Chapter 1

Mesolithic Europe: Glimpses of Another World

Penny Spikins*

Introduction

Mesolithic Europe holds a special place in our imagination. Perhaps more than any other region and period, it is unique in conjuring up a strange sense of both 'otherness' and familiarity. The people who lived here were in many ways fundamentally different from ourselves. As hunters and gatherers, their experience, worldview, and knowledge could not be further from ours. In our imagination, we can conjure up images of how these people might have looked or felt, but even some of the most basic elements of their existence or perception, something far more knowable in later periods, are things of which we know little. The physical world in which they lived is somehow more tangible but, like its people, familiar and yet fundamentally distinct from our own experience. This was a place with landscapes that were vast and, to our minds, untamed, familiar to our experience at a local scale, yet at the same time extending over seemingly immense territories with swathes of dark forests, mountains, and relentlessly rising seas.

Bounded by the Ural Mountains in the East, the Atlantic Ocean in the North, and the Mediterranean in the South, Europe covers an area of over 10 million square kilometers (Figure 1.1). It houses some of the most varied and distinctive landscapes within any comparable-sized region anywhere in the world, landscapes ranging from Mediterranean woodlands to Artic Tundra and across 40 degrees of latitude. In this volume, we pass by the Aegean islands of the eastern Mediterranean to the shores of northern Scandinavia and northern Russia, across the mountainous backbone of Europe, the intricate network of lake basins around the Alpine fringe and in the north and east the vast windswept plain that extends almost unbroken from lowland Britain to the Siberian border interrupted only by great river systems such as the Rhine, the Danube, the Dniepr, and the Don, and across offshore islands and archipelagos in the Mediterranean and the Atlantic.

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Mesolithic people carry a real significance for many. In some regions, the Mesolithic holds a special importance as the time of first settlement, of hardy and intrepid colonisers who carry a symbolic presence for the region. About a third of the European land mass and much of its higher mountain slopes and offshore islands was occupied by human settlement during the Postglacial for the first time in human experience. In other regions, the Mesolithic might appear to be the phase of human history within which the first signs of 'settling' of society into increasingly familiar environments and habits can be found, with enduring ties between people and place. For all, however, the Mesolithic carries a sense of fascination.

Alongside the 'otherness' of Mesolithic Europe, knowledge and understanding brings a sense of rational or even perhaps 'scientific' familiarity. The very notion of 'Mesolithic Europe' as a definable period and region with boundaries of some kind makes us feel that this world is knowable, almost manageable. We can define and analyse its limits, and the ways in which environments change. We can reconstruct how people made and used flint tools, follow them genetically, reconstruct and understand what they ate and how they moved around. In the different spheres of environment, subsistence, settlement and society, we can come to an understanding of the Mesolithic world. By building up our knowledge in this way, the 'other world' of Mesolithic Europe is made familiar. In some senses, we can even 'know' the world of Mesolithic people in a depth that they themselves could not perceive or understand. We can see how societies, activities, resources, and settlement systems changed not only over generations but also millennia. We can 'understand' or at least approach the mechanisms creating change, something far beyond the perceptions of Mesolithic people themselves.

This opening chapter gives an introduction to this world, to some of the history of concepts of the Mesolithic, issues, directions and ideas that draw together research on the period, and suggests further complementary frameworks. Each chapter of the volume paints a picture of environments, people, and changes in each different region. The narratives of the Mesolithic in each region, each grounded in their own historical and research trajectory, reveal different insights about the period. Finally, the concluding chapter brings together a comparative overview in a broad summary of the leading features of the Mesolithic and emergent areas of new and future research.

The 'Story' of the Mesolithic

Human origins and prehistory inevitably form a 'story' of the past (Stoczkowski 2002, Joyce et al. 2002), with powerful metaphors for who we are today. Different dialogues and narratives compete for our acceptance, and it is perhaps in the Mesolithic period more than any other that different frames of reference, or perhaps lenses through which we see the archaeological evidence, come most into play. These different understandings are more than just 'theoretical standpoints' but, rather, perceptions and viewpoints that colour and define not only our interpretations but also our sense of what 'the Mesolithic' is, or what it might have meant to have experienced life in those times. Different stories of the Mesolithic and its place in history both merge and conflict to create our current understanding.

Some long-standing stories permeate our sense of what the Mesolithic might mean, how it might be interpreted or what is 'allowed'. One of the deep-seated concepts of the Mesolithic is as a time of cultural stagnation – passive societies in which little changed and social relationships were uncontested. The most likely root for such ideas lies in a long-standing view of Mesolithic societies as being dominated by their environment. In fact, we only need to look back to the earlier decades of the twentieth century to understand how Mesolithic societies may have been disenfranchised

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Figure 1.1. Map of Europe showing major topographic features and key sites. The dashed line shows the maximum extent of the continental ice sheet during the Last Glacial (© G. Bailey).

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from discussions of social and cultural changes. The prevailing view of the Mesolithic at this time was that memorably expressed by Gordon Childe, who viewed Mesolithic societies, sometimes with undisguised contempt, as impoverished descendants of the Palaeolithic, gripped by 'a state of helpless barbarism' (Childe 1925: 1) and contributing nothing to later European civilisation. Sir Mortimer Wheeler wrote in a similar vein about the inhabitants of Mesolithic Star Carr (Tolan-Smith this volume) – and in the same year as the final publication of the Star Carr excavations by Grahame Clark (1954) – as 'as squalid a huddle of march-ridden food gatherers as the imagination could well encompass' (Wheeler 1954: 231). For these authors, European civilisation began with the spread of Neolithic societies from the Near East, a process that supposedly erased the preceding hunter-gatherers of Europe (Zvelebil 1996c). Even Grahame Clark, excavator of Star Carr and pioneer and champion of Mesolithic studies in Britain, was forced to concede with evident reluctance in 1952 that the archaeological evidence for the coastal Mesolithic peoples of Northwest Europe hardly contradicted the notion of 'a low level of culture' (Clark 1952: 63).

The concept of passivity has been echoed equally in understandings of the cultural relationship between the Mesolithic and the Neolithic as in that of the relationship with the environment. Even from the start of the first use of the label 'Mesolithic' in Clark's (1932: 5) definition of the period as 'between the close of the Pleistocene and the arrival of the Neolithic' (Rowley-Conwy 1996), the period appears to be caught between two apparently inexorable and inescapable events, the first environmental and the second cultural. In the south of Europe where Mesolithic occupation followed that of the Palaeolithic, the term 'Epipalaeolithic' (a continuation or culmination of the Palaeolithic) has been widely used and still appears today (cf. Straus this volume, Valdeyron this volume, Pluciennik this volume, Bonsall this volume). In the north, however, the term Mesolithic highlighted the apparent dynamism and distinctiveness of societies that succeeded in expanding into new areas. Further north again (Bjerck this volume), the terms Older and Younger Stone Age are more commonly used. In each region, we can see how the narratives of the origin of Mesolithic societies influenced understanding of the nature of the period itself.

There have been various challenges to the concept of Mesolithic peoples as rather impoverished communities. In the 1980s, there was a radical transformation when the material record of certain coastal Mesolithic societies, particularly those on the coastlines of Northwest Europe, was interpreted as indicating large socially complex communities living in permanent villages. Drawing on ethnographic analogies with societies of the Northwest Coast of North America, these communities, with material evidence typically associated with later periods, such as specialist task groups, food storage, social ranking, cemeteries, and high levels of population density on a par with early farming societies (Rowley-Conwy 1983, Renouf 1984), were seen as sufficiently densely populated and organised to resist the invasion of farming communities. 'Complex' Mesolithic communities were seen as socially powerful rather than stagnant. Unsurprisingly, the concept of rising social complexity became an appealing characteristic of the whole period and the Mesolithic-Neolithic transition a new source of stimulus for Mesolithic studies (Zvelebil 1986c, Price 2001). The origins of the Neolithic were extended into the Mesolithic and discussions focussed on progressive intensification or diversification of resources, and a move towards agriculture.

Extrapolating the origins of social complexity to certain contexts in Mesolithic Europe marked a powerful departure from ideas of small, marginalised groups apparently 'going nowhere'. However, subtle but pervasive parts of the narrative remained intact. 'Complexity' was built on dense, productive coastal resources that were available all year. 'Complex' societies were still inexorably and rather passively built on seasonal resources and subsistence relationships, with concerns about their logistic organisation taking primacy over social interpretations. This meant that the 'story' of the Mesolithic was still one in which society and social change were determined by environments.

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Ironically, discussions of social changes in complex societies rather contributed to the relegation of many of the societies of Mesolithic Europe as ever more 'passive', as societies outside of maritime locations became rather 'left out in the cold' of discussions of social changes. The lack of dense resources, and the self-fulfilling and apparently uncontested arrival of the Neolithic, in some ways further disenfranchised 'simple' Mesolithic hunter-gatherers.

Challenges to ways of interpreting the Mesolithic have come from various sources. A long history of research from the time of Grahame Clark and beyond (1932, 1975, 1980), three decades of international meetings (Kozlowski 1973, Gramsch 1981, Bonsall 1989, Vermeersch and Van Peer 1990, Larsson et al. 2003), and new approaches and overviews (Mellars 1978, Zvelebil 1986c, Price 1987, Conneller 2000, Young 2000a, Bevan and Moore 2003, Milner and Woodman 2005, Conneller and Warren 2006) provide healthy disagreements over issues and approaches. New approaches to themes with a deeply entrenched traditional stance such as subsistence (Milner 2006), and technology (Warren 2006), are being developed, many of which move beyond environmental determinism and readdress interpretations to incorporate views of experience and perceptions. Even the narrative of increasing complexity has gradually become deconstructed (Bonsall this volume). A gradual intensification of resources and a move towards agriculture has also been seen as being rather simplistic, with archaeological evidence for a decline in social complexity suggesting that a progression towards complexity is far from inevitable (Rowley-Conwy 2001).

Approaches to the Mesolithic continue to be contested. However, as valuable as new perspectives and vigorous debate may be, we might pause to wonder if the large scale narrative has really changed. We have overviews of the Palaeolithic, usually as part of a global synthesis, for example, Gamble (1986, 1993, 1999) or of the Neolithic and later, for example, Bradley (1984), Whittle (1985, 1996), Hodder (1990) and Thomas (1991), but, with the exception of Mithen (2003), little attempt to pull together any large scale understanding for the Mesolithic. The evidence, particularly for so-called simple societies, often dominated by surface lithic scatters, might be that which is at fault, falling almost naturally into a passive extension of artefacts from environments and perhaps too meagre to address any large scale social questions of interest. Nonetheless, Conneller and Warren (2006) argue that it is not the material remains of Mesolithic societies that are to blame for the limitations of interpretations but, rather, the need for new approaches and understanding. Without confronting the narrative of rather passive societies, the questions asked in the Mesolithic can, on the one hand, become overly practical, related to the technicalities of subsistence and settlement or, on the other hand, reach out to incorporate perceptions and experience that often end up drawing on what Strassburg (2003: 543) has called 'banal phenomenological truisms'. Young (2000b: 1) concluded that the discipline was still 'waiting for the great leap forwards'. A long-standing story of Mesolithic hunter-gatherers so immersed in their environments and nature, both ecologically and ideologically, as to be almost socially inert seems to retain a strong hold on our imaginations.

Mesolithic Europe – A Complex Tapestry

Could we rewrite a narrative of the Mesolithic, to write a 'social story' of the period? 'Mesolithic Europe' encompasses over five thousand years across a vast territory, that is over two hundred generations of very different people living in dynamic and changing environments. It might seem reasonable to resist any attempt to pigeonhole such diverse societies into some broad plan. In fact, Kozlowski (2003: xxi) goes so far as to conclude that the range of societies and environments is so great that there is no shared attribute (apart from chronology) that can reliably define the entire Mesolithic formation. Any attempt to draw together such varied societies, to seek comfort

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from some unproblematic perspective, a great (and simple) leap, may of itself be flawed. Mesolithic communities were diverse and varied, perhaps there is no more to say than that these are the only terms on which we can study them.

Diversity and variability are certainly a key theme in this volume. The contributions illustrate a 'tapestry' of Mesolithic Europe, which is complex and varied with remarkably different societies falling under the blanket term of 'Holocene hunter-gatherers'. Societies as diverse as specialised maritime seal hunters, small groups in varied woodland environments, elaborately symbolic settlements such as the Iron Gates of the Danube, early colonisers of barren landscapes, all occupy their place in 'the Mesolithic'. Each local society has its own distinctive feel. This diversity is increasingly being recognised even at the end of the period and into the Neolithic. Patterns of population replacement, coexistence or assimilation show regional and local differences across Europe (Gkiasta et al. 2003, Perrin 2003, Bentley et al. 2003). The pattern of dietary changes, although contentious (Milner et al. 2004), also appears to be regionally and locally varied (Lidén et al. 2004). Similar patterns of differing regional trajectories also affected the transition to the Neolithic in other areas of the world, such as China (Li Lui 2004). The material evidence for Mesolithic Europe reminds us of a complex, multicoloured tapestry.

Like a tapestry, however, there are discernible patterns in this evidence, and threads link different societies as we view Mesolithic Europe as a whole. There is more to the material evidence of Mesolithic Europe than simply wide-ranging diversity. As humans, we naturally seek stories and metaphors to understand patterns around us. However much we might welcome complexity and diversity, without finding other means to interpret large-scale patterns, we are left with our old narratives to structure understanding.

A Structure behind Diversity?

Making sense of the tapestry of Mesolithic Europe is a challenge. We would be mistaken to deride or dismiss ecological and environmental models. Even when environments are stable, hunter-gatherer communities are strongly influenced in their lifestyles and movements by their environments and the rhythm of the seasons, and Holocene environments in contrast were complex and constantly varying. In some cases, the dynamics of Holocene environments would have had immediate and far-reaching effects on local hunter-gatherer groups. Mesolithic Europe was a world in which there were towering glaciers, cataclysmic floods, tsunamis, and rising and falling seas. There is evidence for various sudden and cataclysmic events, which would have left a trail of effects on human societies. Dolukhanov (this volume) describes interpretations of a cataclysmic 'Flood' of the Black Sea at around 6100 cal BC, which would have rapidly inundated more than 100,000 m² of land with its Mesolithic inhabitants, and allegedly accelerated the dispersal of early Neolithic farming into Europe. At around the same time, the Storegga tsunami off the coast of Norway would have been equally devastating and may have caused cataclysmic effects on coastal populations, with 10 m high waves potentially devastating boats, equipment, and food supplies. Moreover, because this happened in autumn, there would have been little time for survivors to prepare for the harsh winter. In the Baltic region, there were fundamental changes to the freshwater Ancylus Lake, which became linked to the ocean through the straits of Øresund, Storebælt, and Lillebælt (Bjerck this volume).

We can scarcely imagine the ideological effect on local populations of these drastic changes. Of course, less dramatic changes also would have had perceptible effects and such dynamism and unpredictability in their surrounding landscape would have been a major influence on how many

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groups understood their world. Bjerck (this volume) describes a drop in sea level of about 3 m per century in parts of Norway such that the configuration of the coastline would have changed, altered fishing and hunting grounds, and potentially blocked sea passages. Periodic transgressions of about 1 m are recorded at Vedbæk in Eastern Zealand (Blankholm this volume). Within many people's lifetimes, there would have been noticeable changes in their surroundings, whether subtle or more significant in their effects. Population movements must have been common, and changing environments and landscapes must have influenced understandings and beliefs about the world.

The influence of environment is perhaps most complex at the regional and local scale. Holocene environments were uniquely structured and differentiated, and in many cases remarkably different from those today despite broadly similar climatic conditions. Where dry scrub is common in much of the modern Mediterranean, Pluciennik (this volume) describes a mosaic of forest communities in southern France, southern Spain, and central Italy during the Mesolithic. Macchia, evergreen forests, and deciduous forests with lime and elm, would have been common, with alder-dominated forests along river and stream margins, as well as pine forest and heath interspersed with coastal and estuarine salt marshes and lagoons. Landscapes in regions such as the British Isles (Tolan-Smith this volume) would have been different from today's, with lowlands dominated early on by forests of pine, birch, and hazel, and later by oak, elm, and lime. Landscapes and vegetation would have been much more patchy and diverse than those with which we are familiar today. The dynamics of vegetation competition and replacement following Postglacial warming mean that conditions also would have been in flux throughout the period, with stable climax communities only becoming established in many regions after several thousand years. Mesolithic communities were intimately connected to their environment, and the complex dynamic of replacement of pine and birch by oak, hazel, and lime in regions such as Britain and Germany had clearly defined influences on large mammal communities and thus on hunting practices (Spikins 1999, Spikins 2000, Jochim and Tolan-Smith this volume).

The most obvious area of environmental influence on Mesolithic societies is that of colonisations. Large-scale patterns of change in environments and resources undoubtedly influenced both new colonisations and population movements within inhabited Europe. Concepts of early pioneers, hardy explorers of previously unused terrain and a 'shifting up' and gradual infilling pervade discussions of all the regions, from new occupation of previously unoccupied landscapes in Scandinavia (Bjerck this volume), Scotland (Finlayson 1998, Hardy and Whickham-Jones 2002, Tolan-Smith this volume), islands such as Ireland (Tolan-Smith this volume), Corsica (Valdeyron this volume, Pluciennik this volume), and Sardinia (Pluciennick this volume), to expansion to high altitudes in the mountains of central Europe (Svoboda this volume). The motivations and processes behind colonisation and how this relates to changing environments and landscapes can be surprisingly elusive, however. In areas such as Ireland (Tolan-Smith this volume) or Corsica (Valdeyron this volume), colonisation reflects a complex relationship between environmental opportunity and human motivation, ingenuity and desire for exploration. Ethnographic evidence can provide further insight. Tolan-Smith (this volume) suggests several different stages in population expansion in the British Isles, from initial colonisation of new regions to consolidation and infilling and further expansion following climatic changes. We might even begin to imagine the different social contexts of settlement with emphases on 'exploration' or 'tradition'.

There is more to colonisation than simply a response to environmental changes, however. Bjerck illustrates the role of technological innovation in colonisation, the risk associated with pioneering settlement of Arctic landscapes and the technological component of specialised maritime occupation and its development. He attributes the delay in colonisation of the extreme north to the delay in developing specialised methods of marine exploitation, in particular the technological capacity

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for safe movement using sea craft that could be righted if submerged – particularly important in extremely cold seas. Without these innovations, Bjerck (this volume) describes northern coastal environments as 'inaccessible as the moon'.

Environmental change also will have influenced population migration in occupied areas. Although the concept of migrations is unfashionable, large-scale changes in technology, in artefact types and distributions, and how these relate to environments and regions, have fascinated archaeologists studying the Mesolithic from its first recognition. Across all regions, we can document the movement of certain artefacts, such as Star Carr and Deepcar assemblage types in early Mesolithic Britain (Tolan-Smith this volume) or scalene or Montclus triangles in Late Mesolithic France (Valdeyron this volume). To some extent, shifts of groups with changing environments or changing subsistence practices can be seen as influencing movements and change in artefact styles (see Tolan-Smith this volume, Jochim this volume). Microlithisation, the gradual reduction in size of microliths, a pattern common to Mesolithic Europe, also can be seen in terms of changing woodland types and changing technologies for medium and large game hunting. However, changes in artefact styles have other, more predominantly social explanations. Pluciennik (this volume) also suggests that microliths performed other functions, such as plant food processing, and microlithisation might have other explanations. Innovation, the spread of ideas, and the negotiation of stylistic identities between groups linked across areas of landscape are also key features of Mesolithic Europe. In some areas, there is a relationship between changes in lithic technology and changes in game resources, as in the British Isles (Tolan-Smith this volume), or the Upper Danube and Upper Rhine (Jochim this volume). In other areas such as southwest France (Pluciennik this volume), there is no consistent pattern, suggesting that relationships between groups and the spread of knowledge were important influences.

Other types of changes in artefacts also suggest a story of social changes, which remains to be uncovered. Increasing *regionalisation* of patterns of artefacts, both in terms of distinctive styles and increasingly regional networks of raw material procurement, require explanation. Increasing regionalisation can in part be explained by a fragmentation of increasingly complex and dense woodland environments throughout the Mesolithic (Spikins 1999, Spikins 2000). Other explanations include an increasing intensification of subsistence. However, in many areas, arguments for increasing territoriality (Gendel 1984, 1987) seen in stylistic or assemblage distinctions in artefacts such as stone axes in west Norway (Bjerck this volume), distinctive types of microlith styles in different regions of Denmark (Blankholm this volume) or other elements of material culture such as rock art traditions, have proved more supportable than a focus on intensification *per se* (Arias 2004). The social context of regionalisation is, nevertheless, difficult to address, given the complex relationship between what might be seen as defined 'territories' and ethnicity (Bergsvik 2003). Insight has been gained from considering the spread of techniques of manufacture rather than by focusing on final form, for example, the spread of blade techniques and changes in platform preparation in Norway (Bjerck this volume, see also Warren 2006).

A particularly interesting argument for a relationship between environment and society lies in the apparent connection between social complexity and maritime and lakeside environments (Mithen 1994). Similarities appear in societies in which there are rich maritime or lakeside resources from the far north to the Mediterranean. In the far northern latitudes, where for four months of the year the sun does not set, the icy cold but resource-rich northern sea was the focus of settlement for maritime hunter-gatherers such as those at Vega in northern Norway. Here we see settlements with pit houses, with people using elaborate seagoing vessels in their specialised focus on marine foods, probably associated with seal hunting (Bjerck 1995, Bjerck this volume). Further south, other structured settlements echo the theme of marine or lakeside focus. At Tågerup in Sweden, large

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houses were constructed in a 'village' at the confluence of two rivers, with permanent structures such as jetties and moorings for boats (Zvelebil this volume). Coastal and lakeside regions also provide evocative glimpses of societies for whom the sea and water played an important economic and symbolic role. We see richly symbolic pendants of amber and animal teeth, wooden artefacts such as bows, decorated paddles, canoes, and leisters in evidence from submerged sites in the Baltic (Blankholm this volume). Rock art sites such as Nämforsen in Sweden offer fascinating glimpses of symbolism associated with images of elk, boats, fish, and birds that show commonalities with the cosmological system of the modern Khanty, and appear to mark an important locus for ritual, aggregation and exchange (Zvelebil this volume). Riverine resources also appear to have been particularly influential in the development of settlements such as Lepenski Vir and Vlasac in the Iron Gates (Bonsall this volume). Here, in relative isolation from the rest of Europe, we see an apparently 'sacred' site at Lepenski Vir, comprising houses with plastered floors, carved figurines, and neonates interned under the floors.

The distinctive difference between these societies and those in inland areas is a common theme running through the volume. In interior regions, typified by often-dense Holocene woodland, the evidence for occupation can be scarce, and for ritual or symbolic life scarcer still. We see similar elusive evidence with scattered sites and interpretations of woodland hunting in Germany (Jochim this volume), France (Valdeyron this volume), and Britain (Tolan-Smith this volume), and in the distinctive woodland areas of the Mediterranean such as Greece (Pluciennik this volume). Postdepositional processes undoubtedly play a role in influencing the patchiness of the hinterland record, but it is difficult to escape the conclusion that such wooded environments were in general less resource-rich and populations more mobile and organisationally 'simpler'. Zvelebil suggests that these inland areas are typified by simple forager groups exemplifying Ingold's 'forager mode of production' (Ingold 1988, Zvelebil 1998). Distinctively different societies occupied many lakeside and marine locations and exhibited status differentiation and distinctions along dimensions of age and sex. Nonetheless, the relationship between environment, landscape, and society in Mesolithic Europe is far from clear-cut. Each region, or even local area, has a distinctive mark, which reflects a subtle and individual engagement between resources, settlement, and belief, and that is also negotiated through and affected by connections between groups at a larger scale.

The interpretation of apparently different degrees of social organisation in societies across the whole region and the extent to which this relates to environments is challenging. Traditionally, social differences are seen as being driven by differences in settlement/mobility patterns. Drawing on ethnography, the contrast between so-called delayed return and immediate return hunter-gatherers (Woodburn 1980) has been seen as the structuring principle explaining difference in Mesolithic society. In Woodburn's model, 'immediate return' groups make frequent moves of their main residential base, foraging on a daily basis to collect local food sources. Mobility of this kind has been seen as a classic hallmark of small-scale egalitarian societies in which resources are unpredictable and sparse, who might tend to show a kinship structure based on exogamy and wide-ranging alliance networks (Tolan-Smith this volume). 'Delayed return' hunter-gatherers, by contrast, appear to be associated with predictable resource-rich environments where collecting food resources can be organised using task groups, who forage away from the main residential base. These are the 'logistic foragers' in Binford's terms (1980), in which through organised exploitation the returns on collection are 'delayed'. The latter kind of movement involves planning and organisation, and typically use of complex technology such as fish traps and boats.

Applying these models appears to 'make sense' of much of the material evidence for Mesolithic Europe. Several regions provide good examples of logistically organised societies that have been seen as examples of 'complexity'. Specialised maritime exploitation patterns as in Scandinavia

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provide one example, with certain clear-cut cases of organised procurement, such as specialised hunting sites for swans or whales in Denmark (Blankholm this volume). Societies in the Baltic show evidence for marking out of social distinctions and illustrate many instances of different social groups in burial (Zvelebil this volume). However, the association of resources and settlement with other changes, such as social stratification, intensification, the rise of sedentism, and the appearance of cemeteries, is not altogether clear-cut. In northern Scandinavia, evidence suggests that a suite of social changes occurred throughout the Mesolithic - a longer-lasting occupation of sites, the appearance of more distinct regional groupings, a widening range of species in subsistence, and an intensification in the use of symbols (Bjerck this volume). The progressive development of social organisation and the relationship between characteristics of social organisation and environments is increasingly being questioned in other regions. In southern Scandinavia, the concept of a progressive increase in sedentism, the rise of complexity, and the appearance of cemeteries is not borne out by close inspection of the material record (Blankholm this volume), although variety of grave goods at Skateholm and association of blade knives with some male burials at Bøggebaken does suggest increased social diversity and the rise of leadership and competition for power. For the Iron Gates, despite earlier interpretations, Bonsall (this volume) finds sedentism unlikely, and although some suggestions of high-status burial exist, social distinctions are hard to define. Across Mesolithic Europe, the relationship among 'delayed return' economies, 'complexity' discernible in evidence of increased sedentism, exchange relationships, and defined stratification in burial is often unclear.

The arguments for relating use of resources and settlement pattern to apparent social changes are not as straightforward as they might appear. Certainly, the concept of clear modes of settlement can be seen to be rather simplistic. Almost all hunter-gatherers use both immediate and delayed return strategies at various times (Kelly 1995, Spikins 1999, 2000) with a fluid transition between 'mapping onto' food resources and the organisation of specialist task groups. As Jochim (1991) illustrates, seasonal rounds in ethnographic societies are rarely clearly defined, with variation from year to year being the norm. Differences within regions are also marked in ethnographic cases (Spikins 1999, Spikins 2000). In recent years, there also has been an increasing recognition of the fluidity of social changes. Rowley-Conwy notes that the appearance of what we might call 'complexity' is a fluid process, which can be reversed (Rowley-Conwy 2001). The relationship between subsistence changes and ideological changes also has become an area of much debate that remains to be resolved for the Mesolithic-Neolithic transition (Rowley-Conwy 2004). A gradual rise of complexity through intensification of exploitation patterns and increasing organisation of people and time has become a hard principle to sustain, and there seems to be far more to the picture of different societies than variability in resource exploitation.

Of course, the 'missing pieces' of the tapestry of evidence in Mesolithic Europe compound the difficulties of distinguishing modes of society related to immediate or delayed return settlement systems, and even more so of identifying or beginning to understand any transition between them. As many have argued (Coles 1998, Bailey 2004, Bailey and Milner 2002, Fleming 2004), the missing evidence from submerged prehistoric coasts may be crucial, as almost all our evidence of early Mesolithic coastal societies has been submerged by rising seas and much Late Mesolithic evidence as well. It is precisely the coastal locations where the most 'organised' societies tend to exist. For Britain, tantalising glimpses of supposedly emergent complexity occur in early Mesolithic coastal settings, such as evidence for structures, which might have been occupied for an extended period, at Howick (Tolan-Smith this volume, Waddington et al. 2003) or glimpses of symbolism and exchange in the elaborate bead production at Nab Head in South Wales (Tolan-Smith this volume). The 'missing pieces' of the tapestry not only frustrate interpretations but may even bias them towards