields which are some kilometres from the main residences. In some families there are two agricultural residences in different areas which are occupied in alternate years. Scheduling results in variations in the use of the agricultural and pastoral residences, in whether they are occupied or not, in the numbers of people present and who they are (Figure 8.7). Pastoral residences are only ever occupied by one to four individuals, never whole families. The agricultural residences see occupancy by individuals from November to February for maintenance work in the fields and by full families in March to May for the harvest and again in October for planting. At all other times both kinds of residences are deserted, and most of the people occupy the aggregated main residences.

In the community as a whole, 31 per cent of families were generally transhumant at the time of study, and it is with this group that we are concerned here. (The other 69 per cent were semi-sedentary.) Of the actively transhumant families, 47 per cent were actively transhumant in the year of study and 53 per cent not for over a year but planning to be so in the near

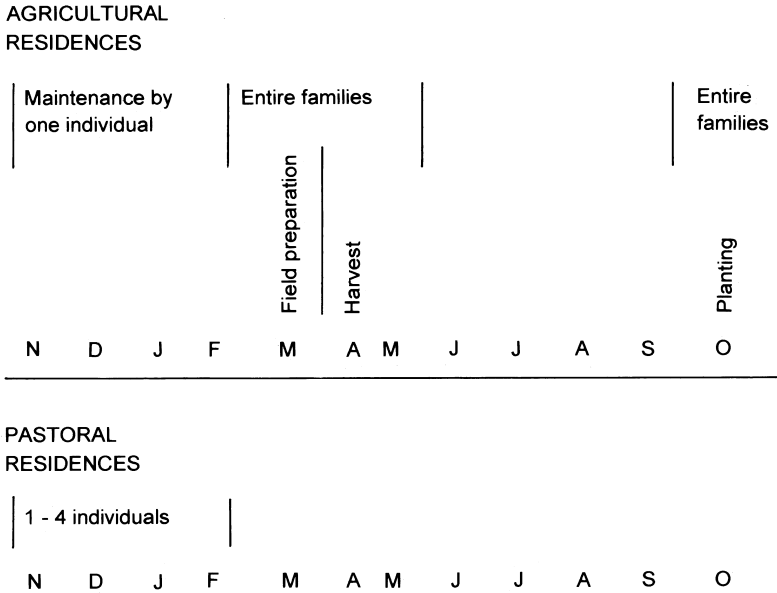


Figure 8.7 Estancia Copacabana, Bolivia. Movement of people between different locations from agricultural residences (above) and pastoral residences (below). (Based on data in Tomka 1993: 14.)

future. Thus at an annual scale, use of the land and the residences is not uniformly applied by all families, resulting in sites which are seasonally abandoned, sites where abandonment is less regularly episodic, and sites which are permanently abandoned. The last are sites to which the owners neither intend to return nor retain ownership rights (Tomka 1993: 14). On the other hand, 'Seasonal abandonment and reoccupation of residences is one of the central features of the transhumant agro-pastoral land-use system' (ibid.: 21).

Within these movements, it is not just the different residences and the land that are left behind but a diversity of material equipment. Some of this is rubbish in fact, like broken glass and fragments of cloth, often left outside the residences, while some items, like *metates* (mortars) and pottery vessels, were clearly stored in the expectations of being returned to. The assemblages at each site were characterized in terms of numbers, manufacture (expedient, improvised, craft and industrial), portability and state of repair. Improvised artefacts, for example, were shearing knives made of sardine-can lids, while industrial items included stoves and bottles. In seasonally abandoned residences where abandonment is between March and October (Figure 8.7), much equipment is cached in a specific area, although some tools like anvils are left in place. The greatest number of artefacts was on seasonally abandoned sites, with a smaller number on episodically abandoned sites and few on permanently abandoned pastoral residences. This is caused by 'delayed curation', in which artefacts are removed over a period of time for use in the main or another temporary residence. Condition and value (in terms of manufacture) are important considerations, as are *perceptions* of future use of both artefact and site, and their place in a continuing use of the region as a whole. Thus the 'abandonment of residences is not accompanied by regional abandonment; the area continues to be criss-crossed by family members participating in intra- and inter-regional reciprocity, barter and market relationships' (Tomka 1993: 11). There is a historical construct to all this – a sense of the future and of the past.

If this were Bronze Age England, the caching of equipment in specific locations and associations at the abandoned pastoral residences might be seen as a body metaphor: 'Social practices that engaged with the life-cycles of houses, pots and quernstones thus furnished ways of conceptualizing and coping with such processes as biological and social ageing' (Brück 2001b: 149). At a wider scale, different types of site and their relationship with artefact style could be created as a means of signalling boundaries and identities by the families of the Estancia, while the re-appropriation of sites after a period of non-inhabitation and the take-up of utensils after a period of dormancy as providing a range of arenas for education about the future, if not a texturing of lives with history. Different abandonment style and delayed curation, which are at the core of Tomka's study, are not arising as a response to cost-effectiveness but in a manner that involves learning, socialization and

the creations of identity. Even if not actively used or returned to, sites and their materials are always in the memory, where they are continually curated in understanding landscape and lives. In a way, 'abandonment' and 'delayed curation' are redundant archaeological constructs.

In the same way, only at a longer time-scale, 'scavenging' can be seen as part of this process. In this, people remove items only after permanent abandonment and when all claims to ownership have ceased. As such, it is not seen by Tomka as a part of delayed curation since it does not involve an assessment of material worth and the cost-effectiveness of removal in a wider scheme. Yet in the view presented here, scavenging is a part of the continuum of delayed curation in the sense that it is a taking-in of history. There are similarities with the re-use of classical building stone in Byzantine Greece (Ch. 7, p. 154) and early Anglo-Saxon England (Ch. 2, p. 35), although there is a cultural disjunction in these which is not the case in the Estancia Copacabana.

TRANSHUMANCE IN WALES

This section is mainly on documentary and archaeological evidence. Transhumance is a part of Welsh culture. It is seen in the *bafod* and *bendre* place names of the Celts. In Caernarfonshire, *bendre* names which are the lowland winter and main settlements occur peripheral to the Snowdon massif below 180m and are common in the west of the Lleyn Peninsula, while *bafod* names, which are the upland summer settlements, are found in the lower mountain slopes and in the upper parts of the valleys (Figure 8.8) (E. Davies, 1979). Transhumance did not develop strongly until the late Medieval and modern periods, that is if the paucity of evidence in the earlier charters is to be relied upon (W. Davies, 1982a: 40); as in northern Italy this suggests a link with the development of towns. Still, in this earlier Medieval period there is some evidence. There is diversity in the distances travelled, some being quite short with a return to the settlement each night, others being seasonal; and there is diversity in the timing and direction of movement, with the use of upland pastures, lowland marshes (including salt-marshes) and river floodplains in summer or winter (*ibid.*).

Slaves, attested in the early charters, may have been involved in transhumance: it would be interesting to know, for they are another social stratum and one in which practice differed from that of free people. Mostly slaves were born, but they could buy their way out of slavery and, unusually, free people could opt into it, so there was some social communication between different strata and this could have been articulated in specific arenas of the physical environment. Estates, for example, common at this early Medieval time, provided a framework of time-space diversity over quite large areas, exceptionally upwards of 2,400 ha.

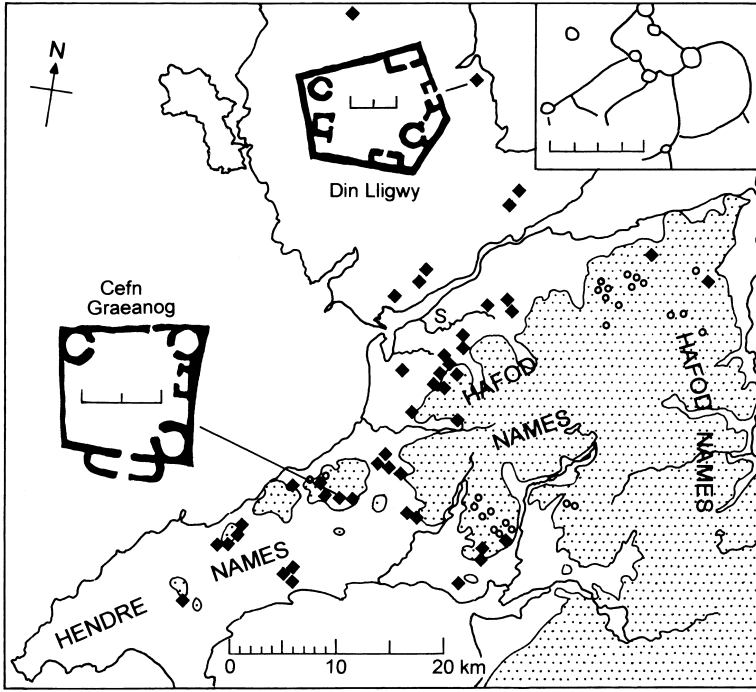


Figure 8.8 North Wales hut classes and place names as an indication of transhumance. Diamonds = class IVa, e.g. Din Lligwy and Cefn Graeanog; circles = Class IIa, e.g. top right inset; scale of insets in 10-m intervals; land over 183 m stippled. (Din Lligwy and Cefn Graeanog plans simplified from RCAHMW 1937: lxxiii and Fasham *et al.* 1998: fig. 5; hut classes based on RCAHMW 1964: figs 20 and 22; *hendre* and *hafod* names from E. Davies, 1979: fig. 5.)

Different kinds of land management are suggested by the distributions of huts and fields of Roman and Iron Age times, some likely going back into the Bronze Age (Figures 8.8 and 8.9) (RCAHMW 1964: figs 18–22). Unenclosed huts that are not associated with fields (class I), lie at higher altitudes (mostly between 180 and 305 m, but up to 533 m) than enclosed homesteads which are always associated with heavily lynched or terraced fields (class IV) (at around 183 m and well below that altitude). This distribution suggests more local movements than the place names and along different axes, up and down hillslopes and mountain valleys rather than along the full length of the peninsula (Figure 8.8). At a high altitude, ‘almost invariably over 305 m’ (*ibid.*: xcii), is another group of unenclosed huts (class IIa), these associated with irregular enclosures. They may be sites where cereals were cultivated, but the banks which define the enclosures are unstructured, ‘simply built of piled stone’ (Johnson 1981: 384) and of little height.

TRANSHUMANANCE

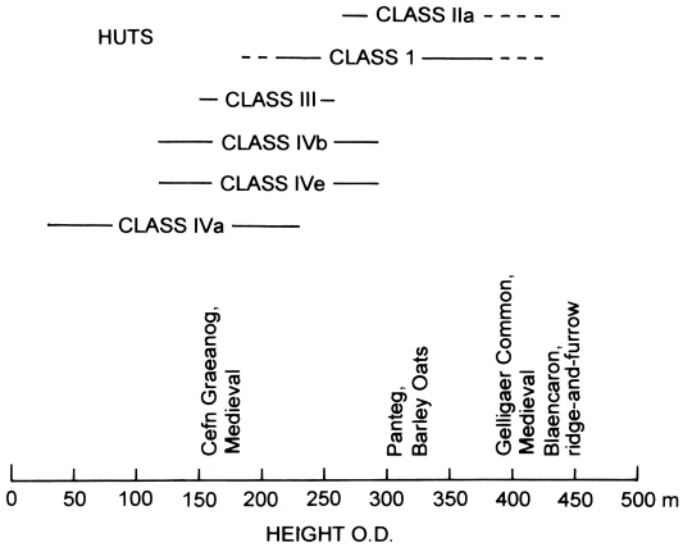


Figure 8.9 North Wales, altitudinal distribution of prehistoric and Roman hut classes (based on data in RCAHMW 1964: lxxxvii–ciii). Occurrences of Medieval and later agriculture at the bottom of the diagram: Cefn Graeanog (Kelly 1982); Gelligaer Common (Fox 1939: 166, 186); Panteg, near Lampeter, and Blaencaron, near Tregaron (personal observations).

In some upland areas there may have been associations with other practices such as the extraction of minerals and peat. Mining and the working of copper and iron, as at Copa Hill near Aberystwyth (Mighall and Chambers 1993) and Bryn y Castell in Snowdonia (Mighall and Chambers 1997), took place in environments where the pollen evidence suggests earlier and contemporary clearance of woodland for pasture and some arable. Higher up, encroaching onto the areas of summer upland pastures, were the blanket peats of the plateaus, exploitation of which for fuel and bog iron might have taken place at the same time as the care of the herds.

At the coast, saltmarshes and mudflats were exploitable for their grazing in winter when they were more sheltered from cold and wind than the uplands and with richer growth. In the Gwent Levels of the Severn Estuary (Figure 4.1) (Bell *et al.* 2000), the unusual siting of Bronze Age and Iron Age houses in saltmarsh and fen and their rectangular shapes in contrast to the usual circular form suggests an opposition or an expression of difference to settlements further inland. Each house, too, had its own distinctive arrangement of timbers, and in this we may recall the houses at Flixborough (Ch. 7, p. 168). Cattle hoofprints in the mud around the houses indicated the presence of animal herds. Perhaps these were the winter settlements whose summer (or more permanent) counterparts were to be found on the escarpment of the

South Wales coalfield, a mile or so inland, where there are several enclosures with round houses and stylish entrances. Some of these are in close proximity, but at different altitudes, as in the area above Margam (RCAHMW 1976) and further west at Llawhaden (Williams and Mytum 1998), as if, like the different house styles in the saltmarshes, inter-household rivalry is being played out.

In these examples, direct evidence of the season of occupation and movements between areas, for example of biological remains or documents, is mostly lacking. Even so, the cultural differences in relation to topography are suggestive that links of some sort were being referenced, and transhumance seems a strong possibility. There was also likely a general relationship with the mild, frost-free, climate of the maritime zone, as with the movement of 'tack' sheep into western Pembrokeshire in winter from upland Wales and England today.

The Roman conquest was eventful in north-west Wales. Provisioning the Roman army with corn entailed economic changes while new breeds of cattle and sheep may have entailed new ways of moving around. Farming was a suitable medium for people to play out personal and community feelings towards the invaders because it allowed flexibility and ambivalence – collaboration, indifference or subversion – as they liked. Response to invasion was likely reflected in the architecture of the settlements as people adjusted socially. In the enclosed settlements of lower altitudes, entrances were through monumental granaries as an expression of settlement wealth (Figure 8.8), and perhaps a copying of the siting of granaries in Roman forts just inside the gates.

This ostentation was likely opposed by activities in the uplands. Perhaps initially for the summer pasturing of sheep and cattle, women and children could have used their care and the production of butter and cheese as a means of establishing their own identities. It was an escape, too, from Roman oppression and a response to the intensity and enclosure of the lowland strongholds. Eggs of the golden plover, *Pluvialis apricarius*, could have been collected, peat cut as a provisioning for winter fuel, and loose wool gathered off the heather. On areas of mineral soils, stones were moved around to form cairns and crude stone banks, (the class IIa settlements) (Figures 8.8 and 8.9) in the same medium used in the lowlands, but in a less aggressive style. The symbolism of the blood-red sheep's sorrel, *Rumex acetosella* (frequent in the pollen diagrams), on the bare surfaces of these cairns and banks would not have escaped the women. Querns from these high altitudes may have been used in milling grain but, more significantly, allowed a sense of permanence in places which were otherwise used transiently.

Issues of permanence or transience, and even whether there was transhumance at all, become blurred when we view things in a broader social environment. As at Copacabana, these Welsh sites may not have been

occupied continuously but they were still understood in the expectation of return and as such constituted a regional structure. Personal and community identities were explored through differences within and between the settlements, through the use of querns and granaries, and house and settlement style. Diversity of vegetation and soils served the same expressive purpose, including intensity and duration of clearances and style of farming, a feature reflected in historical times in the diversity of names for different kinds of land-use in the seasonal round. Wider, tribal, identities in opposition to Roman rule were established in the monumental architecture of settlements, and perhaps an institutionalized transhumance was developed to the same ends. Perhaps in opposition to this, town walls were constructed in the later Roman period as a visual expression of power (Peter Guest, personal information), and we can recall Saepinum and the Bovianum Gate (Figure 8.4). In the end transhumance routes to the coastal grazings were utterly disrupted, symbolically and in fact, through the draining of the fen and saltmarsh and the construction of enclosed fields (Allen and Fulford 1987).

TRANSHUMANCE AND SOCIALITIES

The significance of transience

Human groupings within transhumance are unusual and transient, that is in relation to everyday village or urban life. They are associations, for example, of young people with their small flocks on the fringes of farmland, the kind of situation that lies between the formality of work and the intimacy of the family hearth. It is this – the creation of socialities – that transhumance is all about. More widely, such social groupings can develop in the context of transience generally. These associations allow free communication. We understand this with meetings of strangers in the company of animals and children when we talk about intimacies beyond the possibilities of the privacy of the home. We understand it on holidays – which, like transhumance, are an annual event and one looked forward to in the expectancy of new relationships – when we may indulge in behaviour surprisingly intimate and unthinkable in our everyday lives and home environment. It is the behaviour of cruises or skiing holidays. And we understand it when we greet someone eagerly in a foreign environment but who at work we do not speak to at all. The physical environment and its temporal context make a difference (cf. pp. 34, 173).

The significance of animals

Any understanding of how transhumance works must take into account the way in which people relate to the animals, how they feel about them and care for them, and how they are used in the establishment of relationships with other people. The animals play a part in the creation of socialities. In

this, the moving around of animals like llamas and sheep freely, albeit with the help of dogs – yet the dogs, too, need feeding – entails a mentality in which there is continuous care, ensuring they are fed and watered, looking after their health, and protecting them from predators and the weather. Social relations and learning which develop within such a life-style are significantly definitive and binding since the dependence of the animals on their human carers and protectors brings about a trust and charity within the humans themselves. Historical factors, how transhumance came about in particular circumstances, are also important, but these must be seen as working within a wider *Zeitgeist* of animal care. So, too, must the ways in which other people respond to animals, empathizing with or opposing them, for unless there is some response, they cannot be used as a means of socially relating. In this sense, animals have a similar place to artisanry or art in social agency. Animal style, flock composition, survivorship (or slaughter) profiles (Figure 9.4) and butchered bone assemblages are as much artefacts as pottery and as much used in a societal role.

Questions of community

However, such transient associations might be considered disadvantageous in their seeming lack of community identity. At least it is unlikely that they would be classified as communities in a conventional sense (Cohen 1985) where the concern is with stability, a wider range of activities and a fuller demographic spectrum. Some transient associations such as apprentices might be communities, but the term hardly applies to seasonal farm-workers or shepherds coming together once a year. Yet these categories of people have something in common and something that distinguishes them from other groups: difference is important in establishing the community ideal (*ibid.*: 12). They are made up of fewer numbers than conventional communities, there are variations in personnel from year to year, they are engaged in specialized activities, and are often exceptionally transient. Difference is seen in the physical environments and life-styles that are not experienced by most members of the parent or other adjacent communities. There is also an element of permanence in their very transience and in their inevitable reconstitution, usually annually, but sometimes less regularly. In this sense they are more institutions than communities. ‘Associations’ would be a suitable term, or ‘gatherings’, although the latter is used by sociologists (Goffman 1963), and has been appropriated by some archaeologists (Gamble 1999), for even more casual encounters. Let us just say that the problems we have in classifying these associations at all may be one of the very means whereby their identities and those of their people are established.

Another difference of these transient groupings is that their boundaries are visually weak. In this sense, the communities are absolute rather than relational (Cohen 1985: 58), more apart and less able to use their characteristics

to express difference. But this is surely an immediate thing, and when viewed more widely it is this apartness which is a part of their identity. In the upper alps, the remote coastal marshes, the wide limestone plateaus – the extremes of the transhumant tentacles – it may be true that there is little interaction with other people, but in getting to these places when the people and their animals are visible by their strangeness to the communities through which they pass, and in the wider world of transhumance with its exclusiveness and symbolism, there is considerable expression of difference.

Cohen (*ibid.*: 12) suggests, in relation to the word ‘community’, that it ‘is only occasioned by the desire or need to express such a distinction’. We could go further and suggest that transhumance itself was similarly brought about. In the European Alps, strict control of land sale only to insiders maintains the ‘closed social frontier’ (Viazzo 1989: 25). Transhumance itself allows greater identity. It does this, too, in its diversity. The village of Alagna breaks the norms of communal herding and the regulation of animal numbers to winter fodder, as if as symbols of community identity, especially in going against the grain of ecology. Indeed, there is such diversity within the concept that one wonders how it has come to be so reified, if not as a way of creating identity. Such is the fascination with transhumance and its trappings of ethnicity that we would be forgiven for thinking that it was a deliberately engineered means of societal identification.

Different levels of time

In transhumance, we see how different scales of time come together. The immediacy of the annual movements and the conversations and learning, and the communality brought about through supra-household scheduling of land-use, are embraced in a general sense of history. Long-term trends of migration and demography, such as an increase in seasonal immigration and an increase in population age, are themselves a way socialities at the smaller scales can be explored. They can be felt at the community and individual level in the strengthening of identities through links with more practical matters, for example where emigration and an ageing population create problems for short-term scheduling and a weakening of spirit. An appreciation of the state of the material culture during seasonal stays at pastoral residences at Copacabana could allow discussions about deeper trends of returning or desertion over several years. In high Alpine pastures, people can discuss the state of their villages and valleys in relation to changing settlement patterns, household structures and demographic trends. They can make comparisons between their own village and others from the same or different valleys, they may discuss household structures, as incomers alter the ancient patterns, or they may be concerned with population control. For the last, people might argue keenly over different strategies: some might see permanent emigration as the answer; others might see a more natural response in

rising infant and adult mortalities; in some eastern Alpine communities, control is achieved through high infant mortality, high average age of marriage and a low percentage of married people, yet it is countered by high rates of illegitimacy; in the Alpine village of Leysin studied by Thomas Malthus, there may be no emigration at all, with control being through low adult mortality, low nuptiality and low fertility (Viazzo 1989: 38–43). In Medieval Tuscany, differences in the influences of city, episcopate and monastery allowed explorations of these different powers during the journeys from the mountain valleys to the coastal plains and marshes, conversations coloured by the transit of the towns and monasteries themselves.

Relations with other kinds of expression

Still there are deeper questions. What is its relationship with other kinds of socially expressive style? We know that people moved into areas of strong seasonal contrast before transhumance developed, so we can usually divorce its origins from primary settlement. It is a late feature of land-use in most areas we have considered (e.g. Wickham 1988) and, as several authors have stressed (e.g. Hodkinson 1988), there are other ways of dealing with mountain life or seasonal variations in grazing than moving animals around. Its development is tracked in the documents for the Casentino in Tuscany, yet it is seen there as a response to economic flexibility rather than as satisfying social needs. Surely the serious weakening of the workforce in the summer months in the Alps, made greater by seasonal emigration for purposes outside of transhumance altogether, or the depletion of arable land in dung in ancient Greece by the removal of flocks and herds to upland pastures, were deliberate enhancements of communality and intensity of socialization. Crucially we need to examine the origins of transhumance not as an economic phenomenon but as a social one, and in particular explore the changes in materiality that took place as it developed. The relationship between cycles of gifting and document-making, hilltop towns and pottery scatters on fields in different regions of Italy would be a good place to start.

CONCLUSIONS

- 1 Learning about future events of life and the personal and social upheavals they can involve can be achieved through relationships beyond the family and everyday workplace.
- 2 These come about in transient communities such as those in transhumance and are worked out through the establishment of local identity, community spirit and the exploration in conversations of longer-term societal trends.

TRANSHUMANCE

- 3 Different wavelengths of history (or time) are thus articulated in a single scheme of societal articulation.
- 4 Transhumance itself varies considerably from one place to another, sometimes with a mixture of styles integrated or superimposed. Examples are explored in each of which socialities are played out through different schemes: in the European Alps through changing demographic and settlement style; in ancient Greece through different kinds of agricultural system; in the Estancia Copacobana in the Bolivian Andes through diverse materialities in a regional scheme of delayed curation; and in Wales through different kinds of settlement architecture and topography.
- 5 Different styles and intensities can be related to economic, environmental and cultural influences variously, but at root transhumance has a social mediatory role.
- 6 The relationship of transhumance to other media of social expression and social learning needs to be explored.

HUNTING AND DEATH IN NEANDERTHAL EUROPE

Life is an exploration of what it is to be a human or another species, it is an exploration of the world and the universe, and an exploration of individual selves. History and knowledge evolve, but ultimately brains can take in information or create no longer, and in order to avoid a world of superfluous beings all creatures eventually die. Indeed, the body programmes its own death. The re-use of history is a part of this process of exploration, allowing deeper understanding of the present and a better ability to pioneer, while both of these – exploration and pioneering – take place as a means of social expression. In this chapter we look at some of these ideas in the world of Palaeolithic hominids, and especially of the European Neanderthals. We examine some of the ways they achieved an understanding of their world through the use of the bones of past lives, both of themselves and of the animals with whom they moved through life during the decachiliads of the Pleistocene period.

BONES IN THE LAND

People use bones in the landscape to establish socialities. We saw this at Olduvai Gorge (Ch. 3, p. 70). This can be in an immediate vicinity or over wide areas, and it can be with human or animal bones. In suitable conditions of cool or dry climate and calcareous soils, bones can survive on the surface for a long time. I have seen areas in the Faeroe Islands which are strewn with the bones of birds and sheep, not always densely but enough to be noticeable; and there are walls of pilot whale skulls around some buildings, which starlings use as nesting places. In the Amboseli National Park in Kenya, bones are sufficiently densely and widely distributed to allow quantitative study (Behrensmeier and Dechant Boaz 1980), and similar work is possible in eastern Zaïre (Sept 1994). Bone visibility under different conditions is important, as is the state of its surface, the degree of carcass disarticulation, the nature of secondary concentrations brought together by scavengers, and associations with vegetation. A lot of this work is used 'as a guide to palaeo-

ecological reconstruction' (ibid.: 217) of early hominid behaviour. What is absent, however, is a sense of how bones relate to expressions of societal relationships among the animals and humans, both in how they came to be distributed and how these distributions might have been used.

In Britain it is rare to see human bones outside of a museum or other institution where they are studied. Occasionally one might see small fragments in a graveyard, but that is all. In other countries, however, seeing collections of bones in cemeteries is quite common, as I have in Ireland and Greece. In countries of the northern part of the Indian subcontinent, bodies are placed in the open air, unprotected from the elements, where they are defleshed and disarticulated by birds of prey. In these areas, human bones come to be distributed in the landscape. Similar practices were likely in prehistory, and there are wall paintings from the Neolithic town of Çatal Hüyük in Anatolia of vultures devouring headless human corpses (Mellaart 1967). In archaeological deposits, individual human bones can be quite common, not just as special bones in special contexts, like a complete femur or skull in a pit (Ch. 4, p. 88), but as fragments in ditches and occupation layers. These may originate in excarnation or have been taken from disturbed burials and redeposited, deliberately or unknowingly. But human bone is quite distinctive, for example in its often greater thickness than animal bone, and sometimes the smallest fragments are quite recognizable as such; so whatever their origin, it is always possible that these fragments can be related to by someone.

Death and mortuary practice articulate with socialities of the living in several ways, mostly with reference to the immediacy of a particular death. Status of the dead is reflected in grave-goods and their location in the cemetery; kinship, gender and other attributes of condition in life may also be referenced in these ways (Parker Pearson 1999: 12). The living see funerals as a means of reasserting social norms:

Functional analyses of the corpsewashing ... have some force: the social group reconstitutes itself through mortuary rites, in the face of death's annihilatory threat, given form through the disintegration of the corpse. The corpsewashing is psychologically efficacious in that it provides a resolution for the feelings of fear and horror of death in the participants, which may (or may not) contribute to easing their bereavement.

(Connor 1995: 547)

Funerals are a medium for the affirmation of social bonds among the living. Beyond the funeral, social relations among the living can be aided by the locations within a graveyard in relation to race, kin, age and other attributes. Specific locations are as much about the sensitivities of the living as they are about the condition of the dead.

It is a mistake to consider human bones and animal bones separately in terms of their general meaning in prehistory (Figure 9.1). It is true that the bones of humans were set aside in the Neolithic and Bronze Age, and in some cases in the Iron Age and Mesolithic periods, in areas quite separate from those of animals. But this does not mean we should see animal bones in the wider landscape as having been treated differently from those of humans in a reverential sense, as having lesser meaning. After all, there were animal burials too in the past, as there are today (Larsson 1990). From the perspective of the human bones, the distinction with animal bones breaks down as well. We in Britain are not so familiar with the sight of human bones, yet in other parts of the world, mortuary rites often involve exhumation, washing of partially decomposed corpses as in the Bali example (Connor 1995) or the handling and transference of bones as in Inner Mani (Seremetakis 1991). And even though the bones of humans as opposed to animals and of the different species of animals were considered and used separately, as we have seen in Iron Age sites (Ch. 4, p. 88) (Hill 1995) and as occurs in the ditches at Windmill Hill (Whittle *et al.* 1999), this does not imply a separation of meaning in the ways the two groups were used in social referencing. Thus for the animal bones at Windmill Hill, ‘we should be wary of assuming that broken and disarticulated bone simply represents “rubbish” given the evidence for selection, arrangement and the particular treatment afforded to some

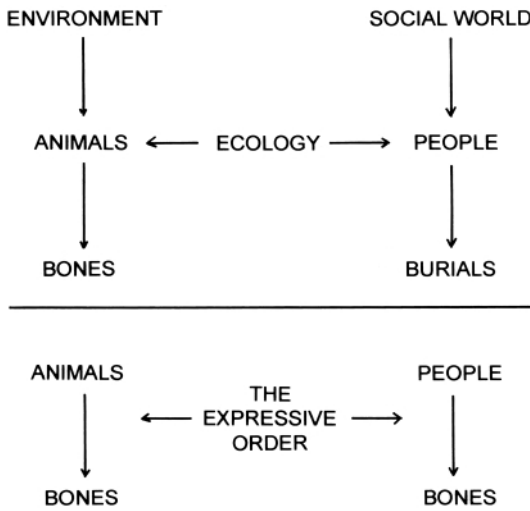


Figure 9.1 Different theories of relationships between animals, humans and their bones. In the upper part of the diagram is the conventional ecological theory; in the lower part of the diagram, living creatures of two species and the bones of their meals and burials relate through mutual social expression. (Compare Figure 1.1.)

remains' (ibid.: 361). In that the bones can have a diversity of meanings according to their origin in the domestic or feasting domain and in their place of deposition, there is an interplay with other deposited materials, including the bones of humans. People studying animal bones in the Neolithic to Iron Age periods are a lot more sensitive to the role these play in human social agency than are the people studying bones in relation to early hominid activities.

LANDSCAPES OF DEATH

The creation of landscapes of burial is reasonably well known about in some periods, like Neolithic and Bronze Age Britain, early Indian Illinois, and the cemeteries of medieval Europe. In Neolithic Britain, differentiation is largely within the individual cemeteries – the barrows and chambered tombs. Different age, sex and status groups are placed within different areas of the tombs but this differentiation is lost beyond the tombs themselves, apart from some moving around of bones between different types of site. In the Bronze Age (Woodward 2000) there is greater visibility of styles of round barrow and knowledge of the burials in them, while there are differences between cemeteries in style and in relation to landscape, both topographical and cultural (Figure 4.4) (Ch. 4, p. 82).

In early Illinois, the distribution of different kinds of people in hunter-gatherer cemeteries of the Archaic period was closely related to landscape (Figure 9.2) (Buikstra 1981). At the site of Koster, a sequence of middens, pits and slopewash deposits, there were a few infants from the deeper horizons, two horizons of adult burials at a higher level, while 'most individuals are represented by broken and isolated bones and small clusters in refuse pits'. All the adult burials were on their backs with their legs tightly flexed and

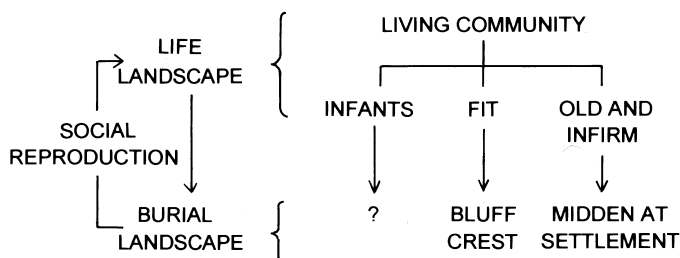


Figure 9.2 The relationship between the landscape of life and the landscape of burial. Bodies of different life conditions are buried in different parts of the landscape, and this burial landscape is fed back into the life landscape in social expression. (Distribution of burials based on Archaic Illinois, in Buikstra 1981.)

there were other stylistic similarities of burial disposition which united the group. On the whole, the burials were of individuals who were not able to perform the range of normal adult tasks because of disease, degenerative bone or joint ailments, old age, or because they were young (Figure 9.4, no. 1). At the rock-shelter site of Modoc, 30 km to the south, and of similar cultural affinities to Koster and again a habitation, there was a similar age structure and, again, a similarly high incidence of palaeopathology, deformities and healed fractures among the burials. There were 28 individuals, 17 of whom were over 40 years, while all the individuals below this age showed imperfectly healed traumas except for one pathology-free individual of around 13 years. In contrast, at a third site, Gibson, 10.5 km from Koster, most of the population were young to middle-aged and none showed striking pathology or arthritis (Figure 9.4, no. 2). The location of this site of essentially much fitter individuals was quite different from the other two sites, in being on a bluff-crest, and it was specifically a cemetery, well away from the habitations. A third, and different, situation again is seen in the burial (or maybe disposal) of infants and children. They are rare or unknown from either the adult cemeteries or the habitation sites, and although no child cemetery has been located, their mortuary rites must have been in a different situation again. These are seen as three different tracks of mortuary practice in a single cultural population.

As Buikstra (1981: 126) summarizes the situation:

Ethnographic reports repeatedly emphasize the frequency with which human groups structure their burial programmes according to sex, age, or circumstances of death, including chronic disease. Such structuring frequently includes burial and cemetery locus as well as burial disposition and is commonly reported for hunter-gatherers.

Much better known are cemeteries from Medieval and modern Europe and North America where they are often strongly partitioned in terms of ethnicity and status, and where there are separate cemeteries for paupers, people who have died in prison, and people of specific religions (Parker Pearson 1999).

What is not so well explored is the role these locales and landscapes, urban or rural, play in the building and reproduction of socialities in the living (Figure 9.2), how the partitioning of the landscape through different styles of mortuary deposition is used, not just at the time of the mortuary rites (which is the usual emphasis in these studies) but in the years beyond the funerals. There is considerable partitioning of landscape through human burial in terms of age, social status and other conditions in life of the deceased (Parker Pearson 1999: 11 ff.). What does it mean to the living when the north side of churchyards is avoided for burial or that a Mesolithic cemetery in Denmark has 'a surprising number of individuals in

mid-life, including childbirth deaths, and too few children or mature adults' (ibid.: 15)? Narrowly, cemeteries have been seen to legitimate land claims, especially through ancestry, as Parker Pearson (ibid. 30) has discussed for Papua New Guinea: 'Where land was scarce, the dead were buried in cemeteries, but . . . where land was not a crucial resource, disposal practices were less formal.' But we still need to ask, especially as environmental archaeologists, how the finer nuancing of burial style in the landscape as a whole is referenced and used in social reproduction. Parker Pearson (op. cit.) is mostly concerned with immediate referencing at funerals, while the issue is not really addressed by Ann Woodward (2000) in relation to British barrows, or by Buikstra (1981) in her study of Archaic practices in Illinois. In general terms, such as the avoidance of cemeteries by field systems and other indications of agriculture like ploughing, or their outright destruction, there is acknowledgement of these sites. They are drawn into phenomenological studies and there is understanding of the differences between areas of the living and areas for the dead. A few more detailed studies exist. In Iron Age Jutland (Parker Pearson 1999: 125–9), changes in the landscape relationships between settlements and cemeteries were drawn into relations of ethnicity, lineage and village identity. In the Early Bronze Age of south-west Britain, nuances of the funerary practices themselves and the degree of barrow embellishments allowed articulation with the wider social world, for example in the facilitation of agrarian and tenorial transformations (Owoc 2001): 'Funerary topography allowed particular community and familial histories to be constructed by connecting the past with a dynamic present in which obligations and relations with the living were under a constant process of negotiation' (ibid.: 194). Rituals of death moved away from the cemeteries into the settlement, 'with the eventual symbolic and physical replacement of the tomb by the house' (ibid.: 203).

ARTICULATIONS WITH MEANING

Bones can be understood as bones. This is not in the way that most environmental archaeologists think about them, as the dead endoskeletal parts of former living beings, nor as taphonomic histories of former lives, but in the way they were (and can be) actively used in articulations of sociality. Importantly, as just discussed, these can range from the scale of individual bones to that of landscapes.

At the Lower Palaeolithic site of Bilzingsleben in the Wipper Valley, Thüringen, in eastern Germany (Figure 9.3), the animal material was utilized by *Homo heidelbergensis*, as seen by the cutmarks and percussions on the bone and its modification (U. Mania, 1995). Some of the material was barely modified and used as percussors and anvils. Other material was shaped into tools by retouching pieces of suitable size and shape, often as a scraper edge.

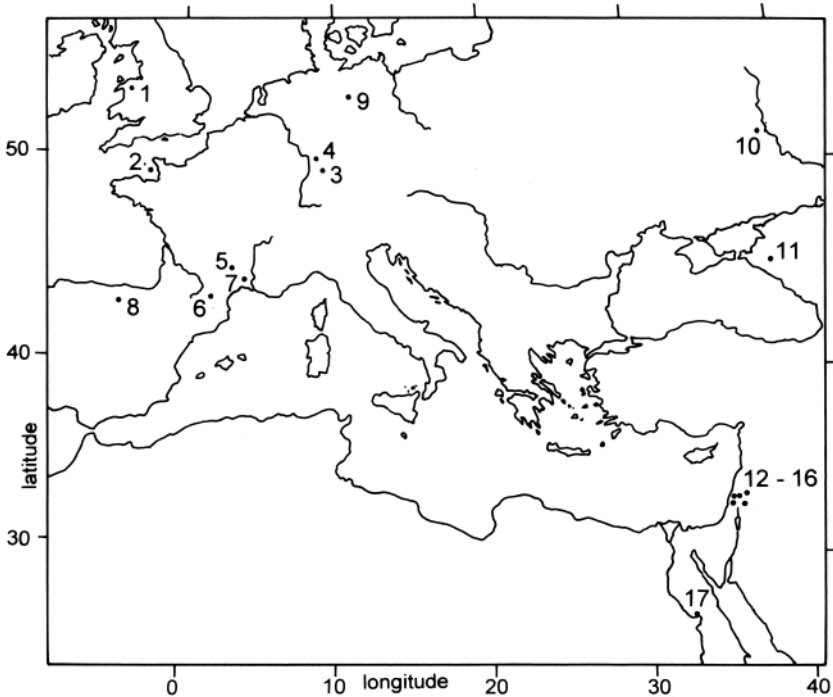


Figure 9.3 Middle Palaeolithic Europe, location of places mentioned in the text: 1, Pont Newydd; 2, La Cotte de St Brelade; 3, Steinheim; 4, Wallertheim; 5, La Borde; 6, Mauran; 7, L'Hortus; 8, Atapuerca; 9, Bilzingsleben; 10, Kostenki; 11, Il'Skaya; 12, Tabun; 13, Mount Carmel, Es Skhul; 14, Kebara; 15, Qafzeh; 16, Amud; 17, Taramsa Hill.

Together with stone, there was selection of specific materials for specific tasks. Large pebbles of tough, dense material like quartzite and travertine were used for rough work, while hard and brittle materials like flint and more rarely quartz and chert were used for small tools, for cutting, scratching, scraping and boring. Antler, shed or cut from skulls, was used for percussion, the main species being red deer, *Cervus elaphus*. Bone, and more rarely ivory, was used for big, special, tools. The bone of elephants were used, the tibia, femur and humerus being preferred. The bones were cut up, the ends cut off, the shafts split with wedges and hammerstones, and the fragments retouched. Pelvises and scapulas were used as anvils. While the elephant teeth were from young animals, probably butchered for food, old rather than fresh bone was specifically collected and used for tools because it was easier to work without adhering flesh, connective tissue and periosteum (Figure 9.4, no. 3) (Gamble 1999: 158). These sources allowed the camp to be understood in different spatio-temporal ways, as at Olduvai

Gorge (Ch. 3, p. 70). The antler may have been softened in water as suggested by the smooth break surfaces or stored under water to keep it from scavengers. By implication, there was also the use of wood and hides.

In the manufacture and use of these tools, people created social relationships (Dobres 2000) which were more intense in being tied to particular kinds of bone and other raw materials than had they been about the tools alone. There was also articulation with other attributes of the physical environment (D. Mania, 1995), a lake edge, a tufa spring, and a spread of animal bone with some human material over the area. Several tusks of elephant were prominent features and there was a bison skull. Numerous fragments of human skull and teeth were scattered around but not in the area of the most intensive human activity, so the placing of these human fragments may have been a deliberate emphasis. The siting at a tufa spring may have been significant in that tufa is a transformation from water to solid material where water bursts from the ground, and could have been perceived as magical (Davies and Robb 2002).

Bone can work as metaphor of status of animals and humans, oppositions of wild and domesticated, and intimations of birth or death. It can work through the animal and human species, their age-gender groupings and their state of fitness and health. There is meaning in parts of the body, in use as metaphors of gender or divinity, or for particular qualities, skulls standing for knowledge, hand bones for side and direction (Ch. 3, p. 61). Specific bones in terms of biology – species, age/gender, body part – can be differently constituted, or bones from specific individuals: an elephant tusk from an animal slain in a drive has different meaning from one found lying around. Individuals were known about as family members or ancestors, or as important beings like saints, leaders, important dogs, or dogs as chiefs (Schulting 1998). Bone type and surface texture, gnawed or corroded, fragmented or whole, and with or without meat, are all significant (Ch. 3, p. 70). And bone can have meaning in itself, as of wildness or the unknown.

Yet although meaning is multiple, it is only developed through specific contexts: an elephant tusk for a woman may be a way into a man's world, for a man it may be quite neutral, for a child a symbol of adulthood, and, in this, there is also relevance in the contexts of use and disposal (Figure 4.6) (Moore 1986).

NEANDERTHAL WORLDS, NEANDERTHAL BURIALS

We can explore some of these ideas about the way bones are used in the landscape through Middle Palaeolithic populations in Europe (Figure 9.3) because this has not often been done and it is a period not covered elsewhere in this book. It is interesting, too, to see if some of the ideas I have been exploring can be used in periods when humans were physically quite

different from ourselves. Even regarding certain characteristics which are usually held firmly in the biological domain, we can propose a solution in social expression. For example, Neanderthals are characterized by side profiles of their faces, not full frontal ones: the receding chin and forehead, and the eyes overshadowed by heavy brow ridges see to that. The developments in Cro-Magnon man of a steeper forehead and protruding chin, flattened face and reduced nose, bring the front view into greater prominence, and since this is the view involving eye-contact these changes allow a greater degree of social expression. This could be one of the reasons for the success of the Cro-Magnons: they were much more sensitive in their social world.

In the Lower Palaeolithic, before the time of the Neanderthals, skulls and other hominid bones were not without meaning in social lives. Even if these were not deliberate placements, their positioning may have entailed specific movements and relationships. We have already noted this for Bilzingsleben (p. 208); Smirnov (1989: 202) suggests a skull and mandible cult in the Lower Palaeolithic; and Parker Pearson (1999: 153) discusses the purposeful and powerful disposal of the dead in deep shafts at Atapuerca in Spain.

In the Neanderthal world of Europe and western Asia, human burials are a distinctive feature, about sixty at a conservative estimate (Smirnov 1989), characterizing the area and the time between the Last Interglacial around 120,000 years ago and the beginning of the Upper Palaeolithic at around 35,000 years ago. Not all of these are of the Neanderthal race or subspecies, *Homo sapiens neanderthalensis*, some, especially in the Levant at the eastern end of the Mediterranean Sea, being Cro-Magnon or anatomically modern humans, *H. sapiens sapiens* (sites of Es Skhul and Qafzeh). Archaeologically, as characterized by its stone artefacts, the period is the Middle Palaeolithic or Mousterian culture, although this is now seen as running back beyond the Last Interglacial into the previous cold stage (the Saale Glaciation). And indeed some human Neanderthal remains, although not burials as such, belong to these earlier times, such as the fragments from Pont Newydd Cave in North Wales which are around 200,000 years old (Green 1984).

There is considerable spatial diversity of mortuary practice. A distinctive feature at a regional scale is the existence of 'taphological centres' (Smirnov 1989) where mortuary practice was intense, and other areas like the British Isles where it did not occur at all. These centres differed from each other, some being quite diverse in their style, others less so. The Dordogne and the Levant are characterized by cave burials, in an aura of sacredness or mystique, the Crimea by open-air interment. And there are differences within the different centres. In south-west France, one sub-area around the River Charente has only isolated bones, while another, 100 km to the south-east in the area of the River Dordogne, articulated skeletons (Defleur 1993: fig. 66).

There is a significant intensity of style, concentration and diversity in the Levant (Figure 9.3). The hominids are diverse, with some of typical Neanderthal form (Tabun, Amud and Kebara) and others closer to modern hominids (Es Skhul and Qafzeh) (Stringer and Gamble 1993: 100). Es Skhul and Qafzeh (at 80,000 to 100,000 years ago) are much earlier than Kebara (at 60,000) and Amud (at 40,000 to 50,000 years ago), so any ideas that these different races of hominid represent a track of conformable evolution are discounted: interface with modern hominids was going on for several decachiliads (Stringer and Gamble 1993). More likely is that they are either different races which moved in and out of the Levant at various times or they are part of a single variable population (*ibid.*: 104). Cemeteries are characteristic, as at the cave of Qafzeh, where there were over twenty burials, all in a small vestibule close to the mouth of the cave. Some were more or less complete, as in the case of an adult female, a young female with a six-year-old child across her feet, an adult male with a fractured ankle bone, and an adolescent with deer skull and antlers. Others were represented by skulls alone or skulls accompanied by other skeletal parts, such as the skull and the hand of a young adult, the skull and lower limb of a young male, and two foetal skulls. In the Mount Carmel area, burials of different races (Neanderthal and Cro-Magnon) are quite close to each other, with a single Neanderthal inhumation at Et Tabun and the remains of ten individuals of which at least six are deliberate burials of Cro-Magnon type at Es Skhul (Defleur 1993). Racial or species interactions may have been played out through burial and dealing with animals and their bones. Indeed, heightening social intensity through the interaction of different races, and the need to strengthen identities, may have seen the development and diversification of mortuary practice in the first place, and, out of one strand of this, burial.

In western Europe, the sites are more narrowly situated chronologically in the Last Glaciation, and the hominids are more extremely Neanderthal. Only towards the end of the period do we get a few modern hominids in association with Middle Palaeolithic stone tools. In dealing with the bodies themselves, there was again considerable diversity. In central and south-west France, there was a variety of positioning, bodies often being strongly flexed as if bound before interment as at La Chapelle-aux-Saints and Chancelade, less strongly so as in the La Ferrassie burial 1. The body at Roc de Marsal 1 had been 'intentionally taken apart at the spine' (Smirnov 1989: 213), that at La Ferrassie 6 interred 'with the skull separate from the body', and the burials of Arcy-sur-Cure 5 to 7 were of only a part of the body. Perhaps significantly, hands and feet, and a few limbs, were buried separately. At L'Hortus in Languedoc (de Lumley 1972) most of the remains are mandibles.

Overall, twice as many adult men were interred as women (Smirnov 1989: 219). Where it could be checked, males were preferentially treated in the elaboration of the burials, with eight out of ten males having grave-goods but none for seven females; and there was a higher occurrence of males with

mortuary paraphernalia such as ochre, hearths and cists (Harrold 1980: 199). But which gender is being referenced here? Animal bones occur with the burials as deliberate emplacements in some cases. At two sites, individuals were seen to have suffered injuries in life, and these burials were placed apart from others.

Debate on whether the partial skeletons or body parts are deliberate or reflect carnivore activity loses some of its impact when it is remembered that such differences were manifest and that it is how they were used in social referencing that is as important. Equally, and more generally, the question of intentionality of burial (so often debated in the Neanderthal arena) is not especially crucial because it is one part of a much wider mortuary diversity. It was how people related to what they saw that mattered. Even so, the fact that there are so many complete skeletons at all in environments where carnivores and scavengers were often common, and in what were probably quite shallow pits or even just surface depositions, implies that the sites were guarded and the carnivores kept away. In some cases, as at L'Hortus, there was likely cannibalism (de Lumley 1972), and there is a spectacular entrance to this site high up on a cliff ledge which makes it monumental. At another site, Taramsa Hill in the Nile Valley in Upper Egypt, the burial was in the sealing deposit of a chert mine (Vermeersch *et al.* 1998). In others there is a strong association with occupation. Many sites were probably specifically for burial, especially the small caves like Qafzeh and Es Skhul. The land was actively entextured through mortuary style and given meaning, as we saw in Archaic Illinois (p. 204, above). This was enhanced in the association of the human bones with other referents like grave-goods and associations with other burials.

Mortuary practices provided referencings through the memory of funerals and long-term memory in ancestors, through the often stunning visuality, indeed monumentality, of the sites, like Shanidar in the Zagros Mountains of Iran, and through their relation to other activities, like hunting, butchery and mining. There was also the constant need to protect burials from animal scavengers and other hominids: someone always had to be around. There was a landscape of mortuary style from across the whole Neanderthal world, from the separate regions to individual cemeteries, with their burials and the bones, through which people could relate – deaths in childbirth or of a young child, damage to the body persisting through life, the routine of maintaining identities, and conflicts over race.

OTHER MATERIALITIES

The emergence of a diversity of mortuary practice, including definitive burials, in the Middle Palaeolithic is sometimes seen as part of the evolutionary trajectory of the genus *Homo*, for example as a response to increasing

cognitive abilities or spiritual awareness. Yet there are no significant developmental or evolutionary trends and it is likely that meetings of different races took place. More usefully, then, we can explore how mortuary practice developed in this world of social agency, how it was related to other referents. In this, it is relevant that mortuary practice provided a medium of social intercourse which was more intense than many others, such as tool manufacture, partly because it was a more specialized and relatively occasional business and partly because of the very nature – variously gruesome, tragic or joyful, but always singular – of death and burial.

Race and gender

Race and gender, as so often, are likely contenders, although we cannot necessarily equate these directly with particular materialities (Moore 1986). Racial significance can be referenced by cemeteries of burials of that race, yet by other attributes as well, like body ornamentation; equally, socialities other than of race can be played out through different racial types. It is the same with gender: a predominance of male burials and a greater diversity within them of mortuary style, while focusing on maleness, may be of female origin, for example as a means of backgrounding the opposite sex (Bailey 1994).

Fire-places

Conversations around fires were hardly developed. Fire was a casual affair, not often used and usually without formal hearth structures. At the cave of Grotte XVI in the Dordogne (Rigaud *et al.* 1995), there was repeated use of the same area even if not on precisely the same spot. Lichen was the main fuel with some grass, and artefacts were less frequent in the hearths than around them. At Abric Romaní in north-east Spain, hearths recurred frequently in the occupations (Vaquero and Carbonell 2000: 80), and in two of the Gibraltar caves there are combustion zones with guano (Macphail and Goldberg 2000: 198). So socializing around fires, although not a big part of people's lives, took place. Even so, there are few sites in all Europe with any patterning indicative of sustained use in conversations (Gamble 1999: 260), while in the landscape, fire was probably not an effective force in forging relationships.

Exotic stone

Materially, there was social storage, especially important in thinly productive ecologies. In this, we may see the origins of greater social complexity, as Clive Gamble (1999: 65) has proposed with his contrast between inhabited and social lands: there was increasing awareness of the *longue durée*. Gatherings in relation to the exploitation of distant stone sources, as we

saw at Taramsa Hill, allowed opportunities for associations among people from distances of up to 80 km (ibid.: 242). Their significance was heightened in the high proportions of these exotic materials made into tools and their use in the specialized Levallois technology; longer and more specialized manufacturing sequences were applied to the more far-travelled geologies. There was a common material culture of Middle Palaeolithic (Levallois-Mousterian) tools, but with significant experimentation in blade technology, especially in the Levant. Wider worlds were also coming into play through contacts with coasts and the moving around of sea-shells (ibid.: 239). Significantly, greater distances were involved in the cooler and less productive regions of Europe, such as the north-east, suggesting a use in these articulations in social insurance. Large groups of people were not necessarily involved in the raw material transportation, but could relate to distant lands and other communities through it and the smaller chains of tool manufacture and use. Opportunities for controlling these sources could have led to asymmetries in society and these may have been experienced between communities over wide areas.

Animal bones

Styles of animal bone assemblages, and styles of how they came together, were more widely and routinely experienced. Some were sufficiently specialized and laden with prestige as to allow the development of hierarchies of engagement in the social domain. Through this, style had substance, and this enhanced an understanding of the longer durations and wider spaces which themselves became a part of style. Style in animal bone assemblages included a hierarchy of environmental referents (p. 208, above). Type of site was important – *in situ* kill, habitation with carcasses brought in from elsewhere, cliff-fall – and a part of this was the guarding of the carcasses and bones, giving at least a short history. This was bound up with the place of the site in the round of environmental exploitation, whether it was occupied seasonally, more irregularly or permanently. As in the drawing out of time through the range of choices of mortuary treatment and the pre-burial and secondary movement of body parts and bones with regard to any one individual, social interactions with animal bones could take place over many years. And as with human bones, whether the accumulations were the result of human practice or animals themselves (Figure 9.4) mattered less than the way the assemblages were referenced in the social domain (Figure 9.1).

Site type

Some habitations were of long use, especially caves and rock-shelters, with long faunal sequences and often with changing associations of species giving time depth over several cold-stage and warm-stage cycles, for example

HUNTING AND DEATH IN NEANDERTHAL EUROPE

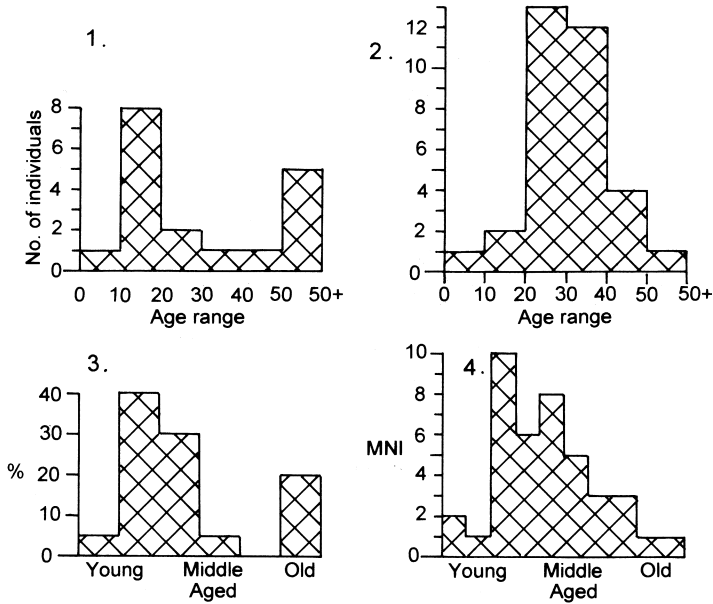


Figure 9.4 Different styles of survivorship or death distributions in humans and animals: 1, human, young, old and infirm (e.g. Koster, Archaic); 2, human, fit (e.g. Gibson, Archaic); 3, animal, most vulnerable to hunting (e.g. Bilzingsleben mammoths); 4, animal, prime-age hunting (e.g. La Borde aurochs); MNI = minimum number of individuals. (1 and 2 based on Buikstra 1981: figs 9.8 and 9.9; 3 based on Gamble 1999: fig. 4.23; 4 based on Jaubert *et al.* 1990: fig. 46.)

L'Hortus (de Lumley 1972) and the south-west French sites of La Ferrassie and Combe Grenal (Bordes 1972). But these are often of small area and the deposits quickly become covered by sediment, so there is not the visibility needed for referencing into the past. Yet many were returned to over long periods, indicating some sort of knowledge of deep time. More relevant are sites in loess (Ch. 3, p. 53) where bones cover a large area and are constantly subjected to burial and exhumation by natural processes (Gamble 1999: 197). Kostenki on the River Don in western Russia is one such area – the very name means ‘bone village’ – where there has been virtually continuous occupation since before the Last Warm Stage. Several side valleys are densely packed with occupation materials over a total area of over 20 km², and while most of this is Upper Palaeolithic, the origins go back into the Middle Palaeolithic. Some sites, like L'Hortus with its likely cannibalism (de Lumley 1972), see very specific activities which might heighten social memory. Fissure sites like La Cotte de St Brelade were used as pitfall traps into which mammoth and woolly rhinoceros were driven (Callow and Cornford 1986).

But the question we need to ask is whether any of these features or practices were of sufficient intensity or involvement across society to be relevant in the articulation with mortuary practice? Race, possibly, especially in the specific developments in the Near East, but otherwise I suspect not, and that a more suitable engagement is to be found in the hunting of cattle and bison.

FOCUSING ON BOVIDS

Thus another way of referencing time and space in bone assemblages is through the application of a precisely defined hunting style. This was done through the focusing on just one species, on one gender of individuals, and on animals of a specific and narrow age range, especially those of supreme fitness (Gaudzinski 1996). Four sites across Europe and western Asia, all open-air, show these characteristics (Figure 9.3). They are La Borde in Lot, south-central France, where aurochs bones were found in a sinkhole (Jaubert *et al.* 1990); Mauran, also in France but much further south on the Garonne; Il'skaya in the northern Caucasus; and Wallertheim in the loess lands of the central Rhine. Some of these sites were used and curated for many years.

Mauran is a bison-kill site in the foothills of the Petites Pyrénées in the headwaters of the River Garonne (Farizy *et al.* 1994). It is in a gap in a limestone ridge where it is cut through by the river, 23 m above the valley floor, and consists of a mass of animal bone, mostly bison and mostly fragmented, with flint tools and debitage. The bison bones have cutmarks from filleting and dismembering the carcasses and percussion marks in significant places on the long bones where they were broken for the extraction of marrow. This was a formal process, with the use of an anvil and a hammer. The percussion marks are clearly visible, and there were distinct patterns for specific bones, for example, with proximal ends of long bones being preferentially detached (Farizy *et al.* 1994: 181). Different bones were treated differently: for the radius and ulna, there was a blow on the cranial face near the proximal end, then a blow distally to remove the epiphysis, and you can see a counter blow on the posterior face; then the ulna is detached. The bones were overlain by stones and earth which had accumulated by slope-wash from further up the hill and were in an unstable situation: indeed the site was revealed by a landslide.

So at one scale, the location may have been referencing this instability. At another, this may have symbolized a greater instability in the alternations of cold and humid climate of the times, although the bone layer itself was formed under conditions that were very cold and dry. The abundance of bone suggests repeated visits over several years (Farizy *et al.* 1994) and the paucity of animal toothmarks on the bone (where surfaces were suitable for their preservation) indicates some continuing human presence in the guarding of the bones from the depredations of scavengers.

Symbolism is entailed in the association of the location and the activity: the site at a gap in the ridge and the hunting of bison and their butchery. The location – directly above the entrance of a ravine – is ideal for ambush hunting, the scenario of killing considered likely by Sabine Gaudzinski (1996) in the light of the prime-age mortality pattern of the individuals. Most of the animals were between three and ten years of age, and such selective hunting is best done through ambush rather than drives. But the location is monumental and visible from afar, so the site may have been selected for this purpose in the first place, a natural setting for group activities, just like the stone-extraction sites or burial grounds. And like many such group activities, this was during a narrow time bracket, slaughter of the bison taking place after the rut towards the end of August at the time when the herds split up, the males leaving for one area, the cows and young for another (Farizy *et al.* 1994: 179). The ambushing of the bison, then, may have been a consequence of such gatherings. It is difficult to know. Selectivity is also seen in the predominance of cows, with some juveniles, suggesting a living herd during the rutting season, although females may have been selected for some other reason as well, and rutting as a symbol of fertility. Focused hunting – on bison, females and prime-age animals – could, then, all have been a way of enhancing the monumentality of the place. Interestingly, such patterns differ from anything found in natural death assemblages or animal predator hunting (Figure 9.4, no. 4) (Gaudzinski 1996: 31), so this, in its opposition to nature, could be a further cultural appropriation of the environment.

ENGAGEMENT WITH SOCIALITIES

Different tracks see the emergence of new materialities. One is about fat, the needs of pregnant women, and the balance of gender power in bison hunting and human burial. Another is about the increasing asymmetries that develop in the *chaîne opératoire* of animal procurement and a concomitant accrual of power.

The special resources of animals in summer and early autumn, of female animals specifically and of prime-age animals generally, are the substantial fat reserves in their bodies and within the long bones (Speth 1991: 171; Gaudzinski 1996: 34). Fatty foods taste good and produce a ‘feeling of satiety’, they are a concentrated source of energy, more efficiently metabolized than protein, and carry important vitamins. Fat is needed as a significant part of the diet, especially in cold climates and especially by pregnant women (Speth 1991), strengthening full-term births and increasing birth weights. Women at Mauran would be expected to have had preferential access to the marrow being extracted from the bones. Trinkaus (1983) discusses pubic bone morphology and gestation length in Neanderthals, showing the pelvic

aperture in Neanderthals to be 15 to 25 per cent larger than in modern humans. Faster foetal growth or longer pregnancies, by up to three to four months, may be entailed, an explanation not, however, supported by a similar anatomical feature in males (Stringer and Gamble 1993: 86). There was also a need to avoid too much protein generally and in this plant foods needed to be collected, an activity often associated with women.

There was a social side, as well, driving the worlds of hunting and mortuary practice and their situation in symbolism. The asymmetries that might emerge were not about the accrual of material wealth but of learning and power. Gender was important, with cows targeted in the hunting, men being given preferential treatment in burial. Focused prime-age hunting entailed knowledge of the herds, and people probably got to know the individual animals over several years. From the first day in the world for each animal that was born, as they grew up, when their rutting season was and when those new animals themselves gave birth, it was almost a husbandry. As with fellow humans, the animals were a part of people's lives. People were watching them. There was training of older children and young adults in preparation for future hunts. They came to understand the fitness of the herds and how they were developing, they could predict herd movements and breeding patterns, and there was the selection of the best animals to kill. And as they trained and learned they came to know their own community, the new babies, the older people, and those in their dying years. Through the life-cycles of the animals they came to know their world.

The ambushing of big, fit animals with calves and their killing, probably with spears, was likely done by fit men, although it could have been done by women (Endicott 1999). At the least it was almost certainly done by a specific age-gender group, and with a narrow social directive. This allowed socialities to develop in relation to learning, skills and knowledge, which would not have been the case with random or cliff-fall hunting. Some people had more knowledge and more skill than others, but it was in the hunt itself, the physical contact with the beast, that the greatest social tensions arose. Those involved in the hunt, in the death, would feel more important and sense the admiration of others. But these others may also have felt excluded, have had a sense of no longer being a part of the whole business of getting food. The kill was a narrow business, as was the committal of a human to the grave, both in the hands of specialists. After an animal had been killed, a body placed in the grave, the focus shifted to other members of the community and social constraints loosened as feasting took place and the diverse social uses of the carcass or the burial were realized. But the curation of the sites – of burial and of butchery – reversed these trends and once more narrowed the focus to the specialists. Again there was a specific role for some members of the community, exclusion of others, especially where the sites were left. Several years could pass before a hunt was repeated or another person died, but the significance of the activity, held in memory

and aided by the place, remained strong as did the socialities which had grown up around it.

The feelings of alienation, of not fully belonging, entailed through the development of specialization in hunting and burial and in the curation of the places of burial and butchery, could have been worked out through quests for new relationships. Different kinds of practice and materiality arose. Focused hunting and burial developed in relation to each other, primarily in the social sphere, secondarily in the more practical domain of obtaining food and burying the dead. Specialization in one area by one group of people was balanced by specialization in another by a different group of people. Alienation was distributed. Specialization itself could have been used as a schema in which to play out routine engagements of social agency.

In this way, too, longer time and wider areas were understood. Even if a death was quick, a community still thought about its occurrence before it took place, often over several years; as a family member grew old or the senses of an important figure waned, there was increasing forewarning of their death. It was also in the memory of past events and expectation of future ventures, and the knowledge of people's roles and status, that these deeper, wider landscapes of time and space were known, anchored through schemas of symbolism, like gender and the monumentality. Perhaps only a few people or certain groups were conscious of the importance of these practices, yet these were the links that held the *chaînes opératoires* from different scales of time together and through which society was reproduced.

CONCLUSIONS

- 1 Animal bones and human bones can be used as a means of social articulation in the landscape.
- 2 There are landscapes of human burial and landscapes of animal bone accumulation, both of which relate to practicalities in life and both of which feed back into life.
- 3 In Middle Palaeolithic Europe and Eurasia, landscapes of hunting strategies and mortuary practice, together with the bones themselves, allowed the development of socialities at a variety of scales.
- 4 These had their origins in social tensions, such as vyings between hunters, the varying needs of women, feelings of alienation as specialization ensued, and the playing out of ethnicity and race.
- 5 For environmental archaeologists, these conclusions are relevant to how environments of the Palaeolithic are perceived and studied because they entail an origin for distributions and patterns of exploitation in the social world.

THE ORIGINS OF FARMING IN SOUTH-WEST ASIA

The origins of farming in south-west Asia (Figure 10.1) has been chosen as my last major study because of the links with both environmental and social pressures. It will be recalled (Ch. 2, p. 35) that Braudel saw social interactions as most relevant in small-scale events, physical environmental ones in the long duration, but that he did not theorize the way these two kinds of influences were linked (Gosden 1994: ch. 6). This chapter provides a means of exploring this problem, and through a fundamental stage of human history.

THEORIES

Exploring the various theories that have been put forward to explain the origins of farming helps us to understand what agriculture actually is and what we mean by its origins.

Farming origins as a synchronous global phenomenon

Although I am confining the discussion to south-west Asia, the fact that farming arose at more or less the same time in human history in several other, geographically unconnected, arenas is significant. It suggests a global undercurrent such as climate forcing, demographic impetus, or the crossing of a threshold of cognizance in relations of society and land. Climatic pressure on its own is difficult to accept, even if the changes in the Younger Dryas period at the end of the Pleistocene were marked and global (p. 240 below) (Petee 1993). As we have seen, climate change works through social interpretation (Ch. 5, p. 98), and it is difficult to see this happening in the same way in up to a dozen different spheres of origins. We might also ask why agriculture had not arisen at earlier periods of human history when similar global trends prevailed, especially when we see the huge diversity of domesticates involved; it is not as if any specific,

ORIGINS OF FARMING IN SOUTH-WEST ASIA

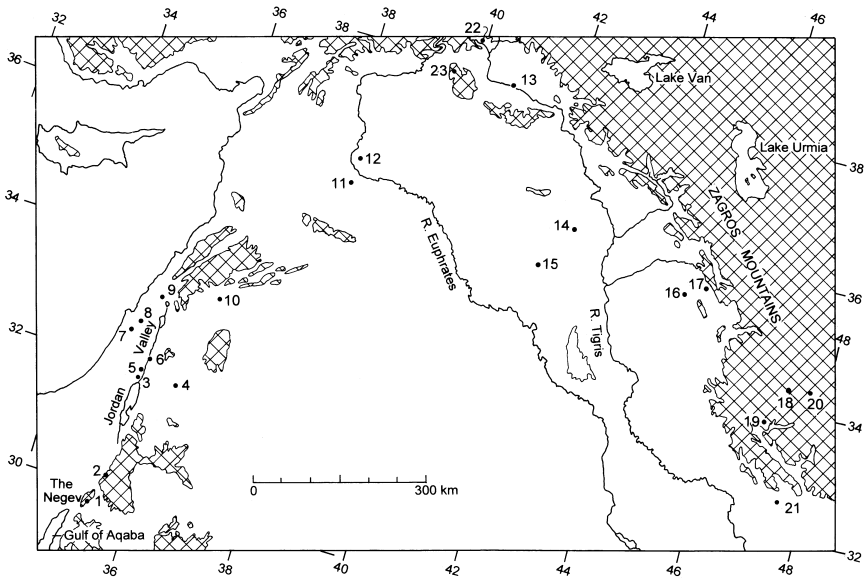


Figure 10.1 The Fertile Crescent, location of sites mentioned in the text: 1, Wadi Judayid; 2, Beidha; 3, Tell Es-Sultan, Jericho; 4, 'Ain Ghazal; 5, Gilgal and Netiv Hagdud; 6, Munhata; 7, Mugharet-el-Wad, Mount Carmel; 8, Nahal Oren; 9, Eynan or 'Ain Mallaha; 10, Tell Aswad; 11, Tell Abu Hureyra; 12, Mureybet; 13, Hallan Çemi; 14, Qermez Dere; 15, Umm Dabaghiyah; 16, Jarmo; 17, Karim Shahir; 18, Sarab; 19, Tepe Asiab; 20, Tepe Ganj Dareh; 21, Ali Kosh; 22, Çayönü; 23, Karacadağ. Land above 1000 m, cross-hatched.

narrow, technology were required. Similar objections can be made to demographic pressure, especially when we think about the likely high population densities in certain areas of the Palaeolithic world. And this is not just in the Upper Palaeolithic, but for much earlier periods when river valleys like those of southern India or the lake edges of eastern Africa were intensively and densely settled.

I am unsympathetic to seeing human history in evolutionary or progressional terms because this imposes a structure which I do not think is there, yet it is difficult to argue away the origins of farming as a global phenomenon otherwise. So if we think about it as the crossing of a threshold in the relation of society to the land, the framework proposed by Clive Gamble (1999: 68, 87–91) for Palaeolithic Europe is a useful start. In this, there was an earlier phase where people communicated in 'landscapes of habit' with people from the wider world, but where permanent relationships did not go beyond the immediate kin group, and a later phase where people related to each other through memories of a wider social world in a

'social landscape'. Sociality was a forging essence, and in developing this in relation to agriculture, several authors have indicated the importance of 'complex hunter-gatherers'. These are people who have a social structure which is hierarchical, show intensification of food procurement, and can be semi- or utterly sedentary (Gamble 1999: 25). They have relatively high population densities, live in dwellings of significant architecture, use and curate specialized equipment, and do so at fixed sites where they harvest resources that are both prolific and reliable, especially those with an abundance of young. Complexity is integral, for instance, to the 'competitive feasting' theory of farming origins (Hayden 1990), for it is only in such conditions that the feasted resources can remain unaffected by the intensive exploitation this theory entails.

Yet this kind of linearity of prerequisites is only to push the problem of origins back. Nor am I particularly convinced that there are such significant differences between simple and complex hunter-gatherers, especially in the curation of equipment and commitment to land. Not every hunter-gatherer society may be similarly anchored, but most have a significant input to following animal and plant life-histories and building up knowledge over generations about specific tracts of land. In that such knowledge is inevitably distributed asymmetrically, these attributes amount to complexity. And, like Gamble (1999: 26), I am not convinced that complexity was a feature which originated only in the few millennia at the end of the Pleistocene.

Similar objections may be made to the concept of 'delayed returns', another characterization of hunter-gatherer groups that is a favoured prerequisite of farming origins. In delayed-return systems (which are a part of complexity), there is a significant time between the procurement of food and eating it (Woodburn 1988: 32), as in curing and storage. The latter involves sedentism or at least the care of the produce by some members of the community: attachment to particular places is entailed. These features are important to the farming of domesticated plants, both physically and psychologically, for in agriculture it is necessary to store seeds for at least a few months before they are planted. Yet are we not again being swayed by the visibility of material equipment rather than understanding what actually happens? Even in immediate-return systems there is long-term investment in planning and learning about places to hunt and gather, the behaviour of the animals and plants, and the land. A specific hunt can be thought about for a long time before it is enacted. After a hunt, as with the Hadza of Tanzania, there can still be several hours before the animal is located and butchered (Lupo 1994), while the salting and drying of meat is not such a significant step and need not entail any form of sedentism. Many animals have delayed-return feeding, moles storing beheaded earthworms in the walls of tunnels (Gorman and Stone 1990: 21), shrikes or butcher birds (*Lanius* species) impaling insects on thorns and barbed wire, and spiders

wrapping up flies and wasps in their webs for later consumption. Even sheep take years to establish familiarity with their specific grazing areas, the hefts. Moreover, different styles of hunter-gatherer system can arise or dissolve quite quickly and in accordance with influences from neighbouring tribes as Woodburn (1988) has shown in African groups. There is really no such thing as an immediate-return system, although some systems are less curatorial and investment-conscious than others, so the idea of a progression of prerequisites leading to farming collapses again.

The progressional approach not only pushes back the question of origins but also lends an inevitability to farming. It is difficult for us today to see it as anything else, yet many societies in every continent have remained at the hunter-gatherer stage and in the whole continent of Australia there was no farming until the coming of Europeans. More significantly, if we are to look to the origins of farming in social relationships, then this must be at the level of individuals in communities in the first instance. Unless there is some kind of cosmic essence linking these globally, it is at this level that the search for origins must be.

While not being able to answer this problem of the near contemporaneity of the introduction of farming in many different, and unconnected, regions across the globe, two points are worth making. First of all, we should distinguish between first signs and fuller development (Harris 1996). In the former context, agriculture was yet another diversification of Palaeolithic subsistence style and as such not noteworthy as a contemporary world-wide development; in the latter, on the other hand, it is globally much more significant. Second, do we actually know that people in the Palaeolithic were not farming? This is not to open up the debate about managing reindeer or sowing wild plants, but to consider the possibility of fully fledged agriculture. Part of the problem is the conceptual barrier of seeing the development of human cognitive abilities as mapping developments in technology, itself deeply embedded in the evolutionary paradigm in early hominid studies. Another problem is the adherence to the 'out of Africa' hypothesis, in which modern humans are seen as originating from a more or less common and point-source origin somewhere in Africa around 120,000 years ago. An alternative view, the 'multiple-spectrum' hypothesis in which modern humans originated from a more diverse, widespread and ancient stock, has seen a decline in support over the last fifteen years. Yet the situation is quite open, and one of the concomitants of the multiple-spectrum hypothesis is the more likely multiple origins of agriculture at a wider range of dates than currently supposed. Admittedly the lack of evidence is a hindrance, but then how much do we know about the subsistence of Lower or Middle Palaeolithic communities in the Near East, parts of East Africa, or lands east of the Caspian Sea across the deltas of the Indian subcontinent to China?

Origins as social structure

Most theories on the origins of farming see it as a specific means of resolving problems. Only, perhaps, for Ian Hodder, with his ideas about the control of the wild, is the concept of domestication itself a primary objective: 'The domestication of wild cattle and of the external wild more generally could thus be seen as an attempt to domesticate and control internal and social problems' (1990: 12). Mostly, domestication is not seen as an inevitability or something that was actively invented as such.

Early theories were of a raw determinist kind. Gordon Childe, in his 'oasis propinquity' model, suggested that climatic drying at the end of the ice-age led to a reduction of wild resources and the concentration of people around oases (O'Connor, 1997: 149). Here, the needs of a tightly packed populace were satisfied by intensifying the use of the seeds of wild grasses and legumes which led to their domestication first by natural and then by artificial selection. Similar unilineal models are seen in a response to the sharp changes at the beginning of the late-Pleistocene Younger Dryas period (9000 bc) in which the general spread of the progenitors of domesticated cereals across swathes of the Fertile Crescent was temporarily set back (Hillman 1996: 189), to be resumed a few centuries later at its close (8300 bc).

The distinction between the first signs of farming and its fuller development are again relevant. First signs are accommodated in the theory of Brian Hayden (1990) in which competitive feasting sought out novel and often bizarre forms of expression which were not particularly geared to dietary or subsistence considerations: 'The view of the first domesticates as prestige items used by accumulators to outclass their rivals explains the otherwise mystifying nature of many of the first domesticates, including dogs, gourds, chili peppers and avocados' (*ibid.*: 31). This strikes a chord with the focused hunting of bovids (Ch. 9, p. 215) in the Middle Palaeolithic, especially in the procurement of significant resources like fat, its intensive extraction, and the guarding of the sites, all of which are features of Hayden's 'accumulators'. Burial of the dead in these early farming communities as a reflection of prestige, especially of males who might be expected to have acquired status in these activities, is an added similarity with the Middle Palaeolithic.

On the other hand, as a full subsistence system, agriculture is seen as developing through the use of food surpluses in exchange systems which establish the prestige of leaders. Barbara Bender (1975: 210) sees agriculture as originating in the attainment of status by a few individuals through the intensification of production, a consequence of the interdependence (social and economic) of households in the settled village societies of the Near and Middle East. 'Specialized production by different groups both within and outside the tribe...operates as a means of entry into the system' (*ibid.*: 211). This may have arisen in hunter-gatherers practising 'delayed returns', for the creation of surplus produce and its storage are features of such

systems; these traits would have lent themselves to the development of farming where there was a need to store seedcorn. Even if there was not a hunter-gatherer origin to this practice, it is still easy to envisage farming communities using some of their seedcorn in exchange.

Although applied in different understandings of origins, both these theories – of competitive feasting and exchange – are grounded in social competition. Yet like the theories of Childe and Hillman, they see a separation of the forcing mechanism – the creation of power or climatic change respectively – and the economic domain through which it was achieved.

An advance is to see agricultural origins in the creation of the theories themselves, for people constructed environments out of theories as much as from their physical world. Farming origins were about experimentation, a defining characteristic of which was the difficulty people had in understanding what was going on. An embracing schema would be in these uncertainties, a part of its ideology, as it is for archaeologists today. There were uncertainties in identifying plant species which had been slightly modified in their morphology and ecology when previously identifications had been unambiguous. On the other hand, people were uncomfortable with the narrow distributions of planted cereals and pulses and of herded sheep and goats when previously these had been much wider and less certain in their occurrences. New schedules in activities like reaping and dehusking grain, culling animals and integrating these with hunting became critical and, along with the symbolism in subtle differences of the debris of crop processing and animal slaughter around settlements, led to specialization. There were uncertainties in the changing divisions of labour, the sharpening separation of public and private activities and space, and in accommodating the constraints of the daily round with wider socialities of the old order (Hesse 1984).

Uncertainty and insecurity at the practical level of subsistence were channelled up into higher life schemas. The sharp climate and concomitant changes of vegetation of the Younger Dryas, such as the interruption of the spread of terebinth–almond woodland steppe and its stands of wild cereals at its beginning and the reversal of these trends a few centuries later, in taking place over just a few decades were certainly noticed and could have been variously constructed and implemented. Competitive feasting may have played a part, especially in the areas where cereals were a novelty, spreading at the forest edge, or sheep and goats moving up into the hills as snow-lines receded. In the more settled village communities where processing of wild food seeds was traditional with grinding and pounding equipment and where storage had been established over many years, the building up of surpluses and the exchange of different foods with neighbouring villages began the process of wider hierarchization. Ultimately, the new fashions, embellished with depth of time and the great expanses of the world, were developed into an ideology.

Farming as social intensification

To go further, we need to understand what agriculture is and characterize it more broadly, yet more carefully, than is usually done. This means looking at the social novelties it entails and how these were brought about through engagements of all individuals, not just a few. Importantly, we need to examine how social practices were enacted during agricultural beginnings as they moved through the various *chaînes opératoires*, not only how they were affected as a result. Thus another reason for eschewing sequence in farming origins is that it focuses on material prerequisites – like storage or sedentism – and denies the way social agency establishes relationships. In the latter view, farming may indeed have been inevitable in the hunter-gatherer establishment of villages, the collection of wild cereals and their storage in the Levantine Natufian, in the beginnings of the social processes through which it later emerged. Social processes which belonged with and were later to be reified as farming were already in place in the hunter-gatherer stage. This is quite a different proposition from saying that farming came about because storage, sedentism and stone grinding equipment were in place. It also means that farming could have arisen from quite different precursor societies which showed no material or behavioural inklings of its beginnings at all.

Another way we might draw farming back into the hunter-gatherer stage and thus disallow the causality of material developments is to look at the meanings of ‘collecting’ and ‘production’. In one of his typical essays in semantic analysis, Tim Ingold (1988: 274) suggests that hunting and gathering are in effect a mode of production as constructed ‘through purposive social action’. Production includes how a person ‘relates to other persons’ and can be set accordingly within the remit of hunter-gatherers. This looks like social agency, ‘becoming as one goes along’: if not Dobres with her subtle mediations of style, it is a lot more nuanced than Bender with her raw social rankings. In early farming, Ingold (1996a) suggests that new value – production – was the province of the land alone. Farmers might rearrange things, nurture and care for the emergent crops, even enhance productivity, but it was nature that produced: ‘Rather, we are dealing with processes of *growth*, in which human beings, animals and plants come into being, each in relation to the others’ (ibid.: 12). If Ingold allowed plants expressiveness of sociality and power through the use of their environment (Figures 1.4 and 1.5), he could merge the economic distinction between hunter-gatherers and farmers at a stroke.

It is difficult to characterize farming in its own right, not to make comparisons with the hunter-gatherer state. In general, farming gives great tightness and clarity in the way it is anchored to the dependence of humans on plants and animals and a commitment to the well-being of the plants and animals in humans. Time and space were clearly understood. This is at a generational

level: 'one generation quite literally feeds off the labour of an earlier generation, and this tends to reinforce generational bonds' (Bender 1989: 201). It was, too, at an individual level. There was a sense of long and continuous time, both back into the past and on into the future, established in social relationships as *chaînes opératoires*. This sense of time was linked to a close sense of place. This does not mean a spatially narrower view, even though sedentism was a necessary part of farming, but quite the opposite, with an understanding of geography as broad and made up of different scales. Actively engendered contacts with a wider world had been going on since the Middle Palaeolithic (Ch. 9, p. 218) but now there was a feeling of individual and community unity with a place, one which did not allow so much flexibility of use by other communities and tribes. As a part of this tightening of time and place, people established relationships, through activities such as harvesting, selecting seeds for sowing, and thinking about future generations of crops, that were of a significantly directional nature. They were forged with a specific objective in mind and remained in place for a significant length of time. Farming is a directional business, the individual *chaînes opératoires* within it such as harvesting and even gleaning are directional, and so are the personal intimacies within these wider frames. We are getting away from Shirley Strum's baboons.

This is what I mean by social intensification (Ch. 2, p. 31). It is a state which sees more face-to-face social interactions and of a more dedicated (less casual) kind, in an understanding of a wider, yet more structured, social landscape. Unlike competitive feasting, in which power was established institutionally (Hayden 1990), or the celebrations of Bender (1975) with her strident social structures, for me, farming arises softly through individual and community actions in the domains of agency. Of course, this only pushes the origins back: we still need to explore the meaning of social intensification. But this is social psychology, like so much in archaeology, and beyond the scope of this book.

In a structuralist analysis, we could see in farming communities the development of strong oppositions between nature or the wild and culture or the settlement. We could see, too, the development within the settlements of oppositions which were quite explicit and the development in the wild of an identity between these oppositions, as Morris (1995: 308) does. Social qualities can be enhanced through specific kinds of land or biology, in the way the solitude and stoicism of Cistercian monks were enhanced through the settlement of remote and marginal lands in Medieval Europe. People understood the different species, the vegetations, the land-forms and the geomorphological processes as part of their round of exploitation, sometimes as entities in themselves, as Ingold (1996b) recounts in his discussion of the Cree, often with individual symbolic meaning, as Hodder (1990) explores in his analysis of Çatal Hüyük, and in many cases as a whole system of signification as Morris (1995) describes for Malawi. People actively incorporated

certain species of plant and animal, the vegetation and animal groupings, land-forms and geomorphological processes into their social structure and, ultimately, their ideology. A tightening up of time and place which farming entailed led to more flexibility in this social manipulation of symbols and a new meaning to the concept of environment. Specific entities, especially the new plant and animal domesticates, were removed, conceptually, from the symbolic system and manipulated in the enhancement of new social meaning. A system was established which allowed each exemplar – species, vegetation, geomorphological process – to be only loosely attached to its original materiality and to acquire a signification of its own. New symbolic environments could be established through the plant and animal species that were being domesticated, the places where this happened, and the events, like receding snow-lines and more frequent flooding, which occurred concurrently, even though the old materialities were still there. It was a bit like Post-modernism today.

Perhaps this is what Ian Hodder means when he says that ‘goods, labour and land have to be evaluated within a symbolic system before they can be used as the basis for social domination’ (1990: 15). There must be some sort of precursor establishment of the significance of the materials being used. There are useful parallels from colour theory. ‘In the Middle Ages pigments have meaning and value in themselves. From the Renaissance onwards colour becomes a system This allows it to become only loosely attached to objects and to acquire a grammar of its own’ (van Leeuwen 2002). Indeed colour is an important landscape referent and may well have had a similar history of significance at other stages in the deeper past, as in the beginnings of agriculture. And there are useful analogies from the early development of linear scripts: ‘The crucial stage was reached when pictograms ceased to be representations of objects intended to signify those objects, and became symbols representing the sounds of speech’ (Dow 1977: 589), although here it is the signs themselves that change as well, not just their meaning.

PLANT DOMESTICATION

It is sensible to decouple plants and animals in farming origins since that is how they arose. First I explore plant domestication.

Social expression in plants

Plants can be difficult because they do not seem to express sociality or emotions. Yet plants respond to stimuli by emitting chemicals above and below the ground, and a few by rapid and visible responses of their leaves and stems. Plants respond to climatic change by altering their distributions, extending or contracting their ranges accordingly. At the edges of their

ranges, they can be in greater competition with each other than those more firmly established or they can be more freely involved, spreading or dying as lone individuals. Responses to the seasons can be independent, too, but are more likely enhanced by mutual pheromone emissions which speed up or retard phenological responses. The liberation of pollen can be quite visual (Figure 1.6), often over a short period, and synchronized among individual plants precisely according to weather and the time of day.

Here is C. E. Hubbard in a particularly suggestive passage on the emission of pollen by the false oat grass, *Arrhenatherum elatius* (L.) Beauv.:

just before flowering... the previously erect branches and branchlets of the panicle are forced apart and away from the main axis and each other by small cushions of spongy tissue in their axils becoming swollen with sap ... When the florets are completely developed and climatic conditions are favourable, the lower portion of each lodicule becomes swollen with sap and exerts great pressure at the base of the lemma and palea forcing them apart ... The filaments of the stamens next elongate rapidly causing the three anthers to be pushed over the sides and hang from the floret ... The tip of each anther lobe gradually diverges and splits along a line ... disclosing the minute yellow grains of pollen. At each movement of the panicle the pollen is shaken out ... After pollination ... the lodicules shrivel and the floret gradually closes.

(Hubbard 1968: 25)

The parallels with animal sex and opportunities for social expression in these would not have escaped the early agriculturalists.

It is the lack of cognition which is the main barrier, with the relationship always seeming to be one-sided: construction of plants as sentient beings comes from people. That plants express themselves to other plants, animals or humans, as a means of gaining in importance, is arguable, yet their power in being able to manipulate humans is not. We can grow plants, we can cut them down and burn them where they grow, we can grow them in particular ways, and we can selectively breed them. But mostly we can do these things to plants as a means of expressing ourselves to others, as a means of accruing satisfaction, of enhancing our condition, and establishing power.

The nature of origins

Arable farming – plant domestication – began when seeds from plants of particular traits or strains were selectively collected, kept for a while, and then sown, all with the specific purpose of reproducing those properties in the next generation. This was quite different from anything that had gone before – not a wider diversification but a quantum difference from all kinds

of hunter-gatherer economics. It is possible that certain characteristics, such as non-brittle rachis, smooth testa (seed coat) or larger seeds, came about through *natural* selection as a result of an intensification of seed production (of lentils, peas or cereals), so we cannot use new morphometric characteristics as necessarily indicative of farming. Yet this natural selection can have been observed and utilized by people and so be part of the process, how it came to be identified and used in the first place.

There was a variety of hunter-gatherer strategies in the Jordan Valley and around the northern reaches of the Euphrates River where this occurred, some involving quite sedentary communities in villages, others more mobile groups (Figure 10.1). Wild plants, including cereals, were harvested using sickles and their seeds ground to flour using querns. There may even have been some planting of the seeds of wild plants and harvesting of the produce for food. But it was the selection and planting of particular strains in order to modify the crops, entailing a knowledge of the relationship between the properties of seeds and other plant properties across two or more generations, that was the real step forward. It involved greater investment of knowledge and more degree of crop care. It meant looking to the future of management over a longer period and in more detail than in any kind of hunter-gatherer strategy. Ultimately it allowed the development of power in certain people in the communities who held that knowledge in that it was specialized and could be used, like climate (Ch. 5, p. 115), in a predictive way, although in the first beginnings I am concerned with its accrual and manipulation at the level of all individuals.

The social significance of origins

The small-scale origins of plant domestication and farming, with some species domesticated only once as indicated by genetics, suggests influences in an individual community or even farm. These were perhaps in the novelty of the produce, perhaps in the ways the process brought about new arenas for social engagement, but almost certainly as a means of enhancing personal and community condition. Genetic studies (e.g. of chromosome polymorphism) have shown that lentil in south-west Asia was brought into cultivation only once or very few times, and work on pea and barley points to the same conclusion (Zohary 1996: 147). There were single events of domestication for these three species. Additionally, several species of lentil, pea and chickpea, closely related to those which have become domesticated and which are suitable for cultivation, were not brought into cultivation at all, and the same applies to the wheats. 'This pattern is hard to explain by a model of multiple introductions into cultivation' (Zohary 1996: 151).

The western arm of the Fertile Crescent (the Levantine Corridor) – from Sinai, through the Jordan Valley, north to the Euphrates – was the heartland of these beginnings (Figure 10.1). Slightly later, regional variations may have

been related to wider social groupings than the farmstead or local community. In the southern part of the Fertile Crescent, in the early eighth millennium bc, emmer wheat, *Triticum turgidum* subspecies *dicoccum* Schülb., and later barley, *Hordeum vulgare*, were important in a cultural context of PPNB (Pre-Pottery Neolithic B) (Zohary 1996: 143). Emmer is recorded from Tell Aswad near Damascus at 7800 bc, barley at Gilgal and Netiv Hagdud in the Jordan Valley at 8000–7800 bc, and einkorn at Jericho, 7300–6500 bc, while pulses (lentils, *Lens culinaris*, and peas, *Pisum sativum*) were also cultivated in the eighth millennium (Garrard *et al.* 1996: 207). In the north, by contrast, einkorn and barley were important, with some emmer and the occurrence of domesticated rye, *Secale cereale* L., at Abu Hureyra around 8500 bc (Moore *et al.* 2000). Einkorn, *Triticum m. monococcum* L., is dated at Çayönü at around 7500–6700 bc, close to the point-source origin near the Karacadağ mountains in southern Turkey identified by DNA fingerprinting for this domesticated form (Figure 10.1, no. 23) (Heun *et al.* 1997).

Neolithic people knew nothing of DNA but they did understand its manifestations in stable polymorphisms and the origins of physiological features like ripening time, phenotypic variation and the potential of new mutations. Different kinds of human action have a basis in molecular biology. Thus in taking these plants into domestication, people may have been influenced by the persistence of distinctive local varieties – a function of self-pollination (or cleistogamy) (Zohary 1996: 145), except in rye (Figure 10.2) – for these allowed social identification with the place. Such varieties could be established rapidly and were stable, even in close juxtaposition to others; there was no need for any form of management or geographical separation. This had potential for the development of social identities, such as of different farms, which in turn would have intensified selection. Perhaps the isolation of the exogamous rye at Abu Hureyra from the more intensively worked cleistogamous species in the heartlands of domestication in the Jordan Valley is itself one such expression.

The social significance of plant agriculture

A hindrance to understanding plant agriculture is that some processes are seen as subordinate to the production of grain: they go on ‘in parallel’ to it (Hillman 1981), or they lead to ‘by-products’ (G. Jones 1990) or to ‘surpluses’ (Bender 1975). However, this is a mistake: in prioritizing one part of the process, the role of these other processes and products in the creation of socialities is lost. Such terminology also implies a progression way of thinking, as if ‘by-products’, like gleanings, straw, chaff and the stores that go with these, were created in a secondary wave of technology.

The landscape of early cereal farming allowed plenty of opportunities for social expression and differentiation in its temporal and spatial diversity, ranging from the microtopographical to the regional. There were gentle



Figure 10.2 Domesticated rye, *Secale* sp. Note the differences with barley (Figure 10.3) in the shorter awns and the extruded anthers. Left: at an early stage of growth. Right: in flower.

slopes, rocky areas each with variable wild cereal growth, some trees, and associations of spiny *Ephedra ciliata* thickets allowing protection for barley in land grazed intensively by gazelle and onager (Hillman 1996: 188). There was wild einkorn at the oak-steppe fringe and barley, more tolerant of drier conditions, in arid-zone terebinth woodland steppe beyond the oak zone. At least some of the habitats of the wild cereals were areas of vegetational transition and diversity, locally patchy, regionally ecotones. During the later centuries of the Younger Dryas (around 8500 bc), fire, increasing seasonality and climatic unpredictability in the abundance of steppe food plants (Hillman 1996: 182) added to this diversity. The cereals were particularly visual in their various stages of growth and ripening, including the contrasts between species which did not pollinate, like barley (Figure 10.3), and those like rye which did (Figure 10.2)

Different stages in crop production gave rise to different possibilities in social lives (Figure 10.4). Selection of particular features of the crops was about extending and intensifying the *chaîne opératoire* of processing. Features which we might see as hindering the processing would in the social domain be beneficial. Hulled varieties of cereals, for example, require parching and an additional stage of grinding to remove the husks and further winnowing to clean the grain which naked varieties do not (Hillman 1981:



Figure 10.3 Domesticated barley, *Hordeum* sp., showing its visuality in different stages of growth. Upper: general view of the crop at ripening. Middle: several ears at an early stage of growth; note the absence of anthers. Lower: ripened ear; note the sheen on the husks.

fig. 7), while incorporation of husks into the flour might improve its visuality and recall earlier parts of the sequence. Some stages are large-scale and in the public domain, others, like 'dehusking, cleaning and preparation for eating belong to the category of daily chores' (Hillman 1981; Meurers-Balke and Lüning 1999: 241). Some stages can be seen as gender separators, like reaping, threshing and grinding. Others, like sowing and caring, are more subtle nuancers of expression.

Timing lent additional social referencing. Judgements were likely made in relation to seasonal phenomena (phenology), like migratory birds or gazelle and red deer which were being hunted at this time, and the opening of leaves and flowers. Late sowing led to a reduction in yield, even though the seeds still ripened, owing to a shorter time of growth. Storage of dried grain which has been just slightly moistened allowed certain winter varieties to germinate without overwintering in the soil – a process called vernalization (Gill and Vear 1969: 248).

One of the ways in which crop domestication could have been accelerated in its early beginnings was through its association with the material equipment of processing, especially that which was fixed and visible. Where there were links with social expression, enhancement was strengthened. Thus stone pavements outside houses, as occurred at Munhata and Nahal Oren in the PPNB (Pre-Pottery Neolithic B) in the upper Jordan Valley (Figure 10.1, no. 6) (Bender 1975: 139), may have been used for threshing. This was probably done by individuals (rather than, as often later, by animal-drawn sledges), and likely by men; as it was a public activity (Figure 10.4) it was a show of prowess, as much a means of separating the genders as of separating the grain.

In contrast, stone equipment for grinding of seeds, common in hunter-gatherer and early farming settlements of the Jordan Valley (Figure 10.1), was likely held in the female domain (Figure 10.4), even if there was a link with men in the initial quarrying of the stone and its transport. It consisted of stone mortars and pestles, often heavy and not easily portable, and so would have provided an anchor and identity in the settlements. This was made more so by their distinctiveness of style, as with a perforated mortar in the PPNA (Pre-Pottery Neolithic A) at Nahal Oren (Bender 1975: 126) and a quern with a double hollow and one open end at Mureybet in PPNB levels. Distinctive raw materials played a similar role, as with limestone mortars and basalt pestles in an area of close-set paving at El Wad (Mugharet-el-Wad, Mount Carmel), in Natufian levels (*ibid.*: 125), and basalt mortars and pestles at Eynan (Ain Mallaha). At Beidha there were stone bowls set in rock. Grinding was important visually with the dramatic transformation of state and texture from grain to flour. None of this was especially novel in domestication but it provided fixed places and a diversity of meanings which had the potential for developing social nuancing. One of the reasons for selecting cereals as a key crop may have been the additional anchoring it gave to

AGE/GENDER	INDIVIDUAL/ COMMUNAL	ARENA	ACTIVITY
Women	Communal/ Group	Fields/Public	Sowing
Women and children	Communal/ Dispersed	Fields/Public	Tending, weeding, bird and rodent control
Women and men	Very communal/ Group	Fields/Public	Harvesting
Women	Communal/ Very dispersed	Fields/Public	Gleaning
Men	Individual/ Intense	Settlement/ Public	Threshing
Women	Individual	House/Private	Milling

Figure 10.4 Social states with their responses and resolution through crop processing.

In the 'Individual/Communal' column, 'Group' refers to activities in which a number of individuals are working together, 'Dispersed' in which they are working individually although still usually as a group, and 'Intense' as individuals but in a focused public arena.

women (if they indeed did the plant-food preparation), for the seeds of grasses required considerable processing in order to dehusk them in contrast to the seeds of chenopods which did not (Hillman 1996: 179).

In sowing, spacing needed subtle attention: too close, and the shoots overcrowded, the grain ripened before it was fully grown; too far apart and the shoots became bushy, tillering occurred with the formation of dense rosettes, and nutrients destined for the grain were taken up by the vegetation. Conditions can be varied to suit requirements: closer spacing gives greater yields of grain per area, but then as the seed rate is increased there is a reduction in establishment, 'in the number of tillers per plant, in the number of these tillers which produce an ear, and in the size of ears' (Gill and Vear 1969: 249). Variability can be socially beneficial: wide spacing results in the ears of younger tillers being green when those of the older ones are ripe (*ibid.*: 247, 249), and this can stretch the period for the development of social relationships through the harvest. This could also have been achieved geographically, as in the Levant where the undulating terrain allowed the spacing out of ripening and harvest times in different cereals and within single species (Bender 1975: 53), sometimes over several weeks (Gill and

Vear 1980: 44). Lodging, where the culm was bent down by wind and the grains fail to ripen (ibid.: 57), could have been deliberately encouraged to create an air of ruin. A similar effect can be achieved by too much manuring (especially by nitrogen), which increases the weight of the ear and decreases the strength of the culm (ibid.: 58). This can occur with 'tathing' where animals are let onto the land after the harvest. Potential conflict between tathing and cereal production could have allowed the resolution of social tensions through subtle nuancing of practice.

At ripening, the rachis of the inflorescence becomes brittle and the seeds or whole ears are shed (Figure 10.5). This is a feature which is selected against automatically in reaping. Cultivated varieties of cereals like emmer, *Triticum dicoccum* Schüllb., and spelt, *Triticum spelta* L., have a less fragile rachis than the wild forms, breaking up only with threshing. The genetic architecture is quite simple, dependent on a single recessive gene (Zohary 1996: 154), so the change could have taken place rapidly, been easy to spot, and drawn into individual or group wisdom. But the character of brittle rachis can also be mitigated by reaping slightly before the brittle state is reached, and in this there can be even finer nuancing in social openings. Again timing is crucial. And while it is in the interests of production to ensure a balance between ripening and rachis firmness, some shattering and distribution of grain and ears to the ground may in fact be beneficial in that it attracts animals and birds which could manure the ground, clean up the straw, and themselves provide a source of food. This may be one of the ways goats and other domestic animals were first drawn into the system in the wild state before being encouraged in these ways and ultimately tamed: tathing may have an ancient and natural origin. Seeds and ears of corn can also attract human gleaners, as they did Ruth among the sheaves in the barley fields of Boaz, whom she eventually married, and later those of wheat. Indeed, suitable conditions were actively created, with the magnanimous Boaz commanding his young men: 'And let fall also some of the handfuls of purpose for her, and leave them, that she may glean them' (Ruth, 2: 16).

ANIMAL DOMESTICATION

The nature of animal domestication

An enduring – and endearing – trait of people is that they do not change much unless they have to. Animal domestication was embedded in a socially expressive relationship with humans which had been in place for as long as there had been humans (Ch. 1, p. 10). If we can see in the sun an expressiveness towards people, as Nietzsche did (p. 18), we should have no problem in a similar relationship with animals. I do not believe that animal domestication arose through narrow and particular processes like the taking



Figure 10.5 Wild grasses in various stages of ripening to show the brittle rachis state. Upper left: wall barley, *Hordeum murinum* L., Llandaff Fields, Cardiff. Upper right: wall barley with one flower head shattered into its constituent spikelets. Lower: hairy wheat, *Dasypyrum villosum* (L.) Borbas, in arable land, near Torricella Peligna, Abruzzo, kindly identified by Marina Ciaraldi.

in of young animals, the raising of animals in captivity, or as pets, nor that it was brought about in a particular 'constellation of circumstances' (Uerpmann 1996: 132). O'Connor (1997: 154) has suggested that the decrease in size of sheep and goats in domestication is due to the fact that it was the weaker ones that sought out the company of people in the proto-Neolithic villages, but I do not believe this either. All of these may have happened. There may have been a significant trigger, like the ending of a family feud or the rapid warming of climate at the end of the Younger Dryas and, with these, significant steps. Caprine domestication as defined by genetic change was, like cereal and pulse agriculture (p. 229 above), a point-source event (Uerpmann 1996: 132): 'it appears that herbivore (sheep and goat) domestication occurred spontaneously only once (in southwest Asia)'. But these happened in a wider medium of mutual understanding and expression. Likewise with processualist theories, such as the idea that control over animals arose from their crop-robbing activities or as a means of supplementing diet; these satisfy our need for order but are unconvincing as mechanisms of domestication.

At the same time, these point-source events and particular engagements with animals did lead to a wider attainment of animal husbandry over several millennia. Early on there was herding, perhaps developed as a medium of expression as a novelty, with distributions and abundances which were unusual in the wild. Later there was more creative management, with selective culling giving new age and gender style to the flocks; wealth and prestige were in numbers of animals, as suggested in the evidence of bone measurements for a decrease in body size (Legge 1996: 240; Meadow 1989: 85). Later still there was breeding for specific economic and further stylistic traits. The one-sided view in which animals were captured, removed from their natural environment, tamed and bred in a controlled way was an advanced stage (O'Connor 1997: 149). Institutionalized cruelty, as in gladiatorial shows, came later again. We should not be trapped by the word 'domestication' (*ibid.*: 151); each relationship was variously constituted and effective, often in quite local circumstances.

The idea that dogs were domesticated as an exotic product for use in competitive feasting (Hayden 1990: 41) does not appeal. Wolves were likely companions of humans for hundreds of thousands of years, companions in the hunt and around the home. They likely kept their distance, but there was still a mutual companionability about the relationship. Domestication was probably a gradual process, happening in many places and in different continents, even if recent (and still controversial) work suggests a narrow origin in eastern Asia.

Wild sheep and goats were hunted in the Upper Palaeolithic and Mesolithic (and even into the earlier Neolithic), the low numbers suggesting that it was single animals that were taken, rather than drive-hunting of herds as took place for gazelle at Abu Hureyra (Moore *et al.* 2000: 435). People

were familiar with the behaviour of the caprines: they understood that there were at least two species, that they lived in different habitats, and that they moved around throughout the year but were not as migratory as gazelle. They were more common in better-watered and mountainous regions than in the arid regions of the upper Euphrates (*ibid.*: 461).

Goats, specifically the wild bezoar *Capra aegagrus*, were first domesticated (or at least strongly managed by herding and selective culling of young males) several hundred years after cereal farming had started in the Jordan Valley and several hundred miles away from those origins (Garrard *et al.* 1996: 208). This was in the eastern arm of the Fertile Crescent, at Ganj Dareh in Iran (Figure 10.1, no. 20). In the Levant, the best site is Jericho where a 'dramatic swing from gazelle to goat in the middle PPNB (7200–6500 bc)' (*ibid.*) indicates herd management. A sheer increase in the number of caprines took place between PPNA (5 per cent) and PPNB (55 per cent) at around 7000 bc at Jericho (Legge 1996: 253). At Tell Aswad in the Damascus Basin, from the end of PPNA through the earlier part of PPNB (7850–6850 bc), goats were more common than sheep, the animals were small-bodied, with a bias towards smaller females, and a significant peak of killing between one and two years. There was 'a high incidence of foot pathology in goats from the same period at 'Ain Ghazal near Amman' (Garrard *et al.* 1996: 208).

There were two separate groups of wild sheep or mouflon, *Ovis orientalis*, in the Fertile Crescent, one in the southernmost part of the Levant and another from northern Syria around to Iraq, Turkey and Iran, with bones from both areas occurring in late Palaeolithic and aceramic Neolithic sites (Garrard *et al.* 1996: 209). *Ovis orientalis* 'was probably the ancestor of all domestic sheep' (Clutton-Brock 1987: 53). Earliest evidence for management and domestication is in the middle of the seventh millennium bc, with sites in south-east Turkey and the northern and southern extremities of the Levant (*ibid.*). There are dramatic increases, both in relation to goats and absolutely, in PPNB levels in the later seventh millennium.

At Tell Abu Hureyra on a low terrace of the Euphrates River in Syria (Figure 10.1, no. 11), there was a change from gazelle hunting to goat and sheep herding (Moore *et al.* 2000: 459–61; Legge 1996). In Abu Hureyra 1, from 9200 to 8000 bc, there were few caprines (6 per cent of large mammals). Those which could be identified were sheep, and all were wild, with the hunting of fox, hare, onager and gazelle being significant. In Abu Hureyra 2 (earliest dates are around 6700 bc), caprines increased, with goats the main species at first but equalled by sheep in the later part of AH-2A; both species were domesticated from the start. At the same time, gazelle hunting continued as an important part of the diet (Figure 10.6).

It is interesting that just a few species – especially of social ungulates – became domesticated, with red deer, onager, gazelle, ibex and (in the earliest centuries) cattle being ignored. Not only is this suggestive of point-source domestication but it hints at a mechanism in ecological gradualism (Zeuner

1963; O'Connor 1997), with only those animals which make a positive expression of sociality towards humans being domesticated. If animals had been a passive partner, it is likely many more species would have been domesticated (O'Connor 1997). At the same time, species with territories – lands fought over and defended from other groups – make poor domesticates (ibid.: 154; Uerpmann 1996), perhaps because they are too closely anchored to the land. This is one of the reasons why gazelles in the Levant failed to become domestic in spite of being intensively exploited immediately prior to the domestication of caprines (ibid.). Sheep and goats, in contrast, do not defend territories. They undertake shorter migrations than some other herbivores, have a number of ranges which they occupy successively at certain times of the year (Geist 1971), and the males fight on very small areas – a few square metres – of flatter ground on a mountain crest (Uerpmann 1996: 235). Another factor is the similarities and differences of sheep and goats which, in being used in human social manipulations, may have restricted the number of domesticates to just these two (p. 243 below).

The social significance of animal domestication

As with crops, the domestication of animals entailed the articulation and reproduction of social lives in the enjoyment of intensive *chaînes opératoires*. Although in hunter-gatherers there is significant establishment and maintenance of land and ranges, their learning anew with each generation, lengthy preparation for the hunt, prolonged tracking, delayed butchery, distribution of body parts, drying and storage, this is quite un-intensive in comparison to the constant herding and care, the seasonal sorting and selective culling, and the year-in, year-out selective breeding and care of the young entailed in animal husbandry. Under domestication, with an increased investment in land, in the management and working of ranges and especially in the interdependency of humans and animals, each animal had a more intimate history. A dead animal that had been hunted may have been known to the hunters from its birth, perhaps named, and its killing an event augured long in advance. But its life had not been so closely articulated with those of individual humans as had that of a herded or domesticated animal. A domesticated animal held an intimacy of daily routine, the particularities of ontogeny, and the trials of a longer history of selective breeding and management. It was a part of the lives of individuals, of communities and of peoples. To kill it and eat it was an ambivalence which had to be understood and resolved. It was like destroying a diary, or other kind of record of personal or group history. But at the same time, the death could be seen as enhancing those events and socialities which the animal had helped to mediate in life, and so, as with the knighting of a joint of beef, strengthen you, your family and the tribe.

Frank Hole (1996) sees domestication of sheep and goats in the eastern arm of the Fertile Crescent as having arisen in transhumance, driven by the climatic changes of the Younger Dryas (9000–8300 bc). This is attractive, but we can also see in it a resolution of human social problems. Moving long distances from the hilly flanks of the Zagros region (Figure 10.1) into the lowlands, as climatic drying reduced the productivity of the hills and cooling lowered the snow-line (ibid: 264), people could explore new ways of relating. Herding of sheep and goats entailed the need for cooperation with adjacent families, as animals were moved around and people and dogs were fed away from the familiarity of a permanent residence; annual gatherings had to be forgone in the interests of the care of the animals; and relationships between neighbouring hunter-gatherers hardened in the new ideology of property and saving (Hesse 1984: 244). In the lowlands, the hunter-gatherers established villages such as Qermez Dere and Hallan Çemi on the upper Mesopotamian plain in the Tigris Valley and led a semi-sedentary life on a diet of onager and caprines together with more plant foods than previously, and with summer moves to upland sites, like Karim Shahir, Tepe Asiab and Ganj Dareh (Hole 1996: 271). Increased summer warmth and wetter conditions at the end of the Younger Dryas, c. 8300 bc, reducing the amount of lowland grazing and causing an expansion of woodland, meant a more permanent settlement of the higher lands (Hole 1996: 271). The ecotone between these upland pastures and the oak woodland, which was spreading upwards with the receding snow-line, provided a habitat for both sheep and goats, although sheep were probably more generally present in the higher pastures. Movement of animals was now on the same sort of scale as Swiss Alpine transhumance and more in keeping with current models of reindeer movements in the Upper Palaeolithic of Europe in the Younger Dryas (Weinstock 2002) rather than the lengthy transhumance of Mediaeval urban societies (Ch. 8, p. 186) or older models for the Late-Glacial which saw animals moving through the breadth of Europe. Thus the former movements between the Euphrates and Tigris valleys and the Zagros Mountains now found a microcosm in links between mountain valleys and lower piedmont, triggering 'the move to caprine domestication' (Hole 1996: 274). At first there was intensive use of caprines, but without selection for morphometric characters, with the protection of flocks from predators, the culling of non-productive animals, the enhancement of pasturage and the provision of supplementary forage (ibid.: 276). Such a site may have been Tepe Asiab in a high valley near Kermanshah (7800–6750 bc) where significant numbers of goats and, less commonly, sheep occur at 36 per cent of the fauna (Legge 1996). The animals were large and mainly adult, without evidence for size reduction or juvenile slaughter. The Tepe Asiab caprines, sheep and goats, are considered to be wild, yet the high numbers in comparison to other sites of this age are noteworthy.

It was only when the small-scale transhumant relationship with topography was established in the early Holocene that morphometric changes arose. Thus the early Holocene high-altitude site of Tepe Ganj Dareh in the Kermanshah Valley (Figure 10.1, no. 20) may be one of the earliest to see cereal agriculture and the movement of caprines by herding into upland pastures at the same time (Hole 1996: 276). This was at first, perhaps as early as the ninth millennium bc, a goat-butchery site of hunters as indicated by the slaughter profile of the bones (Hesse 1984), although the animals are as small as those from the later domesticated assemblages (Legge 1996: 251). Later, perhaps in the early half of the seventh millennium bc, it became a settlement of herders, with the separation of the sexes of the goats, together with tooth-eruption and bone-fusion data, allowing the suggestion that there was preferential culling of juvenile males at an effective size for eating while most females were kept for breeding (Hesse 1984; Legge 1996). Overall, too, caprines were 90 per cent of the fauna, with goats nine times more abundant than sheep, and the animals were significantly smaller than those from Tepe Asiab. Here was purposeful and controlled culling to maximize breeding potential and meat output. On the other hand the sheep were large, with no evidence for cultural control, and probably wild.

HUMAN RELATIONSHIPS WITH SHEEP AND GOATS

Earliest beginnings of relationships between caprines and humans were in mutual expressiveness on their ranges in the hills and mountains. This is different from the loose herding or the management of their lands which came later. It was an understanding of each other's ways in oppositions like fear and curiosity. The response of wild sheep to sightings of people depended on the intensity of hunting, but curiosity, vaguer draws, and the practicalities of mixed-species aggregations in defence were always there. Herding was the development of a mutual relationship where herds, which were followed for weeks on end as a part of the hunt, gained companionship and an additional medium of expression as well as the more practical benefits of protection from more intensive predators. The fact that people hunted sheep made no difference to a general association, and the opposite views of Uerpmann (1996: 231) are hard to believe.

Wild mountain sheep in North America, studied by Valerius Geist (1971), are pointers to the complex behaviour in the early Neolithic flocks. The sheep live in specific ranges for a part of the year and move to others at other parts of the year. Home ranges are transmitted by tradition from older to younger generations, their boundaries held behaviourally but also in relation to features like ravines. Some ranges are large, in summer, and others small when there is much snow on the ground, so there is also a relation to

the weather. Males and females behave differently, often in opposition, and at different times of the year: rams follow the largest-horned male during major movements, while females stick to one older lamb-leading ewe. Diversity in the different ages, the segregation of yearlings and lambs into bands, and the mimicking of female behaviour by young males adds stylistic texture to the flock. Distances vary, with large ones between seasonal home ranges and minor ones within them. The classic winter/summer movement is still there as are the female/male and split/aggregation oppositions, but there is much finer texture. There are useful insights from Corsica where close control over the flocks of sheep and goats by the shepherds is unnecessary because of the strength of the inherited home-range behaviour, known as *imbestita*. 'The flocks may even be abandoned during late summer when milk production ceases without fear of their straying from the upland pastures' (Lewthwaite 1984: 30).

People would have known all this and learned the ranges of the animals and their stability. They might also have witnessed the illogical behaviour of home-range patterning in rams contrary to efficiency and logic, something which may be inherited from older rams (Geist 1971: 64), but which may relate to the behaviour of humans as well (Ch. 1, p. 11). The people who lived in the mountains permanently or who moved into them for a part of the year also used specific areas for their work – steep-sided valleys where the terrain was difficult, narrow valley floors subject to flash-floods, and extensive or narrow plateaus which were more suitable for moving around. Some of the sites in the Zagros Mountains like Karim Shahir are in stunning locations, situated on small plateaus overlooking and extending right up to steeply eroded valleys (Braidwood *et al.* 1983). Jarmo is like a citadel.

In the early centuries of farming, hunting continued, and the contrasts of the two strategies gave scope for expression in both the practical and ideological domains. The two strategies were used in socio-political structuring as much in early agricultural communities as they are today, for example in archaeology and in the countryside debate in the UK. Indeed they reinforced each other, and this was not only in their stark opposites but in the difficulties people had of distinguishing between them, especially as only a few families were practising the new way (Uerpmann 1996; Zohary 1996). Ideological resistance to farming (Hesse 1984) could have been countered not so much through its economic benefits but through the power that knowledge of the subtle differences between wild and domestic animals gave. People likely judged the timing of the culls through an assessment of tooth eruption and wear in their sheep and goats just as archaeologists use the same features in their work today in assessing age; even the significance of the teeth and jaws on the ground would not have gone unnoticed. At least a few people, too, would have been familiar with the timing of the appearances and disappearances of gazelle and onager. At Abu Hureyra (Figure 10.1, no. 11), continued hunting, particularly of gazelle, alongside the management of caprines was

seen in the crown height of the teeth, with gazelle displaying two groupings and seasonal slaughter, the sheep and goats a continuum and year-round slaughter (Moore *et al.* 2000: 462). Again, certain members of the community could have benefited from being able to predict these seasonal movements as a guide to the timing of management practices within their domestic flocks. In these ways, the two strategies with their various mediatory potentials were maintained for centuries.

The two domesticated species, sheep and goat, played a similar oppositional role through which people and communities could play out their lives. Although probably kept in the same general area when feeding, it is likely that sheep and goats were managed separately in their culling and breeding, in view of the different timing of their first appearance, their different rates of increase and decrease, and their different habitats and behaviours. Having the two species together probably intensified this through a socially competitive role in humans and between the two species themselves. It is interesting in this respect that two species were involved in these early domestications. Perhaps if there had been sheep or goats alone, things would not have gone so quickly. Perhaps it was in these oppositions that their domestication arose.

At Abu Hureyra, just the increase in abundance at the start of AH-2A is a hint of management, especially as other non-migratory species declined at this time (Figure 10.6). During AH-2A, the decline in goats and increase in sheep related to finer interplays within the settlement. We could, for example, examine this in terms of human gender or fitness, differences in relation to the different habitats of the two species, how they were looked after, and the continued role of hunting. Distance from the settlement was important, dogs might have been more useful in some situations than others, and children can have had a role. There also developed a schema of symbolism: 'And before him shall be gathered all nations: and he shall separate them one from another, as a shepherd divideth his sheep from the goats: and he shall set the sheep on his right hand, but the goats on the left' (St Matthew, 26: 32, 33).

Meat and bones may have helped in the creation of difference. It was not difficult to tell the two species apart as live animals, but as bones, separation was a specialist business. The distal end of the humerus, especially the form of the epicondyles, is particularly diagnostic (Moore *et al.* 2000: 464). Divination using specific bones could have been important, endowing one species rather than another with particular meanings of auspiciousness, and in the hands of a few people such uses could have been powerful. The fact that changes in the rising abundance of sheep were taking place in other sites in the area could be taken as a sign that such expressions were being used in inter-village rivalry as well. Changes in bone sizes can be difficult to interpret because growth of long bones continues after fusion of the epiphyses, so that larger bones may be older than smaller bones, *not* from animals of different fitness conditions, breeds or species. Again, such subtleties can have been

PHASE	GAZELLE	OTHER HUNTED FAUNA	CAPRINES	DOMESTICATED CROPS	HOUSE MATERIALS
2B/2C	Gazelle hunting seriously reduced		Mostly domestic sheep	Agriculture of various cereals and pulses	Timber and mud-brick houses
6300 bc			Domestic sheep and goat in equal proportions		
2A	Gazelle hunting		Domestic goat, a few domestic sheep		
7000/8000 bc					
1	Gazelle hunting	Decreasing ↑ Hare, Fox, Onager	All wild sheep, no goat	Rye cultivation	Timber and reed houses
9500 bc					

Figure 10.6 Abu Hureyra, summary of some environmental events. (Based on Moore *et al.* 2000.)

understood by some people in the Neolithic in relation to herd management, and again such knowledge could have ordained those people with the power to manage the flocks as well as their own sociality in village life.

The use of sheep and goats in social manipulation continued into phase AH-2B (Figure 10.6). At the same time as a significant decline in gazelle there was an increase in caprines, and with sheep being the more important. There was, however, no change in the size of the sheep, as shown by the distal humerus measurements, nor in age structure. There was management of the goats, with most of the slaughtered young males having unfused distal metacarpals but being at a stage when growth was almost complete, most females having fused metacarpals and thus at a slightly later stage of maturity with relation to this feature (Moore *et al.* 2000: 467). Timing of culling in relation to development was quite subtle, identified in goats in a series from early-fusing to late-fusing bones. For both AH-2A and AH-2B there was an identical decrease, with relatively few young killed between 18 to 28 months (i.e. preponderance of fusion in scapulae, distal humeri, phalanges) and more between 28 and 42 months (i.e. preponderance of non-fusion in metapodia and tibiae), indicating a prime-age, focused cull on animals approaching most efficient meat weights (*ibid.*: 468). We can recall similar subtleties in the harvest timing of cereals in relation to rachis hardening (p. 235).

DIFFERENT LEVELS OF TIME

The early farming community at Abu Hureyra was located on a spur at the edge of the floodplain, 'the closest to the river the inhabitants could live while still being above the flood level' (Moore *et al.* 2000: 112). It was a challenge to the Euphrates, and one which helped to build the identity of the village. But in the early centuries (Figure 10.6, phase 1), topography was hardly enhanced by adding height: the construction of houses of reeds and timber saw to that, with less than one metre of sediment accumulating in a millennium. Furthermore, the dense vegetation of the valley bottom would have obscured the view (*ibid.*). More likely, siting was enhanced through activity and symbolism, with the reed houses referencing the boundary of cereal cultivation and reed-swamp, the former in metaphor, the latter in fact.

Throughout phase 1, there was familiarization with the planting and reaping of cereals and with the hunting of sheep in their wildernesses, both at a low level of involvement. There may have been anticipation of herding and selective culling of sheep, but for centuries these animals were wild and hunted. Braudel's *histoire événementielle*, where occurrences are recognizable and can be brought into social lives in a directed way, is seen in the cultivation of rye. This, like the point-source origin of Zohary's legumes, of einkorn in southern Anatolia and of Uerpmann's caprines, was a novelty in its uniqueness in the Fertile Crescent and in the visuality of its external

fertilization with the extrusion of anthers and the release of pollen (Figure 10.2). The event scale is seen, too, in the replacement of the houses. These may have been quite substantial and lasted for decades, but that they were replaced is seen in the presence of at least ten occupation levels for AH-1, and when they were replaced it would have been as a major business of technology and ritual. Rebuilding of a house may have taken place at a significant death, as happened in later prehistoric European societies (Brück 2001b), and although there were no deliberate burials, this may be a function of the small size of the excavation. The remains of human bones and teeth in the deposits suggest that burial took place close to or within the settlement, and burials could provide a link with longer time, as Hodder (1990) sees it in the early Neolithic communities of the Near East.

The origins of agriculture take in all the levels of Braudel, the 'event' because some critical steps in the process were rapid and likely triggered by occurrences of a social kind, the 'conjuncture' by definition since this scale is about the medium-term history of economic and social cycles, and the *longue durée* because the change from hunting to farming was from subsistence practices which had been in existence for millions of years to a style which was ultimately to change the world. Important in accommodating the *longue durée* is that there was an understanding of this scale by people at the time and its use in the manipulation of socialities and power. We discussed this in relation to climate where prediction was seen as a means of accruing power by certain individuals (Ch. 5, p. 115), and we discussed it in the context of transhumance where we saw the longer trends of demography as a means whereby people understood their more immediate lives (Ch. 8, p. 198). In this way, short events like individual farming origins can be viewed in the embrace of wider influences like the climate changes towards the end of the Younger Dryas, both scales of time working through the same mechanism of social agency.

The continued practice of hunting in the early centuries of agriculture balanced the novelty of farming. At Abu Hureyra, it was the hunting of gazelle as a major activity and source of protein right through the periods of change in AH-1 and AH-2A (Figure 10.6) that suggests its place as a stabilizing influence in the *longue durée* in the social disruptions of the new, event-scale, agriculture. Gazelle hunting was probably highly ritual, taking place at certain times of the year – at about the birth season – and involving the slaughter of large groups of animals right across the age classes, the so-called 'catastrophic mortality pattern'. Although hunting may have been the province of a particular group in the community – one would suppose young men and some older men, although it is not inconceivable as a young female activity – many people would have been involved and there was intense related activity in the settlement among those not directly participating in the hunt. Large quantities of meat were suddenly available, and the occasion was a time of celebration and feasting. It was quite different

from some other subsistence practices like the cultivation of rye and the collection of wild plants, especially in its viscerality and gore. There were other activities that were seasonal, marking the passing of time cyclically, reaffirming life, but they were not so dramatically involving and communal as the slaughter of the gazelle. Practices of this sort – one thinks of whale hunts in more recent times – play a significant stabilizing role in society, important at times of disruption and change.

At the conjuncture scale, social reproduction could have been a feature of economics and social style, as with competitive feasting (Hayden 1990) or the new technology of house constructions in AH-2 (Figure 10.6). Both referenced the past and contributed to the future, competitive feasting in ensuring the power of individuals and, in this, perhaps a new social order, new building style giving greater visibility and allowing community expression. The slow but steady build-up of the mound reminded people of earlier generations and that they were contributing in their depositions to the next. The evidence of the grain and weeds indicates that domestication of rye and cultivation of the soil were by this time ancient practices, but novelty lay in the management of sheep and goats, albeit in low numbers. The houses, now of mudbrick and plaster roofs, drew their materials from slightly different sources yet still from the floodplain of the Euphrates. The change from essentially organic to mineral building materials (but still with the common use of timber in both periods) likely entailed a new ideology, referencing the physicality of flooding and alluviation instead of the older biology. Whether things were metaphorized in exactly this way is questionable, especially as the build-up of the alluvium which provided the materials for mudbricks was closely linked to the biological world in being seasonal and life-giving. Yet there was surely some sort of articulation with these different materials, and we have seen the contrast between organic and inorganic in other contexts (pottery inclusions, Ch. 3, p. 50; Saxon churches, Ch. 7, p. 167; and Roman law, Ch. 7, p. 163). A study of ancient Egyptian writings might throw up some specific examples in relation to building in mudbrick and reeds.

The lost specialization seen in the decline in gazelle hunting (Figure 10.6, AH-2B) was replaced in a significant increase in the importance of caprines and of sheep specifically. New relations with the environment and a new ideology are indicated, with greater specialization, a narrower resource base, and more partitioning of tasks between the privacy of the home and the public domain. There was an almost complete cessation in the use of wild plant-based energy foods and dependence on a narrower range of domesticates (Moore *et al.* 2000: 422). Yet in other ways, the decline in gazelle hunting seems to have been separate from the management of the sheep and goats, for there were no changes in the size of the animals, in culling practice or herd management that could be detected. Nor was there any change in building technology or style. Even so, the start of AH-2B was a period of high faunal diversity, suggesting that this – like the start of AH-1 where there was a

similar faunal diversity – was a period of experimentation and maybe of disruption. A few human burials with arrowheads embedded in their bones would be useful here.

Privacy, while not absent from the earlier settlement, became more general, more intensified, with later stages of crop processing being tied to the home, especially in the use of grinding and pounding equipment (Figure 10.4). Public activities like slaughter and other management practices of the animals may have taken place nearer to the settlement than the gazelle hunts, and threshing and other activities of crop processing were also in a public domain close to the settlement. Altogether, privacy and the public sphere were now more sharply contrasted, spatially and in their practices. So, too, was the division of labour between various age and gender groupings. Herding provided a no doubt welcome arena for social learning where people could get away from the unfamiliar constraints of the home, an arena which had earlier been held within hunting expeditions. As a probable response to similar demands, there was an increase in the number of specialized activities at other settlements in the region. Umm Dabaghiyah, a small mound of less than a hectare, in the hot Mesopotamian steppe and occupied around 6000 bc, was the site of a specialized onager-hunting camp (Mortensen 1982), and there are other similar sites (Garrard *et al.* 1996: 220). These provided a focus for the young to gather and experience each other away from the parent settlements and a means of accessing the wider world.

People were aware of long spans of time and big areas of land right back into prehistory. Unfortunately, we are hampered in our understanding of this by Gidden's time–space distancing theory in which social relations and systems are seen as having been stretched out only in recent years through advances in transport and communications, to paraphrase Jary and Jary (1995: 689). However, the idea that globalization is new is erroneous. We may know about Asian culture through the media, but this was drawn into western society many centuries ago. At the same time, it does not significantly alter our immediate perspectives and certainly not our practice even if certain parts of Far Eastern culture such as meditation and fashion have been widely incorporated into our lives. When we think about how distinct are the different ethnic groups living in the big towns and cities of the western world, we can wonder about the relevance of time–space distancing as an effective medium at all. We can take on board novelty in some areas of our lives – fashion, religion, ethnicity – but resistance to it in other areas like who we live right next to is like the hardest thing there is. In a way, of course, it is this dialectic which is so enriching, and it takes us right back to our earlier discussions of the relationship between different levels of cognition.

We could make links back through history into prehistory through long-distance connections and knowledge: the troubadours of the Middle Ages (Faulstich 1996), the multi-raciality of the Roman legions in the furthest places of their empire, the wanderings of Neolithic people as they moved

stone around Europe, and the trafficking in shells in the Palaeolithic. In Abu Hureyra and other early farming sites of the Near East we could see obsidian as a practical link of distance in a scheme of social and material exchange. But all this is trim. Time–space distanciation is about how people thought about the wider world and how they created and used it in their relationships with each other. It is created through individual engagements which work their way through society as a medium of the whole in the bigger schemas of the mind. Social agency, so often seen as individual practice alone and concerned with the world of whim, is equally the concern of communities and other interest groups (Dobres 2000), and through these concerns, influences of ideology and the place of women in society, for instance, can be played out over huge distances and long periods of time. Origin myths, often held within religions or ideologies, may help in articulating the long durations, enhanced through their use as social memory (*sensu* McIntosh *et al.* 2000) in the practical domain of social agency. But I suspect that these, too, are not so very important in the end.

It does not matter that a family of farmers at Ganj Dareh in the Zagros Mountains did not know about another family with different cultural laws at Jericho in the Jordan Valley. They were both part of the conceptual construction of big areas and big lengths of time established through the articulations of individuals. In the origins of agriculture, agency was about abstract concepts like wealth and respect in individuals and societies, established *through* the use of concrete materiality or other abstract concepts, like status (Bender 1975). Agency does not replace the physical environment, demography or social structures, it incorporates them. Gosden (1994: 144–60) sees power as the link, and does not speak of social agency as such, but his discussion is very similar to that of Dobres.

CONCLUSIONS

- 1 The origins of farming in south-west Asia are seen as a relationship in social intensification.
- 2 Other theories can be accommodated in this in the way they were used at various scales and in various ways as means of social expression, and in their understanding as theories themselves.
- 3 The overarching schema, however, is one of social agency and the establishment of power, and this enables the different levels of history, for example of the *Annales* school, to be linked through one and the same mechanism.
- 4 These ideas are explored through the hunter-gatherer and early farming site of Abu Hureyra.

CONCLUSIONS

In environmental archaeology there needs to be a theoretical perspective which keys in with mainstream archaeology. Environmental archaeology cannot be considered as archaeology, however flexible our interpretation of the environment may be, because the subject cannot be defined or characterized in a purely academic way. It is as much about the environmental archaeologists themselves and the plants and animals and soils from archaeological sites they study as it is about past human environments and an integration in the wider scheme of things. Even snails may have been introduced into an area or at least encouraged: many have a striking visuality in their shapes and different colour morphs. Many have vernacular names which go back to the Middle Ages or Celtic times and places like Snail Creep Hanging may be so called not for the presence there of edible species but for the general sense of snailiness their surfaces evoke. This tends to be forgotten in theoretical debates. Yet environmental archaeology remains, as it always has for me, the study of past human environments, and that is what this book has been about.

I have suggested that environments be considered as a means by which social relations can be explored, and that this is the primary engagement of people and their environment. But it is only one view. The main gap in such an approach is in the area of social (or psychological) cognition and other branches of sociology which study such relationships (Ch. 2). This is not in the domain of psychology and sociology exclusively for we need to explore not only how people relate to each other but what it means to do this through the environment. Environmental archaeology has a central role here, and this must be acknowledged and understood. We also need to explore the symbolic meaning attached to artefacts so that we can track them through their entire *chaînes opératoires*, that is from manufacture, to use, to discard and use on the land.

These gaps are probably real to a certain extent, and certainly they are not mainstream areas of thought in archaeology. At the same time I am conscious of my own lack of reading into such key issues. Even so, it is not easy to access literature on agency theory in everyday lives, dealing with how

CONCLUSIONS

people relate to each other in terms of respect and small-scale power. It was noticeable in my reading about Greek houses how little there was on social symbolism, how analysis of room use, for example, did not go beyond the practicalities of social engagement. In pottery studies, equally, no symbolic meaning is attached to different ceramic types, so their significance in manufacture, in the homestead or on the fields as sherds is unexplored. Palaeolithic archaeology, with a very few notable exceptions, seems to have ignored agency theory totally. The Iron Age in Britain, as with the work of Fasham (1985) and Hill (1995), is much more advanced, yet there is still an absence of interest in the social referencing of texture away from the settlements on the land. Theorists are more interested in the broad-brush philosophers like Heidegger and Foucault than those who concern themselves with everyday lives; Nietzsche is rarely mentioned in archaeological theory, except by a few people like Chris Gosden (1994).

The other area, of course, which needs investigation in practical terms, is the relevance of texture. Most of my ideas have been quite theoretical, consisting of a loose articulation between high-level sociological theory and archaeological or modern observational data, and with no connecting links in between. This is not to say that we need some Middle Range Theory here, or at any rate not in the Binfordian sense, but we do need modern scientific studies on how (or even if) people use texture and other components of material culture in their social manipulations. I suspect there is a good deal of research into this in various commercial worlds, for example of wallpaper. There are so many questions. Can we really see the stone areas at the bottom of the Olduvai Gorge sequence as early equivalents of pottery? Are potsherds really used in the ways I have suggested, scattered onto land as a medium of social expression? Do people create texture and colour on the land surface by treating the soil in various ways and encouraging specific species of weeds? Do people really do these things in order to create a greater texture of sociality in their lives? And if so, we need to consider what sort of articulations with cognition and intent these activities entail, and what sort of socialities are being reproduced in them, for we cannot really address questions of materiality outside of those of social lives.

As a part of this, studies of modern processes which give rise to texture, like the effects of ploughing on soil micromorphology, experimental work in crop processing, and observations on the activities of beavers, studies which go under the general heading of ethnoarchaeology or experimental archaeology, should be encouraged. Importantly, in regard to my ideas that everything we experience in our data was actively incorporated in ancient lives, I would suggest that 'taphonomy' as a subject or a concept be abolished. We saw this in the biases of climate and weather records (Ch. 5, p. 98) without which the characterization of climate and weather would be incomplete, and we saw it in the context of texts (Ch. 7) whose materiality is just as relevant in social reproduction as is their content. This is important as a theoretical and

CONCLUSIONS

practical perspective because if we do not do this we will continue to ignore the relevance of a substantial part of the evidence. Interestingly, there was significant understanding of this problem in regard to the use of documentary data by some palaeoclimatologists and by some of the people studying ancient and Medieval texts, much more, really, than by most of the people involved with more conventional archaeological materials like flints, pottery sherds and bones on the surfaces of the land.

It is worth repeating a few tenets. First of all, we cannot always map directly from object to meaning. Gender archaeologists understand this well (Gero and Conkey 1991). A female figurine is not necessarily about matriarchies or fertility, but is used in the mediation of social tensions which, it is true, may themselves be played out in such an ideology (Bailey 1994). In the same way, 'weeds of cultivation' are not just (or even at all) about particular styles of agriculture, such as the sowing of spring crops, but were used in the machinations of women in the fields after harvest, even though these may have taken place in just such a farming strategy. At the same time, though in the province of women, their use may be referencing deeper gender or other tensions within society. This is core agency theory. It is why the symbolism of environments needs exploring, not just assuming.

Second, agency is about groups as much as it is about individuals, but more surely it is about the building and reproduction of relationships, and, in the context of this book, through the mediatory influence of the physical environment. Agency is about interest and condition. Importantly it is not about the effects of the environment on social lives, the successive influence, for example, of a drought on how people live and behave. That is not even social archaeology.

Third, and going back to a problem I raised earlier (Ch. 2: p. 39), there is the question of why particular materialities and not others were chosen in all this. Again there is a literature on this which I have hardly begun to tap (e.g. Ardener 1975; Hodder 1982), and the ideas I presented earlier are no more than possibilities. But there is a huge potential here for understanding why particular styles of environmental interaction, such as different sorts of woodland management, were employed at different times. Wetland archaeology has got a lot of potential – and data – here. This business of equivalencies fascinates me and I have suggested several areas where investigations might be productive in discovering how they work – e.g. hilltop towns, transhumance and documents in Medieval Tuscany (Ch. 8, p. 199), pottery, building stone and parish records in East Brittany (Ch. 6, p. 132), or gazelle hunting, house construction and early cereal agriculture at Abu Hureyra (Ch. 10, p. 247).

Overall, the approach I have advocated allows a diversity of philosophies. It enables environmental determinism or ecology or rawer forms of social archaeology to be subsumed in the way things were, for these different

CONCLUSIONS

perspectives were constructed in the past just as they are today and as such used in an agency-centred way. I tried to show this in exploring Alpine transhumance and in the early beginnings of agriculture. We can see it, for example, in Hadrian's Wall, in northern England, where an earlier border of road and ditches, the Stanegate, was superseded by an earth and timber construction some way to the north, and then, on this line, by the wall itself. This history may have been driven by defensive considerations or have been related to the decline in timber or have been about increasing monumentality in an increasingly cleared landscape, or all of these. But each of these causes or motivations could have been used as a way of enhancing the meaning of the enterprise and facilitating its construction as well as the socio-political image of the people in charge. It was also a history of the frontier which was itself not so much linear but a means of successively empowering the emperor and Roman ideology at the edge of empire through visibility and monument. If we look at things this way, different sorts of approaches, different levels of interest and different scales of time can easily be combined.

A few months ago I visited Inner Mani at the extreme southern end of the middle finger of the southern Peloponnese, where Nadia Seremetakis (1991) did her fieldwork on burial rites and laments. I was utterly fascinated by the idea that women were moving stone around in the agricultural land to construct walls and cairns as a means of opposing the men or at least of getting into the male domain. I wanted at least to see women with black dresses and shawls, scarves covering their heads, moving along the narrow streets carrying things, going through gateways, closing doors.

The archaeology and the towns and villages were almost beyond description. The first we saw was Areopoli, where the masonry of the walls reminded me of English Saxon architecture, and it may well have been Romanesque for the Normans got to the northern limits of Mani. Each village had its towers and tower-houses and as we moved down the peninsula the architecture got more dramatic with more towers in each village and a greater expression of stone and strength and wildness. The Inner Maniat men in each village used to shoot at each other from the different towers. At the end of the peninsula there was Vathia, set on a high headland like a fortress, and there were other villages even higher up, more remote and even more powerful (Figure 6.11). It was as if the whole peninsula was a monument, enhanced by these war places of the blood-feuds of the past. Many of them were more or less deserted apart from a man, a cat, or a group of young people from Athens, or a family who had renovated a house as a second home. There were many dogs, some free, some chained, their trust beyond anything a man has to offer. At the end there was Cape Tenaron, the gateway to Hell:

I'm going to give my wish
to my Nikos, the brave,
to go to Hades and return

CONCLUSIONS

to ask him to tell me
how are the souls treated?
Do the nuns tell the truth?
Are they hanging by the hair
in a dirty cave?
And those who committed good deeds,
do they sit in soft armchairs?
(Seremetakis 1991: 197)

Some of the villages were quite thriving, and we stayed in one of these, called Kokkala – meaning big-bone village – on the east coast, actually in a war-tower, high up on a hillside overlooking the whole of the eastern finger and the Aegean. One night we sat in a taverna and watched a small kid, lame in one leg but quite unconcerned, walk across the beach, its mother slightly in front and both animals greatly encouraged by a tall woman dressed in black. On another night, men fired guns to celebrate a christening.

The landscape of the countryside was just as unexpected. I had gone for the social side of things and had not thought much about the landscape, bar the idea that there might be a few walls. Everywhere there were walls of fields, terraces of unimaginable depth, their thin surfaces picked out by small areas of pale grasses, double-walled trackways trailing over the hillsides, small buildings and fields of stone. And there was some time depth to it all with different styles of fields in the peripheral areas and walls overlying terraces where the latter had gone out of use.

But in all of this we experienced very little of the people, the black women of Nadia Seremetakis. It was quite extraordinary how much richness of texture as she explores lay so close to the surface, yet more or less invisible, and in this land so equally richly textured in its visuality of archaeology and settlement. We never saw a woman build a wall. It was as if there were two worlds, the one of laments and divination, the intense sociality of women's lives and pain, the other the monumentality of the land. Yet the 'poetic interplay between agricultural and mortuary remains . . . a fundamental component of the Maniat feminine imaginary' (ibid.: 207) was invisible. Here it seems to me is the great problem in environmental archaeology.

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INDEX

- abandonment of settlements 107–12, 189–92
- abbeys *see* religious institutions
- Abric Romani, Spain 212
- Abruzzo, central Italy 179
- Abu Hureyra, Syria 230, 237–8, 242–8
- agency 14–19, 22, 30, 34, 44–5, 249–50, 252; in archaeologists 15–17, 56; in early farming 225–6, 246, 249; and surveys 119–21; in texts 158–9; *see also* social expression, social mediation
- agro-pastoralism 189–92
- Alagna, Val Sesia 176–9, 198
- Alcock, Susan 120, 136–42
- alienation 32, 164, 169–70, 217–18
- allotment of land 68
- alluviation, alluvium 68–9, 81–2, 85–6, 143–4, 247
- Alps 175–9, 198
- Alpwirtschaft* 176, 181
- Anglo-Saxon archaeology 35–6, 168
- animals 6–12, 196–7, 237; and humans compared 10–12; *see also* bones *and* domestication of animals
- antiquity: appropriation of 16, 35–9, 126, 139, 154–8, 163; creation of, 38, 71, 126, 235
- Appennines 164, 167, 171, 183
- archaeological record 17
- Archaic period in Crete and Greece 135–6, 152, 158, 187
- Archaic period in Illinois 204–5
- Ascott-under-Wychwood long barrow, Oxfordshire 39, 58
- Ashby, Thomas 119
- Askra, Boeotia 137–8
- Assyrian stelae 158
- Astill, Grenville 120, 126–7, 132
- Athenian agora 35–6, 94–5, 152, 154
- attributes in cognition 24–5; *see also* schemas
- Ault, Bradley 140–1
- Austen, Jane 22, 34
- Avebury, Wiltshire 90
- baboons 8, 15
- Bar Point, Isles of Scilly 64–5
- Barker, Graeme 181–2
- Barrett, John 16–17, 46, 53
- Bayesian statistics 56
- Beaker pottery 81–2
- beavers 77–8
- Beckhampton Road long barrow, Wiltshire 58–9
- Bender, Barbara 13, 56, 223–5
- Berkshire Downs 91–2
- Biferno Valley, Italy 182
- Bilzingsleben, Germany 206–8
- Binford, Lewis 2
- Bintliff, John 12, 134–8, 139–40, 146–7
- bison 208, 215–16
- blackbirds 8
- Boeotia, Greece 12–13, 134–8, 139–40, 142, 146–7, 154
- Bolivia 189–92
- bone, bones, animal and human 3–4, 18–19, 70–1, 78, 85, 88–9, 201–4, 206–11, 213–16, 242–3, 245–6
- Bourdieu, Pierre 22
- Bovianum Gate, Saepinum 182, 196
- bovids 215, *see also* bison *and* cattle
- Bradley, Richard 70, 80
- Braudel's levels of time 2, 5, 35, 168, 212–13, 219, 245–9
- brick *see* building materials

INDEX

- Bronze Age archaeology, sites 80–5, 87, 194; field boundaries, fields 64, 82
- Buikstra, J.E. 204–5
- building materials (brick, mudbrick, reeds, slate, stone, tile, wood) 35–9, 125–8, 131–2, 139, 163, 167–8, 247
- bureaucracy 169–70
- burial 209–11, 217–18, 223
- burnt mounds 85–6
- butchery 215, 217–18
- Cardiff 29–30
- Carter, T.R. 110
- Casentino Valley, Tuscany 164, 167, 186
- catastrophism 2, 96
- cattle 168, 176, 178–9, 186–7, 194–5
- cattle skulls 58, 85
- causation 26, 28, 96, 109
- causewayed camps 25, 34, 57, 82, 203
- cemeteries 202–6; Bronze Age 82–4; Mesolithic 16, 19, 78; Palaeolithic 210–11
- Central England Temperature Record 109–10
- cereals: domestication of 229–35; in relation to climate 98, 108–11; upland cultivation of 89–90, 108, 193–4
- chaînes opératoires* 34–9, 44, 89, 132, 161, 165, 216, 218, 225–6, 231–3, 239, 250
- chalklands 73–93
- charters 91, 132–4, 158–60, 163–7
- Cherhill, Wiltshire 61
- churches *see* religious institutions
- circumcision 59, 61–2
- cities 29–30, 32–3, 138–9; *see also* urban environments, surveys
- city states 144, 146–7, 188
- Clanchy, Michael 159–62
- Classical Greece 135–6, 187–8
- climate 94–118; defined 96–9; extremes of 107–8, 110; and the media 101–2; and memory 100, 113–15; and figurines 113–15; recording of 98–9, 109–10; and science 100–2; and sociality 98–102; and upland cultivation 108–12; *see also* environments: Mediterranean, semi-arid, temperate
- climate change 95–6, 100–18; in farming origins 219, 223; long-term 102, 112–15; short-term 100, 110; sudden 103–4, 107–8, 113, 224
- coasts, coastal grazings 105, 174, 186, 192, 194–6
- cognition 24–6, 30
- colluviation 67
- colour theory 227
- community 41, 197–8
- competitive feasting 221, 223–4, 237
- complex hunter-gatherers 221
- consciousness of meaning 89–90
- core-periphery systems 146–7
- Corsica 242
- coscrits* 173
- cosmologies *see* world views
- Cro-Magnon race 209–10
- crop processing 41, 231–4, 248
- cuneiform 151, 158–9
- Darwin, Charles 2, 6
- Darwin's finches 6
- Davies, Wendy 27, 120, 126–7, 132, 165–6
- death 201–6
- Delamont, Sarah 40, 188
- delayed curation 191–2
- delayed-return systems 221–4
- Democritus 19, 47
- demographic change 132–3, 137, 140, 189, 198–9, 220
- Dench, Emma 183
- deposits 53–6; *see also* alluviation, erosion, lake sediments, loess, particles, peat, ploughwash, sand, stone, tephra *and* tufa springs
- Dickens, Peter 28, 149
- Dimbleby, Geoffrey 2
- Dirie, Waris 62
- distributions of plants and animals 106
- diversification of landscape 76–7, 80–1, 87; *see also* ecotones
- Dobres, Marcia-Anne 14
- documents 105–6, 109–10, 120, 127, 130, 132–4, 139, 148–71, 183, 186–7, 192
- dogs 179–80, 197, 208, 237
- Domesday Book 91, 159
- domestication 223; of animals 235–41; of plants 227–35
- dung, dung heaps 125, 136–7, 141–2, 188; *see also* *koprone*s, manure *and* tathing
- dust veils 104–5, 107

INDEX

- early hominids 2–3, 70–1, 204, 206–8
 East Brittany 120, 126–34
 ecology 2–4, 6, 11
 ecotones 54, 61–2, 87, 231, 240
 Edmonds, Mark 14, 56
 Egypt 98, 108; *see also* Taramsa Hill,
 Nile Valley
 elephants 207–8, 214
 environment 2–3, 5, 16, 19, 28–31;
 see also landscape archaeology
 environmental archaeology 1–19; and
 agency 16; defined 1, 19, 250–4
 environments: of hunter-gatherers 77–9;
 Mediterranean 134–40, 143; semi-arid
 63, 134, 189–92; temperate 121–34,
 143, 189
 erosion 63–4, 67–8, 81–2, 143–7
 Estancia Copacabana, Bolivia 189–92
 ethnoarchaeology 189, 251
 evolution 5–6, 27, 112, 211–12
 exchange systems *see* gift exchange

 farm mounds 142
 farming origins 3, 13, 219–49; as
 global phenomenon 219–22;
 theories of 219–27; *see also*
 domestication
 farming systems, in Classical Greece 136,
 187–9
 fat 216
 feminism 3; *see also* women
 field boundaries 23–4, 64–6, 67, 82, 195;
 see also lynchets
 fields: enclosed 23–4, 29, 31, 38, 64, 85,
 88, 193, 196; open 92
 fieldwalking 119–21, 142
 figurines: Bulgarian Chalcolithic
 114–15; Mande 114–17; Palaeolithic
 113–14
 fire 33, 212, 231
 Fisher, Nick 21
 Fitzpatrick, Andrew 87
 flint artefacts *see* stone technology
 Flixborough, Lincolnshire 168
 food 16, 62
 Fox, Cyril 73
 Frome Valley, Dorset 81–2, 84
 frost 105–6
 frost fairs 106
 frost rings 104
 functional and social perspectives
 compared 17, 26–8

 Gamble, Clive 113, 212–13, 220–1
 gannets 10
 Garfagnana Valley, Tuscany 186
 Gaudzinski, Sabine 215–16
 gazelles 237–9, 242–7
 Geist, Valerius 241–2
 gender 212, 217; *see also* feminism *and*
 women
 genetics 229–30, 235
 geology 56, 62–3, 70–1, 131
 Gibraltar caves 212
 Gidden's time–space distanciation theory
 248
 gift exchange, gifting 21–2, 24–5, 161,
 164, 167, 171, 223–4
 gleaning 45, 85, 121, 235
 global warming 101–2
 goats 237–45, 247
 Goffman, Erving 28
 Golding, William 30–1
 graffiti 152–3
 granaries 162, 195–6
 Greece 134–41, 187–8
 grinding 64, 229, 233–4, 248
 Grotte XVI, Dordogne 212
 gulls 10, 64
 Gwent Levels 194

 Hadrian's Wall 253
bafod names 192
 haloes of pottery 130, 142; *see also*
 manuring
 hand bones, hands 61–2, 208, 210
 harvesting, harvests 108–10, 234–5
 Hayden, Brian 221, 223
 hazel 18
 heathlands 2, 67; *see also* *plaggen* soils
 Heidegger, Martin 13, 15
 Hellenistic archaeology 136–8
 Henderson-Sellers, Ann 101
bendre names 192
 Higgs, Eric 3
 Highland Zone 73
 Hill, J.D. 87–9
 Hippocrates 94
 history: appropriation of 29, 35–9, 44,
 158, 165, 192; of environmental
 archaeology 1–19; in landscape 14; in
 settlement continuity 92; *see also*
 antiquity
 Hittite hieroglyphics 150–1
 Hodder, Ian 13, 79, 149, 223, 226–7

INDEX

- Hodkinson, Stephen 174
 Hole, Frank 240–1
Homo habilis 70
Homo beidelbergensis 206
Homo sapiens neanderthalensis 209;
 see also Neanderthals
Homo sapiens sapiens *see* Cro-Magnon
 race
 household structure 178, 190
 houses 168, 194–6, 246–7; *see also* hut
 groups *and* settlement patterns
 Hubbard, C.E. 228
 hunting 3, 215–18, 242–3, 246–7
 hut groups 193–6
hybris 21, 24–6
- ice-cores 106
 identity 41, 68–72, 196–8
 Il'skaya, Caucasus 215
imbestita 242
incastellamento 183–4
 inclusions in pottery 47, 49–52
 Ingold, Tim 225–6
 Inner Mani 63–4, 253–4
 inscriptions 148–52, 154–6, 158
 interpretive archeology 15–19, 56
 Iron Age archaeology 85–90, 193–6;
 see also Archaic period in Crete and
 Greece
 Italy 179–87
 Itchen Valley, Hampshire 87–9
- Jericho 230, 238
 Jordan Valley 229–30
- Kennet Valley, Wiltshire 78, 81–2, 85
koprones 140–1
 Kostenki, Ukraine 53, 214
 Koster, Illinois 204–5
- La Borde, Lot 215
 La Cotte de St Brelade, Channel Islands
 53, 214
 lake sediments 103–4
 Lamb, Hubert 101, 109
 Lammermuir Hills 104, 108–12, 118
 land: ownership 148, 160, 162–6; *and*
 text 167–70
 landscape archaeology 12–15; *see also*
 metaphor
 landscapes of death 204–6
 Leakey, Louis 2
- learning about the future 33–4, 173–4,
 248
 Levallois technology 113, 213
 Levant: early farming sites 220, 225,
 229–30, 238; Middle Palaeolithic sites
 207, 209–11, 213
 Levy, E. 162–3
 L'Hortus, Languedoc 207, 210–11, 214
 Linear B 151, 161
 Little Ice-Age 103, 106–7
 llamas 189
 Llandaff Charters 165–7
 Llanfair Clydogau, Cambrian Mountains
 89–90
 locales 28–9, 34, 149
 localities 29, 34, 149
 location of sites 14; in Greece 135–8, 140;
 of Iron Age settlements 87–90; in
 marginal land 69, 72; of Mesolithic
 occupation 60–2; of Middle Ages
 settlements 90–3; of Neolithic tombs
 57–60; of upland hut groups 193;
 see also settlement patterns *and*
 Site Catchment Analysis
 loess 53
longue durée *see* Braudel's levels of
 time
 Lowland Zone 73
 lynchets 67–9, 80
- McIntosh, Rod 99–100, 115–17
 Mackinder, Halford 73
 Maddie Farm, Berkshire 121–6
 magnetic field 102
 magnetic susceptibility 129
 Maiden Castle, Dorset 81, 88
 Maine, U.S.A. 7, 108
 Malthus, Thomas 6, 199
 Mande people, Middle Niger 115–17
 Manley, Gordon 100, 109
 manuports 70–1
 manure, manuring 124–6, 128, 130–1,
 134–6, 140–3
 Marakwet people, Kenya 89, 140
 marginal land, marginality 69, 100,
 109–11
 Marlborough Downs 81–3, 88
 material equipment 189–92, 233–4
 materialities in social agency 39–43,
 133–4, 167–8, 183, 199, 211–16, 252
 Mauran, Garonne Valley 215–16
 maximization of effort 4–12

INDEX

- Medieval: archaeology, settlement 90–3,
 108–9, 128–30; history *see* charters;
 potsherds, pottery 47, 49–52
 Medieval Warm Period 106
 memory 94–5, 99–100, 112–15, 118, 189,
 192, 218, 249
 menstruation 143, 195
 Mesolithic: in Britain 14, 60–2, 77–80;
 in Brittany 16, 19; in Illinois 204–5
 metaphor 14, 25, 63, 88, 208, 226–7
 Middle Range Theory 2–3, 251
 Milankovitch, Milutin 100–2
 mines, mining 194, 211
 mobility of settlement 4–5, 33–5, 121,
 124, 136, 172–200, 213
 moles 8–9, 221
 monasteries *see* religious institutions
 monumentality: of landscape 67, 69, 80,
 111–12, 139, 148–71, 216; and text
 149–59, 167
 Moore, Henrietta 88–9, 140
 Morris, Brian 226
 mortars *see* querns
 mortuary practice 202–6, 209–11, 215
 motivation 28

 narratives 56
 Neanderthals 33, 70, 201, 208–18
 Nemea Valley, Peloponnese 137–8
 Neolithic: archaeology 80–1; land
 clearance 57–8; tombs 32, 35, 37–9,
 57–60, 82–3; *see*
also causewayed camps
 Nietzsche, Friedrich 18, 21

 oats 89, 108–11
 O'Connor, Terry 16, 73–5, 223, 237
 Ogham writing 167, 169
 Olduvai Gorge, East Africa 70–1
 onager-hunting camp 248
 orality *see* sound
 Orchomenos, Boeotia 154–7
 origin stories 99–100, 114
 Orkney Islands 67, 142
 Oronsay, Inner Hebrides 61–2
 ownership *see* land

 Palaeolithic archaeology, sites 33, 53,
 70–2, 79, 112–15, 206–18
 Paris, Matthew 158
 parish boundaries, parishes 91–2, 158–9
 Parker Pearson, Mike 205–6, 209

 Parris, Matthew 119, 133
 Parry, M.L. 108–10
 particles, particle-size distribution 46–7,
 54, 105
 peat, peat bogs 61, 77–8, 103–5, 194–5
 perception 17, 28–9
 phenology 105–6, 233
 phenomenology 13–14, 57
 Phlius, Nemea Valley 137–9
 phosphate 129
 place 14, 226–7, 233–4
 place names 192–3, 196
plaggen soils 67–9, 84
 plants *see* domestication *and* vegetation
 ploughing, ploughmarks 58, 81–2; *see*
also ridge cultivation
 ploughwash 67, 80
 pollen, pollination 18, 228, 231–2
 Portland chert 79
 Post-Medieval archaeology 108–10, 126,
 130–4
 potsherds, pottery 47, 49–53, 71, 81,
 88–9, 119–21, 124–44, 147, 183; fabrics
 47–50; in relation to erosion 143–4; in
 relation to rainfall 134; re-use of 52–3,
 126; scatters 140–3
 power 21, 117, 217, 228–9, 249; *see also*
 agency *and* social expression
 precipitation 103–5, 117, 134–5
 private and public domains 34, 137, 141,
 151–2, 162–3, 224, 247–8
 property laws, Roman 162–3
 pulse stability 53, 61; *see also* ecotones
 Pyrenees 175, 215

 quarries 36, 131
 querns 64–5, 191, 195–6, 229, 233–4

 race, raciality 16, 210, 212
 rachis state 235
 radiocarbon 102–3
 rainmaking 117
 ravens 7
 Redon cartulary 127, 132, 166
 regional systems 4–5, 12, 73, 92–3,
 144–7, 196
 relative humidity 96
 religious institutions (abbeys, churches,
 monasteries) 26, 29–30, 35–7, 158–9,
 161–2, 164–5, 187
 research strategies 55, 73–5
 ridge cultivation 92, 104, 109–11

INDEX

- risk of harvest failure 108–11
 rites of passage 34
 rivers, river valleys 68–9, 73–8, 80–7,
 90–3, 143–4
 Roman archaeology 35–6, 52–3, 92,
 121–8, 135–8, 165–6, 193–6
 Roman property laws 162–3
 round barrows 82–4
 routine 25
 rubbish 125, 131, 137, 139–41, 191
 rye 230–1, 245–6
- Salisbury Cathedral 29–31
 sand 47–8, 50, 55–6, 64
 scavenging 192
 schemas 24–5, 40–1
 science, scientists 15, 55, 98–9, 100–2
 sea-level 112
 seasonality, seasons 105–6, 233
 Seremetakis, Nadia 63, 253–4
 settlement patterns 92–3, 135–8, 139–40,
 144–7, 190–1, 193–6, 213–14; *see also*
 location of sites
 Shanks, Michael 13
 Sharples, Niall 81
 sheep 8, 179–82, 186–7, 189, 195,
 237–45, 247
 shell mounds 16, 19, 61–2
 shells 47, 49–51, 61–2, 105, 213
 shepherds 187–8
 shopping 27–8
 sickles 59, 229
 singularities 105
 Site Catchment Analysis 3–5, 14, 57
 Skomer Island, Pembrokeshire 64
 slate *see* building materials
 slaves 163, 187, 192
 Snodgrass, Anthony 134–8, 140
 social archaeology 12–15, 41
 social expression, social mediation 6–10,
 17; in animals and plants 6–11, 225,
 227–8; through animals and plants 18,
 195–7, 228, 230, 237 (*see also* hunting);
 in archaeologists 15–17, 56; through
 bones 202–8, 213–16, 242–5; through
 building materials 125; through
 charters and gifting 21–2, 164, 168–70;
 through climate 98, 100–2, 117;
 through crop processing 231–4;
 through demography 132–3, 198–9;
 through domestication 239–41;
 through facial characteristics 33, 209;
 through farming, farming origins 195,
 223–7; through knowledge 117, 217;
 through land, landscape 13–14, 69–71,
 80–1, 111, 168–70; through memory
 117; through migration 112–13;
 through mortuary practice 202–6,
 210–12; through potsherds 119–21,
 125, 130–1, 139–43; through rubbish
 140; through settlement mobility and
 style 137, 139–40, 146–7; through
 sheep and goats 241–5; through texts
 148–71; through texture 45; through
 transhumance 172–200
 social intensification 31–4, 44, 110–11,
 189, 210, 225–7, 233–4
 social memory *see* memory
 social storage 34, 110–14
 sociality 12–15, 168–70, 250; compared
 to functionality 26–8; and environment
 20–44; origins of 31; primacy of 22–4
 sociobiology 3, 11–12, 27
 socio-political factors 5
 soil 45–6, 54–8, 62–4, 67, 71, 81, 120–1,
 131, 136, 143; *see also* erosion
 sound 47, 149, 151–2, 160, 171
 South Street long barrow, Wiltshire 58–9,
 81
 sowing 234
 space 91–2, 95, 99–100, 112–15, 121,
 144–7, 212–13, 218, 224, 226, 248–9
 spas 34
 spolia 154–7; *see also* antiquity:
 appropriation *and* creation of
 springs 61, 77–8, 208; *see also* spas
 stone, stones 62–6, 70, 84–5, 144, 195;
 see also building materials
 stone technology 78–9, 84–5, 112–13,
 212–13
 Strabo 94
 Strum, Shirley 8, 15
 sun, the 102–3
 sunspots 103, 105
 surfaces of land 45, 56–7, 62–4, 120–1,
 143
 surveys 119–47, 181–3; scales of 119, 124
- taphonomy 3, 251–2
 Taramsa Hill, Nile Valley 211, 213
 tathing 142, 235
 technological change 71, 112
 tells 139, 247
 Tepe Asiab, Kermanshah 240–1

INDEX

- Tepe Ganj Dareh, Kermanshah Valley
 238, 240–1
- tephra 103–5
- terraces 67, 143–5
- Test Valley, Hampshire 78, 80, 82, 84
- text 148–71; *see also* documents
- texture 45–72, 120–1, 125–6, 149, 251
- Thatcham, Kennet Valley 78
- Theophrastus 142
- Thiessen polygons 5, 136, 144, 146
- Thomas, Julian 13
- Thomas, Rosalind 148–9, 151–2, 158–9
- threshing 233–4, 248
- tile *see* building materials
- Tilley, Chris 13–14, 79
- time 2, 34–9, 44, 70–1, 75, 102–8, 198–9,
 214, 218, 224–7, 245–9; *see also*
 Braudel's levels of time *and* memory
- Tomka, Steve 189–92
- town walls 196
- towns *see* urban environments
- transhumance 136, 172–200, 240–1
- transience, transient communities
 196–8
- tratturi* 181
- tree-throw pits 62, 77, 79
- tufa springs 61, 77–8, 208
- Tuscany 164, 167, 171, 186–7, 199
- uplands 108–12, 193–6; *see also* marginal
 land
- urban environments, surveys 136–9,
 144–6, 168, 183, 186–8; contrast with
 rural environments 136–40; *see also*
 cities
- valleys 73, 143–4; *see also* rivers, river
 valleys
- vegetation 45–6, 71, 96, 121
- vernalization 233
- Viazzo, P.P. 176, 178–9, 199
- Viking pottery 51
- visuality 87–8, 111, 130, 143–4; *see also*
 monumentality
- volcanic ash *see* tephra
- Wales 165–8, 192–6
- Wallertheim, Rhine Valley 215
- watermeadows 68–9
- West Overton, Wiltshire 82, 85–6
- Whittle, Alasdair 25
- Wickham, Chris 164, 167, 171, 186–7
- winds 94–5
- Winnall Down, Hampshire 87–9
- wolves 4, 237
- women 16, 19, 62–4, 141–3, 195, 216–17,
 233–4, 253–4
- Woodward, Ann 84
- world views 39–41, 99–100
- writing *see* documents *and* text
- Wylve Valley, Wiltshire 90
- Younger Dryas period 219, 223–4, 240
- Zagros Mountains 240, 242
- Zeuner, Frederick 100–1