

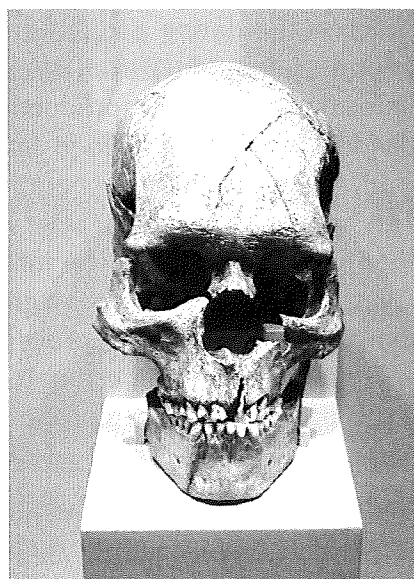
## Big Era Two

### Human Beings Almost Everywhere

200,000–12,000 YEARS AGO

#### INTRODUCTION

*Scholars reconstruct the earliest, longest era in human history through archaeology and science (such as DNA analysis). Many scholars think that language is what makes humans different from other animals.*



Skull of the fossil Homo sapiens from the Epipaleolithic of Combe Capelle, an archaeological site in South France.

**B**ig Era Two is the first era in which our own species, **Homo sapiens**, is known to have existed. So it is the first era of human history. There is much debate among scholars about when Homo sapiens first appeared. An increasing number of **archaeologists** and **paleontologists** think that this happened in eastern Africa about 200,000 years ago. Evidence that supports this date is the very small genetic differences between humans today. These differences are far too small to have happened over a period much longer than 200,000 years. The fossilized remains of humans from almost 200,000 years ago suggest that their **anatomies** were very similar to those of people living today. There are also hints that this species was beginning to behave very differently from earlier **hominins**.

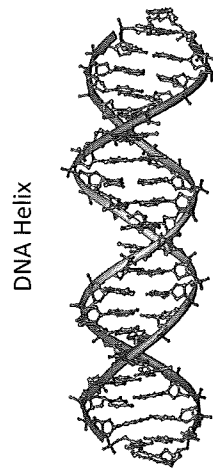
Big Era Two extends to about 12,000 years ago (10,000 BCE). By then, humans were taking up farming for the first time in some parts of the world. Scholars usually mark that date as the approximate transition from the **Paleolithic** (Old Stone Age) to the **Neolithic** (New Stone Age). That is when humans in some places started using a variety of more complex stone tools, many of which assisted in early agricultural production. We can think of Big Era Two as the era of human history that preceded **agriculture**.

This era before farming was by far the longest in human history. It represents about 95 percent of the time that our species has existed on earth, but it is also the era we know least about. We will explore the different types of evidence that are used to try and understand this era.

Most historical scholarship is based on written evidence. Writing did not exist during Big Era Two, however, so we cannot tell a traditional historical narrative about this period. For example, we do not know the names of a single society or individual from that era.

Nevertheless, archaeologists have done a great deal of research on this era. This gives us a surprising amount of details on how humans lived and how they interacted with the natural environment. We can even make some reasonable guesses about how they thought about

the world around them. Archaeologists are extremely skilled at examining objects that have survived from this era in order to help us understand how people lived. For example, scholars can learn much by examining the bones of humans and of the animals that humans hunted. Archaeologists also analyze the remains of human foods and tools. They can often date these remains quite accurately. They can then study how **technologies** have changed over time, and how humans slowly spread into new areas. They can also use what they know about climate change to make inferences about changes in human life. Finally, the study of modern communities that use technologies similar to those used in Big Era Two can give us some helpful hints about the way people lived, and how they may have seen the world.



- 6 In recent years, scientists have discovered a major new method for reconstructing early human history. It allows them to determine the dating and patterns of **migratory** movements. This tool is the analysis of **deoxyribonucleic acid (DNA)**. DNA is the material inside the **nucleus** of a cell that carries genetic information for the reproduction of cells. Scientists can determine the DNA profile of any individual by drawing a blood sample, or taking a swab of cells from inside a person's mouth. As DNA flows from one generation of humans to the next, small changes, or **mutations**, occur. This happens at a regular rate, which means that the genetic differences between individuals sharing a common ancestor increase over time. When two human populations have no contact with one another there is a greater genetic difference between them. When scientists use complicated biochemical procedures they can measure the rate of change in genetic material. Therefore, they can estimate how long ago human groups separated from each other. From this data, scholars can propose hypotheses about early migratory dates and patterns.
- 7 We usually have to use indirect forms of evidence to understand how people might have been thinking before 10,000 or more years ago. It is logical to think that they had an idea of an afterlife, because people buried their dead. This also suggests that they were, in some sense, religious. Art may provide the most powerful evidence of how humans perceived their world. Most archaeologists believe that the existence of art is one of the first signs that humans had a complex ability to communicate. So, when we find early evidence of art, it indicates that people were capable of using **language**.



This bull image was created with natural pigments about 15,000 BCE–10,000 BCE

Language may in fact be the defining characteristic of our species. Apart from the evidence of bones, how can we tell that early *Homo sapiens* were fully human? In fact, what makes humans different from other animals? Archaeologists, historians, and philosophers have debated this basic question for a long time. They have not agreed on an answer, but some feel that the ability to communicate with one another through language is what sets us apart. 8

Many animals use gestures to communicate with each other, but only humans can communicate with precision and detail. Only humans can talk about things that are not present (a new pathway through a forest), things that may not exist (dragons, leprechauns, or rain gods) or things that are abstract (one o'clock in the afternoon or the beauty of a ripe pear). Because of this ability, humans can communicate to one another the results of what they learn in their lifetime. This means that knowledge can accumulate as each individual and each generation contribute to the common store of information within each community. This ability transformed the relationship of humans to each other and to their environment. 9

## HUMANS AND THE ENVIRONMENT

*Humans populated all of the world's major landmasses through collective learning, adaptation, and migration. This extensification altered the natural environment.*

All animals learn how to get food and other resources from their environment. When an animal dies, however, most of the specific knowledge that it has accumulated in its lifetime dies with it. The ability of humans to communicate very precisely with each other changed that. The things that individuals learned during their lifetime could now be passed on to others. This meant that new knowledge could be stored up and handed on to the next generation. So humans, unlike all other animals, slowly accumulated more and more new ways of dealing with their environment. They could add to their knowledge from one century to another. This process, which we call "**collective learning**," led to many of the characteristics that only our species has. 10

One of the earliest signs of the presence of modern humans is an acceleration in the pace of technological change. The stone tools of earlier hominins show little change in the course of a million years or more. But once humans appear, so do new types of tools. These implements are more varied, more delicately made, and more precisely designed for specific tasks. By modern standards, the pace of technological change was still slow. Nevertheless, Big Era Two produced changes that have transformed human history at an accelerating pace ever since. 11

### **Adaptation and Migration**

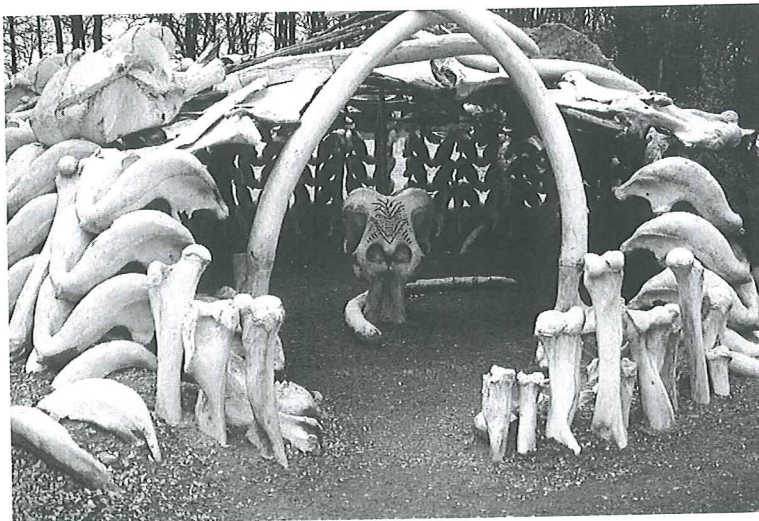
As technologies changed, people learned to live in more diverse environments. By 100,000 years ago, *Homo sapiens* had learned to live in various places which no earlier hominins had occupied, including deserts and dense forests. Later, modern humans began to explore environments outside their African homeland. There is evidence of some modern humans inhabiting the northern Middle East about 100,000 years ago. 12



## Big Era Two

13 In recent years, DNA evidence has indicated that the earliest groups of **foragers** made their way eastward across Eurasia. The evidence suggests that humans began regularly migrating from Africa by an eastern route starting perhaps 70,000 years ago. They moved around the Arabian Sea to India. Humans eventually moved around the Bay of Bengal to Southeast Asia and China. We do not know if they had rafts or canoes, but they must have had a kind of boat since water separated Africa from the Arabian Peninsula. This was so even during the last Ice Age, or **Pleistocene**, when much of the world's water was frozen in glaciers, and sea levels were 200 feet lower than they are today. Forager bands migrating across Eurasia may have multiplied, and made relatively rapid progress, because they did not have to face widely varying environments if they kept to tropical coastlands. They would have had a plentiful and nutritious diet of plants and seafood. Traces of their campsites and boats may now lie deep under water, because sea levels rose when **Ice Age** glaciers began to melt about 18,000 years ago.

14 Around 60,000 years ago, humans crossed a short expanse of sea to settle on the continent of Sahul. Sahul was a **landmass** that joined Australia and Papua New Guinea together at the time. From perhaps 40,000 years ago, humans began to occupy the cold lands of Russia and the Ukraine. From there, they migrated into the even icier environment of Siberia. In such cold climates, they needed highly specialized technologies. They built pit houses and learned to sew warm clothing using bone needles. They also learned to be very efficient hunters. Because edible plants were scarce, they had to learn how to hunt huge animals such as mammoths.

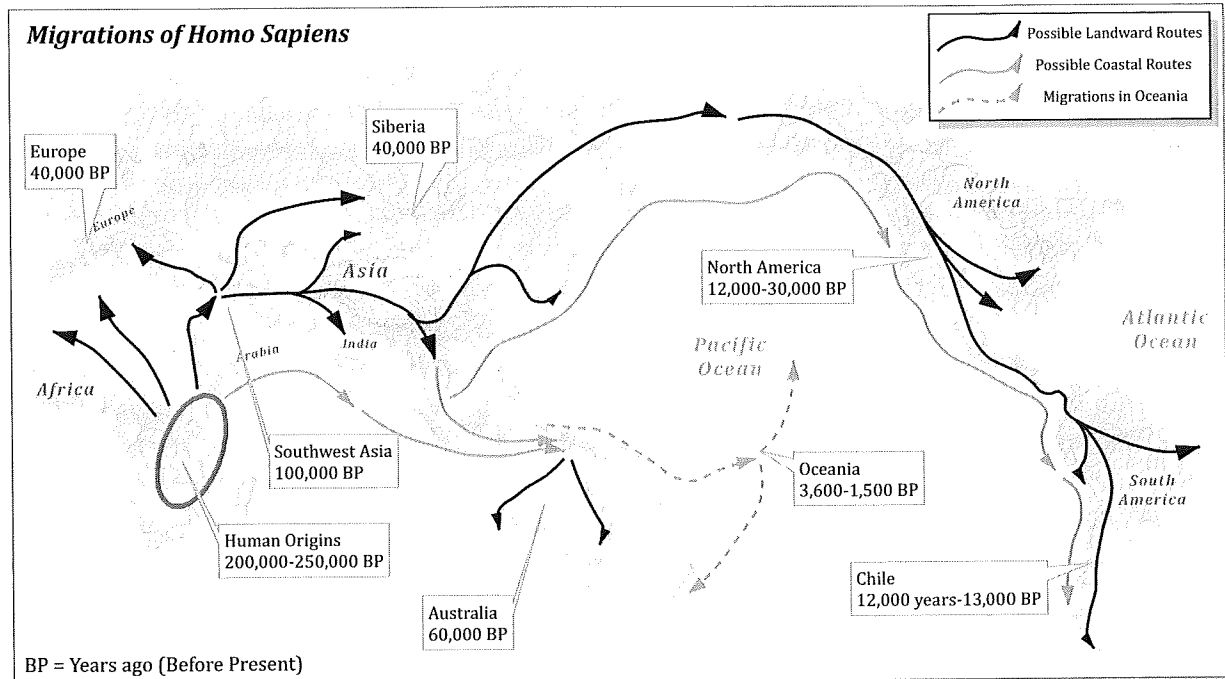


Sites uncovered in Russia and the Ukraine have revealed hamlets where people dug "pit houses," then ringed them with mammoth bones, covering them with hides to keep out the cold. Above is a modern reconstruction of a pit house. This type existed perhaps 12,000 to 18,000 years ago.

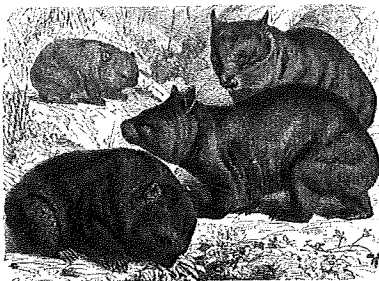
15 At least 15,000 years ago (and very likely up to 30,000 years ago) some humans crossed the Bering Strait from eastern Siberia into the Americas (the Western Hemisphere). This was possible because of a land bridge that was exposed when the water was locked in glaciers. They then spread from northern Canada to the southern end of South America within one or two thousand years. Scholars have argued that humans accomplished this migration in such a short a time because they thrived on a rich marine diet along the western coast. As their numbers grew, they migrated steadily southward in small boats. Archeological evidence from a site in Virginia suggests that humans also crossed North America over land and arrived on the Atlantic coast as long as 15,000 years ago.

### **Humans' Environmental Impact**

16 In Australia, Siberia, and the Americas, humans found many new species of plants and animals. Animals in these regions had never encountered humans before. Many species were



Map shows the probable movements of Homo sapiens out of Africa. "Before Present" is the same as "years ago" or "BCE," so the numbers indicate how many years ago the migrations happened.



Wombat (above)  
Emu (below)

not aware how dangerous these strange new two-legged creatures were. Consequently, the first human settlers found hunting easy. This may explain why many large animal species—the mammoths of Siberia, the giant wombats and emus of Australia, the horses and saber-toothed tigers of the Americas—soon became extinct. Humans attracted the plant-eating animals that they wanted to hunt by using fire to burn vegetation and encourage new plant growth. Wherever they settled, humans began to have a significant impact on the natural environment due to the regular fires they set and over-hunting.

Perhaps the most striking illustration of the effect modern humans could have was the eventual disappearance of all other hominin species. It seems that only **Neanderthals**, and perhaps some types of **Homo erectus**, survived throughout much of Big Era Two. These species may have even met groups of Homo sapiens. Neanderthals had brains at least as large as ours, and they were effective hunters. However, we have no evidence that they had the gift of language and therefore they could not communicate with each other nearly as well as modern humans could. Without the capability for collective learning, Neanderthals appeared to have lacked the adaptability that modern humans have.

- 18 As far as we know, the last Neanderthals lived in the south of France, perhaps 25,000 to 35,000 years ago. There are clues that they tried, and failed, to imitate the technologies of modern humans. Other early hominins may have lived around the same time in parts of Southeast Asia. We cannot know for certain, but it seems that as modern humans occupied more and more territory, their genetic relatives survived less and less frequently in the same areas.
- 19 By 10,000 years ago, humans lived on all of the world's big landmasses—Afroeurasia, Australia, and the Americas. As the area that humans occupied expanded, their numbers probably increased as well. Yet the size of each community most likely remained small. In other words, population increased by “**extensification**.” This means increasing the number of communities and the areas that are settled across the world, without increasing the size of each community. By contrast, “**intensification**” means increasing the *size* of each community and the amount of people living within a given area. This would become more important in Big Era Three, after farming came into use. But even the slow population growth of Big Era Two may have raised the total number of humans from a few hundred thousand to a few million. If so, the population world-wide at the end of the era was about 1/1000th of its size today.

## HUMANS AND OTHER HUMANS

*Humans lived in egalitarian hunting and gathering societies during the Paleolithic era. Permanent settlements began appearing about 10,000 years ago.*

- 20 **H**ow did people live in Big Era Two? Archaeologists can tell us a lot about their dwellings and the tools they used, but it is harder to understand their social and cultural lives. We are sure that virtually all people were hunters and gatherers in that era. However, the techniques people employed varied and multiplied as groups settled more widely across the globe.

### *Social Life in the Paleolithic Era*

- 21 We may be able to gain insight into the lives of the Big Era Two people by investigating the lifestyles of the few modern societies that continue to survive by hunting and gathering. Scholars have to use this kind of evidence cautiously, because we certainly cannot assume that modern foragers live the same way that their predecessors did 10,000 to 200,000 years ago. However, we can use modern evidence to advance some hypotheses. Today's forager communities make up a tiny percentage of the world's population, but they still exist in a few places on all the continents. Except in extremely cold environments, they rely mainly on gathered plants for subsistence. Meat is valued, and most communities have hunters who occasionally bring it in. But meat is not the main component of most forager diets, because hunting is usually less reliable than gathering.



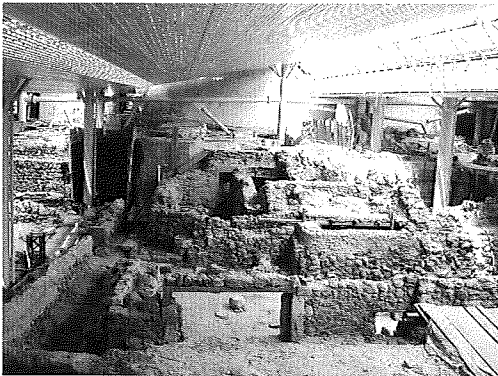
Many Native-American tribes practiced a deliberative form of foraging as late as the 19th century. This photograph of women with seed-gathering baskets was taken on the Colorado River around 1869–1874

- 22 In cold environments such as the Arctic, where plant foods are scarce, people rely on meat from seals, whales,



and caribou. Their hunting techniques have to be very advanced. All foragers must have deep knowledge about the plants and animals they use. Most modern forager communities are mobile. They travel through the land as the seasons change, staying in a camp for only a few weeks before moving on. The largest communities are really large families; that is, groups of ten to fifty people who travel together and periodically encounter other groups. When they meet, individuals often move from one group to another because of marriages, arguments, or even boredom.

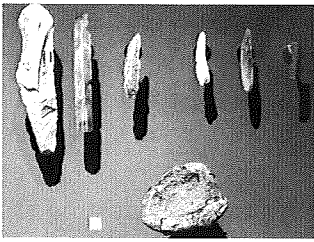
The main divisions within these forager communities are of age and gender. Men and women often have different economic and social roles, as do the old and the young. However, there are few differences in wealth and power so a forager community tends to be **egalitarian**. No one stores possessions since they find what they need as they move around. If you were traveling much of the time, would you try to carry a lot of things with you?



By combining the knowledge we have of modern foragers with the evidence of archaeology (stone tools and weapons, human and animal bones, and the remains of camp sites), we can construct a broad picture of how people lived during Big Era Two.

### ***The Beginnings of Permanent Settlement***

Towards the end of the era, we start finding signs that some communities were spending more time at particular sites and becoming more settled. This probably happened earliest in coastal areas because there was a lot of marine food resources. As communities stayed longer in a single place, they figured out new ways to increase their food supply. For example, they might care for stands of favored food plants by clearing weeds or scaring away birds. Or, they might build weirs (enclosures set in a waterway) to stock fish or eels. These technological innovations had features that were somewhat characteristic of farming, which appears in Big Era Three.



#### **Archaeological Finds**

*Top:* An archaeological dig at Akrotiri.

*Middle left:* Prehistoric tools (scrapers; small blades; a stone cup thought to be used for paint. Found in Les Combarelles cave in France.

*Middle right:* A skeleton lifted from an archaeological dig kept in the same position in which it was found.

*Lower left:* Prehistoric pottery sherds from excavations at Kamabai Rock Shelter, Sierra Leone (West Africa).

Was the foraging life in Big Era Two “nasty, brutish, and short,” as the English philosopher Thomas Hobbes thought, or was it reasonably comfortable? On one hand, it is probable that many people died young from illnesses, childbirth crises, or hunting expeditions gone wrong. On the other hand, studies of modern hunter-gatherers suggest that in Big Era Two, humans had a varied and nutritious diet. They also had much more leisure time in a day than farmers had! So, for a person born into a forager community, that way of living was probably both adequate and fulfilling.

## HUMANS AND IDEAS

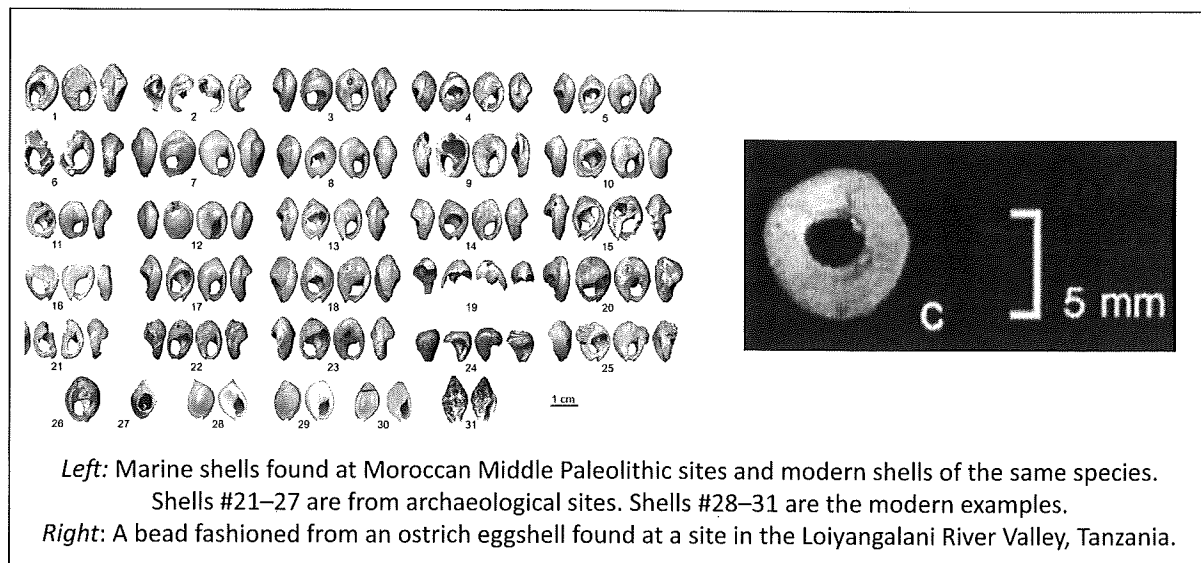
*Early humans expressed themselves through painting, sculpture, and jewelry. Interpreting this art is difficult, because we are applying modern ideas to ancient contexts.*

27 **M**odern forager communities often think of the world as a place full of many different types of intelligent beings aside from humans. Peoples who lived in Big Era Two may have thought the same thing. Some cave and rock paintings, as well as objects sculpted from stone, bone, and ivory, survive from the era. Much of the painting illustrates hunting, but some art also hints at various kinds of magical, supernatural beliefs. These pictures are hard to interpret, but they seem to describe a world full of spirits. The spirits are those that animate land, water, plants, animals, and weather. If this is the case, then it is probable that humans in Big Era Two thought of themselves as just one part of the natural world. They had none of the sense of separateness from nature that characterizes religions and sciences later in history.

### *The Earliest Art*

28 Cave paintings and carved objects were just one of the ways that women and men expressed themselves symbolically through art. An early hint of the existence of art among humans is the physical evidence of powdered pigments. People appear to have ground up earth substances, such as ochre (yellow, orange, or red), and used them to paint themselves or their surroundings. In fact, evidence of ground pigment use in southern Africa dates to well over 100,000 years ago. Therefore, we may also have an early date for the use of language.

29 Archaeologists have unearthed intriguing evidence of advanced technical skill and symbolic thinking at sites in Africa. In 2007, scientists working in eastern Morocco announced the discovery of punctured marine shell beads that they believe are 82,000 years old. These beads are colored with red ochre, and some of them show wear patterns suggesting that people suspended them from a cord. A site called Twilight Cave in Kenya contained ostrich eggshell beads dated to about 40,000 years ago. Men and women in Africa and the Mediterranean appear to have been making and wearing beads thousands of years before our species migrated to other parts of the world.

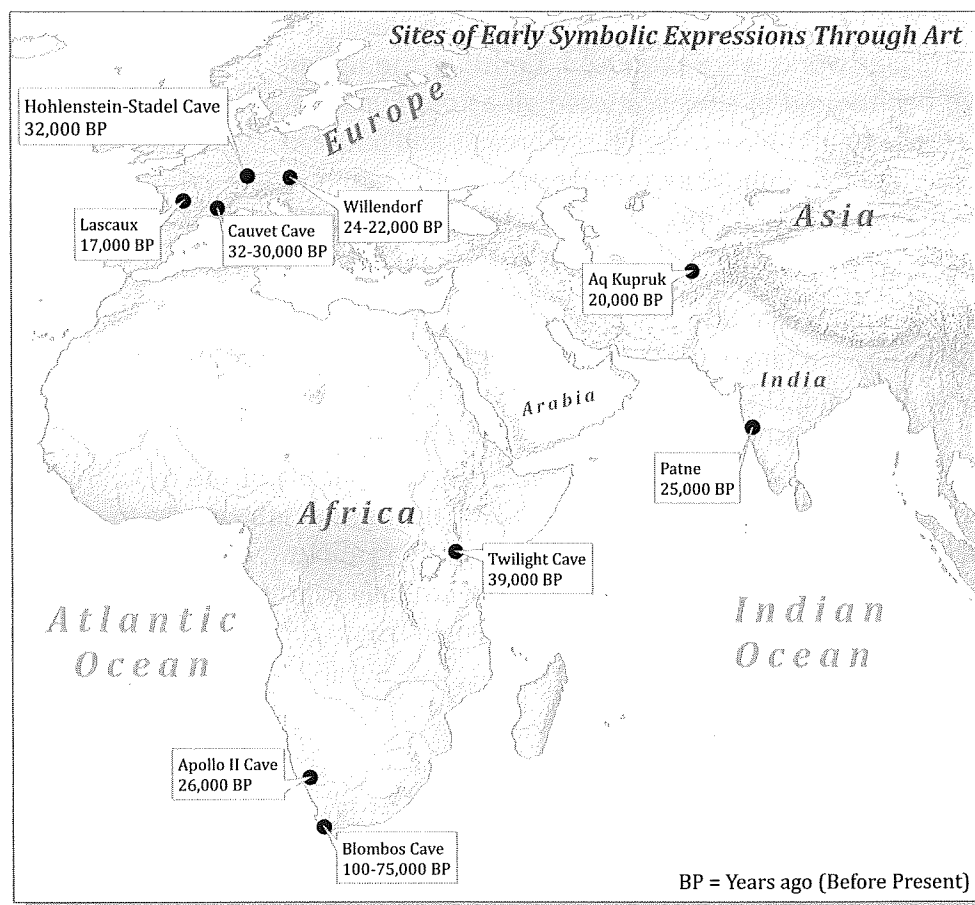


*Left:* Marine shells found at Moroccan Middle Paleolithic sites and modern shells of the same species.

Shells #21–27 are from archaeological sites. Shells #28–31 are the modern examples.

*Right:* A bead fashioned from an ostrich eggshell found at a site in the Loiyangalani River Valley, Tanzania.





From about 50,000 years ago to 10,000 years ago (the period scholars call the Upper 30 Paleolithic) artistic expression exploded in many other parts of the world. Humans began to produce not only paintings and carvings, but also pendants, necklaces, bracelets, earrings, and ornamental headgear. Through this art, women and men represented their world symbolically.

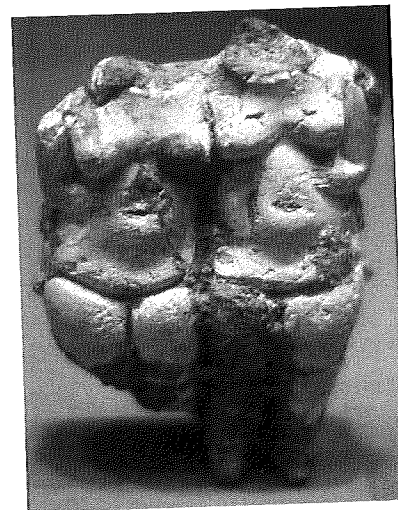
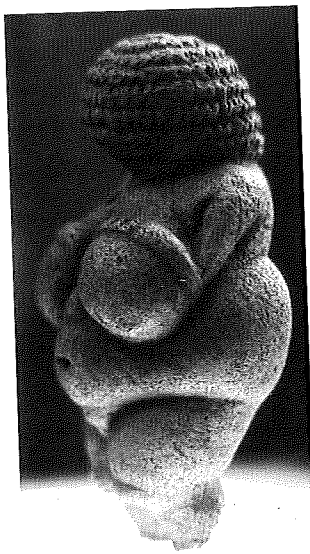
Wherever people lived, they took advantage of the local materials and settings. For exam- 31 ple, wall painting is concentrated heavily in northern Spain and southwestern France, where deep limestone caves provided “gallery space” that was protected from wind and rain. By contrast, caves are rare in Eastern Europe, so people commonly carved small, portable figurines. Humans even started making music in Big Era Two. In what is now Germany, archaeologists have found more than thirty flute-like instruments made of long hollow bone and equipped with finger holes. Most of these instruments are broken and unplayable, but the earliest may date to about 37,000 years ago.

### ***Interpreting Ancient Art Objects***

Explaining the meaning of artistic expression is always risky, because so much depends on the 32 cultural context of the work. When we interpret historical artifacts, we are applying modern ideas to something created in an ancient context. We can only speculate on the practical, **aesthetic**, or spiritual intentions of people who drew pictures of bison galloping across rock walls, painted images of human hands, or carved mysterious spiral patterns on pieces of bone.

*Big Era Two*

- 33 Part of the problem is that we know so little about the wider human environments in which particular works were produced. Consider the hundreds of carved "Venus" figurines that have been found in sites scattered all across Eurasia from Western Europe to Siberia. Most of these females have exaggerated breasts and buttocks. Were they symbols of fertility? Were they part of a symbolic system through which women shared rituals with one another? Did their meaning vary from one region to another? Debate over the meaning of art in the Upper Paleolithic will continue for a long time.
- 34 We have no material artifacts at all to help us understand the most important symbolic system of all, spoken language. Writing lay far in the future. Or did it? We do have quite a bit of evidence from the Upper Paleolithic that includes abstract markings such as dots, paired lines, and zigzags. These signs seem to suggest a system for communicating information. Perhaps they were a record of hunting successes or the phases of the moon. But even if such symbols were early forms of writing, we still cannot connect the marks to sounds that came out of people's mouths. We also know almost nothing about the development and spread of particular spoken languages in Big Era Two. We can only hypothesize that languages were advancing as global migration proceeded and people began the farming settlements that characterized Big Era Three.



**Venus Figurines**

*Left: Venus of Willendorf, limestone (25000 BCE–22000 BCE); Center: Venus from Laussel on limestone (25,000 BCE); Right: Twin goddesses from Çatal Höyük (7,000 BCE–6,000 BCE)*