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The Searchers

The History of Archaeology

The history of archaeology is commonly seen as the history of great discoveries: the tomb of Tutankhamun in Egypt, the lost Maya cities of Mexico, the painted caves of the Old Stone Age, such as Lascaux in France, or the remains of our human ancestors buried deep in the Olduvai Gorge in Tanzania. But even more than that it is the story of how we have come to look with fresh eyes at the material evidence for the human past, and with new methods to aid us in our task.

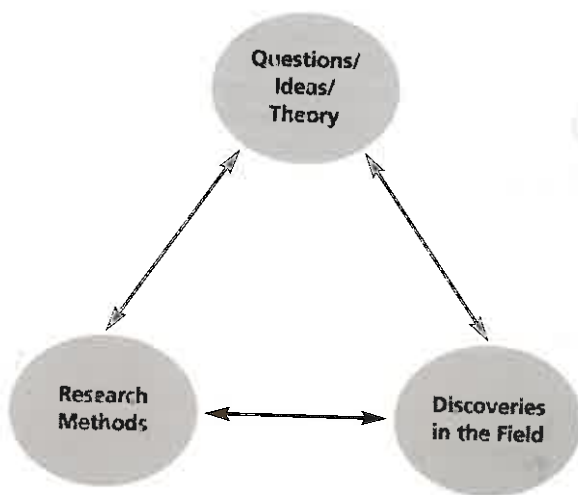
It is important to remember that just a century and a half ago, most well-read people in the Western world – where archaeology as we know it today was first developed – believed that the world had been created only a few thousand years earlier (in the year 4004 BC according to the then-standard interpretation of the Bible), and that all that could be known of the remote past had to be gleaned from the surviving pages of the earliest historians, notably those of the ancient Near East, Egypt, and Greece. There was no awareness that any kind of coherent history of the periods before the development of writing was possible at all. In the words of the Danish scholar Rasmus Nyerup (1759–1829):

Everything which has come down to us from heathendom is wrapped in a thick fog; it belongs to a space of time which we cannot measure. We know that it is older than Christendom, but whether by a couple of years or a couple of centuries, or even by more than a millennium, we can do no more than guess.

Today we can indeed penetrate that “thick fog” of the remote past. This is not simply because new discoveries are being made all the time. It is because we have learnt to ask some of the *right questions*, and have developed some of the *right methods* for answering them. The material evidence of the archaeological record has been lying around for a long time. What is new is our awareness that the methods of archaeology can give us information about the past, even the prehistoric past (before the invention of writing). The history of archaeology is therefore in the first

instance a history of *ideas*, of theory, of ways of looking at the past. Next it is a history of developing research methods, employing those ideas and investigating those questions. And only thirdly is it a history of actual discoveries.

We can illustrate the relationship between these aspects of our knowledge of the past with a simple diagram:



In this chapter and in this book it is the development of the questions and ideas that we shall emphasize, and the application of new research methods. The main thing to remember is that every view of the past is a product of its own time: ideas and theories are constantly evolving, and so are methods. When we describe the archaeological research methods of today we are simply speaking of one point on a trajectory of evolution. In a few decades or even a few years time these methods will certainly look old-fashioned and out of date. That is the dynamic nature of archaeology as a discipline.

THE SPECULATIVE PHASE

Humans have always speculated about their past, and most cultures have their own foundation myths to explain why society is how it is. The Greek writer Hesiod, for instance, who lived around 800 BC, in his epic poem *Works and Days* envisaged the human past as falling into five stages: the Age of Gold and the Immortals, who “dwelt in ease and peace upon their lands with many good things”; the Age of Silver, when humans were less noble; the Age of Bronze; the Age of Epic Heroes; and lastly his own time, the Age of Iron and Dread Sorrow, when “men never rest from labor and sorrow by day and from perishing by night.”

Most cultures, too, have been fascinated by the societies that preceded them. The Aztecs exaggerated their Toltec ancestry, and were so interested in Teotihuacán, the huge Mexican city abandoned hundreds of years earlier which they mistakenly linked with the Toltecs, that they incorporated ceremonial stone masks from that site in the foundation deposits of their own Great Temple (see box, pp. 564–65). A rather more detached curiosity about the relics of bygone ages developed in several early civilizations, where scholars and even rulers collected and studied objects from the past. Nabonidus, last native king of Babylon (reigned 555–539 BC), took a keen interest in antiquities. In one important temple he dug down and

discovered the foundation stone which had been laid some 2200 years before. He housed many of his finds in a kind of museum at Babylon.

During the revival of learning in Europe known as the Renaissance (14th to 17th centuries), princes and people of refinement began to form “cabinets of curiosities” in which curios and ancient artifacts were displayed rather haphazardly with exotic minerals and all manner of specimens illustrative of what was called “natural history.” During the Renaissance also scholars began to study and collect the relics of Classical antiquity. And they began too in more northern lands, far from the civilized centers of ancient Greece and Rome, to study the local relics of their own remote past. At this time these were mainly the field monuments – those conspicuous sites, often made of stone, which immediately attracted attention, such as the great stone tombs of northwestern Europe, and such impressive sites (which we should now call prehistoric) as Stonehenge, or Carnac in Brittany. Careful scholars, such as the Englishman William Stukeley (1687–1765), made systematic studies of some of these monuments, with accurate plans which are still useful today. Stukeley and his colleagues successfully demonstrated that these monuments had not been constructed by giants or devils, as suggested by local names such as the Devil’s Arrows, but by people

An extract from the journal of William Stukeley, with his notes on his survey of the Avebury area and a drawing of Silbury Hill.

13. May 1724. this day I was informed of the few stones left on overton hill carried downwards towards W. Kennet a two thirds of the temple glows up this winter & the star thrown into the cavity for that next year it will be impossible ever more to take any measure of it.



this afternoon I paced over Kennet avenue, the intermediate distance betw. overton hill & Silbury thence to the termination of the avenue thence along Beckhampton avenue to Avebury again. I find each avenue is 8000⁷⁵⁰⁰ f. long, from Silbury to either of the extremities 6000. the whole making 30000 feet or 6 miles. I drank at a hawthorn hood to the great industry

in antiquity. He was also successful in phasing field monuments, showing that, since Roman roads cut barrows, the former must be later than the latter. In the same period, around 1675, the first archaeological excavation of the New World – a tunnel dug into Teotihuacán’s Pyramid of the Moon – was carried out by Carlos de Sigüenza y Góngora.

The First Excavations

In the 18th century more adventurous researchers initiated excavation of some of the most prominent sites. Pompeii in Italy was one of the first of these, with its striking Roman finds, although proper excavation did not begin there until the 19th century (see box overleaf). And in 1765, at the Huaca de Tantaluc on the coast of Peru, a mound was excavated and an offering discovered in a hollow; the mound’s stratigraphy was well described. Nevertheless, the credit for conducting what has been called “the first scientific excavation in the history of archaeology” traditionally goes to Thomas Jefferson (1743–1826), later in his career third President of the United States, who in 1784 dug a trench or section across a burial mound on his property in Virginia. Jefferson’s work marks the beginning of the end of the Speculative Phase.

In Jefferson’s time people were speculating that the hundreds of unexplained mounds known east of the Mississippi river had been built not by the indigenous Native Americans, but by a mythical and vanished race

of Moundbuilders. Jefferson adopted what today we should call a scientific approach, that is, he tested ideas about the mounds against hard evidence – by excavating one of them. His methods were careful enough to allow him to recognize different layers in his trench, and to see that the many human bones present were less well preserved in the lower layers. From this he deduced that the mound had been reused as a place of burial on many separate occasions. Although Jefferson admitted, rightly, that more evidence was needed to resolve the Moundbuilder question, he saw no reason why ancestors of the present-day Native Americans themselves could not have raised the mounds.

Jefferson was ahead of his time. His sound approach – logical deduction from carefully excavated evidence, in many ways the basis of modern archaeology – was not taken up by any of his immediate successors in North America. In Europe, meanwhile, extensive excavations were being conducted, for instance by the Englishman Richard Colt Hoare (1758–1838), who dug into hundreds of burial mounds in southern Britain during the first decade of the 19th century. He successfully divided field monuments into different categories, such as bell barrow, which are still in use today. None of these excavations, however, did much to advance the cause of knowledge about the distant past, since their interpretation was still within the biblical framework, which insisted on a short span for human existence.

Early excavations: Richard Colt Hoare and William Cunnington direct a dig north of Stonehenge in 1805.



THE BEGINNINGS OF MODERN ARCHAEOLOGY

It was not until the middle of the 19th century that the discipline of archaeology became truly established. Already in the background there were the significant achievements of the newly developed science of geology. The Scottish geologist James Hutton (1726–1797), in his *Theory of the Earth* (1785), had studied the stratification of rocks (their arrangement in superimposed layers or strata), establishing principles which were to be the basis of archaeological excavation, as foreshadowed by Jefferson. Hutton showed that the stratification of rocks was due to processes which were still going on in seas, rivers, and lakes. This was the principle of “uniformitarianism.” It was argued again by Charles Lyell (1797–1875) in his *Principles of Geology* (1833): that geologically ancient conditions were in essence similar to, or “uniform with,” those of our own time. This idea could be applied to the human past also, and it marks one of the fundamental notions of modern archaeology: that in many ways the past was much like the present.

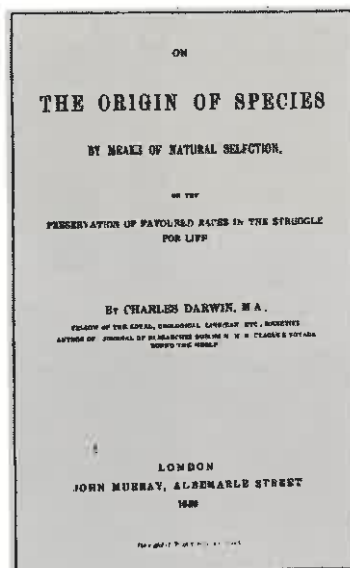
The Antiquity of Humankind

These ideas did much to lay the groundwork for what was one of the significant events in the intellectual history of the 19th century (and an indispensable one for the discipline of archaeology): the establishment of the antiquity of humankind. It was a French customs inspector, Jacques Boucher de Perthes (1788–1868), working in the gravel quarries of the Somme river, who in 1841 published convincing evidence for the association there of human artifacts (of chipped stone, what we would today call “hand-axes” or “bifaces”) and the bones of extinct animals. Boucher de Perthes argued that this indicated human existence for a long time before the biblical Flood. His view did not at first win wide acceptance, but in 1859 two leading British scholars, John Evans and Joseph Prestwich, visited him in France and returned persuaded of the validity of his findings.

It was now widely agreed that human origins extended far back into a remote past, so that the biblical notion of the creation of the world and all its contents just a few thousand years before our own time could no longer be accepted. The possibility of a prehistory of humankind, indeed the *need* for one, was established (the term “prehistory” itself came into general use after the publication of John Lubbock’s book *Prehistoric Times* in 1865, which went on to become a bestseller).

The Concept of Evolution

These ideas harmonized well with the findings of another great scholar of the 19th century, Charles Darwin (1809–



The title page of Darwin's book; his ideas about evolution proved highly influential, not least in archaeology.

1882), whose fundamental work, *On the Origin of Species*, published in 1859, established the concept of evolution as the best explanation for the origin and development of all plants and animals. The idea of evolution itself was not new – earlier scholars had suggested that living things must have changed or evolved through the ages. What Darwin demonstrated was *how* this change occurred. The key mechanism was, in Darwin's words, “natural selection,” or the survival of the fittest. In the struggle for existence, environmentally better-adapted individuals of a particular species would survive (or be “naturally selected”) whereas less well-adapted ones would die. The surviving individuals would pass on their advantageous traits by heredity to their offspring and gradually the characteristics of a species would change to such an extent that a new species emerged. This was the process of evolution. Darwin's other great work, *The Descent of Man*, was not published until 1871, but already the implications were clear: that the human species had emerged as part of this same process. The search for human origins in the material record, by the techniques of archaeology, could begin.

The Three Age System

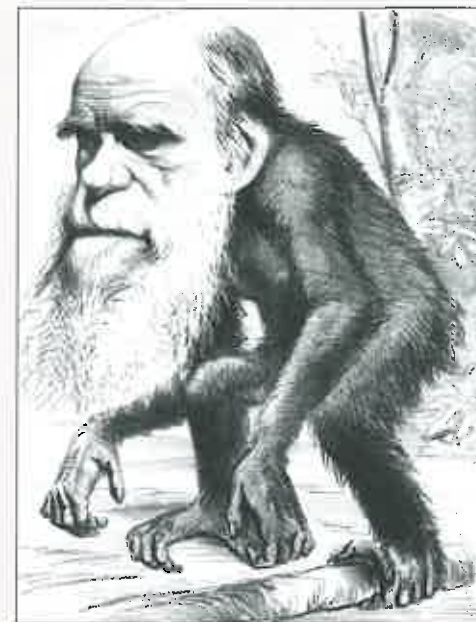
As we have noted, some of these techniques, notably in the field of excavation, were already being developed. So too was another conceptual device which proved very useful for the progress of European prehistory: the Three Age

EVOLUTION: DARWIN'S GREAT IDEA

The idea of evolution has been of central significance in the development of archaeological thinking. In the first place it is associated with the name of Charles Darwin, whose *On the Origin of Species* (1859) effectively explained the problem of the origin and development of the plant and animal species, including humankind. It did so by insisting that within a species there is variation (one individual differs from another), that the transmission of physical traits is by heredity alone, and that natural selection determines survival. Darwin certainly had precursors, among whom Thomas Malthus was influential with his notion of competition through population pressure, and the geologist Charles Lyell with his insistence upon gradual change.

Darwin's work had an immediate impact on archaeologists such as Pitt-Rivers, John Evans, and Oscar Montelius, laying the foundations for the study of the typology of artifacts. His influence on social thinkers and anthropologists was even more significant: among them was Karl Marx (Marx was also influenced by the American anthropologist, Lewis Henry Morgan – see main text).

The application of the principles of evolution to social organization does not always follow the detailed mechanisms of hereditary transmission which apply to the biologically defined species. For culture can be *learned*, and passed on between generations more widely than between parents and their children. Often, indeed, the term “evolutionary” applied to an argument or an explanation simply means “generalizing.” Here it is important to be aware of the great swing in anthropology at the end of



Charles Darwin as a “venerable Orang-outang,” a caricature published in 1871

the 19th century away from the broad generalizations of L.H. Morgan and E.B. Tylor in favor of a much more detailed, descriptive approach, often termed “historical particularism,” and associated with the name of the anthropologist Franz Boas. In the years before and after World War II American anthropologists like Leslie White and Julian Steward were therefore innovators in rejecting Boas and seeking to generalize, to find explanations for long-term change. White was for many years the only protagonist of what may be termed cultural evolutionism, with books such as *The Evolution of Culture* (1959). White and Steward strongly influenced the New Archaeologists of the 1960s and 1970s, in particular Lewis Binford, Kent Flannery, and D.L. Clarke.

In recent years, evolutionary thinking has naturally continued to play a major role in the consideration of human origins. It has been appreciated that the process of evolution does not need to be gradual; there the concept of “punctuated equilibrium” has

come into play. Nor need it be simple: the role of self-organizing systems and catastrophe theory are discussed in Chapter 12. Nor does the recent debate in the United States on “intelligent design” seem helpful: it is no more than an update of traditional arguments for the existence of God, modified to avoid the identity of the designer – it is not science. But increasingly it is realized that Darwinian evolutionary thought has not yet produced mechanisms which adequately describe the processes involved in human cultural development. Richard Dawkins' notion of the “meme,” supposedly a specific and transmissible agent for change based on the concept of the “gene,” has not proved useful in practice. Nor has the application of evolutionary psychology yet solved many problems. There is no suggestion here that the application of Darwinian evolutionary theory is incorrect or inappropriate – the problem is that it does not do very much to develop the discussion or produce useful explanatory mechanisms. Something more is needed.



C.J. Thomsen shows visitors around the Danish National Museum, arranged according to his Three Age System.

System. As early as 1808, Colt Hoare had recognized a sequence of stone, brass, and iron artifacts within the barrows he excavated, but this was first systematically studied when, in 1836, the Danish scholar C.J. Thomsen (1788–1865) published his guidebook to the National Museum of Copenhagen. This appeared in English in 1848 with the title, *A Guide to Northern Antiquities*. In it he proposed that the collections could be divided into those coming from a Stone Age, a Bronze Age, and an Iron Age, and this classification was soon found useful by scholars throughout Europe. Later a division in the Stone Age was established between the Paleolithic or Old Stone Age and the Neolithic or New Stone Age. These terms were less applicable to Africa, where bronze was not used south of the Sahara, or to the Americas, where bronze was less important and iron was not in use before the European conquest. But it was conceptually significant. The Three Age System established the principle that by studying and classifying prehistoric artifacts one could produce a chronological ordering, and say something of the periods in question. Archaeology was moving beyond mere speculation about the past, and becoming instead a discipline involving careful excavation and the systematic study of the artifacts unearthed. Although superseded by chronometric dating methods (see Chapter 4), the Three



The influence of Darwin is evident in these early typologies. (Left) John Evans sought to derive the Celtic British coinage, bottom, from the gold stater of Philip of Macedon, top. (Right) Montelius' arrangement of Iron Age fibulae (cloak pins), showing their evolution.

Age System remains one of the fundamental divisions of archaeological materials today.

These three great conceptual advances – the *antiquity of humankind*, Darwin's *principle of evolution*, and the *Three Age System* – at last offered a framework for studying the past, and for asking intelligent questions about it. Darwin's ideas were influential also in another way. They suggested that human cultures might have evolved in a manner analogous to plant and animal species. Soon after 1859, British scholars such as General Pitt-Rivers (whom we shall meet again below) and John Evans were devising schemes for the evolution of artifact forms which gave rise to the whole method of “typology” – the arrangement of artifacts in chronological or developmental sequence – later greatly elaborated by the Swedish scholar Oscar Montelius (1843–1921).

Ethnography and Archaeology

Another important strand in the thought of the time was the realization that the study by ethnographers of living communities in different parts of the world could be a useful starting point for archaeologists seeking to understand something of the lifestyles of their own early native inhabitants who clearly had comparably simple tools and

crafts. For example, contact with indigenous communities in North America provided antiquarians and historians with models for tattooed images of Celts and Britons, and scholars such as Daniel Wilson and John Lubbock made systematic use of such an ethnographic approach.

And at the same time ethnographers and anthropologists were themselves producing schemes of human progress. Strongly influenced by Darwin's ideas about evolution, the British anthropologist Edward Tylor (1832–1917), and his American counterpart Lewis Henry Morgan (1818–1881), both published important works in the 1870s arguing that human societies had evolved from a state of *savagery* (primitive hunting) through *barbarism* (simple farming) to *civilization* (the highest form of society). Morgan's book, *Ancient Society* (1877), was partly based on his great knowledge of living Native Americans. His ideas – particularly the notion that people had once lived in a state of primitive communism, sharing resources equally – strongly influenced Karl Marx and Friedrich Engels, who drew on them in their writings about pre-capitalist societies, thus influencing many later Marxist archaeologists.

Discovering the Early Civilizations

By the 1880s, then, many of the ideas underlying modern archaeology had been developed. But these ideas themselves took shape against a background of major 19th-century discoveries of ancient civilizations in the Old World and the New.

The splendors of ancient Egyptian civilization had already been brought to the attention of an avid public after Napoleon's military expedition there of 1798–1800. It was the discovery by one of his soldiers of the Rosetta Stone that eventually provided the key to understanding Egyptian hieroglyphic writing. Inscribed on the stone were identical texts written in both Egyptian and Greek scripts. The Frenchman Jean-François Champollion (1790–1832) used this bilingual inscription finally to decipher the hieroglyphs in 1822, after 14 years' work. A similar piece of brilliant scholarly detection helped unlock the secrets of cuneiform writing, the script used for many languages in ancient Mesopotamia. In the 1840s the French and British, under Paul Emile Botta (1802–1870) and Austen Henry Layard (1817–1894) respectively, had vied with one another using crude “excavations” to see which side could obtain from the Mesopotamian ruins the “largest number of works of art with the least possible outlay of time and money.” Layard wrote bestselling books and became famous for his discoveries, which included huge Assyrian sculptures of winged bulls, and a great library of cuneiform tablets from the site of Küyünjik. But it was only the final decipherment of cuneiform by Henry Rawlinson (1810–1895) in the 1850s, building on the work of others, that proved that Küyünjik

was biblical Nineveh. Rawlinson spent 20 years copying and studying a 6th-century BC trilingual inscription located on an inaccessible cliff-face between Baghdad and Tehran before cracking the code of cuneiform.

Egypt and the Near East also held a fascination for the American lawyer and diplomat John Lloyd Stephens (1805–1852), but it was in the New World that he was to make his name. His travels in Yucatán, Mexico, with the English artist Frederick Catherwood, and the superbly illustrated books they produced together in the early 1840s, revealed for the first time to an enthusiastic public the ruined cities of the ancient Maya. Unlike contemporary researchers in North America, who continued to argue for a vanished white race of Moundbuilders as the architects of the earthworks there (see box, pp. 30–31), Stephens rightly believed that the Maya monuments were, in his own

Frederick Catherwood's accurate, if somewhat romantic, drawing of a stela at Copán; at the time of his visit to the site in 1840 Maya glyphs had not been deciphered.



NORTH AMERICAN ARCHAEOLOGICAL PIONEERS



Squier



Haven



Powell



Thomas



Putnam



Holmes

Two themes dominate the study of North American archaeology in the 19th century: the enduring belief in a vanished race of Moundbuilders, and the search for “glacial man” – the idea, sparked off by Boucher de Perthes’ Somme river discoveries in mid-century, that human fossils and Stone Age tools would be found in the Americas in association with extinct animals, as they had been in Europe. One way to gain insight into these issues is to view them through the work of some of the main protagonists.

Caleb Atwater (1778–1867)

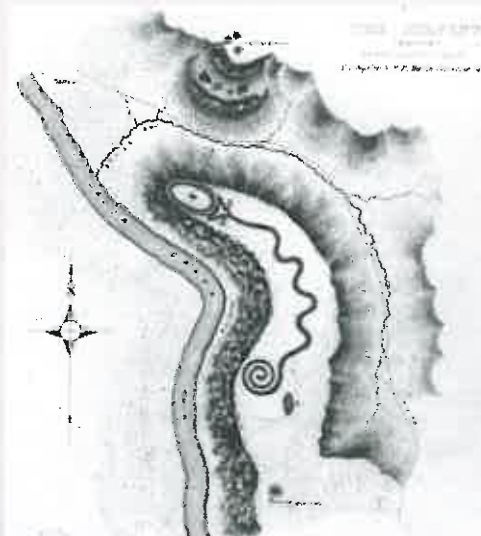
The newly formed American Antiquarian Society’s first Transactions, *Archaeologia Americana* (1820), contained a paper by Atwater, a local postmaster, on burial mounds and earthworks around Circleville, Ohio. His survey work is valuable since the mounds he studied were already disappearing fast, and are now gone. But he took little interest in their contents, and his interpretations were idiosyncratic. Atwater divided the mounds into three periods – modern European, modern Native American, and those built by the original Moundbuilder people whom he believed to have been Hindus from India who later moved on to Mexico.

Ephraim Squier (1821–1888)

Squier was an Ohio newspaperman who later became a diplomat. He is best known for his work on the prehistoric mounds with Edwin Davis, an Ohio physician. Between 1845 and 1847 they excavated over 200

mounds, and accurately surveyed many other earthworks. Their landmark volume of 1848, *Ancient Monuments of the Mississippi Valley*, was the first publication of the newly founded Smithsonian Institution, and is still useful. It recorded hundreds of mounds, including many being destroyed as settlers moved westward, gave cross-sections and plans, and adopted a simple classification system which inferred function in a general way (burial places, building platforms, effigies, fortifications/defense, etc.).

Like most of their contemporaries, Squier and Davis considered the mounds to be beyond the capabilities of any Native Americans, who were “hunters averse to labor,” and so they maintained the myth of the intrusive race of Moundbuilders.



Plan of Serpent Mound, Ohio, as prepared by Squier and Davis in 1846.

Samuel Haven (1806–1881)

As Librarian of the American Antiquarian Society, Haven built up an encyclopedic knowledge of publications on American archaeology. From this wealth of reading he produced a remarkable synthesis in 1856, *The Archaeology of the United States*, published by the Smithsonian Institution, which is considered a foundation stone of modern American archaeology.

In it, Haven argued persuasively that the Native Americans were of great antiquity, and, through cranial and other physical characteristics, he pointed to their probable links with Asiatic races. Disagreeing strongly with Atwater and Squier, he concluded that the mysterious mounds had been built by the ancestors of living Native Americans. The controversy continued to rage, but

Haven’s rigorous approach paved the way for the resolution of the issue by John Wesley Powell and Cyrus Thomas.

John Wesley Powell (1834–1902)

Raised in the Midwest, Powell spent much of his youth digging into mounds and learning geology. He became famous for canoeing down the Colorado and shooting the rapids. Eventually Powell was appointed director of the US Geographical and Geological Survey of the Rocky Mountain region. He published a wide range of information on the rapidly dwindling Native American cultures. Moving to Washington, this energetic scholar headed not only the Geological Survey but also his own brainchild, the Bureau of American Ethnology, an agency set up to study the Native North Americans. A fearless campaigner for Native American rights, he recommended the setting up of reservations, and also began the recording of tribal oral histories.

In 1881 Powell recruited Cyrus Thomas to head the Bureau’s archaeology program, and to settle the Moundbuilder question once and for all. After 7 years of fieldwork and the investigation of thousands of mounds, Thomas proved that the Moundbuilder

race had never existed: the monuments had been erected by the ancestors of modern native Americans.

But that was not the only controversial issue confronting Powell’s Bureau. In 1876, a New Jersey physician named Charles Abbott showed his collection of flaked stone tools to Harvard archaeologist Frederic Putnam, who thought they must be Paleolithic specimens, resembling as they did Stone Age tools found in France. The issue of the “paleoliths” was brought to a head in 1887 when another archaeologist, Thomas Wilson, fresh from a period in France, embarked on a campaign to prove there had been Stone Age occupation of North America. Powell hired William Henry Holmes to look into the question.

William Henry Holmes (1846–1933)

Holmes began his career as a geological illustrator, a training that stood him in good stead when he later turned to archaeology. At Powell’s request he spent five years studying the “paleolith” question. He collected innumerable specimens and proved that they were not Stone Age tools at all but simply “the refuse of

Indian implement making” from recent times. He even manufactured identical “paleoliths” himself. Abbott, Putnam, and Wilson had been



Putnam mistakenly compared prehistoric stone axes from France (left) with Charles Abbott’s “paleoliths” (right), which Holmes subsequently proved to be of recent date.

deceived into making false comparisons with the French stone tools by superficial similarities.

Holmes’ systematic methods also helped him to produce brilliant survey classifications of aboriginal pottery of the eastern United States, and studies of ruins in the Southwest and Mexico. He eventually succeeded Powell as head of the Bureau of American Ethnology. But his obsession with facts rather than theories made it difficult for him to accept the possibility that humans had after all reached North America in the Old Stone Age, as new discoveries at the end of his career in the 1920s began to suggest.

Part of a 348-ft long painting used by lecturer Munro Dickeson in the 19th century to illustrate his mound excavations.



words, "the creation of the same races who inhabited the country at the time of the Spanish conquest." Stephens also noted that there were similar hieroglyphic inscriptions at the different sites, which led him to argue for Maya cultural unity – but no Champollion or Rawlinson was to emerge to decipher the glyphs until the 1960s (box, pp. 410–11).

If the Bible was one of the main inspirations behind the search for lost civilizations in Egypt and the Near East, it was Homer's account of the Trojan Wars in his narrative poem the *Iliad* that fired the imagination of the German banker Heinrich Schliemann (1822–1890), and sent him on a quest for the city of Troy. With remarkable luck and good judgment he successfully identified it in a series of field campaigns at Hissarlik, western Turkey, in the 1870s and 1880s. Not content with that achievement, he then also dug at Mycenae in Greece and revealed – as he had at Troy – a hitherto unknown prehistoric civilization. Schliemann's methods of excavation have been criticized as crude and cavalier, but few were very rigorous in his day, and he demonstrated how

interpretation of the stratigraphy of a mound site could be used to reconstruct the remote past. Nevertheless it fell to the next generation of archaeologists, led by General Pitt-Rivers and William Flinders Petrie, to establish the true basis of modern field techniques (see box).

It is somewhat ironic that the piecemeal approach towards the investigation of the past in Europe was to be surpassed by the creation of the Archaeological Survey of India in 1862. This body was funded by the Government of India because, in the words of Lord Canning, the Governor General, "It will not be to our credit, as an enlightened ruling power, if we continue to allow such fields of investigation ... to remain without more examination." In 1922, Sir John Marshall (1876–1958), the Director General of the Survey, was to discover the last of the great Old World civilizations, that of the Indus. Such was the quality of his enormous excavations at both Bronze Age Mohenjodaro (where 8 ha (2 acres) of the city were exposed) and historic Taxila that his reports are still used today for spatial reanalyses at these sites.

CLASSIFICATION AND CONSOLIDATION

Thus, well before the end of the 19th century, many of the principal features of modern archaeology had been established and many of the early civilizations had been discovered. There now ensued a period, which lasted until about 1960, which Gordon Willey and Jeremy Sabloff in their *A History of American Archaeology* have described as the "classificatory-historical period." Its central concern, as they rightly characterize it, was chronology. Much effort went into the establishment of regional chronological systems, and the description of the development of culture in each area.

In regions where early civilizations had flourished new research and discoveries filled out the chronological sequences. Alfred Maudslay (1850–1931) laid the real scientific foundations of Maya archaeology, while the German scholar Max Uhle (1856–1944) began to establish a sound chronology for Peruvian civilization with his excavation in the 1890s at the coastal site of Pachacamac, Peru. The meticulous work of Flinders Petrie (1853–1942) in Egypt was followed up by the spectacular discovery in the 1920s of Tutankhamun's tomb by Howard Carter (1874–1939) (see box, pp. 64–65). In the Aegean area, Arthur Evans (1851–1941) revealed a previously unknown civilization, that he called Minoan, on the island of Crete; the Minoans proved to be even earlier than Schliemann's Mycenaeans. And in Mesopotamia Leonard Woolley (1880–1960) excavated at Ur, the biblical city of Abraham's birth, and put the Sumerians on the map of the ancient world.

It was, however, scholars studying primarily the prehistoric societies of Europe and North America who made some of the most significant contributions during the first half of the 20th century. Gordon Childe (1892–1957), a brilliant Australian based in Britain, was the leading thinker and writer about European prehistory and Old World history in general. In the United States there was a close link between anthropologists and archaeologists studying the Native Americans. The anthropologist Franz Boas (1858–1942) reacted against the broad evolutionary schemes of his predecessors Morgan and Tylor and demanded much greater attention to the collection and classification of information in the field. Huge inventories of cultural traits, such as pot and basket designs or types of moccasins, were built up. This tied in with the so-called "direct historical approach" of the archaeologists, who attempted to trace modern Native American pottery and other styles "directly" back into the distant past. The work of Cyrus Thomas and later W.H. Holmes (see box pp. 30–31) in the east was complemented by that of A.V. Kidder (1885–1963), whose excavations at Pecos Pueblo in the Southwest from 1915 to 1929 established a chronological framework for that region (box p. 35). James A. Ford (1911–1968) later developed the first major framework for the Southeast. By the 1930s the number of separate regional sequences was so great that a group of scholars led by W.C. McKern devised what became known as the "Midwestern Taxonomic System," which correlated sequences in the Midwest by identifying similarities between artifact collections. This was applied to other areas.

THE DEVELOPMENT OF FIELD TECHNIQUES



General Pitt-Rivers, excavator of Cranborne Chase, and pioneer in recording techniques

It was only in the late 19th century that a sound methodology of scientific excavation began to be generally adopted. From that time, and during the 20th century, major figures stand out who in their various ways have helped create the modern field methods we use today.

General Augustus Lane-Fox Pitt-Rivers (1827–1900)

For much of his life a professional soldier, Pitt-Rivers brought long experience of military methods, survey, and precision to impeccably

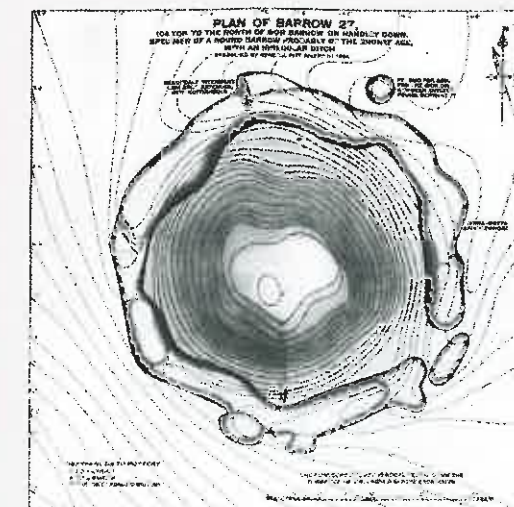
organized excavations on his estates in southern England. Plans, sections, and even models were made, and the exact position of every object was recorded. He was not concerned with retrieving beautiful treasures, but with recovering all objects, no matter how mundane. He was a pioneer in his insistence on total recording, and his four privately printed volumes, describing his excavations on Cranborne Chase from 1887 to 1898, represent the highest standards of archaeological publication.



Excavation in progress at Wor Barrow, Cranborne Chase (above). The barrow was eventually removed

A view (below) of the Wor Barrow ditch during Pitt-Rivers' excavation at the site in the mid-1890s

An example (below) of Pitt-Rivers' meticulous records: his plan of Barrow 27 at Cranborne Chase



Sir William Flinders Petrie (1853–1942)

A younger contemporary of Pitt-Rivers, Petrie was likewise noted for his meticulous excavations and his insistence on the collection and description of everything found, not just the fine objects, as well as on full publication. He employed these methods in his exemplary excavations in Egypt, and later in Palestine, from the 1880s until his death. Petrie also devised his own technique of seriation or "sequence dating," which he used to bring chronological order to the 2200 pit graves of the Naqada cemetery in Upper Egypt (see Chapter 4).



Flinders Petrie (above) outside the tomb in which he lived in Giza, Egypt, in the early 1880s.

Sir Mortimer Wheeler (1890–1976)

Wheeler fought in the British army in both world wars and, like Pitt-Rivers, brought military precision to his excavations, notably through techniques such as the grid-square method (Chapter 3). He is particularly well known for his work at British hillforts, notably Maiden Castle.

Equally outstanding, however, was his achievement from 1944 to 1948 as Director-General of Archaeology in India, where he held training schools in modern field methods, and excavated at the important sites of Harappa, Taxila, Charsadda, and Arikamedu, one of his most famous



Sir Mortimer Wheeler (above), and his excavation (below) at Arikamedu, India, 1945.



excavations. However, subsequent excavations at Maiden Castle, Arikamedu, and Charsadda have inevitably caused many of his fundamental assumptions to be refuted.

Dorothy Garrod (1892–1968)

In 1937 Dorothy Garrod became the first woman professor in any subject at Cambridge, and probably the first woman prehistorian to achieve professorial status anywhere in the world. Her excavations at Zarzi in Iraq and Mount Carmel in Palestine provided the key to a large section of the Near East, from the Middle Paleolithic to the Mesolithic, and found fossil human remains crucial to our knowledge of the relationship between Neanderthals and *Homo sapiens*. With her discovery of the Natufian culture, the predecessor of the world's first farming



Dorothy Garrod (above), one of the first to study the prehistoric Near East systematically.

societies, she posed a series of new problems still not fully resolved today.

Max Uhle (1856–1944)

Scientific archaeology in South America owes much to the work of Uhle, a German scholar who trained as a philologist and then turned to archaeology and ethnography. His excavation of Pachacamac, a coastal site just south of Lima, in the 1890s became the first important step in establishing an area-wide chronology for Peru. Uhle's concentration on graves and the careful recording of grave-good associations recall Petrie's early work in Egypt.

Alfred Kidder (1885–1963)

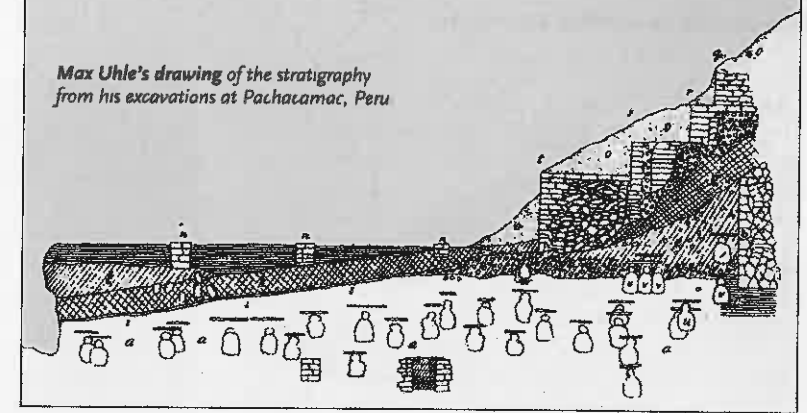
Kidder was the leading Americanist of his time. As well as being a major figure in Maya archaeology, he was largely responsible for putting the Southwest on the archaeological map with his excavations at Pecos Ruin, a large pueblo in northern New Mexico, from 1915 to 1929. His survey of the region, *An Introduction to the Study of Southwestern Archaeology* (1924) has become a classic.

Kidder was one of the first archaeologists to use a team of specialists to help analyze artifacts and human remains. He is also important for his "blueprint" for a regional strategy: (1) reconnaissance; (2) selection of criteria for ranking the remains of sites chronologically; (3) seriation into a probable sequence; (4) stratigraphic excavation to elucidate specific problems; followed by (5) more detailed regional survey and dating.

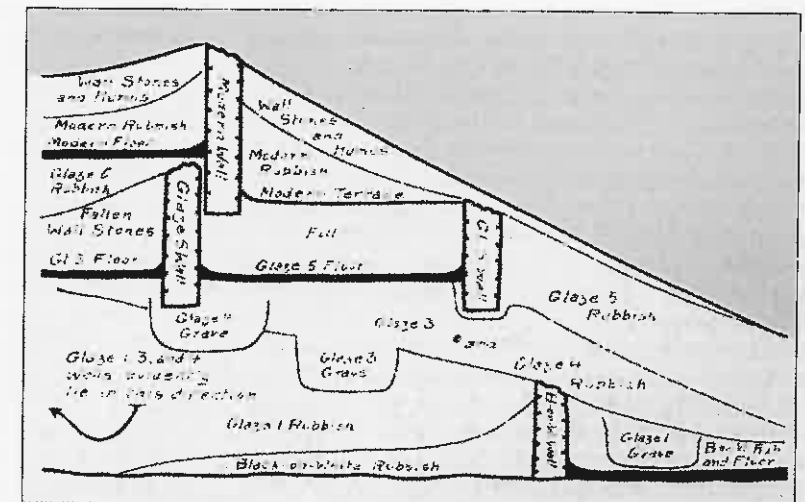
Fieldwork after 1960

Since 1960, archaeological fieldwork has developed in several new directions. One of these is underwater archaeology, which began as a serious method of research in 1960 with the work of George Bass at the Bronze Age Gelidonya shipwreck off the south coast of Turkey. This was the first ancient vessel ever excavated in its entirety on the sea bed. Bass and his team invented or developed many now standard underwater techniques (see boxes, *Underwater Archaeology*, p. 109; *The Uluburun Wreck*, pp. 380–81).

Max Uhle's drawing of the stratigraphy from his excavations at Pachacamac, Peru.



Alfred Kidder (above) and his cross-sectional drawing (below) of the stratigraphy at the Pecos Pueblo site.



On dry land, the economic boom of the 1960s led to the construction of roads and buildings, which threatened and destroyed many archaeological sites and led to a new emphasis on managing the cultural heritage (Cultural Resource Management, or CRM), either by preservation, or by recording and excavation prior to destruction (box, p. 560).

In Europe, the redevelopment of historic city centers led to highly complex excavations spanning many periods and demanding new techniques of analysis. Finally, in recent years, the application of computerization in fieldwork has offered powerful new tools to help us recover and understand the remains left by past societies.



Professor Gordon Childe at the site of the Neolithic settlement at Skara Brae, Orkney, in 1930.

Gordon Childe, meanwhile, had almost single-handedly been making comparisons of this sort between prehistoric sequences in Europe. Both his methods and the Midwestern Taxonomic System were designed to order the material: to answer the question: To what period do these artifacts date? and also: With which other materials do they belong? This latter question usually carried with it an assumption which Gordon Childe made explicit: that a constantly recurring collection or “assemblage” of artifacts (a “culture” in his terminology, or an “aspect” in that of McKern) could be taken as the material equipment of a particular group of people. This approach thus offered the hope of answering, in a very general sense, the question: Who did these artifacts belong to? The answer would be in terms of a named people, even if the name for a prehistoric people would be a modern one, not the original name. (There are now seen to be dangers in this approach, as we shall discuss in Chapter 12.)

But in his great works of synthesis, such as *The Dawn of European Civilization* (1925) and *The Danube in Prehistory* (1929), Childe went beyond merely describing and correlating the culture sequences and attempted to account for their origin. In the late 19th century scholars such as Montelius had looked at the richness of the early

civilizations then being uncovered in the Near East, and argued that all the attributes of civilization, from stone architecture to metal weapons, had spread or “diffused” to Europe from the Near East by trade or migration of people. With the much greater range of evidence available to him, Childe modified this extreme diffusionist approach and argued that Europe had undergone some indigenous development – but he nevertheless attributed the major cultural changes to Near Eastern influences.

In his later books, such as *Man Makes Himself* (1936), Childe went on to try and answer the much more difficult question: Why had civilization arisen in the Near East? Himself influenced by Marxist ideas and the relatively recent Marxist revolution in Russia, he proposed that there had been a Neolithic Revolution which gave rise to the development of farming, and later an Urban Revolution which led to the first towns and cities. Childe was one of the few archaeologists of his generation bold enough to address this whole broad issue of why things happened or changed in the past. Most of his contemporaries were more concerned with establishing chronologies and cultural sequences. But after World War II scholars with new ideas began to challenge conventional approaches.

The Ecological Approach

One of the most influential new thinkers in North America was the anthropologist Julian Steward (1902–1972). Like Childe he was interested in explaining cultural change, but he brought to the question an anthropologist’s understanding of how living cultures work. Moreover he highlighted the fact that cultures do not interact simply with one another but with the environment as well. The study of ways in which adaptation to the environment could cause cultural change Steward christened “cultural ecology.” Perhaps the most direct archaeological impact of these ideas can be seen in the work of Gordon Willey (1913–2002), one of Steward’s graduate associates, who carried out a pioneering investigation in the Virú Valley, Peru, in the late 1940s. This study of 1500 years of pre-Columbian occupation involved a combination of observations from detailed maps and aerial photographs (see box, pp. 84–85), survey at ground level, and excavation and surface potsherd collection to establish dates for the hundreds of prehistoric sites identified. Willey then plotted the geographical distribution of these sites in the valley at different periods – one of the first settlement pattern studies in archaeology (see Chapters 3 and 5) – and set them against the changing local environment.

Quite independently of Steward, however, the British archaeologist Grahame Clark (1907–1995) developed an ecological approach with even more direct relevance for archaeological fieldwork. Breaking away from the artifact-



Gordon Willey in a test pit at Barton Ramie during the Belize Valley project studying Maya settlement patterns, 1953–60.

dominated culture-historical approach of his contemporaries, he argued that by studying how human populations adapted to their environments we can understand many aspects of ancient society. Collaboration with new kinds of specialists was essential: specialists who could identify animal bones or plant remains in the archaeological record to help build up a picture not only of what prehistoric environments were like, but what foods prehistoric peoples ate. Clark’s landmark excavation at Star Carr in northeast Britain in the early 1950s demonstrated just how much information could be gleaned from what appeared to be an unpromising site without stone structures and dating to just after the end of the Ice Age. Careful environmental analysis and recovery of organic remains showed that this had been a camp on the edge of a lake, where people had hunted red deer and eaten a wide variety of wild plant foods. Nor need the insights from an ecological approach be confined to individual sites or groups of sites: in a remarkable work of synthesis, *Prehistoric Europe: the Economic Basis* (1952), Clark provided a panoramic view of the varying human adaptations to the European landscape over thousands of years.

Out of this early ecological research has grown the whole field of environmental and dietary reconstruction discussed in Chapters 6 and 7.

The Rise of Archaeological Science

The other striking development of the period immediately after World War II was the rapid development of scientific aids for archaeology. We have already seen how pioneers of the ecological approach forged an alliance with specialists from the environmental sciences. Even more important,

however, was the application to archaeology of the physical and chemical sciences.

The greatest breakthrough came in the field of dating. In 1949 the American chemist Willard Libby (1908–1980) announced his invention of radiocarbon (C14) dating. It was not until well over a decade later that the full impact of this momentous technical achievement began to be felt (see below), but the implications were clear: here at last archaeologists might have a means of directly determining the age of undated sites and finds anywhere in the world without recourse to complicated cross-cultural comparisons with areas already dated by historical methods (usually written records).

Thus, traditionally, prehistoric Europe had been dated by virtue of supposed contacts with early Greece and hence (indirectly) with ancient Egypt, which could itself be dated historically. The radiocarbon method now held the prospect of providing a completely independent chronology for ancient Europe. Chapter 4 discusses dating methods in general, and radiocarbon in particular.

The growth in archaeological applications for scientific techniques was such that by 1963 a volume entitled *Science in Archaeology*, edited by Don Brothwell and Eric Higgs (1908–1976), could be published which ran to nearly 600 pages, with contributions from 55 experts, not merely on dating techniques and plant and animal studies, but methods for analyzing human remains (see Chapter 11) and artifacts (Chapters 8 and 9).

Artifact studies, for instance, could contribute to an understanding of early trade: it proved possible to identify the raw materials of certain artifacts and the sources from which they had come through the technique of trace-element analysis (the measurement of elements present in the material only in very small amounts). As with many of the new methods, research stretched back to the 1930s, when the Austrian archaeologist Richard Pittioni had begun to apply trace-element analysis to early copper and bronze artifacts. Nevertheless it was not until the postwar years that this and a number of other newly developed scientific techniques really began to make an impact on archaeology, and the increasing power of computers and software, for example, has made them indispensable for many aspects of data handling.

Over the past decade developments in biochemistry and molecular genetics have led to the emergence of the new disciplines of molecular archaeology and archaeogenetics. Sensitive techniques in the field of organic chemistry are beginning to allow the precise identification of organic residues, while isotopic studies are giving fresh insights into both diet and nutrition. The study of DNA, both modern and ancient, has offered novel approaches to the study of human evolution, and is now also beginning to set the study of plant and animal domestication on a systematic, molecular basis.

WOMEN PIONEERS OF ARCHAEOLOGY



Harriet Boyd Hawes (in 1892), discoverer of the Minoan town site of Gournia, Crete

The story of many early women archaeologists was one of exclusion and lack of recognition or promotion – or even employment. Furthermore, many brilliant academic women accepted that, after marriage, their career would no longer be a professional one, and supported the academic work of their husband with little public recognition.

This has remained so until the present time, so the achievements of the following pioneers stand out all the more.

Harriet Boyd Hawes (1871–1945)

This well-educated American majored in Classics and was fluent in Greek. Just after graduating, in her early twenties, she spent several seasons riding around Crete on muleback, in dangerous territory, alone or in the company of a woman friend, looking for prehistoric sites. In 1901 she discovered the Bronze Age site of Gournia – the first Minoan town site ever unearthed – which she excavated for the next three years, supervising a hundred local workmen. She published her findings in exemplary fashion in a lavishly illustrated report that is still

consulted today. It is noteworthy for its classification of artifacts according to potential function, drawing on ethnographic parallels from Cretan rural life of the time.

Gertrude Caton-Thompson (1888–1985)

A wealthy British researcher who followed courses in prehistory and anthropology at Cambridge, Caton-Thompson subsequently became well known for her pioneering interdisciplinary project of survey and excavation in the Fayum of Egypt; and later, perhaps most famously, at Great Zimbabwe, where her excavations in 1929 unearthed datable artifacts from a stratified context, and confirmed that the site represented a major culture of African origin (see box, pp. 472–73). The violent reaction from the white community in Rhodesia (as Zimbabwe was then called) to her findings so upset her that she refused to undertake further work in southern Africa and returned to Egypt and Arabia.

Anna O. Shepard (1903–1973)

An American who studied archaeology as well as a wide range of hard sciences, Shepard subsequently became a specialist in ceramics, as well as Mesoamerican and Southwestern archaeology. She was



Anna O. Shepard was an acknowledged expert in the ceramics of the American Southwest and Mesoamerica

one of the pioneers of petrographic analysis of archaeological pottery (see pp. 364–66), focusing on sherd paste, paint, and temper. She published extensively on the technology of New World pottery, and wrote a standard work, *Ceramics for the Archaeologist*. She carried out most of her work in a laboratory at home, in relative isolation, rarely going into the field, but nevertheless carved out a unique niche for herself in the profession.

Kathleen Kenyon (1906–1978)

A formidable British archaeologist, daughter of a director of the British Museum, Kenyon trained on Roman sites in Britain under Mortimer Wheeler (see box, p. 34), and adopted his method, with its close control over stratigraphy. She subsequently applied this approach in the Near East at two of the most complex and most excavated sites in Palestine: Jericho and Jerusalem. At Jericho, in 1952–1958, she found evidence that pushed back the date of occupation to the end of the Ice Age, and uncovered the walled village of the Neolithic farming community,

Gertrude Caton-Thompson – her work at Great Zimbabwe confirmed that the site was the work of a major African culture



Kathleen Kenyon (above left) was a great excavator and worked at two of the most important and complex sites in the Near East, Jericho and Jerusalem. **Tatiana Proskouriakoff** (above center) trained as an architect and worked originally as a museum artist – this (above right) is her reconstruction of the Maya site of Xpuhil. Her work on Maya glyphs contributed greatly to their final decipherment.



commonly referred to as “the earliest town in the world.”

Tatiana Proskouriakoff (1909–1985)

Born in Siberia, Proskouriakoff moved with her family to Pennsylvania in 1916. Unemployed after graduating as an architect in 1930 during the Great Depression, she ended up working as a museum artist in the University of Pennsylvania. A visit to the Maya site of Piedras Negras led her to devote the rest of her life to Maya architecture, art, and hieroglyphs. A skilled artist, she produced numerous plans of the architecture of Chichén Itzá and Copán, and a definitive book entitled *A Study of Classic Maya Sculpture*.

She also worked alone till her death on the complex problems of Maya hieroglyphic writing, challenging the notion that the inscriptions contained only calendrical and astronomical information and putting forward the pioneering notion that the Maya were also recording their political and dynastic histories, work that contributed to the breakthrough in the decipherment of Maya hieroglyphs.

Mary Leakey (1913–1996)

A cigar-smoking, whisky-drinking British archaeologist who, together with her husband Louis (see p. 42), transformed their chosen field. They

worked for almost half a century at many sites in East Africa, carrying out meticulous excavations, most notably at Olduvai Gorge, Tanzania, where in 1959 Mary unearthed the skull of an adult australopithecine, *Zinjanthropus boisei*, of 1.79 million years ago, and at Laetoli, where she excavated the famous trails of fossilized hominin footprints, made 3.7 million years ago. She also painstakingly recorded a large amount of Tanzanian rock art.

A splendid insight into the careers and personalities of women as well as male archaeologists in Greece in the early

Mary Leakey worked for almost half a century at various early hominin sites in East Africa, transforming our knowledge of human development.



years of the 20th century is given in *Faces of Archaeology in Greece* (Hood 1998), with a wonderful series of portrait caricatures by Piet de Jong, who was the chief illustrator for Sir Arthur Evans at his excavations at Knossos in Crete. Among the well-known archaeologists are Winifred Lamb (1894–1963), the excavator of Thermi in Lesbos (contemporary with early Troy); Hetty Goldman (1881–1972), excavator of Early Bronze Age Eutresis; and Virginia Grace (1901–1994), a world authority on the Roman amphora trade. None of these married. It is clear that the women scholars who did marry, and thus ended their professional careers – such as Vivian Wade-Gery (1897–1988) or Josephine Shear (1901–1967) – were just as brilliant academically.



Virginia Grace (above left) and **Hetty Goldman** (above right) both working in Greece in the early 20th century, as depicted by Piet de Jong. They had long and very distinguished careers in archaeology

A TURNING POINT IN ARCHAEOLOGY

The 1960s mark a turning point in the development of archaeology. By this time various dissatisfactions were being expressed with the way research in the subject was being conducted. These dissatisfactions were not so much with excavation techniques, or with the newly developed scientific aids in archaeology, but with the way conclusions were drawn from them. The first and most obvious point concerned the role of dating in archaeology. The second went beyond this: it focused on the way archaeologists explain things, on the procedures used in archaeological reasoning. With the advent of the radiocarbon method, dates could in many cases be assigned very rapidly, and without the long and laborious framework of cross-cultural comparisons which had been needed previously. To establish a date was no longer one of the main end products of research. It was still important, but it could now be done much more efficiently, allowing the archaeologist to go on to ask more challenging questions than merely chronological ones.

The second and perhaps more fundamental cause for dissatisfaction with the traditional archaeology was that it never seemed to explain anything, other than in terms of migrations of peoples and supposed "influences." Already in 1948 the American archaeologist Walter W. Taylor had formulated some of these dissatisfactions in his *A Study of Archaeology*. He had argued for a "conjunctive" approach, in which the full range of a culture system would be taken into consideration. And in 1958, Gordon Willey and Philip Phillips in their *Method and Theory in American Archaeology* had argued for a greater emphasis on the social aspect, for a broader "processual interpretation" or study of the general processes at work in culture history. They also spoke of "an eventual synthesis in a common search for sociocultural causality and law."

That was all very well, but what would it mean in practice?

The Birth of the New Archaeology

In the United States the answer was provided, at least in part, by a group of younger archaeologists, led by Lewis Binford, who set out to offer a new approach to the problems of archaeological interpretation, which was soon dubbed by its critics and then by its supporters "the New Archaeology." In a series of articles, and later in an edited volume, *New Perspectives in Archaeology* (1968), Binford and his colleagues argued against the approach which tried to use archaeological data to write a kind of "counterfeit history." They maintained that the potential of the archaeological evidence was much greater than had been

realized for the investigation of social and economic aspects of past societies. Their view of archaeology was more optimistic than that of many of their predecessors.

They also argued that archaeological reasoning should be made explicit. Conclusions should be based not simply on the personal authority of the scholar making the interpretation, but on an explicit framework of logical argument. In this they relied on current ideas within the philosophy of science, where conclusions, if they are to be considered valid, must be open to testing.

Within the spirit of processual archaeology advocated by Willey and Phillips, they sought to *explain* rather than simply to describe, and to do so, as in all sciences, by seeking to make valid generalizations.

In doing this they sought to avoid the rather vague talk of the "influences" of one culture upon another, but rather to analyze a culture as a system which could be broken down into subsystems. This led them to study subsistence in its own right, and technology, and the social subsystem, and the ideological subsystem, and trade and demography, and so forth, with much less emphasis on artifact typology and classification. In this way they had been partly anticipated by the ecological approach of the 1950s, which was already studying what one might call "the subsistence subsystem" in very much these terms.

In order to fulfill these aims, the New Archaeologists to a large extent turned away from the approaches of history towards those of the sciences. Very similar developments were under way in Britain at the same time, well exemplified by the work of David L. Clarke (1937–1976), particularly in his book *Analytical Archaeology* (1968), which reflected the great willingness of the New Archaeologists to employ more sophisticated quantitative techniques, where possible computer-aided (computers first became available in the 1960s for the storage, organization, and analysis of data), and to draw on ideas from other disciplines, notably geography.

It must be admitted that in their enthusiasm to seize on and utilize a battery of new techniques, the New Archaeologists drew also on a range of previously unfamiliar vocabularies (drawn from systems theory, cybernetics etc.), which their critics tended to dismiss as jargon. Indeed in recent years, several critics have reacted against some of those aspirations to be scientific, which they have categorized as "scientistic" or "functionalist." Much of the emphasis of early processual archaeology was indeed upon functional or ecological explanation, and it is now possible to regard its first decade as representing a "functional-processual" phase, which has been followed in recent years by a "cognitive-processual" phase, which seeks more

PROCESSUAL ARCHAEOLOGY: KEY CONCEPTS

In the early days of the New Archaeology, its principal exponents were very conscious of the limitations of the older, traditional archaeology. The following contrasts were among those which they often emphasized:

THE NATURE OF ARCHAEOLOGY:

Explanatory vs Descriptive

Archaeology's role was now to *explain* past change, not simply to reconstruct the past and how people had lived. This involved the use of *explicit theory*.

EXPLANATION: Culture process vs Culture history

Traditional archaeology was seen to rely on historical explanation: the New Archaeology, drawing on the *philosophy of science*, would think in terms of *culture process*, of how changes in economic and social systems take place. This implies *generalization*.

REASONING: Deductive vs Inductive

Traditional archaeologists saw archaeology as resembling a jigsaw puzzle: the task was one of "piecing together the past." Instead, the appropriate procedure was now seen as formulating *hypotheses*, constructing *models*, and deducing their consequences.

VALIDATION: Testing vs Authority

Hypotheses were to be tested, and conclusions should not be accepted on the basis of the authority or standing of the research worker.

RESEARCH FOCUS:

Project design vs Data accumulation

Research should be designed to answer specific *questions* economically, not simply to generate more information which might not be relevant.

CHOICE OF APPROACH:

Quantitative vs Simply qualitative

The benefits were seen of quantitative data, allowing computerized statistical treatment, with the possibility of *sampling* and *significance testing*. This was often preferred to the purely verbal traditional approach.

SCOPE: Optimism vs Pessimism

Traditional archaeologists often stressed that archaeological data were not well suited to the reconstruction of *social organization* or *cognitive systems*. The New Archaeologists were more positive and argued that one would never know how hard these problems were until one had tried to solve them.

actively to include the consideration of symbolic and cognitive aspects of early societies into the program of research. Many of these points are considered in Chapter 12. But there can be no doubt that archaeology will never be the same again. Most workers today, even the critics of the early New Archaeology, implicitly recognize its influence when they agree that it is indeed the goal of archaeology to explain what happened in the past as well as to describe it. Most of them agree too that in order to do good archaeology it is necessary to make explicit, and then to examine, our underlying assumptions. That was what David Clarke meant when he wrote in a 1973 article of "the loss of innocence" in archaeology.

WORLD ARCHAEOLOGY

The questioning approach of the New Archaeology and the demand for explicit and quantitative procedures led to new developments in field research, many of which built on or coincided with the programs of fieldwork already being conducted by archaeologists who would not necessarily have thought of themselves as followers of the new school of thought.

In the first place, there was a much greater emphasis on field projects with well-defined research objectives – projects which set out to answer specific questions about the past. In the second place, the new insights yielded by the ecological approach made it clear that satisfactory answers to many major questions would only be forthcoming if whole regions and their environments were looked at, rather than single sites in isolation. And the third development, very much linked to the first and second, was the realization that in order to carry out these objectives effectively, new techniques needed to be introduced of intensive field survey and selective excavation, coupled with statistically based sampling procedures and improved recovery methods, including screening (sieving) of excavated material.

These are the key elements of modern field research, discussed in detail in Chapter 3. Here we should observe that their widespread application has begun to create for the first time a true world discipline: an archaeology that reaches geographically right round the globe, and an archaeology that reaches back in time to the beginnings of human existence and right up to the modern period.

The Search for Origins

Among the pioneers of well-focused project design was Robert J. Braidwood (1907–2003), of the University of Chicago, whose multi-disciplinary team in the 1940s and

1950s systematically sought out sites in the Iraqi Kurdistan region that would provide evidence for the origins of agriculture in the Near East (see Chapter 7). Another American project, headed by Richard MacNeish (1918–2001), did the same for the New World: their research in the 1960s in the Tehuacán Valley of Mexico moved our understanding of the long-drawn-out development of maize farming an immense step forward.

If the origins of farming have been the subject of much well-targeted research in recent decades, the rise of complex societies, including civilizations, has been another. In particular, two American field projects have been outstandingly successful: one in Mesopotamia led by Robert Adams (with much use of aerial photography as well as field survey), and the other in the Valley of Oaxaca, Mexico, led by Kent Flannery and Joyce Marcus (see Chapter 13).

However, the credit for the most determined pursuit of a project with a clear archaeological objective in the whole history of archaeology should perhaps go to Louis Leakey (1903–1972) and Mary Leakey (1913–1996), who between them pushed back the known dates for our immediate ancestors by several million years. As long ago as 1931 they began their search in the Olduvai Gorge, East Africa, for fossil human bones, but it was not until 1959 that their extraordinary perseverance was rewarded and Mary Leakey (see box, p. 39) made the first of many fossil hominin (early human) finds in the Gorge. Africa has now become the great focus of study for the early phases of humankind, and has seen crucial theoretical debate between Lewis Binford, C.K. Brain, Glynn Isaac (1937–1985), and others over the likely hunting and scavenging behavior of our early ancestors (see Chapters 2 and 7).

The Archaeology of Continents

Research in Africa exemplifies the pushing back of archaeology's frontiers in both time and space. The quest for human origins has been one success story, but so too has been the rediscovery through archaeology of the achievements and history of the Iron Age peoples of Africa, including the building of Great Zimbabwe (box, pp. 472–73). By 1970 archaeological knowledge of the whole continent was sufficiently advanced for J. Desmond Clark (1916–2002), one of the leading researchers, to produce the first synthesis, *The Prehistory of Africa*. Meanwhile, in another equally little-studied continent, Australia, John Mulvaney's excavations in the early 1960s at Kenniff Cave, South Queensland, produced radiocarbon dates proving occupation there during the last phase of the Ice Age – thus establishing Australasia as one of the most fruitful regions for new archaeological research in the world.



Revealing Australia's past: archaeologist John Mulvaney at the Shelter 2 site, Fromm's Landing, South Australia. In 1956, during his first season of fieldwork here, Mulvaney excavated some 5000 years of occupation deposit.

Work in Australia highlights two further important trends in modern archaeology: the rise of ethnoarchaeology or "living archaeology"; and the increasing worldwide discussion about who should control or "own" monuments and ideas about the past.

The Living Past

From its beginnings the New Archaeology placed great emphasis on explanation – in particular explaining how the archaeological record was formed, and what excavated structures and artifacts might mean in terms of human behavior. It came to be realized that one of the most effective ways of addressing such questions would be to study the material culture and behavior of living societies. Ethnographic observation itself was nothing new – anthropologists had studied the Native Americans and Australian Aborigines since the 19th century. What was new was the archaeological focus: the new name, ethnoarchaeology, emphasized this. The work of Richard Gould among the Aborigines in Australia, Richard Lee among the !Kung San of southern Africa, and Lewis Binford among the Nunamiut Eskimo has established ethnoarchaeology – discussed in more detail in Chapter 5 – as one of the most significant recent developments in the whole discipline.

However, the increasing involvement of archaeologists with living societies, and the simultaneous rise among such societies of an awareness of their own heritage and their own claims to it, have brought to the fore the question: Who should have access to, or ownership of, the past? It is clear, for example, that the only inhabitants of Australia before European settlement were the Aborigines. Should it therefore be the Aborigines themselves who control archaeological work on their forebears, even those dating back 20,000 years or more? This important issue is explored further in Chapter 14.

Archaeologists such as John Mulvaney and Rhys Jones (1941–2001) have stood shoulder to shoulder with the Aborigines in the fight to prevent destruction by developers of parts of Australia's precious ancient heritage, for instance in Tasmania. Inevitably, though, as the pace of worldwide economic development has quickened, archaeologists everywhere have had to adapt and learn to salvage what they can about the past in advance of the bulldozer or plow. Indeed the massive upsurge of this salvage or rescue archaeology, much of it government-funded, has given a new impetus to the archaeology of our towns and cities – to what in Europe is known as medieval or postmedieval archaeology, and what in the United States and elsewhere is called historical archaeology.

Who Are the Searchers?

The growth of salvage work also leads us to ask: Who today actually are the searchers in archaeology? A century ago they were often wealthy individuals, who had the leisure to speculate about the past, and to undertake excavations. Or in other cases, they were travelers who had reason to be in remote places, and used the opportunity to undertake researches in what was effectively their spare time. Thirty years ago the searchers in archaeology tended to be university scholars, or the representatives of museums seeking to enlarge their collections, or the employees of learned societies and academic institutions (like the Egypt Exploration Society), nearly all of them based in the more prosperous capitals of Europe and the United States.

Today most countries in the world have their own government archaeological or historical services. The scope of current public archaeology is reviewed in Chapter 14. But it is worth noting here that today a "searcher" (i.e. a professional archaeologist) is more likely to be an employee, often directly or indirectly a government employee, on a salvage project, than a more independent research worker. How this shift in the center of gravity of archaeological activity will affect the questions asked, and hence the future growth of the discipline of archaeology, remains to be seen.

Beginning the New Millennium

Post-modernist currents of thought in the 1980s and 1990s, drawn first from architectural theory and literary studies, and then from wider social and philosophical fields, encouraged a great diversity of approaches to the past. While many field archaeologists were relatively untouched by theoretical debates, and the processual tradition established by the New Archaeology rolled on, there were several new approaches, sometimes collectively termed postprocessual, which dealt with interesting and difficult questions (see box, pp. 44). Influential arguments, some of them first advanced by Ian Hodder and his students, have stressed that there is no single, correct way to undertake archaeological inference, and that the goal of objectivity is unattainable. Even the archaeological data are "theory laden," and as many "readings" are possible as there are research workers. But in their more extreme form these arguments have led to charges of "relativism," or a research style where "anything goes," and where the borderlines between archaeological research and fiction (or science-fiction) may be difficult to define.

The writings of Michael Shanks and Christopher Tilley, especially their somewhat provocative "black" and "red" books, initially provoked reactions of this kind. But in their later writings they, and indeed the majority of postprocessual archaeologists, have recently taken a less aggressively anti-scientific tone, and the emphasis has instead been upon the use of a variety of personal and often humanistic insights to develop a range of different fields and interests, recognizing the varied perspectives of different social groups, and accepting the consequent "multivocality" of the post-modern world. The epistemological debate seems over now, with much less rhetorical position-taking and with the recognition that there is no single or coherent postprocessual archaeology, but rather a whole series of interpretive approaches and interests, enriched by the variety of intellectual sources upon which various scholars have drawn.

The various interpretive archaeologies, including those which initially called themselves postprocessual, in general lay stress upon empathetic understanding and interpretation, and hence upon the specific historical context under study. They often reject the tendency toward cross-cultural comparison and the modes of explanation relying upon generalization characteristic of processual archaeology. So too do those working in Classical archaeology, or in the medieval period, or in other cases where the textual evidence is so rich as to require that the approach be context-specific. An excellent example, where the archaeological evidence is used to power the narrative at least as much as the textual sources is Ian Morris's study of Iron Age Greece, *Archaeology as Cultural History*.

INTERPRETIVE OR POSTPROCESSUAL ARCHAEOLOGIES

For its early proponents, notably Ian Hodder in Britain and Mark Leone in the United States, postprocessual archaeology represented so radical a critique of the New Archaeology (i.e. processual archaeology), as to establish a fresh beginning in archaeological theory.

For its more severe critics, the initiative, while making a number of valid criticisms, simply developed some of the ideas and theoretical problems introduced by the New Archaeology. To these critics it brought in a variety of approaches from other disciplines, so that the term "postprocessual," while rather neatly echoing the epithet "post-modern" in literary studies, was a shade arrogant in presuming to supersede what it might quite properly claim to complement. Michael Shanks and Ian Hodder suggested that "interpretive archaeologies" (plural) may be a more positive label than "postprocessual."

A number of key influences have shaped interpretive archaeologies:

The **neo-Marxist** element has a strong commitment to social awareness: that it is the duty of the archaeologist not only to describe the past, but to use such insights to change the present world. This contrasts quite strikingly with the aspirations towards objectivity of many processual archaeologists.

The **post-positivist** approach rejects the emphasis on the systematic procedures of scientific method which are such a feature of processual archaeology, sometimes seeing modern science as hostile to the individual, as forming an integral part of the "systems of domination" by which the forces of capitalism exert their "hegemony."

The **phenomenological** approach lays stress on the personal experiences of the individual and on the way in which encounters with the material world and with the objects in it shape our

understanding of the world. In landscape archaeology, for example, the archaeologist sets out to experience the humanly shaped landscape as it has been modified and formed by human activities

The **praxis** approach lays stress upon the central role of the human "agent" and upon the primary significance of human actions (praxis) in shaping social structure. Many social norms and social structures are established and shaped by habitual experience (and the notion of *habitus* similarly refers to the unspoken strategy-generating principles employed by the individual which mediate between social structure and practice). The role of the individual as a significant agent is thus emphasized.

The **hermeneutic** (or interpretive) view rejects generalization, another feature of processual archaeology. Emphasis is laid, rather, upon the uniqueness of each society and culture and on the need to study the full context of each in all its rich diversity. A related view stresses that there can be no single correct interpretation: each observer or analyst is entitled to their own opinion about the past. There will therefore be a diversity of opinions, and a wide range of perspectives – which is why the emphasis is on interpretive archaeologies (plural).

Within this varied body of thought there is room for a further range of perspectives, and feminist archaeologies have found the intellectual environment conducive for the development of their field and of gender studies in general.

One of the strengths of the interpretive approach is to bring into central focus the actions and thoughts of individuals in the past, which is also the goal of cognitive archaeology (see Chapter 12). But it goes beyond the methodological individualism of the

latter, arguing that in order to understand and interpret the past, it is necessary to employ an empathetic approach, to "get inside the minds" and think the thoughts of the people in question. This might seem a logical goal when examining symbolic systems (for example figurative works, such as paintings, employing a complex iconography) but there is in reality no easy way to get into other people's minds, especially past minds, and the methodology of the empathetic approach is not clear.

Another notable feature, as we have seen, was the argument that there can be no single, correct way to undertake research. However, this well-justified critique of the scientism of the early New Archaeology sometimes overlooks more recent developments in the methodology of post-positivist science, and can lead to charges of relativism, where one person's view has to be regarded as good as another's, and where, in interpretive matters, "anything goes."

The postprocessual approach has proved particularly relevant in matters of interpretation and of choice exercised now, in the present – whether in choosing what elements to emphasize in a museum display, or in learning the "lessons" of the past. For there subjectivity is inevitable, and decisions about meaning and significance are indeed made in the present. The implications of this are considered in Chapter 14.

Whatever the methodological problems, the consequence of the various debates has been to broaden the range of archaeological theory in a positive manner and to emphasize the symbolic and cognitive aspects of human endeavor in a way that the early New Archaeology failed to do. The diversity of postprocessual archaeology was one of its strengths and can be expected to lead on to further insights in the interpretive archaeologies of the future.

Some of the most interesting work on themes such as the rise of complex societies thus continues to be undertaken outside the new interpretive or postprocessual tradition, by such scholars as Kent Flannery, Henry Wright, or Tim Earle, who are willing to make cross-cultural comparisons within some more general framework. The study of early human developments in the Paleolithic period also has to operate within a comparative framework where hominin fossils and material culture are compared between continents. Questions relating to the development of human cognitive abilities are certainly being addressed with renewed vigor, but the intellectual context of the discussion remains broadly within the processual (or cognitive-processual) and scientific tradition. In other areas, however, and notably for those periods when archaeology can be text-aided, interpretive approaches are widespread.

One theme which has recently come to the fore is an increased appreciation of the role played by artifacts themselves – material things – in the development of human relationships and in the promotion of social as well as technological change. Such a view goes beyond the early materialism of economic thinkers such as Karl Marx, and looks in more detail at the symbolic roles played by artifacts in the articulation of human societies. It involves also a consideration of agency, whether in people or in things. Another special focus of recent interest is the human body, and the way it has been viewed, conceptualized, and represented symbolically by different societies.

The Widening Field: Globalization

The postprocessual archaeologists are certainly right in arguing that our own interpretation and presentation of the past, as in any museum display, or indeed in the origin myth of almost any modern nation, involve choices which depend less on an objective assessment of the data than on the feelings and opinions of the researchers and of the clients whom they aim to please. The great national museum in the United States, the Smithsonian Institution in Washington D.C., found it almost impossible to mount an exhibition in 1995 dealing with the destruction of Hiroshima 50 years earlier, without exciting the ire both of ex-servicemen and of liberals sensitive to Japanese sensibilities. The development of indigenous archaeologies raises comparable issues (Chapter 14).

They have come to the fore in successive meetings of the World Archaeology Congress (WAC), founded in 1986 by the British archaeologist Peter Ucko (1938–2007), who had served as the Principal of the Australian Institute of Aboriginal Studies, where he had quickly perceived the need to create and heed a platform for indigenous voices.



The presentation of the past can be unexpectedly controversial and open to criticisms of lack of objectivity and insensitivity to different views of the past, as shown by an exhibition concerned with Hiroshima at the Smithsonian Institution in 1995.

Although the 1994 meeting in New Delhi, India, was marred by internal Indian disagreements, and intending participants from Arab and Third World countries were refused US entry visas for the 2003 WAC in Washington DC, the World Congress has succeeded in creating a forum where the archaeologies of newly emerged nations and of different ethnic groups are respected and encouraged.

It is evident that archaeology cannot avoid being caught up in the issues of the day, social and political as well as intellectual. An example is the influence of feminist thinking (somewhat belatedly in archaeology) and the growth of feminist archaeology, which overlaps with the relatively new field of gender studies (see Chapter 5). A pioneer in the emphasis of the importance of women in prehistory was Marija Gimbutas (1921–1994). Her research in the Balkans led her to create a vision of an "Old Europe" associated with the first farmers whose central focus was (or so she argued) a belief in a great "Mother Goddess" figure. Although many feminist archaeologists today would take issue with certain aspects of Gimbutas' approach, she has certainly helped foster the current debate on gender roles.

In an article published in 1984, Margaret Conkey and Janet Spector drew attention to the androcentrism (male bias) of the discipline of archaeology. As Margaret Conkey pointed out, there existed a need "to reclaim women's experience as valid, to theorize this experience, and to use this to build a program of political action." However, the questions they raised were not widely explored until the 1990s because it was not until then that a suitable critical climate existed in archaeology. In Britain, this was provided by the theoretical development of postprocessual archaeology (see box opposite) and much feminist research has been conducted within this framework. In North America,

ÇATALHÖYÜK: INTERPRETIVE ARCHAEOLOGIES IN ACTION



The history of research at this important early farming site in Turkey well illustrates the changing approaches to archaeology in the second half of the 20th century.

Original Excavations

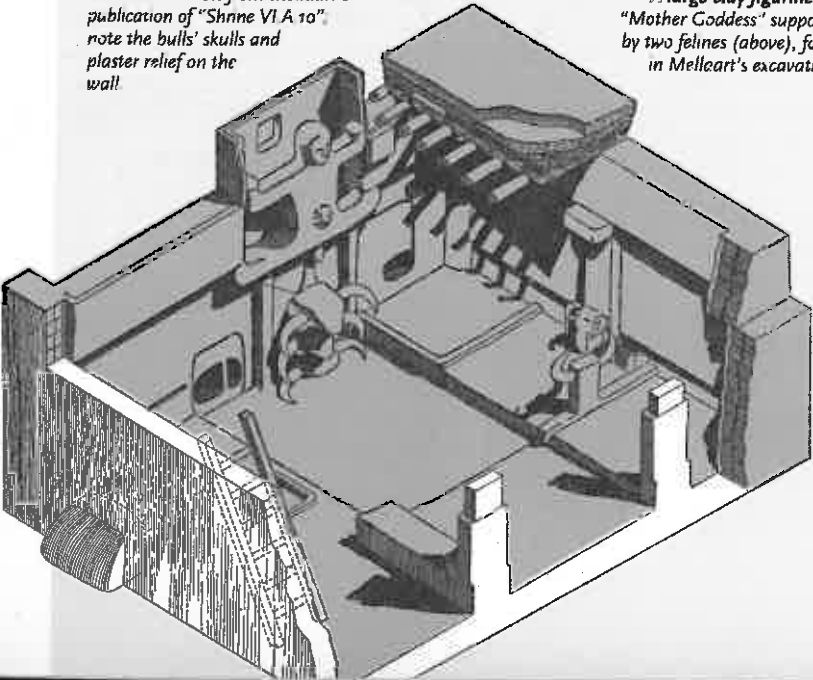
The site was discovered by James Mellaart in 1958, in the course of a survey of the fertile Konya Plain in south-central Turkey which began in 1951. He started excavating the site in 1961, and the dramatic nature of his discovery soon became clear. The 21-m (65-ft) high mound cloaked the remains of an early Neolithic (early farming) town 13 ha (32 acres) in extent with an "agglomerate" plan (see p. 406) and with deeply stratified levels going back at least to 7200 BC. The well-preserved rooms had plastered walls, some with wall paintings and plaster decorations incorporating bull skulls, and the finds included terracotta figures, several of them female, suggesting to certain scholars a "Mother Goddess" cult. Well-preserved remains of textiles

(linen) and of plants and animals were recovered, and the obsidian of which the abundant tools were made proved on trace-element analysis (see p. 377) to derive from local sources. In 1965 the excavation was interrupted, leaving many questions unanswered. In particular it was not clear whether Mellaart's excavations at the southwest part of the site had revealed a "shrine quarter," or whether the high frequency of rooms with painted walls and other symbolic materials would be repeated on other parts of the mound.



A large clay figurine of a "Mother Goddess" supported by two felines (above), found in Mellaart's excavations

A reconstruction from Mellaart's publication of "Shrine VI.A.10" note the bulls' skulls and plaster relief on the wall



Aim of the New Researches

Ian Hodder, the most influential figure in the postprocessual movement of the 1980s and 1990s, has taken up the challenge offered by the site, beginning surface research in 1993 and excavation in 1995. One aim of the project was to use modern field techniques to investigate the structure of the site and the functioning of its buildings and so to answer some of the central questions left unresolved by Mellaart. Also, a falling water table in the area made urgent the investigation of the lower, unexcavated parts of the site which were known to have well-preserved organic remains, such as wood, wooden artifacts, baskets, and perhaps unfired clay tablets, necessitating a 6-month excavation season in 1999.

But Hodder also set himself two yet more ambitious objectives appropriate to the "interpretive" approach arising from the postprocessual debate. The first was to develop a more flexible and open approach to stratigraphic excavation. This has involved encouraging interpretation "at the trowel's edge." The moment of excavation is surrounded in discussion between the excavator and a wide range of specialists. The different specialists process material from the trench quickly so that they can feed information back to the excavator. The excavators are also asked to keep video records and to make diary entries about their interpretations as they dig, and all the data are made available on an interactive database.

The second objective was similarly to allow more open-ended and multivocal approaches to the interpretation of the site as a whole, allowing not only different specialists to have a voice, but also the local inhabitants, and indeed visitors, not least those considering (with the late Marija Gimbutas) the site to be

important for the emergence of a cult of the "Mother Goddess" (see pp. 45, 225–26, and 418).

The decision to make data from the excavation available on the project's website (<http://www.catalhoyuk.com>) thus goes beyond a simple intention to publish the findings promptly: it furthers the postprocessual or interpretive wish for multiple and alternative interpretations by all those choosing to take part. While the excavators have a duty to use their specialist knowledge of the site to put forward interpretations, an inclusive approach to arriving at those interpretations is sought.

The accompanying anthropological project focuses on the local community living in the surrounding villages – some of whom are hired at the site – on domestic and foreign tourists visiting the site, on Goddess groups and worshippers, on the local and central government officials, and on the artists and fashion designers interested in the site. This "multi-sited" ethnography is seen as an integral part of the "reflexive methodology" being used at Çatalhöyük.

In the same spirit there are four semi-independent excavation teams, one operating in the southern area previously excavated by Mellaart, two on the north of the mound including a team of Berkeley archaeologists, and a fourth investigating a separate mound to the west. All four, and the social anthropology/cultural heritage project, as well as the Museum and Interpretive Public Programs (involving the newly-constructed Visitor Center), operate under the general direction of Ian Hodder as project leader.

A recent reconstruction based on the discoveries in Building 1



The new excavations directed by Ian Hodder

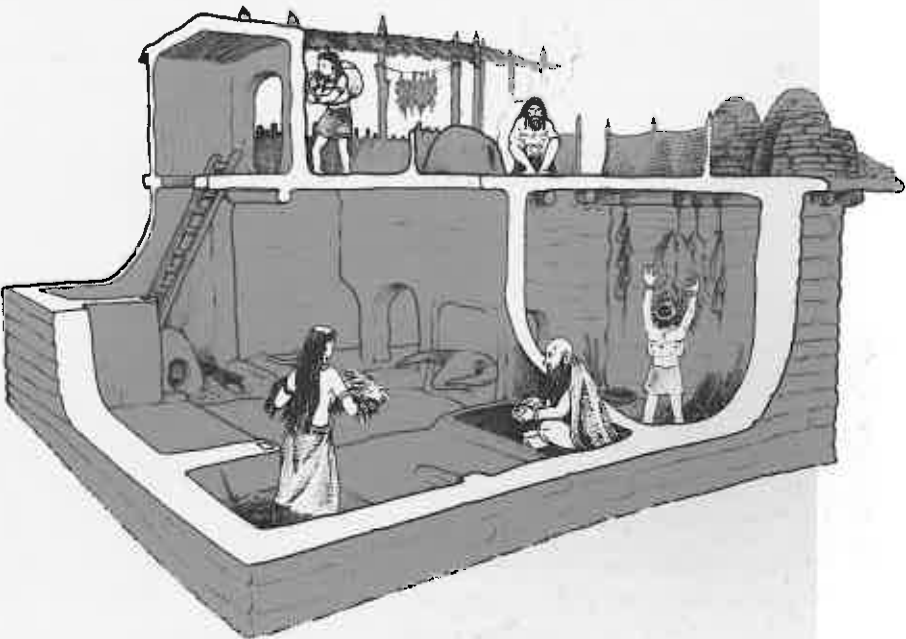
Results

The excavation, due to last 25 years, has been underway now for 15 years and it is possible to assess the extent to which the use of a reflexive methodology gives insights which differ from those of 40 years ago. Certainly a large number of publications have appeared, including a volume written by Sadrettin Dural, the site guard from the local village.

New insights from detailed micromorphological, micro-residue and chemical studies of deposits on house floors have shown that

buildings such as Mellaart's "Shrine VI.A.10" were houses used for a wide range of daily functions. The complex symbolism at Catalhöyük was an integral part of daily life. The figurines of women, along with men and animals, have depositional contexts in midden which do not suggest gods and goddesses.

Hodder's approach has its critics, yet this does appear to hold the promise of being one of those influential projects where a different and coherent theoretical approach actually does have a significant impact on archaeological practice.



a combination of feminist critique, the growth of historical archaeology, and the keen interest taken by indigenous groups in their own past, formed the intellectual environment for the debate.

The deeply pervasive nature of androcentric thinking in most interpretations of the past should not be underestimated: the gender-specific terminology of "Man the Toolmaker," even when swept away with every reference to "mankind" corrected to "humankind," does in fact conceal further, widely held assumptions or prejudices – for instance that Paleolithic stone tools were mainly made by men rather than women, for which there is little or no evidence. Feminist archaeologists can with justice also point to the imbalances between female and male professionals among archaeologists today, and the goal of "political action" may be seen as justified by current social realities. In the 1990s feminist concern over androcentrism became one voice among many questioning the supposed objectivity and political neutrality of archaeology.

Comparable questions have continued to emerge in the developing indigenous archaeologies in the territories of former colonies, now emancipated from the former imperial power. The appropriate policy for cultural heritage management, and indeed the very nature of the cultural heritage, are often contested among competing interest groups, sometimes along ethnic lines. Marginalized groups, such as the Australian Aborigines, have sought to achieve more influence in the definition and management of the heritage, and have often found their interests overlooked and misunderstood.

Deeper questions arise, however, about the nature of the "globalization" process, itself the outcome of technological advances developed in the West, and whether the nature of the very notion of "cultural heritage" as commonly understood may not be a product of Western thought. The Western-conceived notion of Cultural Heritage Management has been seen by post-colonial thinkers as an imposition of Western values, with officially endorsed notions of "heritage" perhaps leading to homogenization and the undervaluation of cultural diversity. Even the UNESCO-sponsored listing of "World Heritage Sites," from the standpoint of this critique, is dominated by Western-formulated notions of "heritage."

Such questions are also raised much nearer to home by archaeologists in the Western world. There is an increasing interest in the archaeology of recent centuries, right down to the present, to the point that "heritage" becomes a term the precise meanings of which are frequently contested.

While some aspects of the archaeology at the beginning of the new millennium were inevitably controversial, they were also in some ways very positive. They emphasized the value and importance of the past for the contemporary world, and they led to the realization that

BROADENING THE FRAME



Aerial view (above) of the Great Serpent Mound, Adams County, Ohio, a major earthwork of the Adena-Hopewell culture of the 1st millennium AD. Such monuments of the prehistoric Moundbuilders have inspired the work of Michael Heizer, for instance his *Effigy Tumuli* (1985, below), at Buffalo Rocks, Illinois, which depicts an aquatic insect and other creatures on a square mile of land.



The contemporary arts, and in particular sculpture, have developed in ways which impinge upon the discipline of archaeology in a number of respects. In some cases the insights of the artist are beginning to feed back into archaeology, and to influence the ways in which archaeologists view their discipline, sometimes suggesting new interpretive approaches. There is a significant broadening of the resources used to feed the archaeological imagination. Several observers have, however, noted that explanations and interpretations generated in this way must still be open to critical or scientific scrutiny.

Art and Landscape

For example, in recent years a number of sculptors, notably in the United States of America and in the United Kingdom, have created large-sized works in the landscape which, by their scale and sometimes their simplicity, evoke in the viewer today responses not unlike those which we experience in looking at the field monuments and other features which make up the prehistoric landscape. In some cases, such as Michael Heizer's *Effigy Tumuli* of 1985, these works have indeed been influenced by existing prehistoric monuments. But in the work of other artists, such as Richard Long, the commonality comes rather from the use of similar and rather simple means to create a mark, an indication of human activity. Such works have caught the attention of archaeologists seeking to understand better the way in which the products of symbolic human action – in this case on a large scale – are influential for those who come after. The line between monument and art work can be hard to define.

Objects and Display

Similar concerns are emerging in relation to the significance of artifacts and their effectiveness, in different ways, in evoking a response. Ever since the French artist Marcel Duchamp (1887–1968) created his first "readymade" art

work in 1913 by placing a pre-existing object – a bicycle wheel – on a pedestal, the position of artifacts placed in glass cases in museums has carried a new overtone.

Artists in recent years have used the techniques of display commonly deployed by museum curators in a way that not only produces a new kind of art work, but which in consequence makes the very act of viewing objects displayed in glass cases rather different. Susan Hiller's display installation *After the Freud Museum*, now owned by the Tate Modern in London, uses archaeological display techniques to create art, and in doing so encourages us to look differently at the very process of display.

The American artist Joseph Cornell (1903–1972) for many years created intriguing works by placing artifacts in unexpected juxtaposition in small display boxes. The German artist Joseph Beuys (1921–1986) made a series of "vitrines" or display cases containing assortments of objects and materials of significance to him, a procedure recently used in a different manner by the "Britart" sculptor Damien Hirst. The influential book by the museum curator James Putnam, *Art and Artifact: The Museum as Medium*, brings out some of the complexities and ambiguities which are today involved in the process of display.

Several archaeologists, including Michael Shanks, have in a comparable way used the art of theater to revisit the archaeologist's approach to the past and to re-examine the relationship between action and the material world. The director and actor Simon McBurney (himself the son of the distinguished archaeologist Charles McBurney), with his company Complicite in their play *Mnemonic* in this way investigated the impact upon us today of the discovery in the Alps of the well-preserved body of a Neolithic hunter, the so-called "Iceman," who died in around 3000 BC (see pp. 68–69).

The processes of archaeological investigation, including excavation and classification, have been used in a series of projects by the American sculptor Mark Dion, in ways which re-define the boundaries between art and archaeology. And the British artist Cornelia Parker has experimented creatively with what the archaeologist would term "formation processes" in her evocative installation works.

New Approaches

To what extent these initiatives in the field of the contemporary arts will serve to enrich or broaden the archaeologist's own approaches to the past remains to be seen. At the same time archaeologists are actively seeking to take more account of all the five senses including sound and taste in their work – acoustic archaeology at megalithic monuments, such as the tomb at Newgrange, promises to become a specialist sub-field of the discipline. In every case there is an attempt to develop new approaches which transcend the traditional interpretational conventions of archaeology.

Mnemonic by Complicite is a stage play centering on the life, death, and subsequent discovery of the Neolithic "Iceman" of the Alps (pp. 68–69).



the cultural heritage is an important part of the human environment, and in some ways as fragile as the natural environment. They imply, then, that the archaeologist has an important role to play in achieving a balanced view also of our present world, which is inescapably the

product of the worlds which have preceded it. The task of interpretation is now seen as very much more complex than it once seemed: that is all part of the "loss of innocence" which accompanied the New Archaeology more than 40 years ago.

SUMMARY

The history of archaeology is both the history of ideas and ways of looking at the past as well as a history of employing those ideas and investigating questions.

Humans have always speculated about their past, but it was not until 1784 that Thomas Jefferson undertook the first scientific excavation in the history of archaeology. The discipline of archaeology became firmly established in the 19th century when three great advances, namely the acceptance of the antiquity of humankind, the concept of evolution, and the development of the Three Age System, offered a framework for studying and asking intelligent questions about the past.

The "classificatory-historical period" of archaeology lasted from the mid-19th century until around 1960 and its chief concern was the development and study of chronologies. During this time there were rapid

advances in scientific aids for archaeology, particularly in the field of dating.

The 1960s marked a turning point in archaeology, and dissatisfaction with the limitations of the classificatory-historical approach led to the birth of New Archaeology. Also known as processual archaeology, its advocates sought to explain the past rather than simply describe it. To do this, New Archaeologists largely turned away from historical approaches in favor of science.

Post-modernist thinking in the 1980s and 1990s led to the development of interpretive or postprocessual archaeology. Advocates believe that there is no single correct way to undertake archaeological inference and that objectivity in research is impossible. Postprocessual archaeologists place emphasis on the varied perspectives of different social groups, arguing that not everyone experiences the past in the same way.

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