

# Preface

The dynamic pace of research in archaeology is illustrated by the rapid evolution of this book: first published in 1991, a second edition came out in 1996, and now a third in 2000. There are plenty of indications that the subject continues to change, not only in terms of dramatic new discoveries, but also in terms of theories, methods, and practice.

Developing *methods* continue to open new perspectives. The investigation of individual sites by remote sensing techniques, including satellite imagery, and also by Ground Penetrating Radar, produces ever more sophisticated results. Methods of dating are becoming more reliable and precise – for instance the potential and limitations of radiocarbon have been greatly clarified – and every few years a new technique, such as Chlorine-36 dating, opens up new possibilities.

One of the most rapidly developing fields is the application of molecular genetics to human population history. The contributions of ancient DNA have so far been few, but in at least one case spectacular – the brilliant achievement of extracting and sequencing mitochondrial DNA from Neanderthal remains some 40,000 years old has contributed important new insights into human evolution, which is now beginning to be understood at the molecular level. But so far it is mainly DNA from living populations that has begun to inform us about population events, some of them dating back beyond 10,000 years ago into the Pleistocene era, the time of the Upper Paleolithic.

In recording and trying to see what is significant among these new advances in methodology one has a sense of the excitement of a rapidly moving discipline. For instance, it is clear that insights into population histories offered by molecular genetics may carry important implications for the histories of the language families of the world. Yet at the same time there is the serious risk of jumping to premature conclusions. The methodologies needed in relating two such disparate and complex disciplines are so novel that it is not at present clear where theory ends and method begins. Many of the methods described in this book may now

be recognized as routine science; others, and the interpretive methods of molecular genetics are among them, are still pioneering initiatives.

In the realm of archaeological *theory* it would seem that some sort of truce has been established between the interpretive archaeologists (postprocessual archaeologists) and others who continue to develop the processual tradition. Indeed there is some convergence of interest. “The Archaeology of Identity” is a term which may be used to describe a “bottom-up” approach, focusing on the individual. This contrasts with the “top-down” approach of those studying whole societies and their hierarchies. Gender archaeology continues to develop within this framework, transcending the simple vigor of early feminist archaeology, and the rather basic polarity between male and female, to a much more complex approach, where sexualities are seen as interacting with age, status, and other variables. The notion of ethnicity is at last being regarded not as some essentialist ingredient of existing societies and their ancestors, but rather as a product of the decisions of individuals in their own time.

Interpretive and cognitive-processual archaeologies converge also in the new and widespread interest in the landscape as a product of human activity and belief, with the evolution of the landscape seen as something to be analyzed in terms of changing human perceptions and assumptions. Underlying all this, however, are philosophical positions which should be examined and if possible made clear – whether it is the methodological individualism of the processual approach, or the phenomenology advocated by some of the interpretive archaeologists. It is our task in this book to seek to make some of these distinctions clear, without becoming so far wrapped up in jargon that the subject becomes totally impenetrable. We hold the optimistic view that it is possible to do archaeology quite effectively without being a specialist in the philosophical works of Heidegger or Derrida – without denying that insights in archaeology may come from unexpected quarters. Perhaps by the fourth edition of

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this book some current philosophical fashions may seem unprofitable, sterile even. But others will be seen to open the way to new and fruitful patterns of thought. We hope that our approach to new modes of thought has been constructive, even when we are not yet entirely persuaded.

The *practice* of archaeology has also changed significantly over the past decade. The interactions in this respect between the politics of archaeology, the growing heritage industry (increasingly seen as a fundamental part of the tourist industry), and the academic status of the discipline are becoming clearer and at the same time more problematic. Just about every nation in the world now uses its past, as revealed in its material culture, to provide symbols of nationhood. Some of these are a blatant misuse of the archaeological past. Others may seem legitimate – but who precisely is to judge? The role of museums in the display of objects from the past has a worthy antiquity, but the continuing practice of the acquisition of unproven antiquities by certain institutions is now the subject of fierce ethical debate. Are such institutions living up to their public responsibilities?

And where does the boundary come in the heritage industry between effective and informed popularization (as exemplified by the York Archaeological Trust) and the unscrupulous exploitation of the past for commercial gain? With the growing popularity of archaeology these are questions which are becoming more prominent. Archaeology today is a global undertaking, and its research methods have a universal application, just as its problems are everywhere felt. We have tried to keep in view the underlying unity of our discipline.

Once more we have attempted to keep pace with developments in all aspects of this diverse discipline and this has involved a great number of people all over the world. We approached numerous specialists and course tutors to comment on the previous edition, and the list of those to whom we are grateful continues to grow. Those who helped in the two previous editions are credited at the end of the book; here we would like to extend our thanks to the following who provided detailed comments, information, or illustrations.

Janet Ambers (British Museum); Arthur Aufderheide (University of Minnesota); Mike Baillie (Queen's University, Belfast); Ofer Bar-Yosef (Harvard); George Bass and Cemal Pulak (Institute of Nautical Archaeology, College Station, Texas); Bob Bewley; Steve Bourget (University of East Anglia); Neil Brodie (University of Cambridge); Simon Buteux (University of Birmingham); Martin Carver (University of York); Robin Coningham (University of Bradford); Larry

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*Archaeology: Theories, Methods, and Practice* is intended fundamentally for the student and for teaching at university level. But it is a work designed as well for the use of the professional archaeologist. For that reason the notes and bibliography have again been enlarged and updated. It is also meant to be read with enjoyment by all who share an enthusiasm for discovering the great variety of ways of looking at the past. Errors of fact or emphasis no doubt remain, and, as always, we would be delighted to hear from anyone who feels sufficiently provoked or stimulated to write suggesting improvements.

Colin Renfrew  
Paul Bahn

# Introduction

## The Nature and Aims of Archaeology

Archaeology is partly the discovery of the treasures of the past, partly the meticulous work of the scientific analyst, partly the exercise of the creative imagination. It is toiling in the sun on an excavation in the deserts of Iraq, it is working with living Inuit in the snows of Alaska. It is diving down to Spanish wrecks off the coast of Florida, and it is investigating the sewers of Roman York. But it is also the painstaking task of interpretation so that we come to understand what these things mean for the human story. And it is the conservation of the world's cultural heritage – against looting and against careless destruction.

Archaeology, then, is both a physical activity out in the field, and an intellectual pursuit in the study or laboratory. That is part of its great attraction. The rich mixture of danger and detective work has also made it the perfect vehicle for fiction writers and film-makers, from Agatha Christie with *Murder in Mesopotamia* to Steven Spielberg with Indiana Jones. However far from reality such portrayals may be, they capture the essential truth that archaeology is an exciting quest – the quest for knowledge about ourselves and our past.

But how does archaeology relate to disciplines such as anthropology and history that are also concerned with the human story? Is archaeology itself a science? And what are the responsibilities of the archaeologist in today's world, where the past is manipulated for political ends and “ethnic cleansing” is accompanied by the deliberate destruction of the cultural heritage?

### Archaeology as Anthropology

Anthropology at its broadest is the study of humanity – our physical characteristics as animals, and our unique non-biological characteristics that we call *culture*. Culture in this sense includes what the anthropologist Edward Tylor usefully summarized in 1871 as “knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by man as a member of society.” Anthropologists also use the term culture in a more restricted sense when they refer to

the culture of a particular society, meaning the non-biological characteristics unique to that society which distinguish it from other societies. (An “archaeological culture” has a specific and somewhat different meaning, as explained in Chapter 3.) Anthropology is thus a broad discipline – so broad that it is generally broken down into three smaller disciplines: biological anthropology, cultural anthropology, and archaeology.

*Biological anthropology*, or physical anthropology as it used to be called, concerns the study of human biological or physical characteristics and how they evolved.

*Cultural anthropology* – or social anthropology – analyzes human culture and society. Two of its branches are *ethnography* (the study at first hand of individual living cultures) and *ethnology* (which sets out to compare cultures using ethnographic evidence to derive general principles about human society).

*Archaeology* is the “past tense of cultural anthropology.” Whereas cultural anthropologists will often base their conclusions on the experience of actually living within contemporary communities, archaeologists study past societies primarily through their material remains – the buildings, tools, and other artifacts that constitute what is known as the *material culture* left over from former societies.

Nevertheless, one of the most challenging tasks for the archaeologist today is to know how to interpret material culture in human terms. How were those pots used? Why are some dwellings round and others square? Here the methods of archaeology and ethnography overlap. Archaeologists in recent decades have developed *ethnoarchaeology*, where like ethnographers they live among contemporary communities, but with the specific purpose of understanding how such societies use material culture – how they make their tools and weapons, why they build their settlements where they do, and so on.

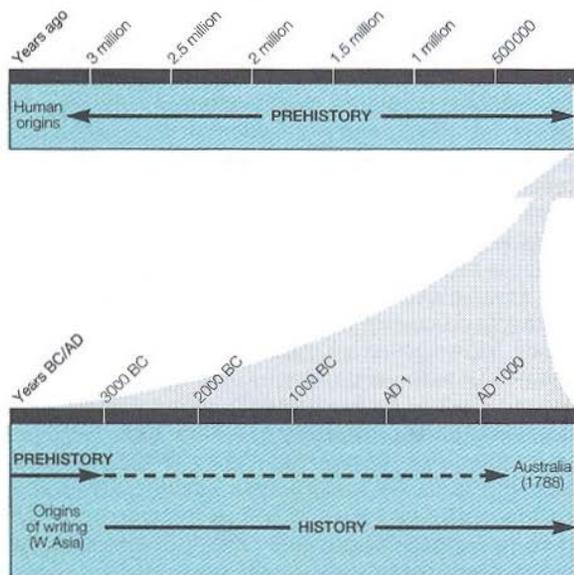
Moreover archaeology has an active role to play in the field of conservation. *Heritage studies* constitute a developing field, where it is realized that the world's

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cultural heritage is a diminishing resource, and one which holds different meanings for different people. The presentation of the findings of archaeology to the public cannot avoid difficult political issues, and the museum curator and the popularizer today have responsibilities which some can be seen to have failed.

### Archaeology as History

If, then, archaeology deals with the past, in what way does it differ from history? In the broadest sense, just as archaeology is an aspect of anthropology, so too is it a part of history – where we mean the whole history of humankind from its beginnings over 3 million years ago. Indeed for more than 99 percent of that huge span of time archaeology – the study of past material culture – is the only significant source of information, if one sets aside physical anthropology, which focuses on our biological rather than cultural progress. Conventional historical sources begin only with the introduction of written records around 3000 BC in western Asia, and much later in most other parts of the world (not until AD 1788 in Australia, for example). A commonly drawn distinction is between *pre-history* – the period before written records – and history in the narrow sense, meaning the study of the past using written evidence. In some countries, “pre-history” is now considered a patronizing and deroga-



*The vast timespan of prehistory compared with the relatively short period for which we have written records (“history”). Before c. 3000 BC, material remains are our only evidence.*

tory term which implies that written texts are more valuable than oral histories, and which classifies their cultures as inferior until the arrival of western ways of recording information. To archaeology, however, which studies all cultures and periods, whether with or without writing, the distinction between history and prehistory is a convenient dividing line that simply recognizes the importance of the written word in the modern world, but in no way denigrates the useful information contained in oral histories.

As will become abundantly clear in this book, archaeology can also contribute a great deal to the understanding even of those periods and places where documents, inscriptions, and other literary evidence do exist. Quite often, it is the archaeologist who unearths such evidence in the first place.

### Archaeology as a Science

Since the aim of archaeology is the understanding of humankind, it is a humanistic discipline, a humane study. And since it deals with the human past it is a historical discipline. But it differs from the study of written history – although it uses written history – in a fundamental way. The material the archaeologist finds does not tell us directly what to think. Historical records make statements, offer opinions, pass judgments (even if those statements and judgments themselves need to be interpreted). The objects that archaeologists discover, on the other hand, tell us nothing directly in themselves. It is *we* today who have to make sense of these things. In this respect the practice of archaeology is rather like that of the scientist. The scientist collects data (evidence), conducts experiments, formulates a hypothesis (a proposition to account for the data), tests the hypothesis against more data, and then in conclusion devises a model (a description that seems best to summarize the pattern observed in the data). The archaeologist has to develop a picture of the past, just as the scientist has to develop a coherent view of the natural world. It is not found ready made.

Archaeology, in short, is a science as well as a humanity. That is one of its fascinations as a discipline: it reflects the ingenuity of the modern scientist as well as the modern historian. The technical methods of archaeological science are the most obvious, from radiocarbon dating to studies of food residues in pots. Equally important are scientific methods of analysis, of inference. Some writers have spoken of the need to define a separate “Middle Range Theory,” referring to a distinct body of ideas to bridge the gap between raw archaeological evidence and the general

observations and conclusions to be derived from it. That is one way of looking at the matter. But we see no need to make a sharp distinction between theory and method. Our aim is to describe clearly the methods and techniques used by archaeologists in investigating the past. The analytical concepts of the archaeologist are as much a part of that battery of approaches as are the instruments in the laboratory.

## The Variety and Scope of Archaeology

Today archaeology is a broad church, encompassing a number of different “archaeologies” which are nevertheless united by the methods and approaches outlined in this book. We have already highlighted the distinction between the archaeology of the long prehistoric period and that of historic times. This chronological division is accentuated by further subdivisions so that archaeologists specialize in, say, the earliest periods (the Old Stone Age or Paleolithic, before 10,000 years ago) or the later ones (the great civilizations of the Americas and China; Egyptology; the Classical archaeology of Greece and Rome). A major development in the last two or three decades has been the realization that archaeology has much to contribute also to the more recent historic periods. In North America and Australia historical archaeology – the archaeological study of colonial and postcolonial settlement – has expanded greatly, as has medieval and postmedieval archaeology in Europe. So whether we are speaking of colonial Jamestown in the United States, or medieval London, Paris, and Hamburg in Europe, archaeology is a prime source of evidence.

Cutting across these chronological subdivisions are specializations that can contribute to many different archaeological periods. Environmental archaeology is one such field, where archaeologists and specialists from other sciences study the human use of plants and animals, and how past societies adapted to the ever-changing environment. Underwater archaeology is another such field, demanding great courage as well as skill. In the last 30 years it has become a highly scientific exercise, yielding time capsules from the past in the form of shipwrecks that shed new light on ancient life on land as well as at sea.

Ethnoarchaeology, too, as we discussed briefly above, is a major specialization in modern archaeology. We now realize that we can only understand the archaeological record – that is to say, what we find – if we understand in much greater detail how it came about, how it was formed. Formation processes are now a focus of intensive study. It is here that ethnoarchaeology has come into its own: the study of living

peoples and of their material culture undertaken with the aim of improving our understanding of the archaeological record. For instance, the study of butchery practices among living hunter-gatherers, undertaken by Lewis Binford among the Nunamiut Eskimo of Alaska gave him many new ideas about the way the archaeological record may have been formed, allowing him to re-evaluate the bone remains of animals eaten by very early humans elsewhere in the world. Nor are these studies confined to simpler communities or small groups. Contemporary material culture has now become a focus of study in its own right, and the archaeology of the 20th century ranges from the design of Coca-Cola bottles and beer cans to the garbage of Tucson, Arizona (where the Garbage Project set up by William L. Rathje studied the refuse of different sectors of the city to give insights into the patterns of consumption of the modern urban population). Such “actualistic studies” are increasingly in vogue. Sites such as airfields and gun emplacements from World War II (1939–45) are now being preserved as ancient monuments: there are plans to preserve the shell of the National Picture Theatre at Hull (in the United Kingdom) as a ruinous “bomb site” – a building destroyed in 1941 during the bombing raids of the blitz. The Nevada Test Site, established in 1950 as a continental location for United States nuclear weapons testing is now the subject of archaeological research and conservation. The archaeology of the 20th century even has its looters: artifacts raised from the wreck of the *Titanic* have been sold for large sums to private collectors. The archaeology of the 21st century will soon be upon us.

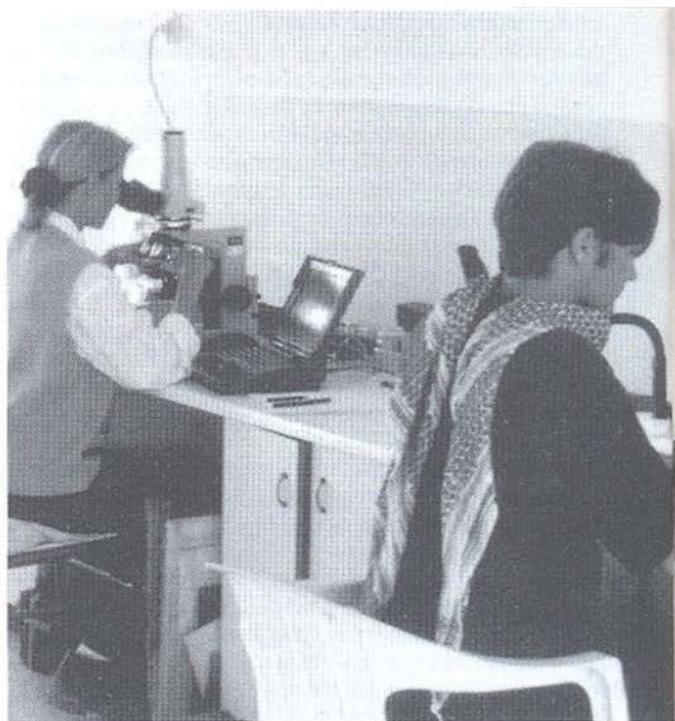
## Aims and Questions

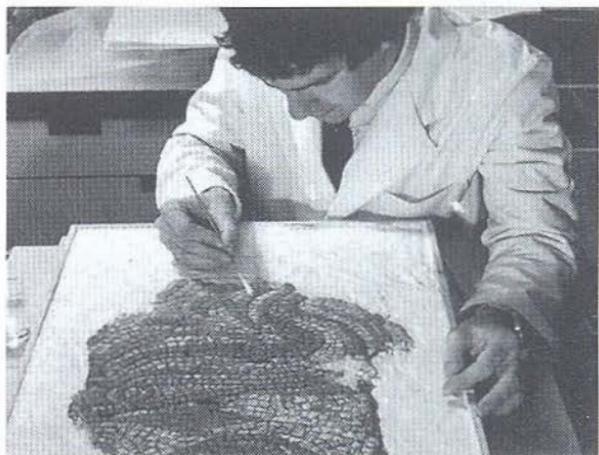
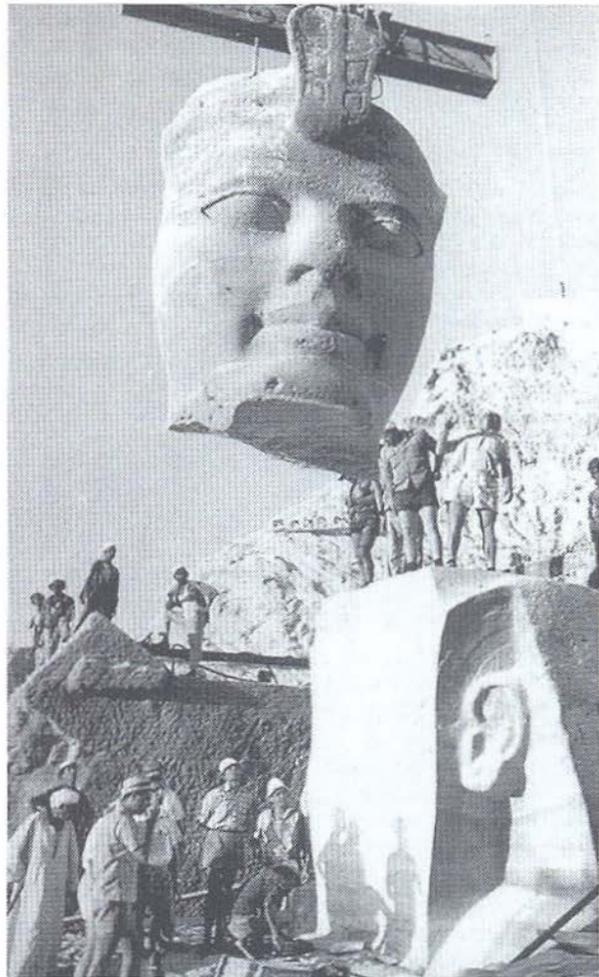
If our aim is to learn about the human past, there remains the major issue of what we hope to learn. Traditional approaches tended to regard the objective of archaeology mainly as reconstruction: piecing together the jigsaw. But today it is not enough simply to re-create the material culture of remote periods, or to complete the picture for more recent ones.

A further objective has been termed “the reconstruction of the lifeways of the people responsible for the archaeological remains.” We are certainly interested in having a clear picture of how people lived, and how they exploited their environment. But we also seek to understand *why* they lived that way: why they had those patterns of behavior, and how their lifeways and material culture came to take the form they did. We are interested, in short, in *explaining* change. This interest in the processes of cultural change came to

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The diversity of modern archaeology. Top row (Near right) Working in the laboratory on finds from Çatalhöyük in Turkey, including study of micromorphological sections. (Second right) Two archaeologists at the site of Batán Grande in Peru trace frescoes in position, evidence for a major pre-Inca civilization. (Far right) A triumph of salvage archaeology: the rescuing of pharaoh Ramesses II's temples at Abu Simbel, Egypt, in advance of the rising waters of the Aswan Dam. Bottom row (Below left) Urban archaeology: excavation of a Roman site in the heart of London, with St. Paul's Cathedral in the background. (Below center) An ethnoarchaeologist in the field in Alaska, sharing and studying the lives of modern Eskimo as they hunt caribou. (Below center right) Underwater archaeology: divers recording finds on the Bronze Age wreck at Uluburun, off the coast of Turkey. (Below far right) Conservation of a mosaic at London's Institute of Archaeology.





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define what is known as *processual archaeology*. Processual archaeology moves forward by asking a series of questions, just as any scientific study proceeds by defining aims of study – formulating questions – and then proceeding to answer them. The symbolic and cognitive aspects of societies are also important areas emphasized by recent approaches, often grouped together under the term *postprocessual* or *interpretive archaeology*, although the apparent unity of this perspective has now diversified into a variety of concerns. It is persuasively argued that in the “post-modern” world different communities and social groups have their own interests and preoccupations, that each may have its voice and its own distinctive construction of the past, and that in this sense there are many archaeologies.

There are many big questions that preoccupy us today. We want to understand the circumstances in which our human ancestors first emerged. Was this in Africa and only in Africa, as currently seems the case? Were these early humans proper hunters or merely scavengers? What were the circumstances in which our own subspecies *Homo sapiens sapiens* evolved? How do we explain the emergence of Paleolithic art? How did the shift from hunting and gathering to farming come about in western Asia, in Mesoamerica, and in other parts of the world? Why did this happen in the course of just a few millennia? How do we explain the rise of cities, apparently quite independently in different parts of the world? The list of questions goes on, and after these general questions there are more specific ones. We wish to know why a particular culture took the form it did: how its particularities emerged, and how they influenced developments. This book does not set out to review the provisional answers to all these questions – although many of the impressive

results of archaeology will emerge in the following pages. In this book we examine rather the *methods* by which such questions can be answered.

## Plan of the Book

The methods of archaeology could be surveyed in many different ways. We have chosen to think in terms of the many kinds of *questions* to which we wish to have answers. Indeed the form of the question is often crucial. It could be argued that the whole philosophy of archaeology is implied in the questions we ask and the form in which we frame them.

Part I reviews the whole field of archaeology, looking first at the history of the subject, and then asking three specific questions: how are materials preserved, how are they found, and how are they dated?

Part II sets out further and more searching questions – about social organization, about environment, and about subsistence; about technology and trade, and about the way people thought and communicated. We then ask what they were like physically. And finally the interesting question is posed: *why* things changed.

Part III is a review of archaeology in practice, showing how the different ideas and techniques can be brought together in field projects. Four such projects are chosen as case studies: from southern Mexico and northern Australia, from Thailand, and from urban York in England. In conclusion there is a chapter on public archaeology, which discusses the uses and abuses of archaeology in the modern world, and the obligations these things have placed on the archaeologist and on all those who exploit the past for gain or for political purposes. In this way we plan that the book should give a good overview of the whole range of methods and ideas of archaeological investigation.

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## FURTHER READING

**The following books give an indication of the rich variety of archaeology today. Most of them have good illustrations:**

Bahn, P.G. (ed.). 2000. *The Penguin Archaeology Guide*. Penguin: London.

Bahn, P.G. (ed.). 2000. *The World Atlas of Archaeology*. Facts on File: New York.

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Gowlett, J. 1993. *Ascent to Civilization: The Archaeology of Early Humans*. (2nd ed.). McGraw-Hill: London & New York.

Scarre, C. (ed.). 1988. *Past Worlds: The Times Atlas of Archaeology*. Times Books: London; Hammond: Maplewood, NJ.

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