

1 The Searchers

The History of Archaeology

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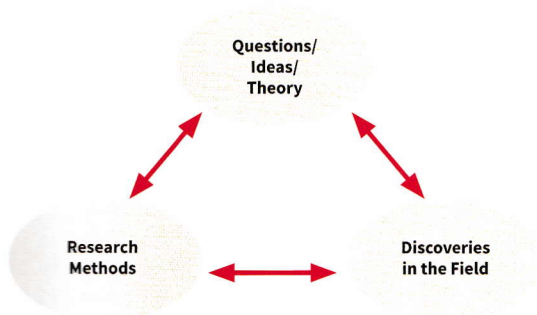
The history of archaeology is sometimes seen as only the history of great discoveries: the tomb of Tutankhamun in Egypt, the Maya cities of the Yucatán Peninsula, the painted cave of Lascaux in France, or the remains of our ancestors buried deep in Olduvai Gorge in Tanzania. But it is also the story of how we look with fresh eyes at the material evidence for the human past. In this chapter we discuss the questions that archaeology has asked and the ideas it has tested, alongside innovations and changes in research methods. Every view of the past is a product of its own time: ideas and theories constantly evolve, and so do methods. As authors, we are writing about one point on a trajectory of our own histories. Understanding how archaeology developed allows

us to show how politics, social expectations, and scientific developments influence our interpretations of the past. In a few decades (or even less time), some methods and approaches will look old-fashioned and out of date. That is the dynamic nature of archaeology as a discipline.

Just a century and a half ago, many people in the Western world—where **archaeology** as we know it was first developed—believed that the Earth had been created only a few thousand years earlier and that the remote past had to be gleaned from the earliest surviving texts, notably those from West Asia, Egypt, and Greece. No one thought that a coherent history of the time before the earliest writing was possible. According to 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 have looked into that thick fog of the remote past, and new discoveries are being made all the time. Archaeologists have learned to ask the right questions and have more of the right methods for finding answers. The archaeological record has been lying around for a long time. What is new is a greater awareness that the methods of archaeology can reveal information about the past, even the prehistoric past (before the invention of writing). The history of archaeology, covered in this chapter, is an exciting story of new ideas, of developing theory, and of changing ways of looking at the past. Second, it is a history of innovation in research methods, employing those new ideas and investigating a changing array of questions. Only third is it a history of actual discoveries.



1.1 The relationships that link archaeological research questions, methods, and discoveries in the field.

We can illustrate these relationships with a simple diagram [1.1].

Decolonizing Archaeology: The Power of Words

Public debates about the words people use remind us that when describing the human past our choice of language can influence our social and political realities in the present. Words can carry associations, both positive and negative, so care is needed when writing and speaking about people and cultures.

At the same time, it is impossible to identify a single choice of word as correct, because opinions change and people so frequently have different and conflicting perspectives about terminology and language. Our patterns of speech are constantly evolving to reflect shifts in **culture** and societal transformations.

As authors, we aim to keep pace with changing vocabularies in our field, while ensuring that the best scholarship of the past continues to be accessible to today's students, some of whom will be future colleagues.

This new edition of *Archaeology* has been written during a time when language in many disciplines is being challenged and is changing in light of renewed calls for equality, social justice, and the reform of university textbooks and curricula. We have therefore made the following updates to terminology.

The use of the word *civilization* to describe certain past societies brings with it the false implication that some other societies must therefore be non-civilized. In this book we have chosen instead to employ the terms **archaic state**, **territorially expansive state**, or **empire**, depending on the context.

We acknowledge that the **West** (uppercase), and **Western** are terms constructed to describe Europe and those areas settled by a majority of people of European descent, such as North America, Australia, and New Zealand. We do not support

The Speculative Phase

Humans have always speculated about the past, while most cultures have foundation myths. The Greek writer Hesiod, for instance, who lived in the eighth century BCE, in his epic poem *Works and Days* envisaged the human past in 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, were fascinated by the societies that preceded them. The Aztecs exaggerated their Toltec ancestry, and were so interested in Teotihuacán, the huge city in Mexico abandoned hundreds of years earlier and that they mistakenly linked to the Toltecs, that they incorporated ceremonial stone masks from the **site** in foundation deposits of their own Great Temple (see feature, pp. 582–83). Scholars and even rulers collected and studied objects

non-Western as a phrase used to group all other nations regardless of geography or other diverse characteristics.

Old World and New World are outmoded terms that were intended to describe, respectively, the land masses where humans first developed and later migrated. In eradicating these terms, we aim to be geographically accurate in our substitutions, referring to specific continents and/or countries.

The geographic areas of the Near East and Middle East have long been familiar in archaeology, but the European perspective here is clear. In this edition, this region is renamed as West or Southwest Asia.

The use of the word **Tribe** is retained by some Native American groups, and in these cases the book uses that designation. Otherwise, it has been replaced with **segmentary society**.

The word **Indigenous** (uppercase) replaces **Aboriginal** for Pacific Islanders; however, **Indigenous** is not preferred in Africa. **Aboriginal Australians** is used for **Aboriginal** and **Torres Strait Islander** people, although some prefer **First Nations** or **Indigenous Australians**. In the Americas, both **Native American** and **Indian** are used, although not everyone agrees and some prefer the first term. In Canada, **First Nations** is favored.

A change from **slave** and **slavery** to **enslaved person** and **enslavement** reflects the active role of the enslaver and describes the enslaved as people, not defined solely by their enslaved status.

from the past. Nabonidus, the last native king of Babylon (reigned 555–539 BCE), took a keen interest in antiquities. In one important temple he dug down and discovered the foundation stone that had been laid some 2,200 years earlier. Many of his finds were kept in a kind of museum at Babylon.

A precursor to archaeology (as we define it) was the search for holy objects. The Roman empress—and later saint—Helena (third–fourth centuries CE) journeyed east in search of Christian relics, actively excavating for them. Later, during the European Renaissance (fourteenth–seventeenth centuries), people began to establish so-called cabinets of curiosities for curios and ancient **artifacts** displayed alongside exotic minerals and specimens illustrating natural history. During the Renaissance, scholars began to study and collect artifacts from Classical antiquity and, in more northern lands of Europe, their own remote past. At this time scholars studied the conspicuous sites, including the great stone tombs of northwestern Europe (such impressive sites as Stonehenge in Britain or Carnac in Brittany). In the Netherlands the poet and scholar Titia Brongersma (c. 1650–1700) was intrigued by these structures, also called *dolmens*. She initiated and funded one of the first recorded **excavations** of these monuments in Europe, establishing that, contrary to the popular belief that the monuments had been constructed by giants, they were indeed graves. She included an ode to the excavated dolmen in her only published book of poetry. Later, William Stukeley (1687–1765) studied in a systematic manner some of these monuments in England, producing accurate plans that are still useful today [1.2]. Stukeley and his colleagues also concluded that the monuments were the work not of giants or devils, as suggested by local names such as the Devil's Arrows, but of people in the past. He was also successful in phasing field monuments,

showing that, since Roman roads cut into barrows, the former were later than the latter. Around 1675, the first archaeological excavation of the Americas—a tunnel into Teotihuacán's Pyramid of the Moon—was carried out by Carlos de Sigüenza y Góngora (1645–1700).

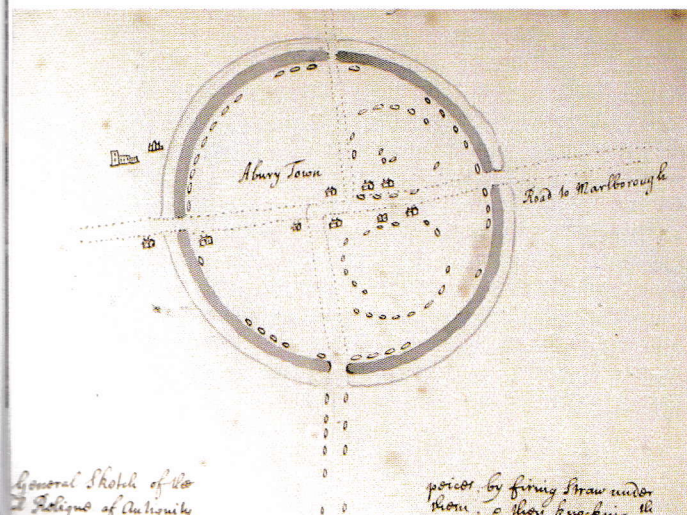
The First Excavations

During the eighteenth century more adventurous researchers initiated excavation of prominent sites, including Pompeii in Italy, with its striking Roman finds, although systematic excavation did not begin there until the nineteenth century (see feature, pp. 24–25) [1.3]. In 1765, at the Huaca de Tantaluc on the coast of Peru, a mound containing a shrine was excavated and its **stratigraphy** carefully recorded. Nevertheless, credit for conducting what many agree was the first scientific excavation in the history of archaeology traditionally goes to Thomas Jefferson (1743–1826), before he became the third president of the United States. In 1784 Jefferson dug a trench (or section) across a burial mound on his property in Virginia.

Jefferson's work marks the beginning of what is known as the Speculative Phase, a name that comes from the way people thought about hundreds of unexplained earthen mounds that lie predominantly to the east of the Mississippi River. European settlers believed, wrongly, that the mounds had not been constructed by Native Americans, but by a mythical and vanished race of Moundbuilders. Jefferson responded to this speculation with a more scientific approach, investigating speculation about the mounds against real evidence—by excavating one of them. His methods were careful, revealing different layers in his trench and that human bones were less well preserved in the lower layers. He deduced that the mound had been reused as a place of burial on many separate occasions. He admitted, rightly, that more evidence was needed to resolve the Moundbuilder question, but he saw no reason why ancestors of present-day Native Americans had not raised the mounds.

Jefferson was ahead of his time. His sound approach—logical **deduction** from carefully excavated evidence—was in many ways the basis of modern archaeology. It was not, however, taken up by any of his immediate successors in North America. In Europe, meanwhile, extensive excavations were being conducted, for instance by Richard Colt Hoare (1758–1838), who dug into hundreds of burial mounds in southern Britain in the early nineteenth century, creating categories of field monuments, such as “bell barrow,” that are still in use today [1.4]. Toward the end of the 1800s, Christian Maclagan (1811–1901) undertook the first scientific excavations of prehistoric sites in Scotland, including a distinctive Iron Age round tower known as a *broch* at Coldoch, although her work was

1.2 (detail) A page from the commonplace book of William Stukeley, with a sketch plan of standing stones at Avebury, southern England.





1.3 The Roman city of Pompeii lies in the shadow of Mount Vesuvius in Italy. When the volcano erupted in 79 CE, the entire city was buried and all but forgotten until excavations began in the mid-eighteenth century. Spectacular discoveries generated huge interest in the past and greatly influenced the arts (see feature, pp. 24–25).

1.4 Early excavations: an illustration of Richard Colt Hoare and William Cunnington directing a dig north of Stonehenge in 1805.



mainly unrecognized and she was denied full membership of the Society of Antiquaries of Scotland. Yet none of these excavations advanced the cause of knowledge about the distant past, since their interpretation was framed by a biblical understanding that insisted on a short timespan for human existence.

The Beginnings of Modern Archaeology

The discipline of archaeology became truly established only around the mid-nineteenth century. Already in the background were significant achievements in **geology**. Hundreds of fossils recovered and described by the English amateur paleontologist Mary Anning (1799–1847) supported the argument that the Earth was older than just a few thousand years. The Scottish geologist James Hutton (1726–1797), in his *Theory of the Earth* (1785), had studied the **stratification** of rocks (arrangement in superimposed layers, or *strata*), establishing principles that became the

Digging Pompeii: Past and Present



In the history of archaeology, the sites of Pompeii and Herculaneum, lying at the foot of Mount Vesuvius in the Bay of Naples, Italy, hold a very special place. Even today, when so many major sites have been systematically excavated, it is a moving experience to visit these wonderfully preserved Roman cities.

Pompeii's fate was sealed on the momentous day in August 79 CE when Vesuvius erupted, a cataclysmic event described by Pliny the Younger, a Roman writer. The city was buried under several meters of volcanic ash, many of the inhabitants being asphyxiated as they tried to flee. Herculaneum was buried to an even greater depth. There the complete cities lay, known only from occasional chance discoveries, until antiquarian curiosity grew in the early eighteenth century.

In 1709 the prince of Elboeuf, learning of the discovery of worked marble in the vicinity, proceeded to investigate by shafts and tunnels what we now know to be the site of Herculaneum. He had the good luck to discover the ancient theater—the first complete Roman example ever found—but was mainly interested in works of art for his collection. These he removed without any kind of record of their location.

After Elboeuf, clearance resumed in a slightly more systematic way in 1738 at Herculaneum, and in 1748 Pompeii was

discovered. Work proceeded under the patronage of the king and queen of Naples, but they did little more than quarry ancient masterpieces to embellish their royal palace. Shortly afterward, on the outskirts of Herculaneum, the remains of a splendid villa were revealed, with statues and an entire library of carbonized papyri that have given the complex its name: the Villa of the Papyri. The villa's dimensions were closely followed by J. Paul Getty in the construction of his museum at Malibu, California.

The first catalogue of the royal collection was published in 1757. Five years later the German scholar Johann Joachim Winckelmann (1717–1768), often regarded as the father of Classical archaeology, published his first *Letter* on the discoveries at Herculaneum. From that time on, the finds from both cities attracted enormous international attention, influencing **styles** of furniture and interior decoration, and inspiring several pieces of Romantic fiction.

Not until 1860, however, when Giuseppe Fiorelli (1823–1896) was put in charge of the work at Pompeii, did well-recorded excavations begin. In 1864 Fiorelli devised a brilliant way of dealing with the cavities in the ash within which skeletons were found: he simply filled them with plaster of Paris.

The ash around the cavity acted as a mold, and the plaster took the accurate shape of the decayed body [1.5 and 1.6]. (In a more recent technique, the excavators pour in transparent glass fiber. This allows bones and artifacts to be visible.)

In the twentieth century, Amedeo Maiuri excavated at Pompeii between 1924 and 1961, and for the first time systematic excavations were carried out beneath the 79 CE ground level, revealing remains of earlier phases of the town. Around the same time, Tatiana Warsher (1880–1960) compiled her massive forty-volume “Codex Topographicus Pompeianus,” in which photography, accurate measurements, and the relationship of artifacts and paintings with specific types of architecture were used to create a detailed picture of the cityscape of Pompeii. Warsher's dedication to detail was meticulous—even her guidebook *Pompeii in Three Hours* included a hundred illustrations and plans. In more recent years, such work has been supplemented by targeted excavations by many international teams of scholars. They have uncovered a complex history of changing property boundaries and land use, revealing how Pompeii grew from a small

1.5 (Right) How a body shape is retrieved.

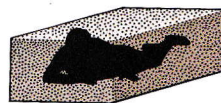
1.6 (Below) Plaster, poured into the cavity left by the body, re-creates the shape of a Pompeian boy.



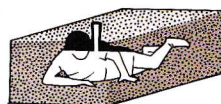
1 Pumice and ash bury a victim in 79 CE.



2 The body gradually decays, leaving a hollow.

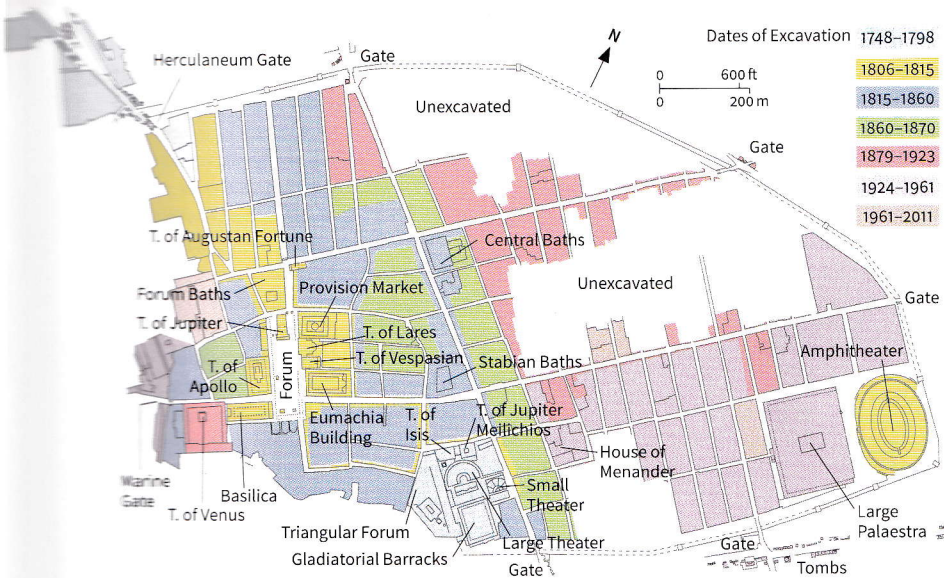


3 Archaeologists find the hollow, and pour in wet plaster.



4 The plaster hardens, allowing the pumice and ash to be chipped away.





1.7 (Above) Preservation conditions at Pompeii are remarkable: carbonized eggs are among the survivors.

1.8 (Left) A sketch plan of Pompeii, showing the excavated areas.

1.9 (Below) The excavated Via dell' Abbondanza, Pompeii's main thoroughfare.

rural settlement into a sophisticated Roman town and throwing much new light on its social and economic development [1.7, 1.8, 1.9, and 1.10].

Pompeii remains the most complete urban excavation ever undertaken. The town plan is clear in its essentials; most of the public buildings have been investigated, along with innumerable shops and private houses. Yet the potential for further study and interpretation is enormous.

Today it is not difficult for the visitor to Pompeii to echo the words of Shelley in his *Ode to Naples*, written almost two centuries ago:

I stood within the City disinterred;
And heard the autumnal leaves like
light footfalls
Of spirits passing through the streets;
and heard
The Mountain's slumberous voice
at intervals
Thrill through those roofless halls.



1.10 A wall painting from the House of the Castile Lovers; an enslaved girl watches two couples enjoying a banquet.

basis for archaeological excavation, as foreshadowed by Jefferson. Hutton showed that the stratification of rocks was due to processes still ongoing in seas, rivers, and lakes. This was the principle of **uniformitarianism**. Charles Lyell (1797–1875) also highlighted, in his *Principles of Geology* (1833), the key point that geologically ancient conditions such as erosion and sedimentation were similar to, or uniform with, those of the present. This idea could be applied to the human past. It marks a fundamental principle of modern archaeology that in many ways the processes of the past much resemble those operating in the present.

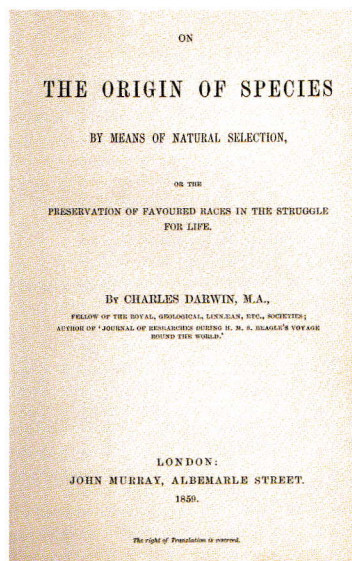
The Antiquity of Humankind

These ideas established the groundwork for one of the most significant intellectual developments in the nineteenth century, which was indispensable for the discipline of archaeology: the understanding of the antiquity of humankind. Jacques Boucher de Perthes (1788–1868), a French customs inspector, was working in the gravel quarries of the Somme River. In 1841 he published convincing evidence for the close **association** he observed there of human artifacts (chipped stone, or what we would today call **hand-axes**, or bifaces) with the bones of extinct animals. Boucher de Perthes argued that human existence extended back in time well before the biblical Flood. While his view did not at first win wide acceptance, in 1859 two leading British scholars, John Evans (1823–1908) and Joseph Prestwich (1812–1896), who visited him in France, accepted the validity of his findings.

The consequence was broad agreement that human origins extended back into a remote past, so that the biblical notion of the creation of the world, thought to be just a few thousand years before our own time, was no longer acceptable. The possibility of a **prehistory** of humankind, indeed the need for one, had been recognized; the term itself came into general use after John Lubbock (1834–1913) published *Prehistoric Times* in 1865, which became a bestseller.

The Concept of Evolution

These new ideas harmonized with the findings of Charles Darwin (1809–1882). Darwin's fundamental work, *On the Origin of Species* (1859) established the concept of **evolution** by natural selection [1.11]. Increasingly, evolution was seen as the best explanation for the origin and development of all plants and animals. While the idea of evolution itself was not new—earlier scholars had suggested that living things had changed or evolved through the ages—Darwin demonstrated *how* this change occurred. In competition for existence in a given environment, better-adapted individuals of a particular species would survive (or be



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

“naturally selected”), while less well-adapted ones would die. Surviving individuals would pass on 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 influential work, *The Descent of Man*, was not published until 1871, but the implications were clear: the human species had emerged through evolution. The search for human origins in the material record, using techniques of archaeology, could begin.

The Three Age System

New techniques, notably in excavation, were being developed, as was an idea that was useful for understanding Europe's prehistory: the **Three Age System**. As early as 1808, Colt Hoare had recognized sequences of stone, brass, and iron artifacts within excavated barrows. In 1836 the Danish scholar C. J. Thomsen (1788–1865) published a guidebook to the National Museum of Copenhagen, which appeared in English (in 1848) as the *Guide to Northern Archaeology*. Thomsen proposed that the collections could be divided into those from a Stone Age, a Bronze Age, and an Iron Age [1.13, p.28]. This system was soon adopted throughout Europe. The division in the Stone Age was later refined to the **Paleolithic** (Old Stone Age) and the **Neolithic** (New Stone Age). Scholars observed that these terms were less applicable to Africa, where bronze had been not used south of the Sahara. It also had less relevance in the Americas, where bronze was less important and iron was not used before the European conquest.

Evolution: Darwin's Great Idea

The idea of evolution has been of central significance in the development of archaeological thinking. It is associated in the first place with the name of Charles Darwin, whose *On the Origin of Species* (1859) effectively explained the problem of the origin and development of 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 (1766–1834) was influential with his notion of competition through population pressure, and the geologist Charles Lyell with his insistence on gradual change.

The Impact on Archaeology

Darwin's work had an immediate effect on such archaeologists as Augustus 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, who was also influenced by the American anthropologist Lewis Henry Morgan (see p. 28).

The application of the principles of evolution to social organization does not always follow the detailed mechanisms of hereditary transmission that apply to the biologically defined species. For culture can be learned and passed on more widely between generations 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 the nineteenth century away from the broad generalizations of Lewis Henry Morgan and Edward Tylor in favor of a much more detailed, descriptive approach, often termed **historical particularism**, and associated with the anthropologist Franz Boas. In the years before and after World War I, American anthropologists such



1.12 A drawing of Charles Darwin caricatured as an ape, published in 1874. The drawing was captioned with a line from William Shakespeare's *Love's Labour's Lost*: "This is the ape of form."

as 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 Sally Binford, Lewis Binford, Kent Flannery, and David L. Clarke.

Recent Approaches

Evolutionary thinking has continued to play a major role in the consideration of human origins. The theory of genetic drift was an important factor in biological

evolution, explaining how random genetic fluctuations in a population can lead to the loss of rare variants of particular **genes**. This process is separate from natural selection. It has also been appreciated that the process of evolution does not need to be gradual; the concept of **punctuated equilibrium** has come into play, where a species may show no signs of evolutionary change for long periods until a moment in time when change is sudden. Nor need evolution be simple (see Chapter 12 for further discussion). The debate about intelligent design, particularly in the United States, 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 it has increasingly been realized that Darwinian evolutionary thought has not yet produced mechanisms to describe adequately the processes involved in human

cultural development. The notion of the meme, supposedly a specific transmissible agent for change based on the concept of the gene, has not proved useful in practice; nor has evolutionary psychology. There is no suggestion here that the application of Darwinian evolutionary theory is incorrect or inappropriate; there are now indications that computer-aided **simulations**, modeling, and other approaches to diversification, such as phylogenetic studies, can be applied to linguistics and **material culture** as well as to molecular genetics.



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

Thomsen's ideas were significant, and the Three Age System demonstrated that by studying and classifying prehistoric artifacts one could produce chronological sequences and say something about the time periods in question. Archaeology was moving beyond speculation, becoming a discipline of careful excavation and the systematic study of artifacts. Although it has been superseded by chronometric dating methods (see Chapter 4), the Three Age System is still a fundamental archaeological concept.

Together, these ideas—the antiquity of humankind, Darwin's principle of evolution, and the Three Age System—offered a framework for studying the past and for asking intelligent questions. Darwin's ideas were also influential in another way, suggesting that human cultures might have evolved in a manner analogous to plant and animal species. Soon after 1859, British scholars including Augustus Pitt-Rivers (whom we shall meet again) and John Evans were devising schemes for the evolution of artifact forms that employed typology—the arrangement of artifacts in chronological or developmental sequence, later elaborated by the Swedish scholar Oscar Montelius (1843–1921) [1.14].

Ethnography and Archaeology

Another key strand was the realization that the study of living communities in different parts of the world (**ethnography**) was a starting point for archaeologists.



1.14 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's arrangement of Iron Age fibulae (cloak pins), showing their evolution.

Ethnographers wanted to understand the lifestyles of early inhabitants who had different types of tools and crafts. For example, colonialist thinking meant that contact with Indigenous communities in North America provided antiquarians and historians with models for images of tattooed Celts and Britons.

At the same time, ethnographers and anthropologists were 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) published works in the 1870s arguing that human societies had evolved from a state of savagery (primitive hunting) through barbarism (simple farming) to civilization (seen by these authors as the “highest forms” of society, a view that is now rightly criticized). Morgan's book *Ancient Society* (1877), in particular his notion that people had once lived in a state of primitive communism, sharing resources equally, strongly influenced Karl Marx (1818–1883) and Friedrich Engels (1820–1895), who used these ideas to write about precapitalist societies, influencing many later archaeologists who used Marxist approaches. The paradigm of social progression, which is now rejected, was couched in colonial thinking of the times that saw so-called Western civilization as the apex of the human story. This is a negative legacy with which many archaeologists continue to struggle.

Discovering Early Cities and their Writing

By the 1880s, many ideas underlying modern archaeology were in place, formed against a background of major discoveries of early states during the nineteenth century.

The richness of ancient Egyptian sites was brought to an avid public after Napoleon's military expedition there in 1798–99. The discovery (by one of his soldiers) of the Rosetta Stone provided the key to understanding Egyptian hieroglyphic writing. Inscribed on the stone were identical texts, written in both Egyptian and Greek scripts. Using this bilingual inscription, the French scholar Jean-François Champollion (1790–1832) was able to decipher the **hieroglyphs** in 1822, after fourteen years' work. Additional brilliant scholarly detection unlocked the secrets of **cuneiform** writing, a script used for many languages of ancient Mesopotamia. Henry Rawlinson (1810–1895) spent twenty years studying a sixth-century BCE trilingual inscription, found on an inaccessible cliff face located between Baghdad and Tehran, before he cracked cuneiform's code. Other ancient scripts were not deciphered until well into the twentieth century: the Mycenaean Greek script Linear B was deciphered by Alice Kober (1906–1950), Michael Ventris (1922–1956), and John Chadwick (1920–1998) in 1952, after more than two decades' work. The ancient Indus, or Harappan, script has yet to be deciphered.

Egypt and West Asia fascinated the American lawyer and diplomat John Lloyd Stephens (1805–1852), whose exploration in the Americas is well known. Together with the English artist Frederick Catherwood (1799–1854), with whom he traveled through the Yucatán Peninsula, Stephens produced superbly illustrated books during the early 1840s, revealing the ruined cities of the ancient Maya to an enthusiastic public for the first time. Unlike contemporary researchers in North America, who continued to argue for a vanished white race of Moundbuilders as the architects of the earthworks there, Stephens rightly argued that the Maya monuments were created by the ancestors of the Indigenous Maya still living in the area [1.15]. Stephens also observed similar hieroglyphic inscriptions at the Maya centers, which led him to propose Maya cultural unity. The glyphs were not deciphered until the 1960s by Tatiana Proskouriakoff (1909–1985).

As readings of the Bible had inspired a search for lost cities in Egypt and West Asia, readings of Homer's *Iliad*, the narrative poem recounting the events of the Trojan Wars, similarly fired the imagination of the German banker Heinrich Schliemann (1822–1890), who searched for the city of Troy. With remarkable luck and good judgment he identified it in a series of field campaigns at Hissarlik, western Turkey, in the 1870s and 1880s. He then also dug at Mycenae in Greece and revealed—as at Troy—a hitherto unknown prehistoric society. Schliemann's methods of

excavation were criticized as crude and cavalier, but few searchers were rigorous in his day, and he showed that interpretation of stratigraphy within a mound could allow the reconstruction of the remote past. Nevertheless, it fell to the next generation of archaeologists, led by Augustus Pitt-Rivers and William Flinders Petrie, to establish modern field techniques (see feature, pp. 30–33).

The piecemeal approach to investigation of the past in Europe was surpassed by the creation of the Archaeological Survey of India in 1862, funded by the Government of India. Sir John Marshall, the director-general of the Survey, was to uncover the urban settlements of the Indus Valley in 1922. 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 the reports are still used today for spatial reanalysis.

The islands of the Aegean were also explored by the American Classics scholar Harriet Boyd Hawes, who discovered and excavated the Bronze Age site of Gournia on Crete, from 1901 to 1904, (see feature, p. 33). Her publications are still consulted today.

1.15 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 yet been deciphered.



The Development of Field Techniques

It was only in the late nineteenth century that a sound methodology of scientific excavation began to be generally adopted. Since then, and through the twentieth century, major figures have stood out who in their various ways helped to create modern field methods.

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

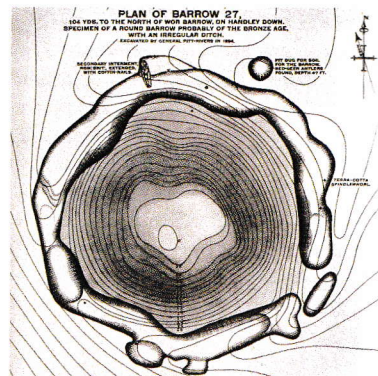
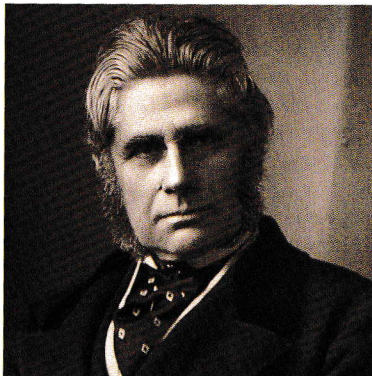
For much of his life a professional soldier, Pitt-Rivers [1.16] brought long experience of military methods, survey, and precision to impeccably organized excavations on his estates in southern England. Plans, sections, and even models were made, and the exact position of every object was recorded [1.17]. He was concerned not with retrieving beautiful treasures but with recovering all objects, no matter how mundane. Pitt-Rivers 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 [1.18, 1.19] represent the highest

1.16 (Top, left) Augustus Pitt-Rivers.

1.17 (Top, right) An example of Pitt-Rivers's meticulous records: his plan of Barrow 27 on Cranborne Chase.

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

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





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

1.21 (Below) Sir Mortimer Wheeler.

1.22 (Bottom) Sir Mortimer Wheeler's 1945 excavation at Arikamedu.



1.23 (Above) Hilda Petrie descending into a tomb, 1897–98.

1.24 (Below) Tessa Wheeler.



standards of archaeological publication; his recording was so thorough that the site continues to be reinterpreted through these monographs today.

Sir William Flinders Petrie (1853–1942) and Hilda Petrie (1871–1956)

A younger contemporary of Pitt-Rivers, Flinders Petrie [1.20] was likewise noted for his meticulous excavations and his insistence on the collection and description of everything found, 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. Flinders Petrie also devised his own technique of **seriation**, or sequence dating, with which he brought chronological order to the 2,000 pit graves of the Naqada cemetery in Upper Egypt (see Chapter 4 for more about seriation). Hilda Petrie [1.21] contributed to many different projects in Egypt, including Saqqara, Abydos, and Al-Amarnt. Her most important contribution was as a fundraiser, improving and maintaining the visibility of Flinders's excavations so that the projects remained financed.

Sir Mortimer Wheeler (1890–1976) and Tessa Verney Wheeler (1893–1936)

A veteran of the British army in both world wars, Mortimer Wheeler [1.22] brought military precision to his excavations, including the grid-square method, known as the **Wheeler box-grid** (see Chapter 3). Wheeler worked at many British hillforts, including Maiden Castle.

From 1944 to 1948, as Director General of Archaeology in India, he established training schools for archaeological field workers and excavated sites including Harappa, Taxila, Charsadda, and Arikamedu [1.23]. More recently, some of his interpretations for Maiden Castle, Arikamedu, and Charsadda have been challenged.

The significant contributions of Mortimer's wife, Tessa Wheeler [1.24], to the UK excavations was properly acknowledged only later, in the 1930s, when research from Caerleon, Lydney, and St. Albans was published using their joint names.



1.25 (Top) Gertrude Caton-Thompson.

1.26 (Above) Dorothy Garrod, one of the first to study prehistoric West Asia systematically.

1.27 (Top, right) Julio Tello, arguably the greatest Native American social scientist of the twentieth century and the father of Peruvian archaeology.

1.28 (Right) Kathleen Kenyon.

Gertrude Caton-Thompson (1888–1985)

A wealthy British researcher who had studied prehistory and anthropology at Cambridge University, Caton-Thompson [1.25] subsequently became known for her pioneering interdisciplinary projects of survey and excavation in the Faiyum of Egypt and, perhaps most famously,

at Great Zimbabwe. Here, her excavations in 1929 unearthed datable artifacts from a stratified **context** and confirmed that the site represented a major culture of African origin (see feature, pp. 492–93). The violent reaction from the white community in Southern Rhodesia (as Zimbabwe was then called) to her findings so upset her that she refused to undertake further work in Southern Africa, concentrating once more on sites in Egypt and Arabia.

Dorothy Garrod (1892–1968)

In 1937 Dorothy Garrod [1.26] became the first female professor in any subject at Cambridge University, 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 West Asia, from the Middle Paleolithic to the **Mesolithic** (Middle Stone Age), and found human remains crucial to our knowledge of the relationship between Neanderthals and *Homo sapiens*. With her discovery of the Natufian culture, predecessor of the world's first farming societies, she posed a series of problems that are still not fully resolved today.

Julio Tello (1880–1947)

Tello [1.27], who was Quechua, was born and worked in Peru. America's first **Indigenous archaeologist** began his career with studies in Peruvian linguistics and qualified as a medical doctor before taking up anthropology. He did much to awaken



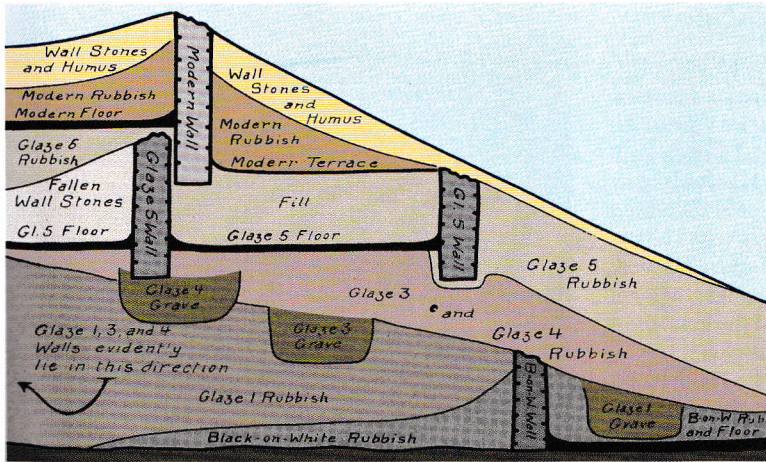
an awareness of the archaeological heritage of Peru, and was the first to recognize the importance not only of the key site of Chavín de Huantar but also of other major sites, such as Sechín Alto, Cerro Sechín, and Wari. One of the first to stress the autonomous rise of early states in Peru, Tello also founded the Peruvian National Museum of Archaeology.

Kathleen Kenyon (1906–1978)

The daughter of a director of the British Museum, Kenyon [1.28] was a formidable archaeologist. She trained on Roman sites in Britain under Mortimer Wheeler (see p. 31) and adopted his method. She subsequently applied this approach in West Asia at two of the most complex and most excavated sites in Palestine: Jericho and Jerusalem. At Jericho, in 1952–58, she found evidence that pushed back the date of occupation to the end of the Ice Age (see Chapter 7) and uncovered the walled village of the Neolithic farming community commonly referred to as the earliest town in the world.

Alfred Kidder (1885–1963)

Kidder was the leading Americanist of his time. As well as being a major figure in Maya archaeology, he was primarily responsible for putting the Southwest on the archaeological map with his excavations



at the Pecos ruins, 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 [1.30] was one of the first archaeologists to employ a team of specialists to analyze artifacts and human remains. He also developed a 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.

Harriet Boyd Hawes (1871-1945)

The pioneering American archaeologist Harriet Boyd Hawes [1.31] majored in Classics and was fluent in Greek. Shortly after graduating, she spent several seasons in Crete, riding around often dangerous territory alone or in the company of another woman, 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 workers. She published her findings

1.29 (Top) Alfred Kidder's drawing of the stratigraphy at Pecos Pueblo.

1.30 (Above, left) Alfred Kidder.

1.31 (Left) Harriet Boyd Hawes.

1.32 (Right) Honor Frost.

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.

Honor Frost (1917–2010)

Since 1980, archaeological fieldwork has developed in several new directions. One of these is underwater archaeology, which was introduced to Britain by Honor Frost [1.32]. While convalescing on the French Riviera, she was taught to free dive by divers who had helped with the development of the aqualung during World War II.

The value of underwater archaeology as a serious scientific discipline was first demonstrated in 1960 during Frost's excavation of the Bronze Age shipwreck at Gelidonya, off Turkey, along with the Turkish diver Mustafa Kapkin and the American photojournalist Peter Throckmorton. That work has since come to be regarded as the benchmark and outstanding achievement of underwater archaeology.



Classification and Consolidation

Well before the end of the nineteenth century, many principal features of modern archaeology had been established, and many of the earliest urban societies across the globe had been discovered. There ensued a period lasting until about 1960 that Gordon Willey (1913–2002) and Jeremy Sabloff called the “classificatory-historical period” in their *A History of American Archaeology* (1974). Its central concern, as they rightly characterize it, was detailed work on chronology that aimed at the establishment of regional chronological systems and descriptions of the long-term trajectories of different societies across the globe.

In **regions** where early urban societies had flourished, new excavations and discoveries filled out chronological sequences. Alfred Maudslay (1850–1931) laid a scientific foundation for Maya archaeology, while the German scholar Max Uhle (1856–1944) explored the phases of Peruvian societies with excavations in the 1890s at Pachacamac on Peru’s coast. Meticulous work by Flinders Petrie in Egypt preceded the spectacular discovery (in the 1920s) of Tutankhamun’s tomb by Howard Carter (1874–1939) (see feature, pp. 66–67). In the Aegean, Arthur Evans (1851–1941) revealed previously unknown Minoan sites on the island of Crete that were even earlier than Schliemann’s Mycenaean ones. And in Mesopotamia work by Leonard Woolley (1880–1960) and Katharine Woolley (1888–1945) at Ur, the biblical city of Abraham’s birth, established the Sumerians on the expanding map of the ancient world.

Scholars studying primarily the prehistoric societies of Europe and North America made highly significant contributions during the first half of the twentieth century. Gordon Childe (1892–1957), a brilliant Australian archaeologist based in Britain, was a leading thinker on European prehistory [1.33]. In the United States, anthropologists and archaeologists studying Native American peoples worked closely together, while the anthropologist Franz Boas (1858–1942) reacted against the broad evolutionary schemes of his predecessors Morgan and Tylor. Boas demanded much greater attention to the collection and classification of information in the field. His students compiled huge inventories of cultural traits, such as pot and basket designs or **types** of moccasins, reflecting the direct historical approach of archaeologists, who attempted to trace modern Native American pottery and other styles directly back into the distant past. Cyrus Thomas (1825–1910) and later W. H. Holmes (1846–1933) in the eastern United States complemented work by Alfred Kidder, whose excavations at Pecos Pueblo in the Southwest from 1915 to 1929 established a chronological framework for that region (see feature, p. 32–33). James A. Ford (1911–1968) later developed the first major framework for the Southeast. By the 1930s, the number of



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

separate regional sequences was so great that a group of scholars, led by W. C. McKern (1892–1988), devised what became known as the **Midwestern Taxonomic System**, which correlated sequences in the Midwest by identifying similarities between artifact collections. The principle was applied to other areas.

Gordon Childe, meanwhile, was making the same sort of comparisons between prehistoric sequences in Europe, almost single-handedly. His methods (and that of the Midwestern Taxonomic System) aimed to order the material to answer two questions: To what period do the artifacts date? And with which other materials do they belong? The latter question highlighted an assumption made explicit by Gordon Childe, that a constantly recurring collection or **assemblage** of artifacts (a “culture” in his, or an “aspect” in McKern’s, terms) could be seen as the material equipment of a particular group of people. In turn, this approach offered the hope of answering, in general ways, the question: Who did these artifacts belong to? The answer took the form of a named people, even if the name was a modern invention and not its original name. (Today, we are aware of the dangers of this approach, as discussed in Chapter 12.)

Childe’s works of synthesis, *The Dawn of European Civilization* (1925) and *The Danube in Prehistory* (1929), went well beyond describing and correlating the culture sequences and attempting to account for their origin. During the late nineteenth century, scholars such as Montelius (1843–1921), who saw the richness of early urban societies being uncovered in West Asia, argued that all the attributes of urban society, from stone architecture to

metal weapons, had spread, or diffused, to Europe from West Asia by trade or by migrations of people. Childe, benefiting from a much greater range of evidence, modified this extreme **diffusionist approach** to argue that Europe had seen its own indigenous development—although he nevertheless attributed the major cultural changes to West Asian influences.

In his later books, such as *Man Makes Himself* (1936), Childe pursued the even more difficult question: Why had urban life arisen in West Asia? Influenced by Marxist ideas (and the relatively recent revolution in Russia), he proposed that what he called a **Neolithic Revolution** had given rise to farming and that later an **urban revolution** had led to the first towns and cities. Childe was among only a few archaeologists of his generation bold enough to address the big question of why things had happened or changed in the past. Most of his contemporaries focused on chronologies and cultural sequences. But, after World War II, scholars again began to challenge conventional approaches.

The Ecological Approach

During the 1940s and 1950s, the anthropologist Julian Steward (1902–1972) emerged as one of the most influential new thinkers in North America. He wanted, like Childe, to explain cultural change, bringing to it an anthropologist's understanding of how living cultures work. Steward highlighted the observation that cultures interact not only with one another, but also with their environments. Steward established the study of **cultural ecology**, the ways in which humans' adaptation to the environment caused cultural change. The pioneering work of Gordon Willey (1913–2002) [1.34], one of Steward's graduate associates, was carried out in the Virú Valley of Peru

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



1.35 Beatrice de Cardi stated of her fieldwork that “I have never had any difficulties...I am not a woman or a man when I am working in the Gulf or anywhere else. I am a professional and [my colleagues] have always accepted that.”



during the late 1940s. Willey's archaeological study of 1,500 years of pre-Hispanic settlement combined observations from detailed maps and aerial photographs (see feature, pp. 86–87), **survey** at ground level, and excavation and surface potsherd collections. Using these data, he established dates for hundreds of prehistoric sites. He then plotted the geographical distribution of these sites in the valley during different time periods. This was one of the first settlement-pattern studies in archaeology (see Chapter 3), where sites were viewed in the context of the changing local environment. Cultural ecology had far-reaching consequences for the study of humans living in different environments over long periods of time.

Regional surveys following the Virú Valley study were starting points, both in the Americas and in Southwest Asia, for documenting distributions of sites across diverse environments. Beatrice de Cardi (1914–2016) embarked on a long career of successful archaeological field surveys in the Persian Gulf and Baluchistan, and then in Qatar and the United Arab Emirates [1.35]. She recorded many newly discovered sites and was awarded an OBE for services to British archaeology. At the time of her death, aged 102, de Cardi was the world's oldest practicing archaeologist.

Independently of Steward, the British archaeologist Grahame Clark was developing an ecological approach with direct relevance for archaeological fieldwork. Breaking away from the artifact-dominated **culture-historical approach** of his contemporaries, he argued that, by studying how human populations adapted to their environments, archaeologists could understand many other aspects of ancient society. Collaboration with specialists was essential; for example, scientists who could identify animal bones or plant remains in the archaeological record could contribute to a picture not only of what

prehistoric environments were like but also of the foods that prehistoric peoples ate.

From this early ecological research, the rich field of environmental and dietary reconstruction (discussed in Chapters 6 and 7) has grown.

The Rise of Archaeological Science

The period immediately after World War II witnessed the rapid development of scientific techniques for archaeology. We have seen how pioneers of the ecological approach forged alliances with environmental scientists. Even more important was the application of the physical and chemical sciences. An early proponent of the physical sciences in archaeology was Anna O. Shepard (1903–1971), an American ceramics expert [1.36]. Shepard studied archaeology, as well as chemistry, physics, and geology, and became a specialist in the physical attributes of ceramics. Studying pottery excavated from Mesoamerican and Southwestern US sites, she contributed pioneering petrographic analyses of archaeological pottery. Her *Ceramics for the Archaeologist* (1961), containing analyses of sherd pastes, paints, and tempers, set a high standard for the scientific understanding of technologies and craft production.

A significant breakthrough came in the field of dating. In 1949 the American chemist Willard Libby (1908–1980)

announced his invention of radiocarbon (^{14}C) dating. The full impact of this momentous technical achievement was not felt for a decade (see below), but the implications for archaeology were clear: here at last was a method for directly determining the age of undated sites and finds anywhere in the world without recourse to complicated cross-cultural comparisons with areas dated by historical methods (usually written records).

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 promise of providing a completely independent chronology for ancient Europe. Chapter 4 discusses radiocarbon in detail, alongside other dating methods.

The enthusiasm for, and expansion of, scientific techniques was such that, by 1963, a volume entitled *Science in Archaeology*, edited by Don Brothwell (1933–2016) and Eric Higgs (1908–1976), ran to nearly 600 pages. Its contributions from fifty-five experts not only expounded dating techniques and presented plant and animal studies, but also described methods for analyzing human remains (see Chapter 11) and artifacts (Chapters 8 and 9).

Another development, in artifact studies, contributed to understanding early trade. Using the technique of **trace-element analysis**, which measures elements present in the material in tiny amounts (see pp. 373–77), it was possible to identify the raw materials of certain artifacts and the sources from which the materials had come. As with many new methods, research in this field stretched back to the 1930s, when the Austrian archaeologist Richard Pittioni (1906–1985) had used trace-element analysis to find the sources used for early copper and bronze artifacts. Only during the postwar years did this, and other newly developed scientific techniques, really make an impact on archaeology. At the same time, the increasing power of computers and software made them indispensable for data handling and processing.

Over more recent decades, developments in biochemistry and molecular genetics have underpinned the major new disciplines of **molecular archaeology** and **archaeogenetics**. Sensitive techniques in the field of organic chemistry allow the precise identification of organic residues, while isotopic studies support fresh insights into diet and nutrition in the past. The first sequencing of ancient DNA was of a museum specimen of the quagga, an extinct subspecies of zebra, published in 1984 by a team led by Allan Wilson from the University of California, Berkeley. Archaeogenetics captured the public imagination in 1997, when Svante Pääbo and his colleagues reported the first successful sequencing of Neanderthal **mitochondrial DNA** (DNA found in **mitochondria**, outside the nucleus, also called mtDNA), originating from a specimen found

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



in Germany's Neander Valley. The full sequence of the Neanderthal genome was achieved in 2010, allowing Pääbo and his team to argue that there had been interbreeding between Neanderthals and Eurasian humans.

The study of DNA, both modern and ancient, offers exciting and promising approaches to the study of human evolution. Work is now contributing to the study of plant and animal domestication on a systematic, molecular basis. Ancient DNA studies have recently helped address the question of whether changes in material culture are due to innovations within a society or to the migration of new populations (see Chapter 12).

A Turning Point in Archaeology

The 1960s were a turning point in the development of archaeology. By this time various dissatisfactions were being expressed, not so much with excavation techniques or the newly developed scientific aids, but more with the way in which conclusions were being drawn from data. The first concern was the role of dating. With the advent of **radiocarbon dating**, dates could in many cases be assigned rapidly, eliminating the long and laborious framework of cross-cultural comparisons that had previously been needed. Establishing a date was no longer one of the main end products of research. While still important, it could now be done more efficiently, freeing up archaeologists to ask more challenging questions.

A second and more fundamental cause for dissatisfaction was that traditional archaeology never seemed to explain anything, only suggesting that migrations of peoples had taken place or that there had been influences. In 1958, Gordon Willey and Philip Phillips (1900–1994), in *Method and Theory in American Archaeology*, had encouraged a greater emphasis on social aspects, seeking a broader *processual interpretation* (the study of the general processes that operate in culture history). They also looked for “an eventual synthesis in a common search for socio-cultural causality and law.”

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

The New Archaeology (now known as Processual Archaeology)

In the United States, one set of answers was provided by a group of younger archaeologists led by Lewis Binford, who set out to offer new perspectives [1.37, p. 38]. Their approach 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), Lewis Binford, Sally Binford, and their colleagues challenged the use of archaeological data

Processual Archaeology

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 that 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: their task was to piece 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

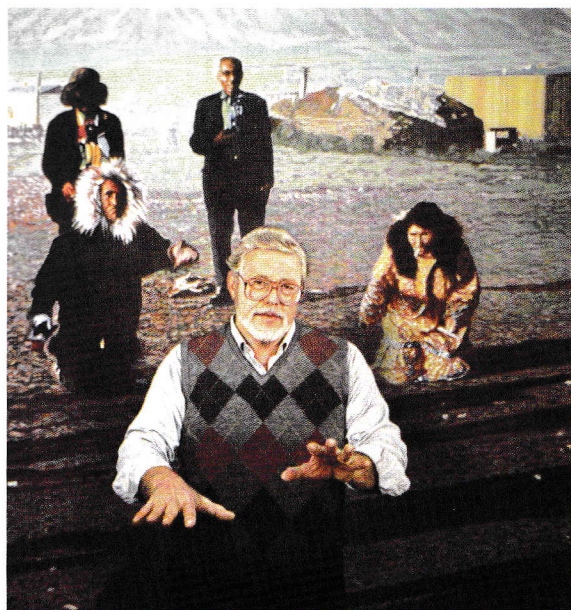
Research should be designed to answer specific questions economically, not simply to generate more information that might not be relevant.

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 stressed that archaeological data were not well suited to the reconstruction of social organization or cognitive systems. The New Archaeologists argued that one would never know how hard these problems were unless one tried to solve them.



1.37 Lewis Binford, founder of the New Archaeology, lecturing on his work among the Nunamiut hunters of Alaska.

to write a kind of so called counterfeit history. They were optimistic that the potential of the archaeological evidence was much greater than had been realized, and called for the investigation of the social and economic aspects of past societies.

They also argued that archaeological reasoning should be explicit, with conclusions based not only on the personal authority of the scholar, but also on explicit and logical argument. Drawing on current ideas within the philosophy of science, they argued that conclusions must be open to testing to be considered valid.

Within the spirit of **processual archaeology** advocated by Willey and Phillips (see feature, p. 37), they sought to explain rather than simply describe and, as in all sciences, to do so by seeking to make valid generalizations.

They sought to avoid the vague idea of influences of one culture on another, and looked to analyze a culture as a system that could be broken down into subsystems. **Subsistence** was studied in its own right, as were technology, social and ideological subsystems, trade, **demography**, and so forth, while less emphasis was placed on artifact typology and classification. This thinking about systems had been anticipated by the ecological approaches of the 1950s, which had raised questions about the subsistence subsystem in similar terms.

To realize its aims, the New Archaeology turned broadly away from history-related approaches and toward those of the sciences. As in North America, archaeologists in

Britain reoriented their approaches, especially David L. Clarke (1937–1976), whose *Analytical Archaeology* (1968) reflected the ambition of the New Archaeologists to employ sophisticated quantitative techniques. This meant using computers where possible (computers were first available for the storage, organization, and analysis of data from the 1960s), and employing ideas from other disciplines, notably geography.

In their enthusiasm to seize on and utilize a battery of new techniques, New Archaeologists introduced unfamiliar vocabularies (from systems theory, cybernetics, and the like) that many dismissed as jargon. Some critics even rejected their aspirations to be scientific, calling their approach “scientistic” or “functionalist.” True, the emphasis of early processual archaeology was on functional and ecological explanation, and its first decade saw a **functional-processual** phase, which was overtaken by a **cognitive-processual** one, which tried to integrate symbols, ideologies, and cognitive elements into the program of research. Many of these points are considered in Chapter 12.

Even early critics of the New Archaeology implicitly recognized its importance; archaeologists working today agree that we should explain what happened in the past as well as describing it. It is now standard practice to expect archaeologists to take account of past environments and the opportunities they offered to human beings for food, shelter, and implements. Most of them also agree that, to do effective archaeology, we have to make explicit, and then examine, our underlying assumptions. That was what David Clarke meant when he wrote a 1973 article about the loss of innocence in archaeology.

Increasingly, too, archaeologists began to recognize the great potential of the techniques of archaeological investigation for the study of more recent times. In the United States, James Deetz and Ivor Noel Hume made significant contributions to what is called **historical archaeology** in the United States, while postmedieval archaeology and industrial archaeology are now recognized fields in different parts of the globe.

World Archaeology

The questioning approach of the New Archaeology and interest in using more explicit reasoning and quantitative procedures built on (or coincided with) the programs of fieldwork already being conducted by archaeologists who might not necessarily have thought of themselves as followers of the new school of thought.

Increasingly, field projects had well-defined research objectives: projects set out to answer specific questions about the past. Second, the objectives of the ecological

A History of Japanese Archaeology

Just as archaeology in Europe and North America reflected political developments in those continents, the history of Japanese archaeology can be understood within the context of East Asian history and Japan's role in the world.

Archaeology was introduced in Japan in the late nineteenth century as one way to modernize the nation, in reaction to the expansion of Western colonial influence. During this formative phase, one of the most enthusiastically pursued subjects was the origin of the Japanese nation, especially the displacement of its Indigenous inhabitants by an incoming population of rice farmers. It was argued that this ancestral population, which was regarded as the direct progenitor of the Japanese imperial family, originated in the Korean Peninsula. The belief that the Japanese and Korean peoples shared a common

ancestry also led to the idea that it would be natural for them to form "one nation"—a typical piece of colonialist logic that helped legitimize Japanese expansion into Korea, which culminated in complete annexation in 1910.

The emphasis on population movements and racial identity continued up to the end of World War II in 1945, when Japan's defeat led to a period of critical reflection on the political manipulation of archaeology and to the rise of **Marxist archaeology**. This led to the investigation of the ancient origins of social inequality in Japan and the despotism that laid the foundations of the imperial system, which was regarded as the fundamental cause of the devastation of Japan and the neighboring countries it had colonized. From the 1960s, Japan's economy boomed, and the ensuing wholesale destruction of sites led to the

systematization of local government-based rescue archaeology and heritage protection. When economic development started to slow down in the 1990s, Japanese archaeology began to change once again. The decline of the Marxist archaeological paradigm created a vacuum in the theoretical framework of archaeology, leading to the proliferation of new tentative approaches that reflect an increasing awareness of the social responsibility of archaeological practice. In June 2008 the House of Councillors, the upper house of the National Diet, unanimously approved a motion to recognize the Ainu as an Indigenous people of Japan. With such socially driven movements, Japanese archaeology is more open to international dialogue, and will certainly continue to be so.

approach encouraged the study of whole regions and their environments rather than of single sites in isolation. A third realization was that, to achieve these objectives, projects had to employ new techniques, including intensive field survey and selective excavations, coupled with statistically based sampling procedures and improved recovery methods, such as the screening (sieving) of excavated material.

These were the key elements of modern field research, as discussed in Chapter 3. Their widespread application created, for the first time, a truly global discipline: an archaeology that had worldwide reach and that stretched back in time to span the beginnings of human existence 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 multidisciplinary team, including Linda Braidwood (1909–2003), during the 1940s and 1950s systematically sought out sites in the Iraqi Kurdistan region (which is now the Kurdistan Region) with evidence for the origins of agriculture in West Asia (see Chapter 7). Another American project, headed by Richard MacNeish (1918–2001), did similar research with a multidisciplinary team in the Tehuacán Valley of Mexico that took immense

steps forward in studying the gradual development of maize farming.

Large-scale projects that combined linguistics and archaeology were carried out in the 1950s. Marija Gimbutas (1921–1994) introduced her "Kurgan hypothesis" in 1956, combining archaeological study of burial mounds with linguistics, working primarily on Neolithic and Bronze Age sites of central and eastern Europe and the Balkans. She argued for a major migration from north of the Black Sea westward into central Europe, at the beginning of the Bronze Age, of patriarchal **Proto-Indo-European**-speaking people whom she associated with kurgan burial mounds; her hypothesis has recently been supported by ancient DNA analysis.

Probably the most determined pursuit of a project with a clear objective in the history of archaeology goes to Louis Leakey (1903–1972) and Mary Leakey (1913–1996), who together pushed back the known dates for our immediate ancestors by several million years. In 1931 they began a search in the Olduvai Gorge, East Africa, for fossil human bones. In 1959 their extraordinary perseverance was rewarded and Mary Leakey (see pp. 454–55) made the first of her many fossil **hominin** (early human) finds in the gorge.

The Archaeologies of Continents

Research in Africa similarly 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. The site of Great Zimbabwe is one example (see feature, pp. 492–93). By 1970, archaeological knowledge of the whole continent was sufficient for J. Desmond Clark (1916–2002) to write *The Prehistory of Africa*.

In Australia in the 1960s, Isabel McBryde in New South Wales and John Mulvaney (1925–2016) in South Queensland established Australasia as a fruitful region for archaeological research. Work in Australia highlights two trends in modern archaeology: the rise of **ethnoarchaeology** and the intensifying global debate about who should control, or own, monuments (and ideas about the past), as the foundations of archaeology are increasingly being criticized for their deep roots in colonial regimes. Here, as elsewhere, DNA studies are having a major impact, and it has become possible to write a genomic history of early Australia.

In the People's Republic of China, the Chinese Academy of Social Sciences is encouraging local initiatives, some led by the Institute of Archaeology in Beijing. The Shanghai Forum, a biennial gathering since 2013, has the status of a leading meeting for world archaeology, ranking with the World Archaeological Congress and the longer-established Union Internationale des Sciences Préhistoriques et Protohistoriques as major conferences and ones not dominated by European scholars. In some countries, especially those with Marxist traditions, work is centrally organized and directed so that publications are not signed by individuals but by a collective. This is standard practice in China, where, for example, excavations at the early city of Liangzhu in Zhejiang Province are published in articles credited not to named authors but to the Zhejiang Provincial Institute of Cultural Relics and Archaeology.

The Living Past

From its beginnings, the New Archaeology emphasized explaining how the archaeological record was formed and what excavated structures and artifacts implied about human behavior. One means of addressing such questions was the study of the material culture and behavior of living societies. Ethnographic observation was nothing new—Native American and Aboriginal Australian groups had been studied by anthropologists since the nineteenth century—but the archaeological focus and questions were new, and were emphasized by ethnoarchaeology, or “living archaeology.” Work by Isabel McBryde and Richard Gould among Aboriginal Australians, by Jean Sassooun among the Pokot in Kenya and by Richard Lee among the !Kung San

Interpretive or Postprocessual Archaeologies

Postprocessualism is a collective term for a number of approaches to the past, all of which have roots in the post-modernist current of thought that developed in the 1980s and 1990s.

The **post-positivist** approach rejects the assumption that the scientific method is inherently objective, arguing instead that the objectivity presented by scientists can work to normalize one perspective (e.g. male, white, European) over others.

The **phenomenological** approach stresses the personal experiences of the individual and the ways in which encounters with the material world and with the objects in it shape our understanding of that 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 activity.

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, highlighting its rich diversity. A related view stresses that there is no single correct interpretation: each observer or analyst is entitled to their own perspective about the past. There will therefore always be a diversity of opinions, and a wide range of perspectives—which is why the emphasis is on interpretive archaeologies (plural).

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

of southern Africa, by Bridget Allchin (1927–2017) in India, by Ralph and Rose Solecki in Iraq, and by Lewis Binford among the Nunamiut are among the contributions of ethnoarchaeology (discussed in more detail in Chapter 5) to the wider field.

The increasing engagement of archaeologists with living societies, and the simultaneous increased awareness among these communities of their own heritage and their claims to it, raises critical questions of 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 Aboriginal Australians. To what extent should the Indigenous groups 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 including Isabel McBryde, John Mulvaney, and Rhys Jones (1941–2001) have stood shoulder to shoulder with Aboriginal Australians in the fight to prevent developers destroying parts of Australia's precious ancient heritage, for instance in Tasmania. Increasing tensions led the Swedish-born Australian archaeologist Laila Haglund to become a leader in the establishment of commercial archaeology in Australia. 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 rescue or **salvage archaeology**, much of it government funded, has given a new impetus to the archaeology of our towns and cities.

The Postprocessual Debate of the 1980s and 1990s

Postmodernist currents of thought in the 1980s and 1990s encouraged a greater diversity of approaches to the past. While many field archaeologists were relatively untouched by theoretical debates, and the processual tradition rolled on, new approaches, sometimes collectively termed **postprocessual archaeology**, dealt with interesting and difficult questions.

One key criticism, first advanced by the archaeologist Ian Hodder and his students, stressed that there is no single correct way to undertake archaeological inference, and that the goal of objectivity is unattainable. They argued that all interpretation is underpinned by the social and political biases of archaeologists, which the ideal of scientific objectivism only works to obscure. A second key contribution of postprocessual archaeology was careful attention to

local sequences and details, and its prioritization over the broader grand narratives and general laws that processual archaeologists sought.

For its early proponents, postprocessual archaeology represented so radical a critique of processual archaeology as to establish a new beginning in archaeological theory. Others, however, saw postprocessualism as simply a development of ideas and theoretical problems introduced by the New Archaeology. The term “interpretive archaeologies” (in the plural) has been suggested as a more positive label than “postprocessual archaeology.”

The majority of postprocessual approaches used in more recent times have been less aggressively antiscientific, and the emphasis has shifted toward a variety of personal and often **humanistic** insights used together. There was greater emphasis on the varied perspectives of different social groups. Identity, gender, and **ethnicity** are prioritized as questions for study rather than assumed from the start. Ian Hodder's work at the early farming site of Çatalhöyük in Turkey provides a good example of this approach in action [1.38] (see feature, pp. 42–43). It is now accepted that there is no single postprocessual archaeology, but rather a whole series of interpretive approaches.

One of the strengths of the interpretive approach is its aim to pay greater attention to individuals in the past. Questions of **agency** and **identity** have been increasingly important since the late 1990s. Archaeologists now recognize that, among any group of people in the past, individuals occupying different societal positions within a single society had varied, often conflicting, interests. Interpretive approaches focus on the ways in which class,

1.38 At Çatalhöyük, Ian Hodder has experimented with digital and visual reconstruction methods to support interpretation. The finds include detailed evidence of symbolic activities in houses.



Çatalhöyük: Interpretive Archaeologies in Action

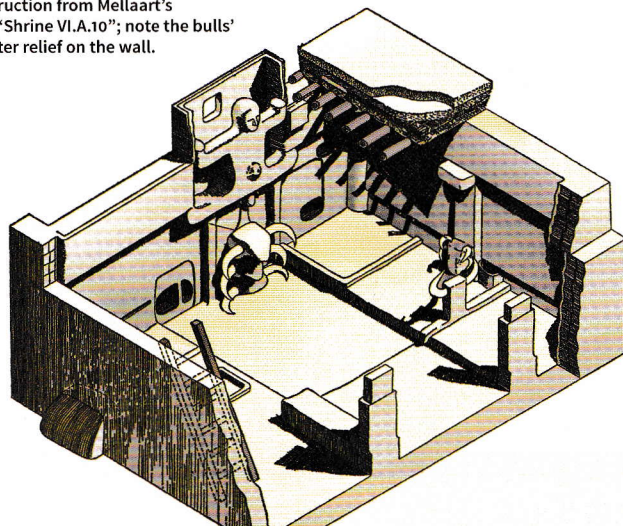


The history of research at this important early farming site in Turkey illustrates the changing approaches to archaeology since the late 1950s.

Original Excavations

The site was discovered by the archaeologist James Mellaart (1925–2012) in 1958, during 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-meter- (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. 193), and with deeply stratified levels going back to at least 7200 BCE. The well-preserved rooms had plastered walls, some with wall paintings and plaster decorations incorporating bull skulls [1.39], and the finds included terra-cotta figures, several of them female, suggesting to some scholars a mother goddess cult [1.40]. Remains of textiles, plants, and animals were recovered, and the **obsidian** from which the abundant tools were made proved on trace-element analysis (see pp. 373–77) to derive from local sources. In 1965 the excavation was interrupted, leaving many questions unanswered. In particular, it was not clear whether

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



Mellaart's excavations at the southwest part of the site had revealed what was thought to be a shrine quarter, or whether the high frequency of rooms with painted walls and other symbolic materials would be repeated in other parts of the mound.

Aims of the Succeeding Researches

Ian Hodder, one of the most influential figures 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 in order to answer some of the central questions left unresolved by Mellaart. A falling water table in the area made more urgent investigation of the lower, unexcavated parts of the site, which were known to have well-preserved organic remains, such as wood, baskets, and perhaps unfired clay tablets, necessitating a six-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, as it were, at the trowel's edge. The moment of excavation is surrounded with discussion



1.40 A large clay figurine of a mother goddess supported by two felines, found by Mellaart.

between the excavator and a wide range of specialists. The different specialists then process material from the trench quickly so they can feed information back to the excavator. The excavator is 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 engage with more open-ended and multivocal approaches to the interpretation of the site as a whole, inviting not only different specialists to have a voice but also local inhabitants, and indeed visitors, not least those who (alongside Marija Gimbutas) consider the site to be important for the emergence of a cult of the mother goddess (see pp. 45–46, 430).

The decision to make data from the excavation available on the project's website therefore goes beyond the simple intention of publishing the findings promptly: it furthers the postprocessual desire for multiple and alternative interpretations from 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 is sought.

The accompanying anthropological project focuses on the community living in the surrounding villages (some of whom are hired at the site), on domestic and foreign tourists visiting the site, on goddess



1.41 Skeletal figurine discovered at Çatalhöyük.

groups and worshipers, on local and central government officials, and on artists and fashion designers interested in the site. This multisited ethnography is seen as an integral part of the reflexive methodology used at Çatalhöyük.

In the same spirit, several semi-independent excavation teams work in different areas of the site, including a team from Berkeley, a team from Poznań, and three Turkish teams. In the early 1990s Shahina Farid became the field director at Çatalhöyük, a position she held for nearly twenty years, managing more than 200 researchers and students, and constructing the stratigraphic sequence of the site.

Results

The latest excavations have been underway now for thirty years and it is possible to assess the extent to which the use of a reflexive methodology gives insights that differ from those of the late 1950s. Certainly a large number of publications have appeared, including a volume written by Sadrettin Dural, the site guard.

New insights from detailed microresidue, and chemical studies of deposits on 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 Çatalhöyük was an integral part of daily life. The figurines of women, along with those of men and animals, have depositional



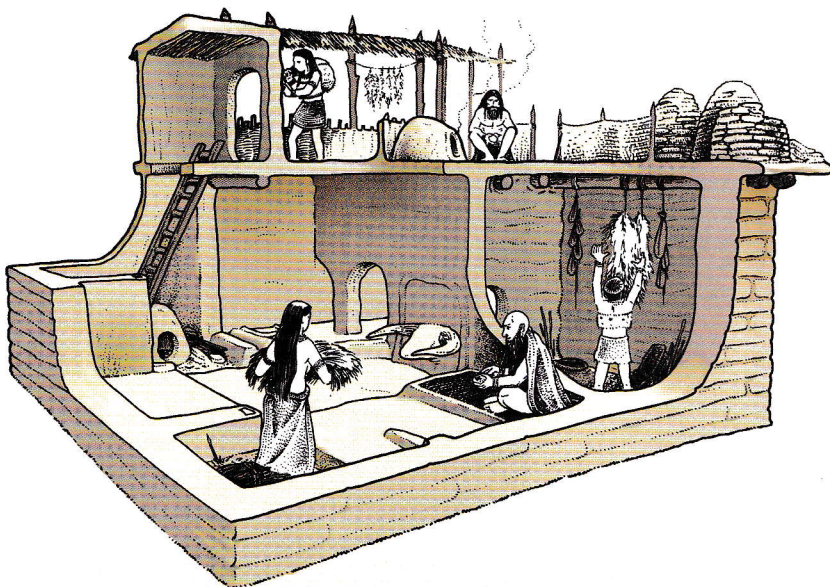
1.42 Teams from Turkey and around the world excavate in different parts of the site.

contexts in **middens** and therefore do not suggest gods and goddesses. Hodder's approach at Çatalhöyük has its critics, yet it is an influential project where a coherent, alternative theoretical approach will have a significant impact on archaeological practice [1.41, 1.42, and 1.43].

The experiment of Çatalhöyük actually builds on a strong tradition of archaeology in Turkey. In the mid-twentieth century, the archaeologist, activist, and former Olympic fencer Halet Çambel (1916–2014) excavated the Hittite fortress of Karatepe, where she

uncovered a sort of Hittite Rosetta Stone, containing both Hittite and Phoenician scripts. Her student Ufuk Esin went on to lead excavations at Aşıklı Höyük, where she instituted the sort of multidisciplinary excavation practices that are now very well known from world-famous sites, such as nearby Çatalhöyük itself. Mihriban Özbaşaran, who also once led an excavation team at Çatalhöyük and is now director of the Aşıklı Höyük Research Project, has carried on the revolutionary legacy of that project, which also brought in modern theoretical approaches and analyses despite criticism.

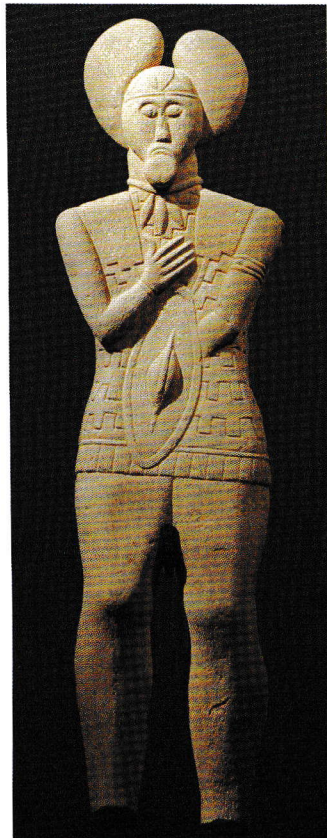
1.43 A reconstruction based on the discoveries in Building 1.



gender, ethnicity, religion, and age (among other dimensions) affected past people's potential to act, or to change their circumstances. One way to approach these difficult questions was to study symbols (for example, figurative artworks, or evidence for differences in personal decoration or adornments, such as in burials). In Chapter 9 we further examine some of the ways in which we can start to answer the question: What did they think? It is important not only to recognize the diverse range of people's identities and interests in past societies, but also to consider how social differences or conflicting priorities gave rise to societal tensions or contradictions the resolution of which led to new organizations or institutions.

A further aspect of agency theory is what Ian Hodder has described as the "active role of material culture" in his 1982 book, *Symbols in Action*. During his research in Africa, Hodder recognized that people used the things of the world not only to produce tools, harvest foods, build shelters, and defend themselves, but also to create symbols and decorated objects to communicate social information [1.44]. In the same way that a national flag, a football shirt, or a wedding ring provide information in our own society, past peoples actively used things, from pottery decorations to figurines, to express social messages and share information.

1.44 This life-size limestone statue of a chief was found near a sixth-century BCE lavish burial site at Glauberg, Germany. The graves contained armrings and a neck torc similar to the ones shown on the statue. It is now thought that grave goods were often chosen to give a representation or construction of the identity of the deceased.



Today's Approaches: Pluralizing Pasts

Research has further changed since 2000, as debates about processual and postprocessual approaches have subsided and new questions proliferated. Archaeology cannot avoid being influenced by the issues of the day, and archaeologists actively engage with, and contribute to, public debates.

Archaeology and Gender

One long-running example involves gender studies and the growth of **gender archaeology**. A pioneer arguing for the importance of women in prehistory was Marija Gimbutas [1.45], who taught at UCLA during the 1980s. Her research in the Balkans led her to create a vision of an "Old Europe" associated with the first farmers whose central focus was (she argued) a belief in a mother goddess figure.

Although many archaeologists today take issue with aspects of Gimbutas's approach, she fostered early and constructive debate about gender roles in the past. In 1984 Margaret Conkey and Janet Spector drew attention to the **androcentrism** (male bias) of the discipline. Conkey and Spector highlighted the ways that modern society's androcentric perspectives led archaeologists, most of whom were males, to overlook the contributions, activities, and lived experience of women in the past. While the lack of visibility was not unique to the discipline of archaeology, it required new methods and theories, backed by political action (both within the discipline and beyond), to begin to recognize women and their activities in the archaeological record. The deeply pervasive nature of androcentric thinking in interpretations of the past should not be underestimated: the gender-specific terminology of book titles such as *Man the Tool-Maker* masks widely held assumptions and prejudices—for instance, the idea that Paleolithic stone tools were mainly made by men rather than women, for which we have little or no evidence.

Feminist archaeologists can with justice point to persistent imbalances between women and men practicing archaeology today. Since the 1990s, concerns over androcentrism became one voice, among many, questioning the supposed objectivity and political neutrality of archaeology. Today, it is common practice to acknowledge multiple voices and diverse interests among stakeholders, past and present. Postcolonial perspectives, local communities, and Indigenous archaeologists (see pp. 46–48 and Chapter 11) are increasingly heard and recognized.

A central idea of feminist archaeology soon became the distinction between sex and gender. It was argued that sex—female or male—may be regarded as biologically

Pluralizing Pasts

Since 2000, archaeologists have moved away from debating the merits of processual versus postprocessual approaches. Instead, they ask questions about agency, materiality, gender, and postcolonial theory, as well as continuing to investigate environments, food production, and scales of social organization. Indigenous archaeologies are increasingly being developed in the twenty-first century.

Agency involves the investigation of the diversity of human intentions, competencies, and actions in the past. The

archaeological study of agency recognizes that, within a society, individuals often have different interests and motivations, shaped by their social positions or roles.

Materiality approaches recognize the close relations that link human beings with artifacts. A potter exists in and through their making of a pot with clay, their embodied knowledge of techniques, and shared understandings of how the finished pot should be decorated.

Gender approaches are central to archaeological research on a wide range of

topics from identity and personhood in the past to crafting and the division of labor.

Postcolonial theory draws on ideas from anthropology, literature, and history to investigate the effects of European colonization on people across the globe, problematizing these encounters and examining local expressions of resistance and response.

Indigenous archaeologies work toward the inclusion of Indigenous ethics, values, and agendas in theory and practice through collaboration and dialogue.



1.45 Marija Gimbutas, who pioneered the study of gender roles in early European farming societies.

determined and can be established archaeologically from skeletal remains. But gender—at its simplest, woman or man—is a social construct, involving the sex-related roles of individuals in society. Gender roles vary greatly both from place to place and through time. Systems of kinship, marriage (including polygamy, polyandry, etc.), inheritance, and the division of labor are all related to biological sex but not determined by it (see feature, pp. 180–181).

In addition to her contribution to the history of migration in Eurasia (see Chapter 12), Marija Gimbutas is also well known for her study of female figurines in southeastern Europe and Anatolia, for instance in her *Goddesses and Gods of Old Europe* (1974). She argued that the principally female figurines seen in the Neolithic and Copper Age of those regions demonstrate the important status of women. She argued for an old Europe influenced by feminine values that disappeared under the dominance of an eastern Indo-European male warrior **hierarchy** in the ensuing Bronze Age.

Marija Gimbutas supported the concept of a great fertility mother goddess, embraced by some public enthusiasts. Current excavations at Early Neolithic Çatalhöyük in Turkey, where female figurines of baked clay have indeed been found (see feature, pp. 42–43), are now visited regularly by goddess devotees whose views are respectfully entertained by the excavators, even though they do not share them. But there are skeptical voices. Ian Hodder has argued instead that elaborate figurines representing women may not have represented goddesses. Instead, the figurines may reflect increasing subordination—or even ownership—of women by men. Rather than celebrating female power, the objects perhaps express male desires. The careful study by Peter Ucko (1938–2007) of comparable material from the Aegean showed that many of these figurines lacked features diagnostic of sex or gender, a view supported by more recent Maltese evidence. Studies of comparable baked clay figurines from the Formative period in Oaxaca, Mexico (c. 1800–500 BCE), have reached very different conclusions, suggesting that the figurines were made by women for use in rituals in which they often represented ancestors, not deities. And Lynn Meskell, in an avowedly feminist critique, has written of “pseudo-feminism” in relation

to the mother goddess, seeing the work of Gimbutas as

steeped within the “establishment” epistemological framework of polar opposites, rigid gender roles, barbarian invaders and culture stages which are now regarded as outmoded. It is unfortunate that many archaeologists interested in gender are drawn to historical fiction and emotional narratives....At this juncture sound feminist scholarship needs to be divorced from methodological shortcomings, reverse sexism, conflated data and pure fantasy. (Meskell 1995, 83)

In her book *Gender Archaeology* (2000), Marie Louise Stig Sørensen explores the relationships between social roles and gender, and goes beyond theory to put these ideas into practice. More recently, in 2013, the organization TrowelBlazers was founded by archaeologists and earth scientists to highlight the contributions of women in archaeology. It has made strides in improving the recognition of women in the history of the discipline, and, in particular, has emphasized the importance of networks between women through time in furthering archaeological discovery.

Agency

During the late 1990s, the idea of societies as integrated systems came under further scrutiny, with greater attention paid to the ways in which human societies were full of internal dissent, factional competition, and even outright conflict. Change was increasingly seen both as an outcome of these internal contradictions (e.g. class conflict) and as a consequence of the external factors identified by processual archaeologists, such as environmental change (e.g. drought or crop failure).

One important book, *Agency in Archaeology*, published in 2000 and edited by Marcia-Anne Dobres and John

Robb, explored agency in studies of change. Adopting different conceptions of agency, contributors argued that human beings made choices or acted in planned ways that left material traces. While enacted by the individual, these actions accumulated through time eventually to create new social realities in the form of new institutions, altered rituals, or innovation in everyday practices, objects, and routines. Recognizing the importance of agency—and the material expressions of that agency—allowed archaeologists to examine more fully how social interactions generate change from within a society. Importantly, agency approaches brought attention to social and political negotiation, including competition for power and access to resources. Researchers of agency argue that recognizing how individuals shape their own social realities (at least in part) provides a more complete understanding of how change occurs.

Linked to the study of agency is also a new interest in materiality approaches that has stimulated a close and careful look at the properties of material culture from stone, bone, and wood to textiles, metals, and mud. Researchers adopting materiality approaches emphasize the ways in which individual artisans learned techniques, produced artifacts, and, through innovation and creativity, worked with a wide range of raw materials. As one example, in the United States, Cathy Costin, Elizabeth Brumfiel (1945–2012), and Rita Wright pioneered new understandings of the contributions made by women artisans to ancient political economies. In both the Aztec and Inka empires, the finest cloth, usually woven by high-status women, was even more valued than precious metals, and its circulation was crucial to imperial statecraft and political economies [1.46]. This research directly challenged assumptions that a woman's place was (only) in the domestic sphere.

Taken together, materiality and agency approaches contributed importantly to understanding social relations in the past and helped archaeologists understand how people made and used symbols and insignia as part of their daily lives.

Indigenous Archaeology

Today, no place on the globe is unaffected by colonialism. Understanding colonial expansion and its effects, as well as investigating social inequalities and racism, are central problems for any discipline that aims to explain the whole of the human past.



1.46 An illustration of a 14-year-old girl being taught to weave (the two tortillas above are her daily ration). A detail of a folio from the *Codex Mendoza*, an illustrated manuscript that includes depictions of daily life in the Aztec empire.



1.47 Eastern Pequot Tribal Nation members discussing a clay tobacco pipe found in excavations on their historic reservation (established 1683) in North Stonington, Connecticut. Pictured are Robert "Bobby" Sebastian (now deceased), left, and Ashbow "Bo" Sebastian, Jr., right.

Postcolonial approaches influence archaeological study of the effects of imperial expansion across the globe. Its aims are to help archaeologists (and historians) think about the process by which two (or more) distinct cultures came into contact. Examples include the conquest of Mexico and of Peru by the Spaniards in the early sixteenth century, or the English, French, and Dutch settlement of northeastern North America during the early seventeenth century. Charles Orser, Martin Hall, and Stephen Silliman write about an "archaeology of the modern world" that investigates rapidly accelerating and interlocking processes of economic and political change since 1500 CE. Aided by technological developments in shipbuilding and navigation, northern European nations explored and settled regions across the globe. Often the consequences of these voyages were devastating for local peoples.

Dutch, English, Spanish, Portuguese, and French explorers embarked on ocean voyages in search of resources (particularly gold and silver), labor, and new territories. The consequence was a dramatic increase in global connectivity and long-lasting processes, the effects of which continue to be felt today. The enslavement of Africans (the trade in enslaved people, or triangular trade), discussed in Chapter 11, was one major consequence of European colonialism. As the anthropologist Eric Wolf (1923–1999) argued, after 1500 CE, a **world-systems** approach is needed to understand these encounters.

Indigenous archaeologies, in former colonies now free from imperial power, are increasingly central to the discipline. Policies for cultural heritage management, and indeed the very nature of the cultural heritage itself, are often contested issues. Marginalized Indigenous groups

have often seen their interests in their own heritage overlooked or misunderstood by archaeologists, although this is beginning to change. A positive example is Stephen Silliman's collaboration with the Pequot of Connecticut [1.47], which is building dialogues from which all participants can learn. Such collaborations are changing the way we interpret the past. For example, archaeologists working with Indigenous communities argue that, when exploring periods of European contact, instead of seeing a dominant culture imposing its practices and material culture on a subordinate culture, it is more accurate to examine ongoing cultural entanglements, in which two (or more) cultures interact, with each group emerging changed by the encounter.

Many archaeological projects across the world now work in collaboration with Indigenous groups—from initial ideas to the details of **research design** and practical work. The Clanwilliam Living Landscape Project in South Africa is an example of a successful collaboration between archaeologists and local people [1.48]. Launched in the 1990s, the community-based heritage and education project uses archaeology and the local landscape as a framework for learning and for reconnecting descendant communities with a past from which colonialism had largely severed them.

Archaeology in Canada has contributed to locating the unmarked graves of many Indigenous children (First Nations, Inuit, and Métis Nation) who were taken away from their families to attend residential schools. The first of these, the Mohawk Indian Residential School, opened in 1831 in Ontario. By 1883, new schools were established in the western provinces. The 139 schools operated for 150 years, often treating students harshly and punishing those who practiced their family's traditions. An estimated 150,000 children, separated from their families,

1.48 The Clanwilliam Living Landscape Project.



were deprived of the childhood experience of family life, where they would have learned the language, culture, and traditions of their forebears. In the worst cases, students experienced traumatic abuse and death. By 1920, attendance of residential schools had become compulsory for all children from ages seven to fifteen. In 1982 the Constitution Act affirmed the rights of Indian, Inuit, and Métis peoples. A call for a public inquiry was made in 1996, and class action lawsuits were filed in the early 2000s. In 2008 Stephen Harper, the then prime minister of Canada, issued a formal Statement of Apology, and from 2009 to 2015 a Truth and Reconciliation Commission worked to address the injustices, hearing testimony from 7,000 survivors. When the conclusion was reached that cultural genocide had occurred, a large sum for compensation was also established. The archaeologists Kisha Supernant (who is Métis, Papaschase, and British) and Terrance Clark have assisted communities in searching for unmarked graves at the former sites of residential schools in Saskatchewan and Alberta. Using **ground-penetrating radar** equipment, they have located several hundred unmarked burial sites of children who attended the schools, demonstrating the severity of the abuse; many more graves have yet to be found.

The National Centre for Truth and Reconciliation, housed in the University of Manitoba, has a rich website, informed by its archives: <https://nctr.ca/research/projects>.

The Black Lives Matter and #MeToo movements have also drawn attention to archaeological practice and discoveries, as discussed in more detail in Chapter 11. Theresa Singleton of Syracuse University, a leading researcher in the archaeology of the African diaspora, documents the lives of enslaved Africans who were taken to plantations in the southern United States and Cuba. Her archaeological work, which was well underway before recent calls for greater inclusion and social justice across the globe, continues to fill a critical gap in our awareness. Few written documents tell the detailed stories, or even the names, of those forcibly removed from Africa to work in the fields and plantations of the Caribbean, Brazil, and the southern United States.

Another historical archaeologist, Whitney Battle-Baptiste, works on the intersection of class, gender, and race in the cultural landscapes of African diaspora sites. Her approach, known as Black feminist archaeology, highlights the lived experience of Black women who were ignored in earlier research. The stories she has created, focused on individual Black women, reveal not only the material realities of their lives but also the settings they moved in and through, the nature of their work, their struggles, and their resilience. These narratives afford us rich resources for use in responding skillfully to calls for equality and social justice.

Searching questions continue to be explored in relation to globalization processes and examining the consequences of technological advances developed in Europe and North America for the planet, climate, and welfare of areas including the Global South. From the standpoint of this critique, even the UNESCO-sponsored listing of World Heritage Sites has long been dominated by notions of heritage formulated by Europe and North America.

Archaeologists also have an important role to play in achieving a balanced view of our present world that is inescapably the product of the histories that have preceded it. The task of interpretation is now seen as very much more complex than it once seemed.

Finally, archaeology—once largely the preserve (and the product) of white, upper-class European or North American men—has changed. Many active archaeologists are women. Archaeologists come from all nationalities and increasingly include Indigenous peoples. In Chapter 11, we explore further the implications of these observations.

Summary

- The history of archaeology is the history both of ideas and ways of looking at the past, and of employing those ideas and investigating questions. The questions we ask about the past are always being reformulated, as political concerns transform and refocus, public debate evolves, and new perspectives take shape.
- Thomas Jefferson undertook the first scientific excavation in 1784 to establish the discipline of archaeology. In Europe, archaeology became firmly established in the nineteenth century when three great advances—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-nineteenth century to around 1960. Its chief concern was the development and study of chronologies, using rapid advances in scientific aids, particularly in the field of dating.
- The 1960s marked a turning point in archaeology, with growing dissatisfaction with the classificatory-historical approach. Criticism led to the birth of the *New Archaeology* (now known as *processual archaeology*). Its advocates sought to explain the past rather than simply describe it. New Archaeologists mainly turned away from historical approaches in favor of science.
- During the 1980s, postprocessual approaches introduced questions about symbols, the active role of material culture,

and the political implications of archaeological inquiry. Today's archaeologists engage with questions of materiality, agency, and gender to explore the ways material culture is used to establish national and ethnic identities.

- Archaeology of the modern world includes contemporary concerns about social and gender inequalities and racism. Indigenous archaeologies prioritize study of the ethics, values, and interests of those who lost lives, livelihoods, and lands to successive waves of colonial expansion.
- In a postcolonial world, archaeology plays a significant role in establishing national and ethnic identity, and heritage tourism is a profitable business.

Further Reading

The following list includes books on the history of archaeology as well as its changing theoretical approaches and viewpoints:

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