Name: _____

AP World History Summer Reading Assignments

Welcome to AP World History! In order to best prepare for the year ahead, the following three assignments are required: (**BRING THESE ASSIGNMENTS WITH YOU ON THE FIRST DAY OF SCHOOL!**)

1. Reading Notes for Chapters 1 and 2 – Follow the Cornell Notes Template (attached) and write proper notes on the first two chapters of the textbook that we will be using. The first two chapters are included in this packet.
2. Answer the guided questions from Jared Diamond's book *Guns, Germs, and Steel*. In order to answer these questions, I suggest you start by using the first two options below because they are free, however, if you feel intrigued by the arguments made by Jared Diamond, his book is available at the public library, or for purchase. Here are the ways to access the information:
    - An abbreviated version of the book is posted on this website https://sites.google.com/a/hartdistrict.org/williams_apworld/
    - A video series is available on youtube.com. A link is available at the class website (listed above).
    - The full book and audio book are available at the Santa Clarita Public Library.
3. Geography Assignment – Use the two maps attached and study the major physical features of each region of the world. A geography quiz will be given on the first day of school.

***Guns, Germs, and Steel* – Guided Questions!**

Prologue: Yali's Question

1. What are three considerations Diamond discusses as he ponders Yali's question?

I. Part One: From Eden to Cajamarca

Chapter One: Up to the Starting Line

1. What was the "Great Leap Forward"? Which peoples did it impact, and what probably catalyzed this change?

Chapter Two: A Natural Experiment of History

1. What were the six environmental factors that contribute to the differences among Polynesian societies? Of the six, which do you think plays the greatest role in differentiation and why?

Chapter Three: Collision at Cajamarca

1. What happened at Cajamarca?

2. How did Pizarro come to be at Cajamarca? Why didn't Atahualpa instead try to conquer Spain?

Name: _____

3. Why did Atahuallpa walk into the trap?

II. Part Two: The Rise and Spread of Food Production
Chapter Four: Farmer Power
1. Summarize how domestication of livestock and farming changed societies.

Chapter Five: History's Haves and Have-nots
1. Examine Figure 5.1 and Table 5.1; apply your knowledge of environmental and geographic factors to identify what these regions have in common. What environmental factors probably contributed to the success of these crops in their respective regions?

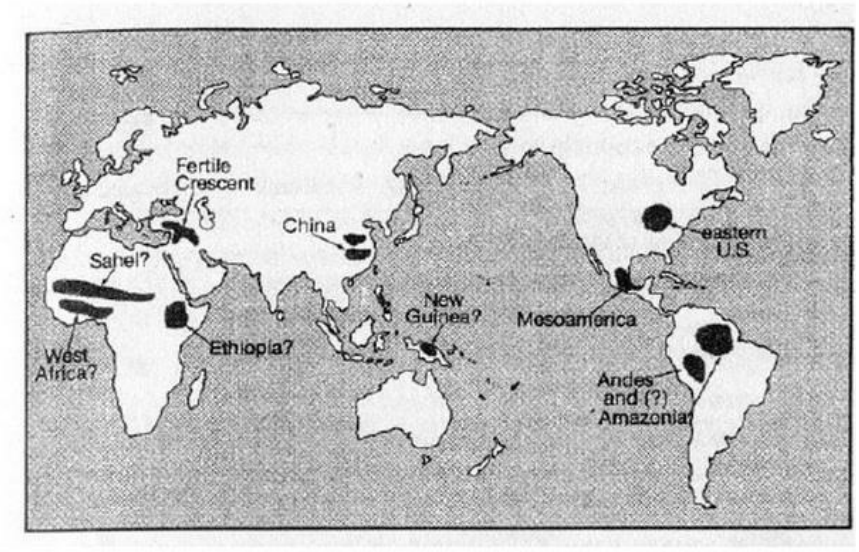


Figure 5.1. Centers of origin of food production. A question mark indicates some uncertainty whether the rise of food production at that center was really uninfluenced by the spread of food production from other centers, or (in the case of New Guinea) what the earliest crops were.

TABLE 5.1 Examples of Species Domesticated in Each Area

Area	Domesticated Plants	Domesticated Animals	Earliest Attested Date of Domestication
Independent Origins of Domestication			
1. Southwest Asia	wheat, pea, olive	sheep, goat	8500 B.C.
2. China	rice, millet	pig, silkworm	by 7500 B.C.
3. Mesoamerica	corn, beans, squash	turkey	by 3500 B.C.
4. Andes and Amazonia	potato, manioc	llama, guinea pig	by 3500 B.C.
5. Eastern United States	sunflower, goosefoot	none	2500 B.C.
? 6. Sahel	sorghum, African rice	guinea fowl	by 5000 B.C.
? 7. Tropical West Africa	African yams, oil palm	none	by 3000 B.C.
? 8. Ethiopia	coffee, teff	none	?
? 9. New Guinea	sugar cane, banana	none	7000 B.C.?
Local Domestication Following Arrival of Founder Crops from Elsewhere			
10. Western Europe	poppy, oat	none	6000-3500 B.C.
11. Indus Valley	sesame, eggplant	humped cattle	7000 B.C.
12. Egypt	sycamore fig, chufa	donkey, cat	6000 B.C.

Name: _____

Chapter 6: To Farm or Not to Farm
1. What five factors contributed to the transition from hunter gatherer to farming?

Chapter 7: How to Make an Almond
1. Describe three of the many factors that contribute to whether or not a plant becomes a crop that humans choose to domesticate.

Chapter 8: Apples or Indians
1. Indentify at least four of the Fertile Crescent's advantages in terms of food production.

2. Identify New Guinea's 3 severe limitations.

Chapter 9: Zebras, Unhappy Marriages, and the Anna Karenina Principle
1. What is the Anna Karenina Principle (when applied to the domestication of animals)?

Chapter 10: Spacious Skies and Tilted Axes
1. How did the rate of spread in Eurasia's East-West axes compare to the spread along the Americas North-South axes? (p. 178)

2. In paragraph from, why was the spread of crops from the Fertile Crescent so rapid?

III. Part 3: From Food to Guns, Germs, and Steel
Chapter 11: Lethal Gift of Livestock
1. What are two historically famous epidemics?

2. What are the four common characteristics shared by lethal epidemics?

3. List four diseases that are contracted from an animal.

Name: _____

Chapter 12: Blueprints and Borrowed Letters
1. What are the three basic types of writing systems and what is an example of each?

2. What civilization was first to develop a writing system and what was it called?

Chapter 13: Necessity's Mother
1. Bullet out the 14 factors historians have identified as catalysts for the creation of technology.

2. Of the 14, discuss two in complete sentences that you think have the most influential impact on the creation of new technologies.

Chapter 14: From Egalitarianism to Kleptocracy
1. Briefly summarize the four solutions Kleptocrats have resorted to maintain their control and elite lifestyle.

2. How does food production make features of complex societies possible? (bullet four reasons)

IV. Part Four: Around the World in Five Chapters
Chapter 15: Yali's People
1. Why did Australia not develop metal tools, writing, and politically complex societies?

2. Why didn't more advanced technology reach Australia from its neighbors, Indonesia and New Guinea?

Chapter 16: How China Became Chinese
1. What is Sinification? (look it up online if necessary)

Name: _____

2. What are some characteristics or accomplishments of the Chinese civilization?

Chapter 17: Speedboat to Polynesia

1. What languages are part of the "Austronesian" family? (Fig. 17.1)

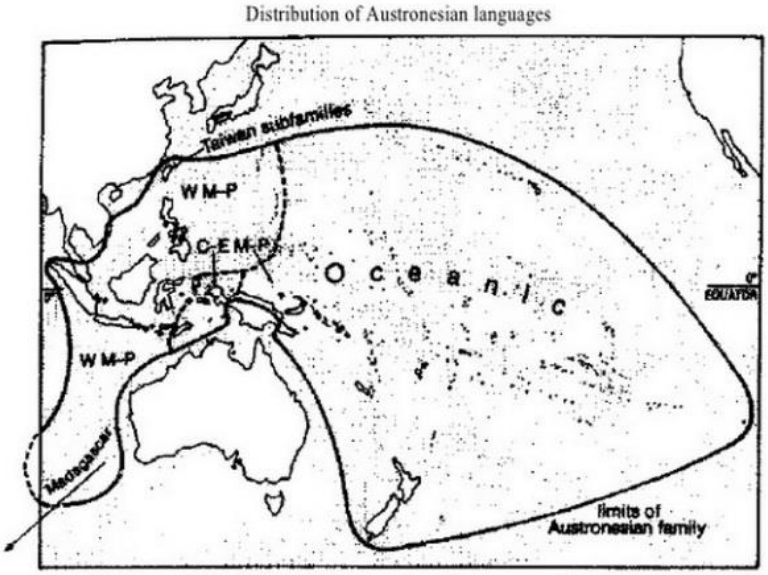


Figure 17.1. The Austronesian language family consists of four subfamilies, three of them confined to Taiwan and one (Malayo-Polynesian) widespread. The latter subfamily in turn consists of two sub-subfamilies, Western Malayo-Polynesian (= W M-P) and Central-Eastern Malayo-Polynesian (= C-E M-P). The latter sub-subfamily in turn consists of four sub-sub-subfamilies, the very widespread Oceanic one to the east and three others to the west in a much smaller area comprising Halmahera, nearby islands of eastern Indonesia, and the west end of New Guinea.

Name: _____

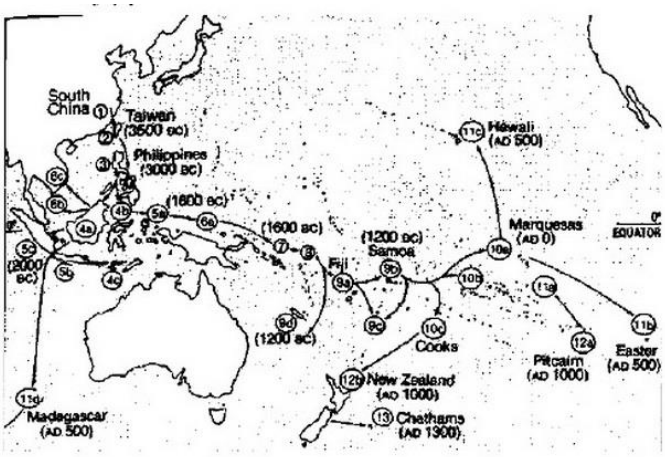


Figure 17.2. The paths of the Austronesian expansion, with approximate dates when each region was reached. 4a — Borneo, 4b = Celebes, 4c = Timor (around 2500 B.C.). 5a - Halmahera (around 1600 B.C.). 5b = Java, 5c — Sumatra (around 2000 B.C.). 6a = Bismarck Archipelago (around 1600 B.C.). 6b = Malay Peninsula, 6c = Vietnam (around 1000 B.C.). 7 = Solomon Archipelago (around 1600 B.C.). 8 - Santa Cruz, 9c = Tonga, 9d = New Caledonia (around 1200 B.C.). 1Ob = Society Islands, lOc = Cook Islands, 11 a = Tuamotu Archipelago (around A.D. 1).

2. What was the outcome of Austronesian expansion? (page 350!)

Chapter 18: Hemispheres Colliding

1. Using pages 354-357, make a chart that compares and contrasts Eurasian and Native American society prior to 1492.

2. Describe the five areas of technology that were contributing factors to Europe's conquest of the Americas.

Name: _____

3. Referencing Table 18.1; Which is the earliest developing society? Second earliest? Third? Which societies never developed writing systems? Which never developed iron tools?

TABLE 18.1 Historical Trajectories of Eurasia and the Americas

Approximate Date of Adoption	*Eurasia*		
	Fertile Crescent	China	England
Plant domestication	8500 B.C.	by 7500 B.C.	3500 B.C.
Animal domestication	8000 B.C.	by 7500 B.C.	3500
Pottery	7000 B.C.	by 7500 B.C.	3500
Villages	9000 B.C.	by 7500 B.C.	3000
Chiefdoms	5500 B.C.	4000 B.C.	2500
Widespread metal tools or artifacts (copper and/or bronze)	4000 B.C.	2000 B.C.	2000
States	3700 B.C.	2000 B.C.	500 A.D.
Writing	3200 B.C.	by 1300 B.C.	A.D. 43
Widespread iron tools	900 B.C.	500 B.C.	650 B.C.

This table gives approximate dates of widespread adoption of significant developments in three Eurasian and four Native American areas. Dates for animal domestication neglect dogs, which were domesticated earlier than food-producing animals in both Eurasia and

4. What has the Native American population reduced by (%) since 1492?

Chapter 19: How Africa Became Black

1. List the five major human groups in Africa around 1000 CE (AD).

2. How many different language groups exist in the African continent?

3. Describe the characteristics and growth of the Bantus.

4. What does Diamond project actually happened to the vanished Khoisan populations?

AP World Summer Work: Chapters 1 and 2 Reading Notes

Cornell Notes Lecture, reading/chapter/novel/article during class, power point, movies (if need to collect info.) **Topic: Write the Chapter's Subtitles Here!**	**Name:** _____ **Class:** ___AP World_____ **Period:** _____ **Date:** _____

Develop an essential question based on <u>each</u> subtitle in Chapters 1-2. There are 8 subtitles in Ch. 1 and 8 subtitles in Ch. 2. Next, use the terms that are located in the margins of the textbook (there are 23 terms in Ch. 1 and 41 terms in Ch. 2) and develop reading notes based on these main ideas. Be prepared to show the notes to your teacher on Day 1 of the school year (A blank template is on the back).

Questions/Main Ideas:	**Notes:**

Summary:

Cornell Notes

Lecture, reading/chapter/novel/article during class, power point, movies (if need to collect info.)

Topic:_____

_____

Name: _____

Class: _____ **Period:** _____

Date: _____

Essential Question:

Questions/Main Ideas:	**Notes:**

Summary:

1 Before History

Throughout the evening of 30 November 1974, a tape player in an Ethiopian desert blared the Beatles' song "Lucy in the Sky with Diamonds" at top volume. The site was an archaeological camp at Hadar, a remote spot about 320 kilometers (200 miles) northeast of Addis Ababa. The music helped fuel a spirited celebration: earlier in the day, archaeologists had discovered the skeleton of a woman who died 3.2 million years ago. Scholars refer to this woman's skeleton as AL 288-1, but the woman herself has become by far the world's best-known prehistoric individual under the name Lucy.

At the time of her death, from unknown causes, Lucy was age twenty-five to thirty. She stood just over 1 meter (about 3.5 feet) tall and probably weighed about 25 kilograms (55 pounds). After she died, sand and mud covered Lucy's body, hardened gradually into rock, and entombed her remains. By 1974, however, rain waters had eroded the rock and exposed Lucy's fossilized skeleton. The archaeological team working at Hadar eventually found 40 percent of Lucy's bones, which together form one of the most complete and best-preserved skeletons of any early human ancestor. Later searches at Hadar turned up bones belonging to perhaps as many as sixty-five additional individuals, although no other collection of bones from Hadar rivals Lucy's skeleton for completeness.

Analysis of Lucy's skeleton and other bones found at Hadar demonstrates that the earliest ancestors of modern human beings walked upright on two feet. Erect walking is crucial for human beings because it frees their arms and hands for other tasks. Lucy and her contemporaries did not possess large or well-developed brains—Lucy's skull was about the size of a small grapefruit—but unlike the neighboring apes, which used their forelimbs for locomotion, Lucy and her companions could carry objects with their arms and manipulate tools with their dexterous hands. Those abilities enabled Lucy and her companions to survive better than many other species. As the brains of our human ancestors grew larger and more sophisticated—a process that occurred over a period of several million years—human beings learned to take even better advantage of their arms and hands and established flourishing communities throughout the world.

According to geologists the earth came into being about 4.5 billion years ago. The first living organisms made their appearance hundreds of millions of years later. In their wake came increasingly complex creatures such as fish, birds, reptiles, and mammals. About forty million years ago, short, hairy, monkeylike animals began to populate tropical regions of the world. Humanlike cousins to these animals began to appear only four or five million years ago, and our species, *Homo sapiens*, about two hundred thousand years ago.

OPPOSITE: A quartet of horses depicted about thirty thousand years ago in a painting from the Chauvet cave in southern France.

Even the most sketchy review of the earth's natural history clearly shows that human society has not developed in a vacuum. The earliest human beings inhabited a world already well stocked with flora and fauna, a world shaped for countless eons by natural rhythms that governed the behavior of all the earth's creatures. Human beings made a place for themselves in this world, and over time they demonstrated remarkable ingenuity in devising ways to take advantage of the earth's resources. Indeed, it has become clear in recent years that the human animal has exploited the natural environment so thoroughly that the earth has undergone irreversible changes.

A discussion of such early times might seem peripheral to a book that deals with the history of human societies, their origins, development, and interactions. In conventional terminology, *prehistory* refers to the period before writing, and *history* refers to the era after the invention of writing enabled human communities to record and store information. It is certainly true that the availability of written documents vastly enhances the ability of scholars to understand past ages, but recent research by archaeologists and evolutionary biologists has brightly illuminated the physical and social development of early human beings. It is now clear that long before the invention of writing, human beings made a place for their species in the natural world and laid the social, economic, and cultural foundations on which their successors built increasingly complex societies.

The Evolution of *Homo sapiens*

During the past century or so, archaeologists, evolutionary biologists, and other scholars have vastly increased the understanding of human origins and the lives our distant ancestors led. Their work has done much to clarify the relationship between human beings and other animal species. On one hand, researchers have shown that human beings share some remarkable similarities with the large apes. This point is true not only of external features, such as physical form, but also of the basic elements of genetic makeup and body chemistry—DNA, chromosomal patterns, life-sustaining proteins, and blood types. In the case of some of these elements, scientists have been able to observe a difference of only 1.6 percent between the DNA of human beings and chimpanzees. Biologists therefore place human beings in the order of primates, along with monkeys, chimpanzees, gorillas, and the various other large apes.

On the other hand, human beings clearly stand out as the most distinctive of the primate species. Small differences in genetic makeup and body chemistry have led to enormous differences in levels of intelligence and ability to exercise control over the natural world. Human beings developed an extraordinarily high order of intelligence, which enabled them to devise tools, technologies, language skills, and other means of communication and cooperation. Whereas other animal species adapted physically and genetically to their natural environment, human beings altered the natural environment to suit their needs and desires—a process that began in remote prehistory and continues in the present day. Over the long term, too, intelligence endowed humans with immense potential for social and cultural development.

The Hominids

A series of spectacular discoveries in east Africa has thrown valuable light on the evolution of the human species. In Tanzania, Kenya, Ethiopia, and other places, archaeologists have unearthed bones and tools of human ancestors going back about five million years. The Olduvai Gorge in Tanzania and Hadar in Ethiopia have yielded especially

rich remains of individuals like the famous Lucy. These individuals probably represented several different species belonging to the genus *Australopithecus* ("the southern ape"), which flourished in east Africa during the long period from about four million to one million years ago.

Australopithecus

In spite of its name, *Australopithecus* was not an ape but rather a hominid—a creature belonging to the family Hominidae, which includes human and humanlike species. Evolutionary biologists recognize *Australopithecus* as a genus standing alongside *Homo* (the genus in which biologists place modern human beings) in the family of hominids. Compared to our species, *Homo sapiens,* Lucy and other australopithecines would seem short, hairy, and limited in intelligence. They stood something over 1 meter (3 feet) tall, weighed 25 to 55 kilograms (55 to 121 pounds), and had a brain size of about 500 cubic centimeters. (The brain size of modern humans averages about 1,400 cc.)

Fossilized footprints preserved near Olduvai Gorge in modern Tanzania show that hominids walked upright some 3.5 million years ago. These prints came from an adult walking on the right and a child on the left.

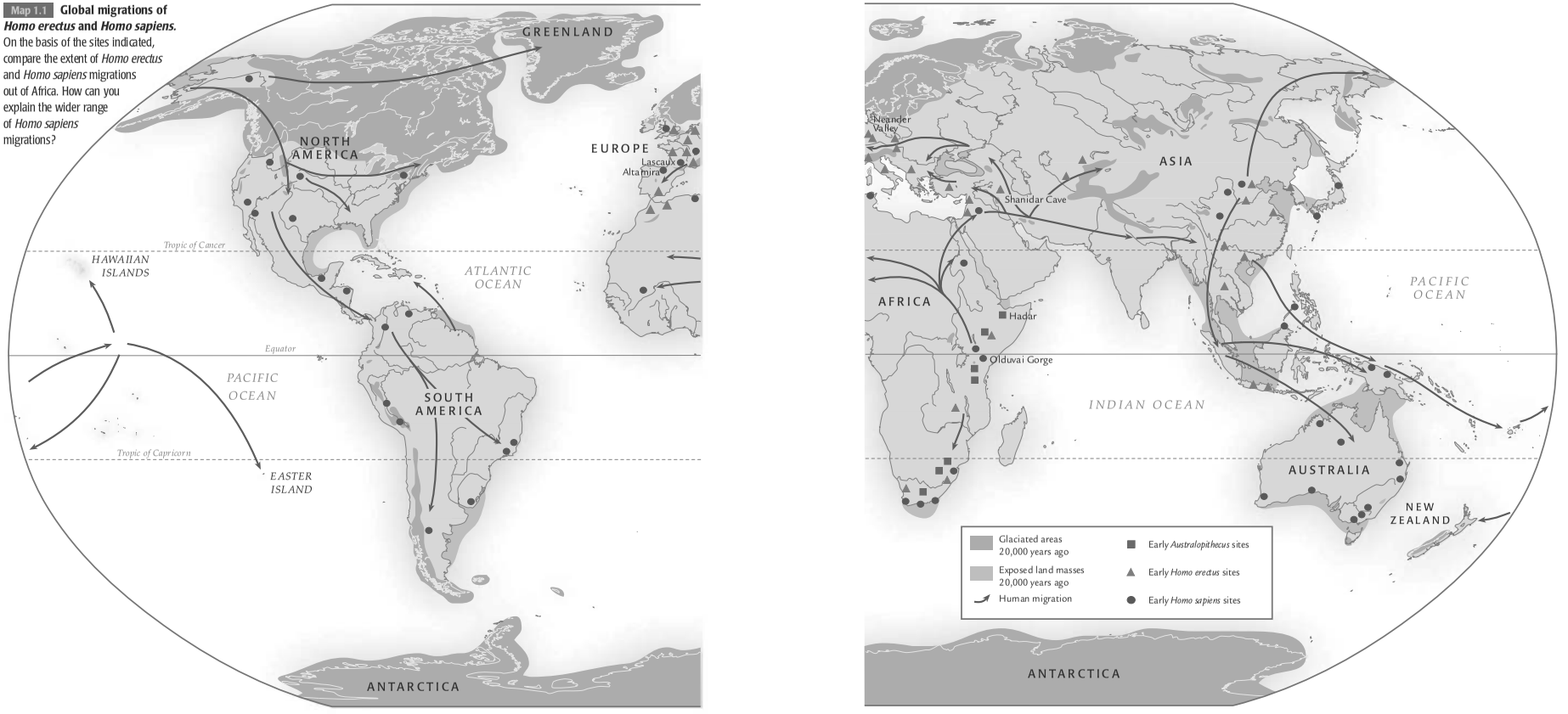
Compared with other ape and animal species, however, australopithecines were sophisticated creatures. They walked upright on two legs, which enabled them to use their arms independently for other tasks. They had well-developed hands with opposable thumbs, which enabled them to grasp tools and perform intricate operations. They almost certainly had some ability to communicate verbally, although analysis of their skulls suggests that the portion of the brain responsible for speech was not very large or well developed.

The intelligence of australopithecines was sufficient to allow them to plan complex ventures. They often traveled deliberately—over distances of 15 kilometers (9.3 miles) and more—to obtain the particular kinds of stone that they needed to fashion tools. Chemical analyses show that the stone from which australopithecines made tools was often available only at sites distant from the camps where archaeologists discovered the finished tools. Those tools included choppers, scrapers, and other implements for food preparation. With the aid of their tools and intelligence, australopithecines established themselves securely throughout most of eastern and southern Africa.

Homo erectus

By about one million years ago, australopithecines had disappeared as new species of hominids possessing greater intelligence evolved and displaced their predecessors. The new species belonged to the genus *Homo* and thus represented creatures considerably different from the australopithecines. Most important of them was *Homo erectus*—"upright-walking human"—who flourished from about two million to 200,000 years ago. *Homo erectus* possessed a larger brain than the australopithecines—the average capacity was about 1,000 cc—and fashioned more sophisticated tools as well.

Australopithecus (ah-strah-loh-PITH-uh-kuhs)



Map 1.1 **Global migrations of *Homo erectus* and *Homo sapiens*.** On the basis of the sites indicated, compare the extent of *Homo erectus* and *Homo sapiens* migrations out of Africa. How can you explain the wider range of *Homo sapiens* migrations?

To the australopithecine choppers and scrapers, *Homo erectus* added cleavers and hand axes, which not only were useful in hunting and food preparation but also provided protection against predators. *Homo erectus* also learned how to start and tend fires, which furnished the species with a means to cook food, a defense against large animals, and a source of artificial heat.

Even more important than tools and fire were intelligence and language skills, which enabled individuals to communicate complex ideas to one another. Archaeologists have determined, for example, that bands of *Homo erectus* men conducted their hunts in well-coordinated ways that presumed prior communication. Many sites associated with *Homo erectus* served as camps for communities of hunters. The quantities of animal remains found at those sites—particularly bones of large and dangerous animals such as elephant, rhinoceros, and bear—provide evidence that hunters worked in groups and brought their prey back to their camps. Cooperation of this sort presumed both high intelligence and effective language skills.

Migrations of Homo erectus

With effective tools, fire, intelligence, and language, *Homo erectus* gained increasing control over the natural environment and introduced the human species into widely scattered regions. Whereas australopithecines had not ventured beyond eastern and southern Africa, *Homo erectus* migrated to north Africa and the Eurasian

landmass. Almost two million years ago, *Homo erectus* groups moved to southwest Asia and beyond to Europe, south Asia, east Asia, and southeast Asia. By two hundred thousand years ago they had established themselves throughout the temperate zones of the eastern hemisphere, where archaeologists have unearthed many specimens of their bones and tools.

Homo sapiens

Like *Australopithecus,* though, *Homo erectus* faded with the arrival of more intelligent and successful human species. *Homo sapiens* ("consciously thinking human") evolved about two hundred thousand years ago and has skillfully adapted to the natural environment ever since. Early *Homo sapiens* already possessed a large brain—one approaching the size of modern human brains. More important than the size of the brain, though, is its structure: the modern human brain is especially well developed in the frontal regions, where conscious, reflective thought takes place. This physical feature provided *Homo sapiens* with an enormous advantage. Although not endowed with great strength and not equipped with natural means of attack and defense—claws, beaks, fangs, shells, venom, and the like—*Homo sapiens* possessed a remarkable intelligence that provided a powerful edge in the contest for survival. It enabled individuals to understand the structure of the world around them, to organize more efficient methods of exploiting natural resources, and to communicate and cooperate on increasingly complex tasks.

Migrations of Homo sapiens

Intelligence enabled *Homo sapiens* to adapt to widely varying environmental conditions and to establish the species securely throughout the world. Beginning about one hundred thousand years ago, communities of *Homo sapiens* spread throughout the eastern hemisphere and populated the temperate lands of Africa, Europe, and Asia, where they encountered *Homo erectus* groups that had inhabited those regions for several hundred thousand years. *Homo sapiens* soon moved beyond the temperate zones, though, and established communities in progressively colder regions—migrations that were possible because their intelligence allowed *Homo sapiens* to fashion warm clothes from animal skins and to build effective shelters against the cold.

Between sixty thousand and fifteen thousand years ago, *Homo sapiens* extended the range of human population even further. Several ice ages cooled the earth's temperature during that period, resulting in the concentration of water in massive glaciers, the lowering of the world's sea levels, and the exposure of land bridges that linked Asia with regions of the world previously uninhabited by humans. Small bands of individuals crossed those bridges and established communities in the islands of Indonesia and New Guinea, and some of them went farther to cross the temporarily narrow straits of water separating southeast Asia from Australia.

Homo sapiens arrived in Australia about sixty thousand years ago, perhaps even earlier. Somewhat later, beginning as early perhaps as twenty-five thousand years ago, other groups took advantage of land bridges linking Siberia with Alaska and established human communities in North America. From there they migrated throughout the western hemisphere. About fifteen thousand years ago, communities of *Homo sapiens* had appeared in almost every habitable region of the world.

The Natural Environment

Their intellectual abilities enabled members of the *Homo sapiens* species to recognize problems and possibilities in their environment and then to take action that favored their survival. At sites of early settlements, archaeologists have discovered increasingly sophisticated tools that reflect *Homo sapiens'* progressive control over the environment. In addition to the choppers, scrapers, axes, and other tools that earlier species possessed, *Homo sapiens* used knives, spears, and bows and arrows. Individuals made dwellings for themselves in caves and in hutlike shelters fabricated from wood, bones, and animal skins. In cold regions *Homo sapiens* warmed themselves with fire and cloaked themselves in the skins of animals. Mounds of ashes discovered at their campsites show that in especially cold regions, they kept fires burning continuously during the winter months. In all parts of the earth, members of the species learned to use spoken languages to communicate complex ideas and coordinate their efforts in the common interest. *Homo sapiens* used superior intelligence, sophisticated tools, and language to exploit the natural world more efficiently than any other species the earth had seen.

Sources from the Past

Richard E. Leakey on the Nature of *Homo sapiens sapiens*

Richard E. Leakey (1944–) has spent much of his life searching for the fossilized remains of early hominids in east Africa. While seeking to explain the evolutionary biology of hominids, Leakey offered some reflections on the nature and distinctive characteristics of our species.

What are we? To the biologist we are members of a subspecies called *Homo sapiens sapiens,* which represents a division of the species known as *Homo sapiens.* Every species is unique and distinct: that is part of the definition of a species. But what is particularly interesting about our species? . . .

Our forelimbs, being freed from helping us to get about, possess a very high degree of manipulative skill. Part of this skill lies in the anatomical structure of the hands, but the crucial element is, of course, the power of the brain. No matter how suitable the limbs are for detailed manipulation, they are useless in the absence of finely tuned instructions delivered through nerve fibres. The most obvious product of our hands and brains is technology. No other animal manipulates the world in the extensive and arbitrary way that humans do. The termites are capable of constructing intricately structured mounds which create their own "air-conditioned" environment inside. But the termites cannot choose to build a cathedral instead. Humans are unique because they have the capacity to *choose* what they do.

Communication is a vital thread of all animal life. Social insects such as termites possess a system of communication that is clearly essential for their complex labours: their language is not verbal but is based upon an exchange of chemicals between individuals and on certain sorts of signalling with the body. In many animal groups, such as birds and mammals, communicating by sound is important, and the posture and movement of the body can also transmit messages. The tilting of the head, the staring or averted eyes, the arched back, the bristled hair or feathers: all are part of an extensive repertoire of animal signals. In animals that live in groups, the need to be able to communicate effectively is paramount.

For humans, body language is still very important but the voice has taken over as the main channel of information-flow. Unlike any other animal, we have a spoken language which is characterized by a huge vocabulary and a complex grammatical structure. Speech is an unparalleled medium for exchanging complex information, and it is also an essential part of social interaction in that most social of all creatures, *Homo sapiens sapiens.*

All the points I have mentioned are characteristics of a very intelligent creature, but humans are more than just intelligent. Our sense of justice, our need for aesthetic pleasure, our imaginative flights, and our penetrating self-awareness, all combine to create an indefinable spirit which I believe is the "soul."

FOR FURTHER REFLECTION

Granting that *Homo sapiens* possesses distinctive characteristics and enjoys unique abilities, as Leakey has eloquently suggested, to what extent does human membership in the larger animal kingdom help explain human experiences in the world?

SOURCE: Richard E. Leakey. *The Making of Mankind.* New York: E. P. Dutton, 1981, pp. 18, 20.

Indeed, intelligent, tool-bearing humans competed so successfully in the natural world that they brought tremendous pressure to bear on other species. As the population of *Homo sapiens* increased, large mammal species in several parts of the world became extinct. Mammoths and the woolly rhinoceros disappeared from Europe, giant kangaroos from Australia, and mammoths, mastodons, and horses from the Americas. Archaeologists believe that changes in the earth's climate might have altered the natural environment enough to harm those species. In most cases, however, human hunting probably helped push large animals into extinction. Thus, from their earliest days on earth, members of the species *Homo sapiens* became effective and efficient competitors in the natural world—to the point that they threatened the very survival of other large but less intelligent species.

Paleolithic Society

By far the longest portion of the human experience on earth is the period historians and archaeologists call the paleolithic era, the "old stone age." The principal characteristic of the paleolithic era was that human beings foraged for their food: they hunted wild animals or gathered edible products of naturally growing plants. The paleolithic era extended from the evolution of the first hominids until about twelve thousand years ago, when groups of *Homo sapiens* in several parts of the world began to rely on cultivated crops to feed themselves.

Economy and Society of Hunting and Gathering Peoples

In the absence of written records, scholars have drawn inferences about paleolithic economy and society from other kinds of evidence. Archaeologists have excavated many sites that open windows on paleolithic life, and anthropologists have carefully studied hunting and gathering societies in the contemporary world. In the Amazon basin of South America, the tropical forests of Africa and southeast Asia, the deserts of Africa and Australia, and a few other regions as well, small communities of hunters and gatherers follow the ways of our common paleolithic ancestors. Although contemporary hunting and gathering communities reflect the influence of the modern world—they are by no means exact replicas of paleolithic societies—they throw important light on the economic and social dynamics that shaped the experiences of prehistoric foragers. In combination, then, the studies of both archaeologists and anthropologists help to illustrate how the hunting and gathering economy decisively influenced all dimensions of the human experience during the paleolithic era.

Relative Social Equality

A hunting and gathering economy virtually prevents individuals from accumulating private property and basing social distinctions on wealth. To survive, most hunters and gatherers must follow the animals that they stalk, and they must move with the seasons in search of edible plant life. Given their mobility, it is easy to see that, for them, the notion of private, landed property has no meaning at all. Individuals possess only a few small items such as weapons and tools that they can carry easily as they move. In the absence of accumulated wealth, hunters and gatherers of paleolithic times, like their contemporary descendants, probably lived a relatively egalitarian existence. Social distinctions no doubt arose, and some individuals became influential because of their age, strength, courage, intelligence, fertility, force of personality, or some other trait. But personal or family wealth could not have served as a basis for permanent social differences.

Some scholars believe that this relative social equality in paleolithic times extended even further, to relations between the sexes. All members of a paleolithic group made

Artist's conception of food preparation in a *Homo erectus* community.

important contributions to the survival of the community. Men traveled on sometimes distant hunting expeditions in search of large animals while women and children gathered edible plants, roots, nuts, and fruits from the area near the group's camp. Meat from the hunt was the most highly prized item in the paleolithic diet, but plant foods were essential to survival. Anthropologists calculate that in modern hunting and gathering societies, women contribute more calories to the community's diet than do the men. As a source of protein, meat represents a crucial supplement to the diet. But plant products sustain the men during hunting expeditions and feed the entire community when the hunt does not succeed. Because of the thorough interdependence of the sexes from the viewpoint of food production, paleolithic society probably did not encourage the domination of one sex by the other—certainly not to the extent that became common later.

A hunting and gathering economy has implications not only for social and sexual relations but also for community size and organization. The foraging lifestyle of hunters and gatherers dictates that they mostly live in small bands, which today include about thirty to fifty members. Larger groups could not move efficiently or find enough food to survive over a long period. During times of drought or famine, even small bands have trouble providing for themselves. Individual bands certainly have relationships with their neighbors—agreements concerning the territories that the groups exploit, for example, or arrangements to take marriage partners from each others' groups—but the immediate community is the focus of social life.

The survival of hunting and gathering bands depends on a sophisticated understanding of their natural environment. In contemporary studies, anthropologists have found that hunting and gathering peoples do not wander aimlessly about hoping to find a bit of food. Instead, they exploit the environment systematically and efficiently by timing their movements to coincide with the seasonal migrations of the animals they hunt and the life cycles of the plant species they gather.

Big-Game Hunting

Archaeological remains show that early peoples also went about hunting and gathering in a purposeful and intelligent manner. As early as three hundred thousand years ago, for example, *Homo erectus* had learned to hunt big game successfully. Although almost anyone could take a small, young, or wounded animal, the hunting of big game

posed special challenges. Large animals such as elephant, mastodon, rhinoceros, bison, and wild cattle were not only strong and fast but also well equipped to defend themselves and even attack their human hunters. *Homo erectus* and *Homo sapiens* fashioned special tools, such as sharp knives, spears, and bows and arrows, and devised special tactics for hunting these animals. The hunters wore disguises such as animal skins and coordinated their movements so as to attack game simultaneously from several directions. They sometimes even started fires or caused disturbances to stampede herds into swamps or enclosed areas where hunters could kill them more easily. Paleolithic hunting was a complicated venture. It clearly demonstrated the capacity of early human communities to pool their uniquely human traits—high intelligence, ability to make complicated plans, and sophisticated language and communications skills—to exploit the environment.

Paleolithic Settlements

In regions where food resources were especially rich, a few peoples in late paleolithic times abandoned the nomadic lifestyle and established permanent settlements. The most prominent paleolithic settlements were those of Natufian society in the eastern Mediterranean (modern-day Israel and Lebanon), Jomon society in central Japan, and Chinook society in the Pacific northwest region of North America (including the modern states of Oregon and Washington and the Canadian province of British Columbia). As early as 13,500 B.C.E., Natufians collected wild wheat and took animals from abundant antelope herds. From 10,000 to 300 B.C.E., Jomon settlers harvested wild buckwheat and developed a productive fishing economy. Chinook society emerged after 3000 B.C.E. and flourished until the mid-nineteenth century C.E., principally on the basis of wild berries, acorns, and massive salmon runs in local rivers. Paleolithic settlements had permanent dwellings, sometimes in the form of long houses that accommodated several hundred people, but often in the form of smaller structures for individual families. Many settlements had populations of a thousand or more individuals. As archaeological excavations continue, it is becoming increasingly clear that paleolithic peoples organized complex societies with specialized rulers and craftsmen in many regions where they found abundant food resources.

Statue of a Neandertal man based on the study of recently discovered bones.

Neandertal Peoples

Neandertal (nee-ANN-duhr-tawl)

Paleolithic Culture

Paleolithic individuals did not limit their creative thinking to strictly practical matters of subsistence and survival. Instead, they reflected on the nature of human existence and the world around them. The earliest evidence of reflective thought comes from sites associated with Neandertal peoples, named after the Neander valley in western Germany where their remains first came to light. Neandertal peoples flourished in Europe and

southwest Asia between about two hundred thousand and thirty-five thousand years ago. Most scholars regard Neandertal peoples as members of a distinct human species known as *Homo neandertalensis.* For about ten millennia, from forty-five thousand to thirty-five thousand years ago, Neandertal groups inhabited some of the same regions as *Homo sapiens* communities, and members of the two species sometimes lived in close proximity to each other. DNA analysis suggests that there was little if any interbreeding between the two species, but it is quite likely that individuals traded goods between their groups, and it is possible that Neandertal peoples imitated the technologies and crafts of their more intelligent cousins.

At several Neandertal sites archaeologists have discovered signs of careful, deliberate burial accompanied by ritual observances. Perhaps the most notable is that of Shanidar cave, located about 400 kilometers (250 miles) north of Baghdad in modern-day Iraq, where survivors laid the deceased to rest on beds of freshly picked wild flowers and then covered the bodies with shrouds and garlands of other flowers. At other Neandertal sites in France, Italy, and central Asia, survivors placed flint tools and animal bones in and around the graves of the deceased. It is impossible to know precisely what Neandertal peoples were thinking when they buried their dead in that fashion. Possibly they simply wanted to honor the memory of the departed, or perhaps they wanted to prepare the dead for a new dimension of existence, a life beyond the grave. Whatever their intentions, Neandertal peoples apparently recognized a significance in the life and death of individuals that none of their ancestors had appreciated. They had developed a capacity for emotions and feelings, and they cared for one another even to the extent of preparing elaborate resting places for the departed.

The Creativity of Homo sapiens

Homo sapiens was much more intellectually inventive and creative than *Homo neandertalensis.* Many scholars argue that *Homo sapiens* owed much of the species's intellectual prowess to the ability to construct powerful and flexible languages for the communication of complex ideas. With the development of languages, human beings were able both to accumulate knowledge and to transmit it precisely and efficiently to new generations. Thus it was not necessary for every individual human being to learn from trial and error or from direct personal experience about the nature of the local environment or the best techniques for making advanced tools. Rather, it was possible for human groups to pass large and complex bodies of information along to their offspring, who then were able to make immediate use of it and furthermore were in a good position to build on inherited information by devising increasingly effective ways of satisfying human needs and desires.

From its earliest days on the earth, *Homo sapiens* distinguished itself as a creative species. At least 200,000 years ago, *Homo sapiens* was producing stone blades with long cutting edges. By 140,000 years ago early humans had learned to supplement their diet with shellfish from coastal waters, and they had developed networks with neighbors that enabled them to trade high-quality obsidian stone over distances sometimes exceeding 300 kilometers (185 miles). By 110,000 years ago they had devised means of catching fish from deep waters. By 100,000 years ago they had begun to fashion sharp tools such as sewing

Sewing needles fashioned from animal bones about fifteen thousand years ago.

Venus figurine from Austria. The exaggerated sexual features suggest that paleolithic peoples fashioned such figurines out of an interest in fertility. This sculpture was produced between 24,000 and 22,000 B.C.E.

needles and barbed harpoons out of animal bones. Somewhat later they invented spear-throwers—small slings that enaabled hunters to hurl spears at speeds upwards of 160 kilometers per hour (100 miles per hour). About 50,000 to 40,000 years ago, they were fabricating ornamental beads, necklaces, and bracelets, and shortly thereafter they began painting images of human and animal subjects. About 10,000 years ago, they invented the bow and arrow, a weapon that dramatically enhanced the power of human beings with respect to other animal species.

Venus Figurines

The most visually impressive creations of early *Homo sapiens* are the Venus figurines and cave paintings found at many sites of early human habitation. Archaeologists use the term *Venus figurines*—named after the Roman goddess of love—to refer to small sculptures of women, usually depicted with exaggerated sexual features. Most scholars believe that the figures reflect a deep interest in fertility. The prominent sexual features of the Venus figurines suggest that the sculptors' principal interests were fecundity and the generation of new life—matters of immediate concern to paleolithic societies. Some interpreters speculate that the figures had a place in ritual observances intended to increase fertility.

Cave Paintings

Paintings in caves frequented by early humans are the most dramatic examples of prehistoric art. The known examples of cave art date from about thirty-four thousand to twelve thousand years ago, and most of them are in caves in southern France and northern Spain. In that region alone, archaeologists have discovered more than one hundred caves bearing prehistoric paintings. The best-known are Lascaux in France and Altamira in Spain. There prehistoric peoples left depictions of remarkable sensitivity and power. Most of the subjects were animals, especially large game such as mammoth, bison, and reindeer, although a few human figures also appear.

As in the case of the Venus figurines, the explanation for the cave paintings involves a certain amount of educated guesswork. It is conceivable that early artists sometimes worked for purely aesthetic reasons—to beautify their living quarters. But many examples of cave art occur in places that are almost inaccessible to human beings—deep within remote chambers, for example, or at the end of long and constricted passages. Paintings in such remote locations presumably had some other purpose. Most analysts believe that the prominence of game animals in the paintings reflects the artists' interest in successful hunting expeditions. Thus cave paintings may have represented efforts

Cave painting from Lascaux in southern France, perhaps intended to help hunters gain control over the spirits of large game animals.

to exercise sympathetic magic—to gain control over subjects (in this case, game animals) by capturing their spirits (by way of accurate representations of their physical forms). Although not universally accepted, this interpretation accounts reasonably well for a great deal of the evidence and has won widespread support among scholars.

Whatever the explanation for prehistoric art, the production of the works themselves represented conscious and purposeful activity of a high order. Early artists compounded pigments and manufactured tools. They made paints from minerals, plants, blood, saliva, water, animal fat, and other available ingredients. They used mortar and pestle for grinding pigments and mixing paints, which they applied with moss, frayed twigs and branches, or primitive brushes fabricated from hair. The simplicity and power of their representations have left deep impressions on modern critics ever since the early twentieth century, when their works became widely known. The display of prehistoric artistic talent clearly testifies once again to the remarkable intellectual power of the human species.

The Neolithic Era and the Transition to Agriculture

A few societies of hunting and gathering peoples inhabit the contemporary world, although most of them do not thrive because agricultural and industrial societies have taken over environments best suited to a foraging economy. Demographers estimate the current number of hunters and gatherers to be about thirty thousand, a tiny fraction of the world's human population of more than six billion. The vast majority of the world's peoples, however, have crossed an economic threshold of immense significance. When human beings brought plants under cultivation and animals under domestication, they dramatically altered the natural world and steered human societies in new directions.

Two cave painting (here and facing page) produced five to six thousand years ago illustrate the different roles played by men and women in the early days of agriculture. Here women harvest grain.

The Origins of Agriculture

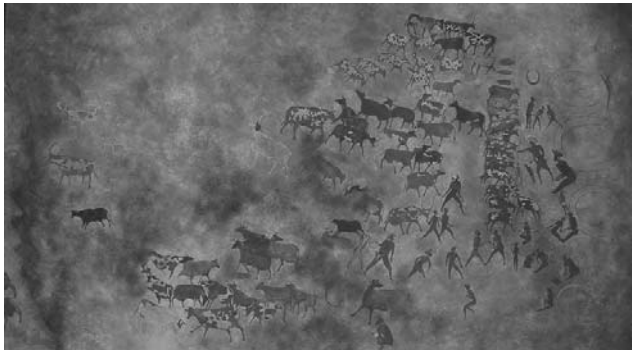
Neolithic Era

The term *neolithic era* means "new stone age," as opposed to the old stone age of paleolithic times. Archaeologists first used the term *neolithic* because of refinements in tool-making techniques: they found polished stone tools in neolithic sites, rather than the chipped implements characteristic of paleolithic sites. Gradually, however, archaeologists became aware that something more fundamental than tool production distinguished the neolithic from the paleolithic era. Polished stone tools occurred in sites where peoples relied on cultivation, rather than foraging, for their subsistence. Today the term *neolithic era* refers to the early stages of agricultural society, from about twelve thousand to six thousand years ago.

Because they depended on the bounty of nature, foraging peoples faced serious risks. Drought, famine, disease, floods, extreme temperatures, and other natural disasters could annihilate entire communities. Even in good times, many hunting and gathering peoples had to limit their populations so as not to exceed the capacity of their lands to support them. They most likely resorted routinely to infanticide to control their numbers.

Neolithic peoples sought to ensure themselves of more regular food supplies by encouraging the growth of edible crops and bringing wild animals into dependence on human keepers. Many scholars believe that women most likely began the systematic care of plants. As the principal gatherers in foraging communities, women became familiar with the life cycles of plants and noticed the effects of sunshine, rain, and temperature on vegetation. Hoping for larger and more reliable supplies of food, women in neolithic societies probably began to nurture plants instead of simply collecting available foods in the wild. Meanwhile, instead of just stalking game with the intention of killing it for meat, neolithic men began to capture animals and domesticate them by providing for their needs and supervising their breeding. Over a period of decades and centuries, those practices gradually led to the formation of agricultural economies.

By suggesting that agriculture brought about an immediate transformation of human society, the popular term *agricultural revolution* is somewhat misleading.



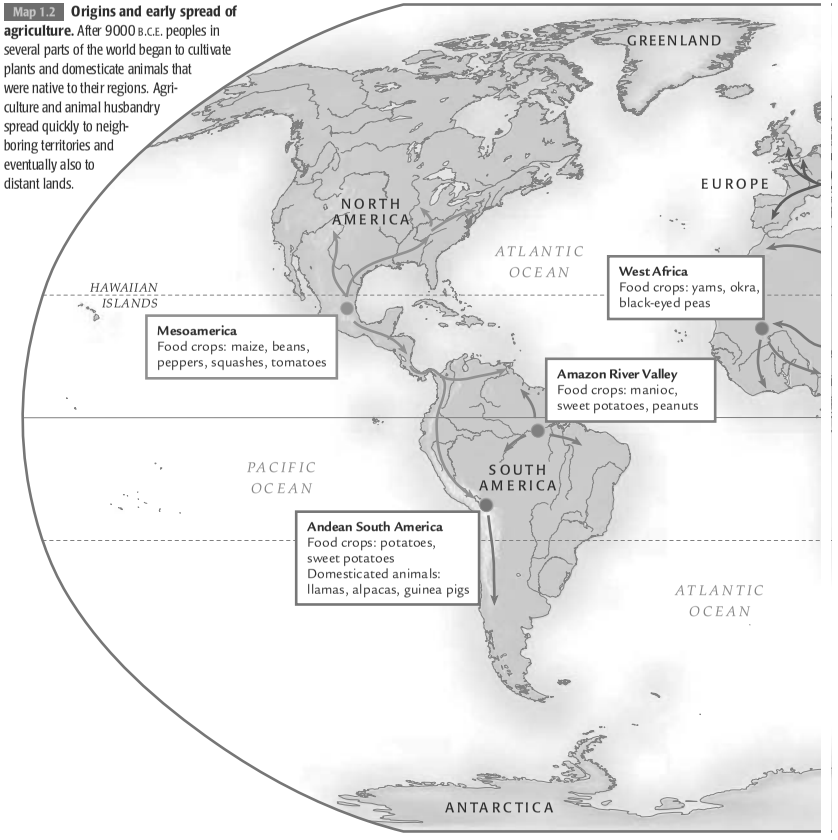
Men herd domesticated cattle in the early days of agriculture. This painting and the facing one are both in a cave at Tassili n'Ajjer in modern-day Algeria.

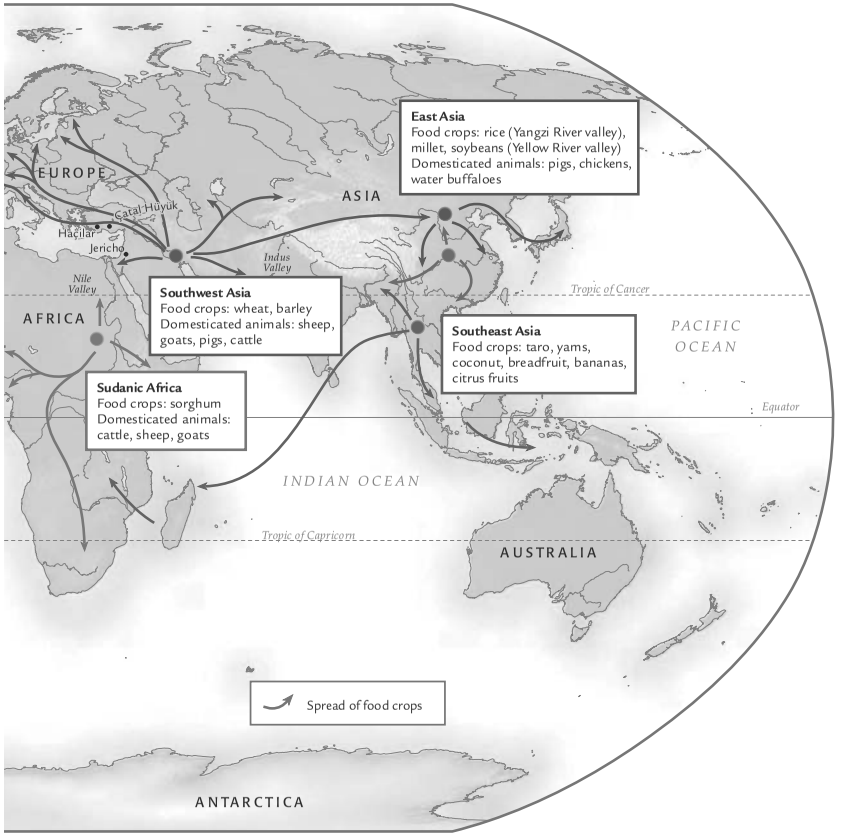
The establishment of an agricultural economy was not an event that took place at a given date but, rather, a process that unfolded over many centuries, as human beings gradually learned how to cultivate crops and keep animals. It would be more appropriate to speak of an *agricultural transition*—leading from paleolithic experiments with cultivation to early agricultural societies in the neolithic era—rather than an agricultural revolution.

Independent Inventions of Agriculture

Agriculture—including both the cultivation of crops and the domestication of animals—emerged independently in several different parts of the world. The earliest evidence of agricultural activity discovered so far dates to the era after 9000 B.C.E., when peoples of southwest Asia (modern-day Iraq, Syria, and Turkey) cultivated wheat and barley while domesticating sheep, goats, pigs, and cattle. Between 9000 and 7000 B.C.E., African peoples inhabiting the southeastern margin of the Sahara desert (modern-day Sudan) domesticated cattle, sheep, and goats while cultivating sorghum. Between 8000 and 6000 B.C.E., peoples of sub-Saharan west Africa (in the vicinity of modern Nigeria) also began independently to cultivate yams, okra, and black-eyed peas. In east Asia, residents of the Yangzi River valley began to cultivate rice as early as 6500 B.C.E., and their neighbors to the north in the Yellow River valley raised crops of millet and soybeans after 5500 B.C.E. East Asian peoples also kept pigs and chickens from an early date, perhaps 6000 B.C.E., and they later added water buffaloes to their domesticated stock. In southeast Asia the cultivation of taro, yams, coconut, breadfruit, bananas, and citrus fruits, including oranges, lemons, limes, tangerines, and grapefruit, dates from probably 3000 B.C.E. or earlier.

Peoples of the western hemisphere also turned independently to agriculture. Inhabitants of Mesoamerica (central Mexico) cultivated maize (corn) as early as 4000 B.C.E., and they later added a range of additional food crops, including beans, peppers, squashes, and tomatoes. Residents of the central Andean region of South America (modern Peru) cultivated potatoes after 3000 B.C.E., and they later added maize and beans to their diets. It is possible that the Amazon River valley was yet another site of independently invented agriculture, this one centering on the cultivation of manioc, sweet potatoes, and peanuts. Domesticated animals were much less prominent in the Americas than in the eastern





Map 1.2 Origins and early spread of agriculture. After 9000 B.C.E. peoples in several parts of the world began to cultivate plants and domesticate animals that were native to their regions. Agriculture and animal husbandry spread quickly to neighboring territories and eventually also to distant lands.

hemisphere. Paleolithic peoples had hunted many large species to extinction: mammoths, mastodons, and horses had all disappeared from the Americas by 7000 B.C.E. (The horses that have figured so prominently in the modern history of the Americas all descended from animals introduced to the western hemisphere during the past five hundred years.) With the exception of llamas, alpacas, and guinea pigs of the Andean regions, most other American animals were not well suited to domestication.

The Early Spread of Agriculture

Once established, agriculture spread rapidly, partly because of the methods of early cultivators. One of the earliest techniques, known as slash-and-burn cultivation, involved frequent movement on the part of farmers. To prepare a field for cultivation, a community would slash the bark on a stand of trees in a forest and later burn the dead trees to the ground. The resulting weed-free patch was extremely fertile and produced abundant harvests. After a few years, however, weeds invaded the field, and the soil lost its original fertility. The community then moved to another forest region and repeated the procedure. Migrations of slash-and-burn cultivators helped spread agriculture throughout both eastern and western hemispheres. By 6000 B.C.E., for example, agriculture had spread from its southwest Asian homeland to the eastern shores of the Mediterranean and the Balkan region of eastern Europe, and by 4000 B.C.E. it had spread farther to western Europe north of the Mediterranean.

While agriculture radiated out from its various hearths, foods originally cultivated in only one region also spread widely, as merchants, migrants, or other travelers carried knowledge of those foods to agricultural lands that previously had relied on different crops. Wheat, for example, spread from its original homeland in southwest Asia to Iran and northern India after 5000 B.C.E. and farther to northern China perhaps by 3000 B.C.E. Meanwhile, rice spread from southern China to southeast Asia by 3000 B.C.E. and to the Ganges River valley in India by 1500 B.C.E. African sorghum reached India by 2000 B.C.E., while southeast Asian bananas took root in tropical lands throughout the Indian Ocean basin. In the western hemisphere, maize spread from Mesoamerica to the southwestern part of the United States by 1200 B.C.E. and farther to the eastern woodlands region of North America by 100 C.E.

Agriculture involved long hours of hard physical labor—clearing land, preparing fields, planting seeds, pulling weeds, and harvesting crops. Indeed, agriculture probably required more work than paleolithic foraging: anthropologists calculate that modern hunting and gathering peoples spend about four hours per day in providing themselves with food and other necessities, devoting the remainder of their time to rest, leisure, and social activities. Yet agriculture had its own appeal in that it made possible the production of abundant food supplies. Thus agriculture spread widely, eventually influencing the lives and experience of almost all human beings.

Early Agricultural Society

In the wake of agriculture came a series of social and cultural changes that transformed human history. Perhaps the most important change associated with early agriculture was a population explosion. Spread thinly across the earth in paleolithic times, the human species multiplied prodigiously after agriculture increased the supply of food. Historians estimate that before agriculture, about 10,000 B.C.E., the earth's human population was about four million. By 5000 B.C.E., when agriculture had appeared in a few world regions, human population had risen to about five million. Estimates for later dates demonstrate eloquently the speed with which, thanks to agriculture, human numbers increased:

Year	*Human Population*
3000 B.C.E.	14 million
2000 B.C.E.	27 million
1000 B.C.E.	50 million
500 B.C.E.	100 million

Emergence of Villages and Towns

Their agricultural economy and rapidly increasing numbers encouraged neolithic peoples to adopt new forms of social organization. Because they devoted their time to cultivation rather than foraging, neolithic peoples did not continue the migratory life of their paleolithic predecessors but, rather, settled near their fields in permanent villages. One of the earliest known neolithic villages was Jericho, site of a freshwater oasis north of the Dead Sea in present-day Israel, which came into existence before 8000 B.C.E. Even in its early days, Jericho may have had two thousand residents—a vast crowd compared with a paleolithic hunting band. The residents farmed mostly wheat and barley with the aid of water from the oasis. During the earliest days of the settlement, they kept no domesticated animals, but they added meat to their diet by hunting local game animals. They also engaged in a limited amount of trade, particularly in salt and obsidian, a hard, volcanic glass from which ancient peoples fashioned knives and blades. About 7000 B.C.E., the residents surrounded their circular mud huts with a formidable wall and moat—a sure sign that the wealth concentrated at Jericho had begun to attract the interest of human predators.

Specialization of Labor

The concentration of large numbers of people in villages encouraged specialization of labor. Most people in neolithic villages cultivated crops or kept animals. Many also continued to hunt and forage for wild plants. But a surplus of food enabled some individuals to concentrate their time and talents on enterprises that had nothing to do with the production of food. The rapid development of specialized labor is apparent from excavations carried out at one of the best-known neolithic settlements, Çatal Hüyük. Located in south-central Anatolia (modern-day Turkey), Çatal Hüyük was occupied continuously from 7250 to 5400 B.C.E., when residents abandoned the site. Originally a small and undistinguished neolithic village, Çatal Hüyük grew into a bustling town, accommodating about five thousand inhabitants. Archaeologists have uncovered evidence that residents manufactured pots, baskets, textiles, leather, stone and metal tools, wood carvings, carpets, beads, and jewelry among other products. Çatal Hüyük became a prominent village partly because of its close proximity to large obsidian deposits. The village probably was a center of production and trade in obsidian tools: archaeologists have discovered obsidian that originated near Çatal Hüyük at sites throughout much of the eastern Mediterranean region.

Three early craft industries—pottery, metallurgy, and textile production—illustrate the potential of specialized labor in neolithic times. Neolithic craftsmen were not always the original inventors of the technologies behind those industries: the Jomon society of central Japan produced the world's first known pottery, for example, about 10,000 B.C.E. But neolithic craftsmen expanded dramatically on existing practices and supplemented them with new techniques to fashion natural products into useful items. Their enterprises reflected the conditions of early agricultural society: either the craft industries provided tools and utensils needed by cultivators, or they made use of cultivators' and herders' products in new ways.

Pottery

The earliest of the three craft industries to emerge was pottery. Paleolithic hunters and gatherers had no use for pots. They did not store food for long periods of time, and in any case lugging heavy clay pots around as they moved from one site to another would have been inconvenient. A food-producing society, however, needs containers to store surplus foods. By about 7000 B.C.E. neolithic villagers in several parts of the world had discovered processes that transformed malleable clay into fire-hardened, waterproof pottery capable of storing dry or liquid products. Soon thereafter, neolithic craftsmen discovered that they could etch designs into their clay that fire would harden into permanent decorations and furthermore that they could color their products with glazes. As a result, pottery became a medium of artistic expression as well as a source of practical utensils.

Pottery vessel from Haçilar in Anatolia in the shape of a reclining deer, produced about the early sixth millennium B.C.E.

Metalworking

Metallurgy soon joined pottery as a neolithic industry. The earliest metal that humans worked with systematically was copper. In many regions of the world, copper occurs

naturally in relatively pure and easily malleable form. By hammering the cold metal it was possible to turn it into jewelry and simple tools. By 6000 B.C.E., though, neolithic villagers had discovered that they could use heat to extract copper from its ores and that when heated to high temperatures, copper became much more workable. By 5000 B.C.E., they had raised temperatures in their furnaces high enough to melt copper and pour it into molds. With the technology of smelting and casting copper, neolithic communities were able to make not only jewelry and decorative items but also tools such as knives, axes, hoes, and weapons. Moreover, copper metallurgy served as a technological foundation on which later neolithic craftsmen developed expertise in the working of gold, bronze, iron, and other metals.

Textile Production

Because natural fibers decay more easily than pottery or copper, the dating of textile production is not certain, but fragments of textiles survive from as early as 6000 B.C.E. As soon as they began to raise crops and keep animals, neolithic peoples experimented with techniques of selective breeding. Before long they had bred strains of plants and animals that provided long, lustrous, easily worked fibers. They then developed technologies for spinning the fibers into threads and weaving the threads into cloth. The invention of textiles was probably the work of women, who were able to spin thread and weave fabrics at home while nursing and watching over small children. Textile production quickly became one of the most important enterprises in agricultural society.

Social Distinctions

The concentration of people into permanent settlements and the increasing specialization of labor provided the first opportunity for individuals to accumulate considerable wealth. Individuals could trade surplus food or manufactured products for gems, jewelry, and other valuable items. The institutionalization of privately owned landed property—which occurred at an uncertain date after the introduction of agriculture—enhanced the significance of accumulated wealth. Because land was (and remains) the ultimate source of wealth in any agricultural society, ownership of land carried enormous economic power. When especially successful individuals managed to consolidate wealth in their families' hands and kept it there for several generations, clearly defined social classes emerged. Already at Çatal Hüyük, for example, differences in wealth and social status are clear from the quality of interior decorations in houses and the value of goods buried with individuals from different social classes.

Neolithic Culture

Quite apart from its social effects, agriculture left its mark on the cultural dimension of the human experience. Because their lives and communities depended on the successful cultivation of crops, neolithic farmers closely observed the natural world around them and noted the conditions that favored successful harvests. In other words, they developed a kind of early applied science. From experience accumulated over the generations, they acquired an impressive working knowledge of the earth and its rhythms. Agricultural peoples had to learn when changes of season would take place: survival depended on the ability to predict when they could reasonably expect sunshine, rain, warmth, and freezing temperatures. They learned to associate the seasons with the different positions of the sun, moon, and stars. As a result, they accumulated a store of knowledge concerning relationships between the heavens and the earth, and they made the first steps toward the elaboration of a calendar, which would enable them to predict with tolerable accuracy the kind of weather they could expect at various times of the year.

Religious Values

The workings of the natural world also influenced neolithic religion. Paleolithic communities had already honored, and perhaps even worshiped, Venus figurines in hopes of ensuring fertility. Neolithic religion reflected the same interest in fertility, but it celebrated particularly the rhythms that governed agricultural society—birth, growth, death, and regenerated life. Archaeologists have unearthed thousands of neolithic representations of gods and goddesses in the form of clay figurines, drawings on pots and vases, decorations on tools, and ritual objects.

The neolithic gods included not only the life-bearing, Venus-type figures of paleolithic times but also deities associated with the cycle of life, death, and regeneration. A pregnant goddess of vegetation, for example, represented neolithic hopes for fertility in the fields. Sometimes neolithic worshipers associated these goddesses with animals such as frogs or butterflies that dramatically changed form during the course of their lives, just as seeds of grain sprouted, flourished, died, and produced new seed for another agricultural cycle. Meanwhile, young male gods associated with bulls and goats represented the energy and virility that participates in the creation of life.

Some deities were associated with death: many neolithic goddesses possessed the power to bring about decay and destruction. Yet physical death was not an absolute end. The procreative capacities of gods and goddesses resulted in the births of infant deities who represented the regeneration of life—freshly sprouted crops, replenished stocks of domestic animals, and infant human beings to inaugurate a new biological cycle. Thus neolithic religious thought clearly reflected the natural world of early agricultural society.

The Origins of Urban Life

Within four thousand years of its introduction, agriculture had dramatically transformed the face of the earth. Human beings multiplied prodigiously, congregated in densely populated quarters, placed the surrounding lands under cultivation, and domesticated several species of animals. Besides altering the physical appearance of the earth, agriculture also transformed the lives of human beings. Even a modest neolithic village dwarfed a paleolithic band of a few dozen hunters and gatherers. In larger villages and towns, such as Jericho and Çatal Hüyük, with their populations of several thousand people, their specialized labor, and their craft industries, social relationships became more complex than would have been conceivable during paleolithic times. Gradually, dense populations, specialized labor, and complex social relations gave rise to an altogether new form of social organization—the city.

Emergence of Cities

Like the transition from foraging to agricultural society, the development of cities and complex societies organized around urban centers was a gradual process rather than a well-defined event. Because of favorable location, some neolithic villages and towns attracted more people and grew larger than others. Over time, some of those settlements evolved into cities. What distinguished early cities from their predecessors, the neolithic villages and towns?

Even in their early days, cities differed from neolithic villages and towns in two principal ways. In the first, cities were larger and more complex than neolithic villages and towns. Çatal Hüyük featured an impressive variety of specialized crafts and industries. With progressively larger populations, cities fostered more intense specialization than any of their predecessors among the neolithic villages and towns. Thus it was in cities that large classes of professionals emerged—individuals who devoted all their time to efforts other than the production of food. Professional craft workers refined existing technologies, invented new ones, and raised levels of quality and production. Professional managers also appeared—governors, administrators, military strategists, tax collectors, and the like—whose services were necessary to the survival of the community. Cities also gave rise to professional cultural specialists such as priests, who

maintained their communities' traditions, transmitted their values, organized public rituals, and sought to discover meaning in human existence.

In the second, whereas neolithic villages and towns served the needs of their inhabitants and immediate neighbors, cities decisively influenced the political, economic, and cultural life of large regions. Cities established marketplaces that attracted buyers and sellers from distant parts. Brisk trade, conducted over increasingly longer distances, promoted economic integration on a much larger scale than was possible in neolithic times. To ensure adequate food supplies for their large populations, cities also extended their claims to authority over their hinterlands, thus becoming centers of political and military control as well as economic influence. In time, too, the building of temples and schools in neighboring regions enabled the cities to extend their cultural traditions and values to surrounding areas.

The earliest known cities grew out of agricultural villages and towns in the valleys of the Tigris and Euphrates rivers in modern-day Iraq. These communities crossed the urban threshold during the period about 4000 to 3500 B.C.E. and soon dominated their regions. During the following centuries cities appeared in several other parts of the world, including Egypt, northern India, northern China, central Mexico, and the central Andean region of South America. Cities became the focal points of public affairs—the sites from which leaders guided human fortunes, supervised neighboring regions, and organized the world's earliest complex societies.

In many ways the world of prehistoric human beings seems remote and even alien. Yet the evolution of the human species and the development of human society during the paleolithic and neolithic eras have profoundly influenced the lives of all the world's peoples during the past six millennia. Paleolithic peoples enjoyed levels of intelligence that far exceeded those of other animals, and they invented tools and languages that enabled them to flourish in all regions of the world. Indeed, they thrived so well that they threatened their sources of food. Their neolithic descendants began to cultivate food to sustain their communities, and the agricultural societies that they built transformed the world. Human population rose dramatically, and human groups congregated in villages, towns, and eventually cities. There they engaged in specialized labor and launched industries that produced pottery, metal goods, and textiles as well as tools and decorative items. Thus intelligence, language, reflective thought, agriculture, urban settlements, and craft industries all figure in the legacy that prehistoric human beings left for their descendants.

CHRONOLOGY

4 million–1 million years ago	Era of *Australopithecus*
3.5 million years ago	Era of Lucy
2.5 million–200,000 years ago	Era of *Homo erectus*
200,000 B.C.E.	Early evolution of *Homo sapiens*
200,000–35,000 B.C.E.	Era of Neandertal peoples
13,500–10,500 B.C.E.	Natufian society
10,000–8000 B.C.E.	Early experimentation with agriculture
10,000–300 B.C.E.	Jomon society
8000 B.C.E.	Appearance of agricultural villages
4000–3500 B.C.E.	Appearance of cities
3000 B.C.E.–1850 C.E.	Chinook society

FOR FURTHER READING

Elizabeth Wayland Barber. *Women's Work: The First 20,000 Years.* New York, 1994. Fascinating study of prehistoric and ancient textiles, which the author argues was a craft industry dominated by women from the earliest times.

David Christian. *Maps of Time: An Introduction to Big History.* Berkeley, 2004. A brilliant study that considers human history in the context of natural history since the big bang.

Mark Nathan Cohen. *The Food Crisis in Prehistory: Overpopulation and the Origins of Agriculture.* New Haven, 1977. Contends that overpopulation and food shortages encouraged human communities to resort to cultivation.

———. *Health and the Rise of Civilization.* New Haven, 1989. Argues that human groups faced new dietary problems and diseases as they relied on agriculture and congregated in urban settings.

Jared Diamond. *Guns, Germs, and Steel: The Fates of Human Societies.* New York, 1997. A wide-ranging book that throws fresh light particularly on the invention and early spread of agriculture.

———. *The Third Chimpanzee: The Evolution and Future of the Human Animal.* New York, 1992. An insightful guide to human evolution and its significance for human behavior.

Margaret Ehrenberg. *Women in Prehistory.* London, 1989. Brings archaeological discoveries to bear on questions of sex and gender relations in prehistoric times.

Clive Gamble. *Timewalkers: The Prehistory of Global Civilization.* Cambridge, Mass., 1994. Examines the migration of human beings to all parts of the world in the context of human evolution.

Marija Gimbutas. *The Civilization of the Goddess.* San Francisco, 1991. A controversial but often insightful book especially valuable for its analysis of prehistoric art and religion.

———. *The Goddesses and Gods of Old Europe.* London, 1982. A provocative examination of the religions of paleolithic Europe.

R. Dale Guthrie. *The Nature of Paleolithic Art.* Chicago, 2005. Examines paleolithic art in the context of human physiology and argues that much paleolithic art reflected interests in food and sex.

Donald C. Johanson and Maitland A. Edey. *Lucy: The Beginnings of Humankind.* New York, 1981. Fascinating account of the discovery of Lucy and the scholarly controversies that ensued.

Richard E. Leakey. *The Making of Mankind.* New York, 1981. A richly illustrated volume that outlines the evolutionary history of early hominids for a popular audience.

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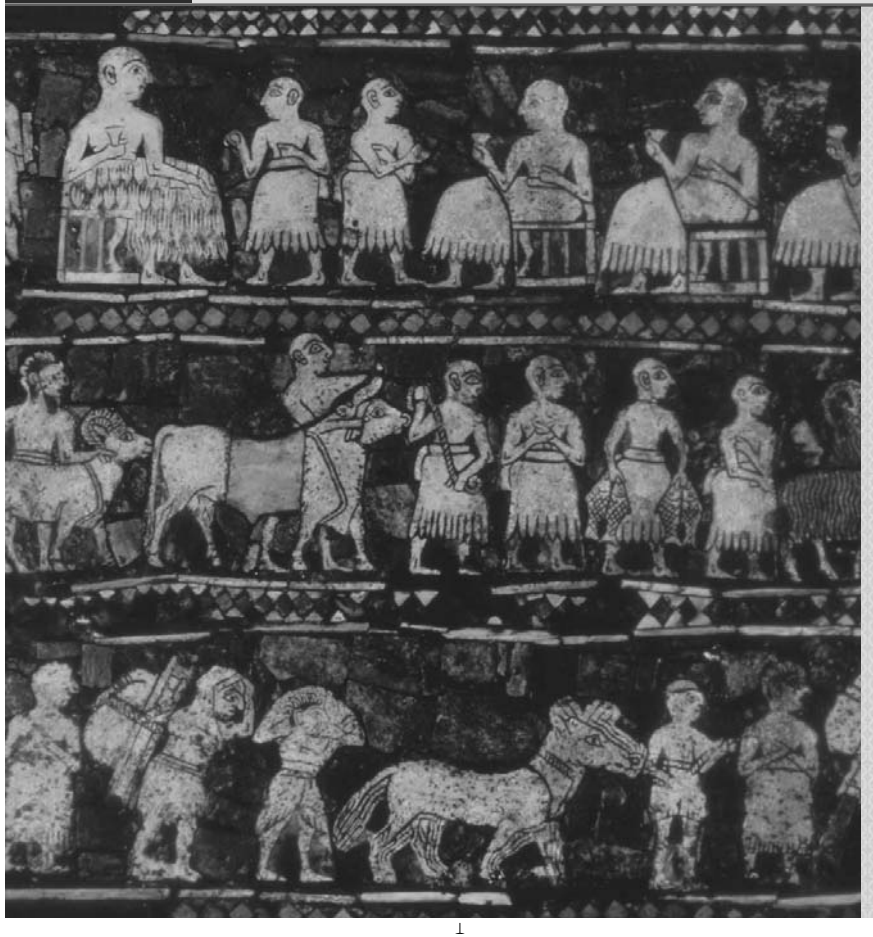
Kathy D. Schick and Nicholas Toth. *Making Silent Stones Speak: Human Evolution and the Dawn of Technology.* New York, 1993. Fascinating examination of stone tools and paleolithic technology.

Andrew Sherratt. *Economy and Society in Prehistoric Europe: Changing Perspectives.* Princeton, 1997. Collection of brilliant essays by a prominent scholar who places archaeological discoveries in larger social context and emphasizes interactions between prehistoric societies.

Bruce D. Smith. *The Emergence of Agriculture.* New York, 1995. Concentrates on the initial domestication of plant and animal species in world regions where agriculture originated.

2 Early Societies in Southwest Asia and the Indo-European Migrations



By far the best-known individual of ancient Mesopotamian society was a man named Gilgamesh. According to historical sources, Gilgamesh was the fifth king of the city of Uruk. He ruled about 2750 B.C.E.—for a period of 126 years, according to one semilegendary source—and he led his community in its conflicts with Kish, a nearby city that was the principal rival of Uruk. Historical sources record little additional detail about Gilgamesh's life and deeds.

But Gilgamesh was a figure of Mesopotamian mythology and folklore as well as history. He was the subject of numerous poems and legends, and Mesopotamian bards made him the central figure in a cycle of stories known collectively as the *Epic of Gilgamesh.* As a figure of legend, Gilgamesh became the greatest hero figure of ancient Mesopotamia. According to the stories, the gods granted Gilgamesh a perfect body and endowed him with superhuman strength and courage. He was "the man to whom all things were known," a supremely wise individual who "saw mysteries and knew secret things." The legends declare that he constructed the massive city walls of Uruk as well as several of the city's magnificent temples to Mesopotamian deities.

The stories that make up the *Epic of Gilgamesh* recount the adventures of this hero and his cherished friend Enkidu as they sought fame. They killed an evil monster, rescued Uruk from a ravaging bull, and matched wits with the gods. In spite of their heroic deeds, Enkidu offended the gods and fell under a sentence of death. His loss profoundly affected Gilgamesh, who sought for some means to cheat death and gain eternal life. He eventually found a magical plant that had the power to confer immortality, but a serpent stole the plant and carried it away, forcing Gilgamesh to recognize that death is the ultimate fate of all human beings. Thus, while focusing on the activities of Gilgamesh and Enkidu, the stories explored themes of friendship, loyalty, ambition, fear of death, and longing for immortality. In doing so they reflected the interests and concerns of the complex, urban-based society that had recently emerged in Mesopotamia.

Productive agricultural economies supported the development of the world's first complex societies, in which sizable numbers of people lived in cities and extended their political, social, economic, and cultural influence over large regions. The earliest urban societies so far known emerged during the early fourth millennium B.C.E. in southwest Asia, particularly in Mesopotamia.

As people congregated in cities, they needed to find ways to resolve disputes—sometimes between residents within individual settlements, other times between whole settlements themselves—that inevitably arose as individual and group interests conflicted. In search of

OPPOSITE: The Royal Standard of Ur, a painting dating from about 2700 B.C.E., depicts scenes from daily life in the Sumerian city-state of Ur.

order, settled agricultural peoples recognized political authorities and built states throughout Mesopotamia. The establishment of states encouraged the creation of empires, as some states sought to extend their power and enhance their security by imposing their rule on neighboring lands.

Apart from stimulating the establishment of states, urban society in Mesopotamia also promoted the emergence of social classes, thus giving rise to increasingly complex social and economic structures. Cities fostered specialized labor, and the resulting efficient production of high-quality goods in turn stimulated trade. Furthermore, early Mesopotamia also developed distinctive cultural traditions as Mesopotamians invented a system of writing and supported organized religions.

Mesopotamian and other peoples regularly interacted with one another. Mesopotamian prosperity attracted numerous migrants, such as the ancient Hebrews, who settled in the region's cities and adopted Mesopotamian ways. Merchants such as the Phoenicians, who also embraced Mesopotamian society, built extensive maritime trade networks that linked southwest Asia with lands throughout the Mediterranean basin. Some Indo-European peoples also had direct dealings with their Mesopotamian contemporaries, with effects crucial for both Indo-European and Mesopotamian societies. Other Indo-European peoples never heard of Mesopotamia, but they employed Mesopotamian inventions such as wheels and metallurgy when undertaking extensive migrations that profoundly influenced historical development throughout much of Eurasia from western Europe to India and beyond. Even in the earliest days of city life, the world was the site of frequent and intense interaction between peoples of different societies.

The Quest for Order

During the fourth millennium B.C.E., human population increased rapidly in Mesopotamia. Inhabitants had few precedents to guide them in the organization of a large-scale society. At most they inherited a few techniques for keeping order in the small agricultural villages of neolithic times. By experimentation and adaptation, however, they created states and governmental machinery that brought political and social order to their territories. Moreover, effective political and military organization enabled them to build regional empires and extend their authority to neighboring peoples.

Mesopotamia: "The Land between the Rivers"

The place-name *Mesopotamia* comes from two Greek words meaning "the land between the rivers," and it refers specifically to the fertile valleys of the Tigris and Euphrates rivers in modern-day Iraq. Mesopotamia receives little rainfall, but the Tigris and Euphrates brought large volumes of freshwater to the region. Early cultivators realized that by tapping these rivers, building reservoirs, and digging canals, they could irrigate fields of barley, wheat, and peas. Small-scale irrigation began in Mesopotamia soon after 6000 B.C.E.

Sumer

Artificial irrigation led to increased food supplies, which in turn supported a rapidly increasing human population and attracted migrants from other regions. Human numbers grew especially fast in the land of Sumer in the southern half of Mesopotamia. It is possible that the people known as the Sumerians already inhabited this land in the sixth millennium B.C.E., but it is perhaps more likely that they were later migrants attracted to the region by its agricultural potential. In either case, by about 5000 B.C.E. the Sumerians were constructing elaborate irrigation networks that helped them realize abundant agricultural harvests. By 3000 B.C.E. the population of Sumer approached

Map 2.1 Early Mesopotamia, 3000–2000 B.C.E. Note the locations of Mesopotamian cities in relation to the Tigris and Euphrates rivers. In what ways were the rivers important for Mesopotamian society?

one hundred thousand—an unprecedented concentration of people in ancient times—and the Sumerians were the dominant people of Mesopotamia.

Semitic Migrants

While supporting a growing population, the wealth of Sumer also attracted migrants from other regions. Most of the new arrivals were Semitic peoples—so called because they spoke tongues in the Semitic family of languages, including Akkadian, Aramaic, Hebrew, and Phoenician. (Semitic languages spoken in the world today include Arabic and Hebrew, and African peoples speak many other languages related to Semitic tongues.) Semitic peoples were nomadic herders who went to Mesopotamia from the Arabian and Syrian deserts to the south and west. They often intermarried with the Sumerians, and they largely adapted to Sumerian ways.

Beginning around 4000 B.C.E., as human numbers increased in southern Mesopotamia, the Sumerians built the world's first cities. These cities differed markedly from the neolithic villages that preceded them. Unlike the earlier settlements, the Sumerian cities were centers of political and military authority, and their jurisdiction extended into the surrounding regions. Moreover, bustling marketplaces that drew buyers and sellers from near and far turned the cities into economic centers as well. The cities also served as cultural centers where priests maintained organized religions and scribes developed traditions of writing and formal education.

Sumerian City-States

For almost a millennium, from 3200 to 2350 B.C.E., a dozen Sumerian cities—Eridu, Ur, Uruk, Lagash, Nippur, Kish, and others—dominated public affairs in Mesopotamia. These cities all experienced internal and external pressures that prompted them to establish states—formal governmental institutions that wielded authority throughout their territories. Internally, the cities needed to maintain order and ensure that inhabitants cooperated on community projects. With their expanding populations, the cities also needed to prevent conflicts between urban residents from escalating into serious civic disorder. Moreover, because agriculture was crucial to the welfare of urban residents, the cities all became city-states: they not only controlled public life within the city walls but also extended their authority to neighboring territories and oversaw affairs in surrounding agricultural regions.

The massive temple of the moon god Nanna-Suen (sometimes known as Sin) dominated the Sumerian city of Ur. Constructing temples of this size required a huge investment of resources and thousands of laborers.

While preserving the peace, government authorities also organized work on projects of value to the entire community. Palaces, temples, and defensive walls dominated all the Sumerian cities, and all were the work of laborers recruited and coordinated by government authorities such as Gilgamesh, whom legendary accounts credit with the building of city walls and temples at Uruk. Particularly impressive were the ziggurats—distinctive stepped pyramids that housed temples and altars to the principal local deity. In the city of Uruk, a massive ziggurat and temple complex went up about 3200 B.C.E. to honor the fertility goddess Inanna. Scholars have calculated that its construction required the services of fifteen hundred laborers working ten hours per day for five years.

Even more important than buildings were the irrigation systems that supported productive agriculture and urban society. As their population grew, the Sumerians expanded their networks of reservoirs and canals. The construction, maintenance, and repair of the irrigation systems required the labor of untold thousands of workers. Only recognized government authorities had the standing to draft workers for this difficult labor and order them to participate in such large-scale projects. Even when the irrigation systems functioned perfectly, recognized authority was still necessary to ensure equitable distribution of water and to resolve disputes.

In addition to their internal pressures, the Sumerian cities also faced external problems. The wealth stored in Sumerian cities attracted the interest of peoples outside the cities. Mesopotamia is a mostly flat land with few natural geographic barriers. It was a simple matter for raiders to attack the Sumerian cities and take their wealth. The cities

responded to that threat by building defensive walls and organizing military forces. The need to recruit, train, equip, maintain, and deploy military forces created another demand for recognized authority.

Sumerian Kings

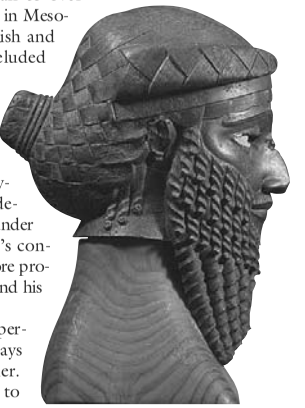
The earliest Sumerian governments were probably assemblies of prominent men who made decisions on behalf of the whole community. When crises arose, assemblies yielded their power to individuals who possessed full authority during the period of emergency. These individual rulers gradually usurped the authority of the assemblies and established themselves as monarchs. By about 3000 B.C.E. all Sumerian cities had kings who claimed absolute authority within their realms. In fact, however, the kings generally ruled in cooperation with local nobles, who came mostly from the ranks of military leaders who had displayed special valor in battle. By 2500 B.C.E. city-states dominated public life in Sumer, and city-states such as Assur and Nineveh had also begun to emerge in northern Mesopotamia.

The Course of Empire

Once they had organized effective states, Mesopotamians ventured beyond the boundaries of their societies. As early as 2800 B.C.E., conflicts between city-states often led to war, as aggrieved or ambitious kings sought to punish or conquer their neighbors. Sumerian accounts indicate that the king of Kish, a city-state located just east of Babylon, extended his rule to much of southern Mesopotamia after 2800 B.C.E., for example, and Sumerian poems praised King Gilgamesh for later liberating Uruk from Kish's control. In efforts to move beyond constant conflicts, a series of conquerors worked to establish order on a scale larger than the city-state by building empires that supervised the affairs of numerous subject cities and peoples. After 2350 B.C.E. Mesopotamia fell under the control of several powerful regional empires.

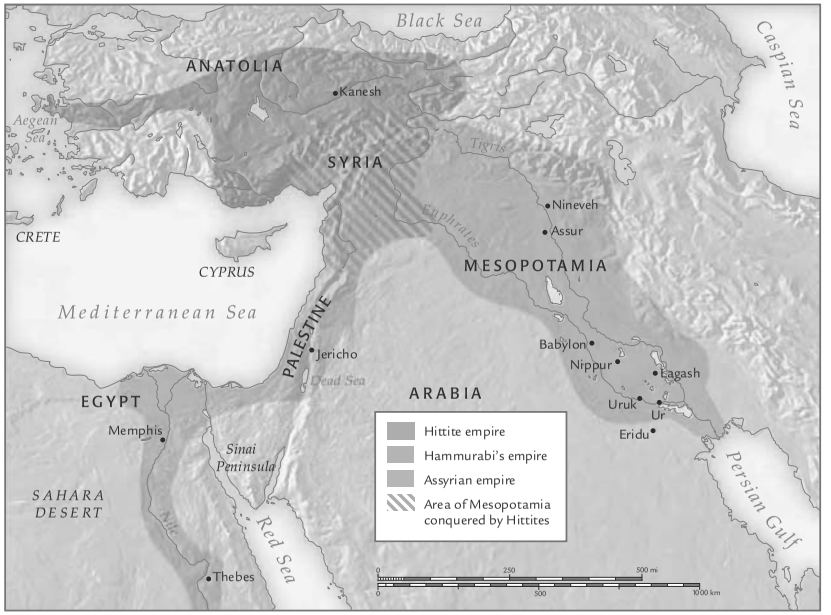
Sargon of Akkad

These regional empires emerged as Semitic peoples such as the Akkadians and the Babylonians of northern Mesopotamia began to overshadow the Sumerians. The creator of empire in Mesopotamia was Sargon of Akkad, a city near Kish and Babylon whose precise location has so far eluded archaeologists. A talented administrator and brilliant warrior, Sargon (2370–2315 B.C.E.) began his career as a minister to the king of Kish. About 2334 B.C.E. he organized a coup against the king, recruited an army, and went on the offensive against the Sumerian city-states. He conquered the cities one by one, destroyed their defensive walls, and placed them under his governors and administrators. As Sargon's conquests mounted, his armies grew larger and more professional, and no single city-state could withstand his forces.



Bronze bust of a Mesopotamian king often thought to represent Sargon of Akkad. The sculpture dates to about 2350 B.C.E. and reflects high levels of expertise in the working of bronze.

Sargon's empire represented a historical experiment, as the conqueror worked to devise ways and means to hold his possessions together. He relied heavily on his personal presence to maintain stability throughout his realm. For much of his reign, he traveled with armies, which sometimes numbered more than five thousand, from one Mesopotamian city to another. The resulting experience was quite



Map 2.2 **Mesopotamian empires, 1800–600 B.C.E.** Mesopotamian empires facilitated interactions between peoples from different societies. Consider the various land, river, and sea routes by which peoples of Mesopotamia, Anatolia, and Egypt were able to communicate with one another in the second and first millennia B.C.E.

unpleasant for the cities he visited, because their populations had to provide food, lodging, and financial support whenever Sargon and his forces descended upon them. That inconvenience naturally generated considerable resentment of the conqueror and frequently sparked local rebellions. In a never-ending search for funds to support his army and his government, Sargon also seized control of trade routes and supplies of natural resources such as silver, tin, and cedar wood. By controlling and taxing trade, Sargon obtained financial resources to maintain his military juggernaut and transform his capital of Akkad into the wealthiest and most powerful city in the world. At the high point of his reign, his empire embraced all of Mesopotamia, and his armies had ventured as far afield as the Mediterranean and the Black Sea.

For several generations Sargon's successors maintained his empire. Gradually, though, it weakened, partly because of chronic rebellion in city-states that resented imperial rule, partly also because of invasions by peoples hoping to seize a portion of Mesopotamia's fabulous wealth. By about 2150 B.C.E. Sargon's empire had collapsed altogether. Yet the memory of his deeds, recorded in legends and histories as well as in his works of propaganda, inspired later conquerors to follow his example.

Hammurabi and the Babylonian Empire

Most prominent of the later conquerors was the Babylonian Hammurabi (reigned 1792–1750 B.C.E.), who styled himself "king of the four quarters of the world." The

Babylonian empire dominated Mesopotamia until about 1600 B.C.E. Hammurabi improved on Sargon's administrative techniques by relying on centralized bureaucratic rule and regular taxation. Instead of traveling from city to city with an army both large and hungry, Hammurabi and his successors ruled from Babylon (located near modern Baghdad) and stationed deputies in the territories they controlled. Instead of confiscating supplies and other wealth in the unfortunate regions their armies visited, Hammurabi and later rulers instituted less ruinous but more regular taxes collected by their officials. By these means Hammurabi developed a more efficient and predictable government than his predecessors and also spread its costs more evenly over the population.

Hammurabi's Laws

Hammurabi also sought to maintain his empire by providing it with a code of law. Sumerian rulers had promulgated laws perhaps as early as 2500 B.C.E., and Hammurabi borrowed liberally from his predecessors in compiling the most extensive and most complete Mesopotamian law code. In the prologue to his laws, Hammurabi proclaimed that the gods had chosen him "to promote the welfare of the people, . . . to cause justice to prevail in the land, to destroy the wicked and evil, [so] that the strong might not oppress the weak, to rise like the sun over the people, and to light up the land." Hammurabi's laws established high standards of behavior and stern punishments for violators. They prescribed death penalties for murder, theft, fraud, false accusations, sheltering of runaway slaves, failure to obey royal orders, adultery, and incest. Civil laws regulated prices, wages, commercial dealings, marital relationships, and the conditions of slavery.

This handsome basalt stele shows Hammurabi receiving his royal authority from the sun god, Shamash. Some four thousand lines of Hammurabi's laws are inscribed below.

The code relied heavily on the principle of *lex talionis,* the "law of retaliation," whereby offenders suffered punishments resembling their violations. But the code also took account of social standing when applying this principle. It provided, for example, that a noble who destroyed the eye or broke the bone of another noble would have his own eye destroyed or bone broken, but if a noble destroyed the eye or broke the bone of a commoner, the noble merely paid a fine in silver. Local judges did not always follow the prescriptions of Hammurabi's code: indeed, they frequently relied on their own judgment when

lex talionis (lehks tah-lee-oh-nihs)

deciding cases that came before them. Nevertheless, Hammurabi's laws established a set of common standards that lent some degree of cultural unity to the far-flung Babylonian empire.

Despite Hammurabi's administrative efficiencies and impressive law code, the wealth of the Babylonian empire attracted invaders, particularly the Hittites, who had built a powerful empire in Anatolia (modern-day Turkey), and about 1595 B.C.E. the Babylonian empire crumbled before Hittite assaults. For several centuries after the fall of Babylon, southwest Asia was a land of considerable turmoil, as regional states competed for power and position while migrants and invaders struggled to establish footholds for themselves in Mesopotamia and neighboring regions.

The Later Mesopotamian Empires

Imperial rule returned to Mesopotamia with the Assyrians, a hardy people from northern Mesopotamia who had built a compact state in the Tigris River valley during the nineteenth century B.C.E. Taking advantage of their location on trade routes running both north-south and east-west, the Assyrians built flourishing cities at Assur and Nineveh. They built a powerful and intimidating army by organizing their forces into standardized units and placing them under the command of professional officers. The Assyrians appointed these officers because of merit, skill, and bravery rather than noble birth or family connections. They supplemented infantry with cavalry forces and light, swift, horse-drawn chariots, which they borrowed from the Hittites. These chariots were devastating instruments of war that allowed archers to attack their enemies from rapidly moving platforms. Waves of Assyrian chariots stormed their opponents with a combination of high speed and withering firepower that unnerved the opponents and left them vulnerable to the Assyrian infantry and cavalry forces.

The Assyrian Empire

An alabaster relief sculpture from the eighth century B.C.E. depicts Assyrian forces besieging a city and dispatching defeated enemy soldiers. Assyrian royal palaces commonly featured similar wall reliefs celebrating victories of the Assyrian armies.

After the collapse of the Babylonian empire, the Assyrian state was one among many jockeying for power and position in northern Mesopotamia. After about 1300 B.C.E. Assyrians gradually extended their authority to much of southwest Asia. They made use of recently invented iron weapons to strengthen their army, which sometimes numbered upward of fifty thousand troops who pushed relentlessly in all directions. At its high point, during the eighth and seventh centuries B.C.E., the Assyrian empire embraced not only Mesopotamia but also Syria, Palestine, much of Anatolia, and most of Egypt. King Assurbanipal, whose long reign (668–627 B.C.E.) coincided with the high tide of Assyrian domination, went so far as to style himself not only "king of Assyria" but also, grandiosely, "king of the universe."

Like most other Mesopotamian peoples, the Assyrians relied on the administrative techniques pioneered by their Babylonian predecessors, and they followed laws much like those enshrined in the code of Hammurabi. They also preserved a great deal of Mesopotamian literature in huge libraries maintained at their large and lavish courts. At his magnificent royal palace in Nineveh, for example, King Assurbanipal maintained a vast library that included thousands of literary scholarly texts as well as diplomatic correspondence and administrative records. Indeed, Assurbanipal's library preserved most of the Mesopotamian literature that has survived to the present day, including the *Epic of Gilgamesh*.

The Assyrian empire brought wealth, comfort, and sophistication to the Assyrian heartland, particularly the cities of Assur and Nineveh, but elsewhere Assyrian domination was extremely unpopular. Assyrian rulers faced intermittent rebellion by subjects in one part or another of their empire, the very size of which presented enormous administrative challenges. Ultimately, a combination of internal unrest and external assault brought their empire down in 612 B.C.E.

Nebuchadnezzar and the New Babylonian Empire

For half a century, from 600 to 550 B.C.E., Babylon once again dominated Mesopotamia during the New Babylonian empire, sometimes called the Chaldean empire. King Nebuchadnezzar (reigned 605–562 B.C.E.) lavished wealth and resources on his capital city. Babylon occupied some 850 hectares (more than 2,100 acres), and the city's defensive walls were reportedly so thick that a four-horse chariot could turn around on top of them. Within the walls there were enormous palaces and 1,179 temples, some of them faced with gold and decorated with thousands of statues. When one of the king's wives longed for flowering shrubs from her mountain homeland, Nebuchadnezzar had them planted in terraces above the city walls, and the hanging gardens of Babylon have symbolized the city's luxuriousness ever since.

By that time, however, peoples beyond Mesopotamia had acquired advanced weapons and experimented with techniques of administering large territories. By the mid-sixth century B.C.E., Mesopotamians largely lost control of their affairs, as foreign conquerors absorbed them into their empires.

The Formation of a Complex Society and Sophisticated Cultural Traditions

With the emergence of cities and the congregation of dense populations in urban spaces, specialized labor proliferated. The Mesopotamian economy became increasingly diverse, and trade linked the region with distant peoples. Clearly defined social classes emerged, as small groups of people concentrated wealth and power in their hands, and Mesopotamia developed into a patriarchal society that vested authority largely in adult males. While building a complex society, Mesopotamians also allocated some of their resources to individuals who worked to develop sophisticated cultural traditions. They invented systems of writing that enabled them to record information for future retrieval. Writing soon became a foundation for education, science, literature, and religious reflection.

Economic Specialization and Trade

When large numbers of people began to congregate in cities and work at tasks other than agriculture, they vastly expanded the stock of human skills. Craftsmen refined techniques inherited from earlier generations and experimented with new ways of doing

things. Pottery, textile manufacture, woodworking, leather production, brick making, stonecutting, and masonry all became distinct occupations in the world's earliest cities.

Bronze Metallurgy

Metallurgical innovations ranked among the most important developments that came about because of specialized labor. Already in neolithic times, craftsmen had fashioned copper into tools and jewelry. In pure form, however, copper is too soft for use as an effective weapon or as a tool for heavy work. About 4000 B.C.E. Mesopotamian metalworkers discovered that if they alloyed copper with tin, they could make much harder and stronger implements. Experimentation with copper metallurgy thus led to the invention of bronze. Because both copper and tin were relatively rare and hence expensive, most people could not afford bronze implements. But bronze had an immediate impact on military affairs, as craftsmen turned out swords, spears, axes, shields, and armor made of the recently invented metal. Over a longer period, bronze also had an impact on agriculture. Mesopotamian farmers began to use bronze knives and bronze-tipped plows instead of tools made of bone, wood, stone, or obsidian.

Iron Metallurgy

After about 1000 B.C.E. Mesopotamian craftsmen began to manufacture effective tools and weapons with iron as well as bronze. Experimentation with iron metallurgy began as early as the fourth millennium B.C.E., but early efforts resulted in products that were too brittle for heavy-duty uses. About 1300 B.C.E. craftsmen from Hittite society in Anatolia (discussed later in this chapter) developed techniques of forging exceptionally strong iron tools and weapons. Iron metallurgy soon spread throughout Anatolia, Mesopotamia, and other regions as well, and Assyrian conquerors made particularly effective use of iron weapons in building their empire. Because iron deposits are much cheaper and more widely available than copper and tin, the ingredients of bronze, iron quickly became the metal of choice for weapons and tools.

The Wheel

While some craftsmen refined the techniques of bronze and iron metallurgy, others devised efficient means of transportation based on wheeled vehicles and sailing ships, both of which facilitated long-distance trade. The first use of wheels probably took place about 3500 B.C.E., and Sumerians were building wheeled carts by 3000 B.C.E. Wheeled carts and wagons enabled people to haul heavy loads of bulk goods—such as grain, bricks, or metal ores—over much longer distances than human porters or draft animals could manage. The wheel rapidly diffused from Sumer to neighboring lands, and within a few centuries it had become a standard means of overland transportation.

Shipbuilding

Sumerians also experimented with technologies of maritime transportation. By 3500 B.C.E. they had built watercraft that allowed them to venture into the Persian Gulf and beyond. By 2300 B.C.E. they were trading regularly with merchants of Harappan society in the Indus River valley of northern India (discussed in chapter 4), which they reached by sailing through the Persian Gulf and the Arabian Sea. Until about 1750 B.C.E. Sumerian merchants shipped woolen textiles, leather goods, sesame oil, and jewelry to India in exchange for copper, ivory, pearls, and semiprecious stones. During the time of the Babylonian empire, Mesopotamians traded extensively with peoples in all directions: they imported silver from Anatolia, cedarwood from Lebanon, copper from Arabia, gold from Egypt, tin from Persia, lapis lazuli from Afghanistan, and semiprecious stones from northern India.

Trade Networks

Archaeological excavations have shed bright light on one Mesopotamian trade network in particular. During the early second millennium B.C.E., Assyrian merchants traveled regularly by donkey caravan some 1,600 kilometers (1,000 miles) from their home of Assur in northern Mesopotamia to Kanesh (modern Kültepe) in Anatolia. Surviving correspondence shows that during the forty-five years from 1810 to 1765 B.C.E. merchants transported at least eighty tons of tin and one hundred thousand textiles from Assur and returned from Kanesh with no less than ten tons of silver. The correspondence also shows that the merchants and their families operated a well-organized business. Merchants' wives and children manufactured textiles in Assur and sent them to their menfolk who lived in trading colonies at Kanesh. The merchants responded with orders for textiles in the styles desired at Kanesh.

A silver model of a boat discovered in a royal tomb at Ur throws light on Sumerian transportation of grain and other goods on the rivers, canals, and marshes of southern Mesopotamia about 2700 B.C.E.

The Emergence of a Stratified Patriarchal Society

Social Classes

Agriculture enabled human groups to accumulate wealth, and clear distinctions between the more and less wealthy appeared already in neolithic villages such as Jericho and Çatal Hüyük. With increasingly specialized labor and long-distance trade, however, cities provided many more opportunities for the accumulation of wealth. Social distinctions in Mesopotamia became much more sharply defined than those of neolithic villages.

In early Mesopotamia the ruling classes consisted of kings and nobles who won their positions because of their valor and success as warriors. Community members originally elected their kings, but royal status soon became hereditary, as kings arranged for their sons to succeed them. Nobles were mostly members of royal families and other close supporters of the kings.

The early kings of the Sumerian cities made such a deep impression on their contemporaries that legends portrayed them as offspring of the gods. According to many legends, for example, Gilgamesh of Uruk, the son of a goddess and a king, was two-thirds divine and one-third human. Some legends recognized him as a full-fledged god. Large-scale construction projects ordered by the kings and the lavish decoration of capital cities also reflected the high status of the Mesopotamian ruling classes. All the Mesopotamian cities boasted massive city walls and imposing public buildings.

Temple Communities

Closely allied with the ruling elites were priests and priestesses, many of whom were younger relatives of the rulers. The principal role of the priestly elites was to intervene with the gods to ensure good fortune for their communities. In exchange for those

Gypsum carving of an elderly couple from the city of Nippur about 2500 B.C.E.

services, priests and priestesses lived in temple communities and received offerings of food, drink, and clothing from city inhabitants. Temples also generated income from vast tracts of land that they owned and large workshops that they maintained. One temple community near the city of Lagash employed six thousand textile workers between 2150 and 2100 B.C.E. Other temple communities cultivated grains, herded sheep and goats, and manufactured leather, wood, metal, and stone goods. Because of their wealth, temples provided comfortable livings for their inhabitants, and they also served the needs of the larger community. Temples functioned as banks where individuals could store wealth, and they helped underwrite trading ventures to distant lands. They also helped those in need by taking in orphans, supplying grain in times of famine, and providing ransoms for community members captured in battle.

Apart from the ruling and priestly elites, Mesopotamian society included less privileged classes of free commoners, dependent clients, and slaves. Free commoners mostly worked as peasant cultivators in the countryside on land owned by their families, although some also worked in the cities as builders, craftsmen, or professionals, such as physicians or engineers. Dependent clients had fewer options than free commoners because they possessed no property. Dependent clients usually worked as agricultural laborers on estates owned by others, including the king, nobles, or priestly communities, and they owed a portion of their production to the landowners. Free commoners and dependent clients all paid taxes—usually in the form of surplus agricultural production—that supported the ruling classes, military forces, and temple communities. In addition, when conscripted by ruling authorities, free commoners and dependent clients also provided labor services for large-scale construction projects involving roads, city walls, irrigation systems, temples, and public buildings.

Slaves

Slaves came from three main sources: prisoners of war, convicted criminals, and heavily indebted individuals who sold themselves into slavery to satisfy their obligations. Some slaves worked as agricultural laborers on the estates of nobles or temple communities, but most were domestic servants in wealthy households. Many masters granted slaves their freedom, often with a financial gift, after several years of good service. Slaves with accommodating masters sometimes even engaged in small-scale trade and earned enough money to purchase their freedom.

Patriarchal Society

While recognizing differences of rank, wealth, and social status, Mesopotamians also built a patriarchal society that vested authority over public and private affairs in adult men. Within their households men decided the work that family members would perform and made marriage arrangements for their children as well as any others who came under their authority. Men also dominated public life. Men ruled as kings, and decisions about policies and public affairs rested almost entirely in men's hands.

Hammurabi's laws throw considerable light on sex and gender relations in ancient Mesopotamia. The laws recognized men as heads of their households and entrusted all major family decisions to their judgment. Men even had the power to sell their wives and children into slavery to satisfy their debts. In the interests of protecting the reputations of husbands and the legitimacy of offspring, the laws prescribed death by drowning as the punishment for adulterous wives, as well as for their partners, while permitting men to engage in consensual sexual relations with concubines, slaves, or prostitutes without penalty.

Women's Roles

In spite of their subordinate legal status, women made their influence felt in Mesopotamian society. At ruling courts women sometimes advised kings and their governments. A few women wielded great power as high priestesses who managed the enormous estates belonging to their temples. Others obtained a formal education and worked as scribes—literate individuals who prepared administrative and legal documents for governments and private parties. Women also pursued careers as midwives, shopkeepers, brewers, bakers, tavern keepers, and textile manufacturers.

Sources from the Past

Hammurabi's Laws on Family Relationships

By the time of Hammurabi, Mesopotamian marriages had come to represent important business and economic relationships between families. Hammurabi's laws reflect a concern to ensure the legitimacy of children and to protect the economic interests of both marital partners and their families. While placing women under the authority of their fathers and husbands, the laws also protected women against unreasonable treatment by their husbands or other men.

128: If a seignior acquired a wife, but did not draw up the contracts for her, that woman is no wife.

129: If the wife of a seignior has been caught while lying [i.e., having sexual relations] with another man, they shall bind them and throw them into the water. If the husband of the woman wishes to spare his wife, then the king in turn may spare his subject.

130: If a seignior bound the (betrothed) wife of a(nother) seignior, who had no intercourse with a male and was still living in her father's house, and he has lain in her bosom and they have caught him, that seignior shall be put to death, while that woman shall go free.

131: If a seignior's wife was accused by her husband, but she was not caught while lying with another man, she shall make affirmation by god and return to her house. . . .

138: If a seignior wishes to divorce his wife who did not bear him children, he shall give her money to the full amount of her marriage-price [money or goods that the husband paid to the bride's family in exchange for the right to marry her] and he shall also make good to her the dowry [money or goods that the bride brought to the marriage] which she brought from her father's house and then he may divorce her.

139: If there was no marriage-price, he shall give her one mina of silver as the divorce-settlement.

140: If he is a peasant, he shall give her one-third mina of silver.

141: If a seignior's wife, who was living in the house of the seignior, has made up her mind to leave in order that she may engage in business, thus neglecting her house (and) humiliating her husband, they shall prove it against her; and if her husband has then decided on her divorce, he may divorce her, with nothing to be given her as her divorce-settlement upon her departure. If her husband has not decided on her divorce, her husband may marry another woman, with the former woman living in the house of her husband like a maidservant.

142: If a woman so hated her husband that she has declared, "You may not have me," her record shall be investigated at her city council, and if she was careful and was not at fault, even though her husband has been going out and disparaging her greatly, that woman, without incurring any blame at all, may take her dowry and go off to her father's house.

143: If she was not careful, but was a gadabout, thus neglecting her house (and) humiliating her husband, they shall throw that woman into the water.

FOR FURTHER REFLECTION

Discuss the extent to which Hammurabi's various provisions on family relationships protected the interests of different groups—husbands, wives, and the family itself.

SOURCE: James B. Pritchard, ed. *Ancient Near Eastern Texts Relating to the Old Testament.* Princeton: Princeton University Press, 1955, pp. 171–72.

During the second millennium B.C.E., Mesopotamian men progressively tightened their control over the social and sexual behavior of women. To protect family fortunes and guarantee the legitimacy of heirs, Mesopotamians insisted on the virginity of brides at marriage, and they forbade casual socializing between married women and men outside their family. By 1500 B.C.E. and probably even earlier, married women in Mesopotamian cities had begun to wear veils when they ventured beyond their own households to discourage the attention of men from other families. This concern to control women's social and sexual behavior spread throughout much of southwest Asia and the Mediterranean basin, where it reinforced patriarchal social structures.

The Development of Written Cultural Traditions

Cuneiform tablet from Ur dating from 2900 to 2600 B.C.E. It records deliveries of barley to a temple.

Cuneiform Writing

The world's earliest known writing came from Mesopotamia. Sumerians invented a system of writing about the middle of the fourth millennium B.C.E. to keep track of commercial transactions and tax collections. They first experimented with pictographs representing animals, agricultural products, and trade items—such as sheep, oxen, wheat, barley, pots, and fish—that figured prominently in tax and commercial transactions. By 3100 B.C.E. conventional signs representing specific words had spread throughout Mesopotamia.

A writing system that depends on pictures is useful for purposes such as keeping records, but it is a cumbersome way to communicate abstract ideas. Beginning about 2900 B.C.E. the Sumerians developed a more flexible system of writing that used graphic symbols to represent sounds, syllables, and ideas as well as physical objects. By combining pictographs and other symbols, the Sumerians created a powerful writing system.

When writing, a Sumerian scribe used a stylus fashioned from a reed to impress symbols on wet clay. Because the stylus left lines and wedge-shaped marks, Sumerian writing is known as *cuneiform,* a term that comes from two Latin words meaning "wedge-shaped." When dried in the sun or baked in an oven, the clay hardened and preserved a permanent record of the scribe's message. Many examples of early Sumerian writing survive to the present day. Babylonians, Assyrians, and other peoples later adapted the Sumerians' script to their languages, and the tradition of cuneiform writing continued for more than three thousand years. Although it entered a period of decline in the fourth century B.C.E. after the arrival of Greek alphabetic script, in which each written symbol represents a distinct, individual sound, scribes continued to produce cuneiform documents into the early centuries C.E.

Education

Most education in ancient times was vocational instruction designed to train individuals to work in specific trades and crafts. Yet Mesopotamians also established formal schools, since it required a great deal of time and concentrated effort to learn cuneiform writing. Most of those who learned to read and write became scribes or government officials. A few pursued their studies further and became priests, physicians, or professionals such as engineers and architects. Formal education was by no means common, but already by 3000 B.C.E., literacy was essential to the smooth functioning of Mesopotamian society.

Though originally invented for purposes of keeping records, writing clearly had potential that went far beyond the purely practical matter of storing information. Mesopotamians relied on writing to communicate complex ideas about the world, the gods, human beings, and their relationships with one another. Indeed, writing made possible the emergence of a distinctive cultural tradition that shaped Mesopotamian values for almost three thousand years.

Astronomy and Mathematics

Literacy led to a rapid expansion of knowledge. Mesopotamian scholars devoted themselves to the study of astronomy and mathematics—both important sciences for agricultural societies. Knowledge of astronomy helped them prepare accurate calendars, which in turn enabled them to chart the rhythms of the seasons and determine the appropriate times for planting and harvesting crops. They used their mathematical skills to survey agricultural lands and allocate them to the proper owners or tenants. Some Mesopotamian conventions persist to the present day: Mesopotamian scientists divided the year into twelve months, for example, and they divided the hours of the day into sixty minutes, each composed of sixty seconds.

The Epic of Gilgamesh

Mesopotamians also used writing to communicate abstract ideas, investigate intellectual problems, and reflect on human beings and their place in the world. Best known of the reflective literature from Mesopotamia is the *Epic of Gilgamesh.* Parts of this work came from the Sumerian city-states, but the whole epic, as known today, was the work of compilers who lived after 2000 B.C.E. during the days of the Babylonian empire. In recounting the experiences of Gilgamesh and Enkidu, the epic explored themes of friendship, relations between humans and the gods, and especially the meaning of life and death. The stories of Gilgamesh and Enkidu resonated so widely that for some two thousand years—from the time of the Sumerian city-states to the fall of the Assyrian empire—they were the principal vehicles for Mesopotamian reflections on moral issues.

A wall relief from an Assyrian palace of the eighth century B.C.E. depicts Gilgamesh as a heroic figure holding a lion.

The Broader Influence of Mesopotamian Society

While building cities and regional states, Mesopotamians deeply influenced the development and experiences of peoples living far beyond Mesopotamia. Often their wealth and power attracted the attention of neighboring peoples. Sometimes Mesopotamians projected their power to foreign lands and imposed their ways by force. Occasionally migrants left Mesopotamia and carried their inherited traditions to new lands. Mesopotamian influence did not completely transform other peoples and turn them into carbon copies of Mesopotamians. On the contrary, other peoples adopted Mesopotamian ways selectively and adapted them to their needs and interests. Yet the broader impact of Mesopotamian society shows that, even in early times, complex agricultural societies organized around cities had strong potential to influence the development of distant human communities.

Hebrews, Israelites, and Jews

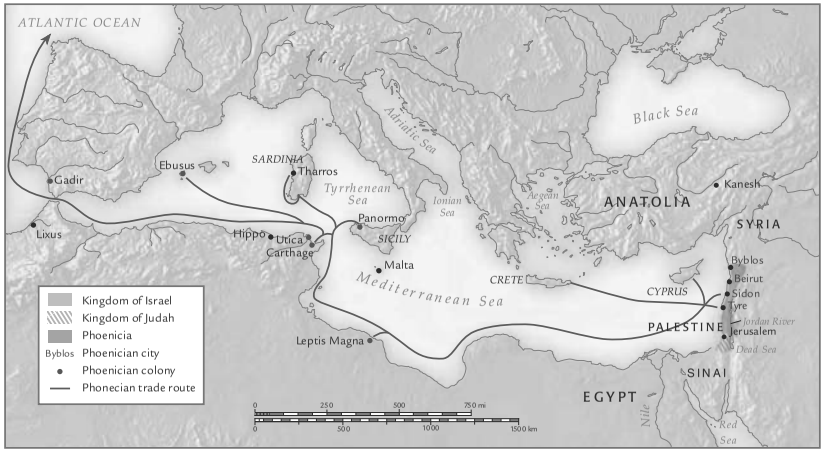
The best-known cases of early Mesopotamian influence involved Hebrews, Israelites, and Jews, who preserved memories of their historical experiences in an extensive collection of sacred writings. Hebrews were speakers of the ancient Hebrew language. Israelites formed a branch of Hebrews who settled in Palestine (modern-day Israel) after 1200 B.C.E. Jews descended from southern Israelites who inhabited the kingdom of Judah. For more than two thousand years, Hebrews, Israelites, and Jews interacted constantly with Mesopotamians and other peoples as well, with profound consequences for the development of their societies.

The Early Hebrews

The earliest Hebrews were pastoral nomads who inhabited lands between Mesopotamia and Egypt during the second millennium B.C.E. As Mesopotamia prospered, some Hebrews settled in the region's cities. According to the Hebrew scriptures (the Old Testament of the Christian Bible), the Hebrew patriarch Abraham came from the Sumerian city of Ur, but he migrated to northern Mesopotamia about 1850 B.C.E., perhaps because of disorder in Sumer. Abraham's descendants continued to recognize many of the deities, values, and customs common to Mesopotamian peoples. Hebrew law, for example, borrowed the principle of *lex talionis* from Hammurabi's code. The Hebrews also told the story of a devastating flood that had destroyed all early human society. Their account was a variation on similar flood stories related from the earliest days of Sumerian society. One early version of the story made its way into the *Epic of Gilgamesh.* The Hebrews altered the story and adapted it to their own interests and purposes, but their familiarity with the flood story shows that they participated fully in the larger society of Mesopotamia.

Migrations and Settlement in Palestine

The Hebrew scriptures do not offer reliable historical accounts of early times, but they present memories and interpretations of Hebrew experience from the perspectives of later religious leaders who collected oral reports and edited them into a body of writings after 800 B.C.E. According to those scriptures, some Hebrews migrated to Egypt during the eighteenth century B.C.E. About 1300 B.C.E., however, this branch of the Hebrews departed under the leadership of Moses and went to Palestine. Organized into a loose federation of twelve tribes, these Hebrews, known as the Israelites, fought bitterly with other inhabitants of Palestine and carved out a territory for themselves. Eventually the Israelites abandoned their inherited tribal structure in favor of a Mesopotamian-style monarchy that brought the twelve tribes under unified rule. During the reigns of King David (1000–970 B.C.E.) and King Solomon (970–930 B.C.E.),



Map 2.3 **Israel and Phoenicia, 1500–600 B.C.E.** Note the location of Israel and Phoenicia with respect to Mesopotamia, Egypt, and the Mediterranean Sea. How might geographical location have influenced communications and exchanges between Israel, Phoenicia, and other lands of the region?

Israelites dominated the territory between Syria and the Sinai peninsula. They built an elaborate and cosmopolitan capital city at Jerusalem and entered into diplomatic and commercial relations with Mesopotamians, Egyptians, and Arabian peoples.

Moses and Monotheism

The Hebrew scriptures also teach that after the time of Moses, the religious beliefs of the Israelites developed along increasingly distinctive lines. The early Hebrews had recognized many of the same gods as their Mesopotamian neighbors: they believed that nature spirits inhabited trees, rocks, and mountains, for example, and they honored various deities as patrons or protectors of their clans. Moses, however, embraced monotheism: he taught that there was only one god, known as Yahweh, who was a supremely powerful deity, the creator and sustainer of the world. All other gods, including the various Mesopotamian deities, were impostors—figments of the human imagination rather than true and powerful gods. When the kings of the Israelites established their capital at Jerusalem, they did not build a ziggurat, which they associated with false Mesopotamian gods but, rather, a magnificent, lavishly decorated temple in honor of Yahweh.

Although he was the omnipotent creator of the universe, Yahweh was also a personal god. He expected his followers to worship him alone, and he demanded that they observe high moral and ethical standards. In the Ten Commandments, a set of religious and ethical principles that Moses announced to the Israelites, Yahweh warned his followers against destructive and antisocial behaviors such as lying, theft, adultery, and murder. A detailed and elaborate legal code prepared after Moses's death instructed the Israelites further to provide relief and protection for widows, orphans, slaves, and the poor. Between about 800 and 400 B.C.E., the Israelites' religious leaders compiled their teachings in a set of holy scriptures known as the Torah (Hebrew for "doctrine"

Yahweh (YAH-way)

or "teaching"), which laid down Yahweh's laws and outlined his role in creating the world and guiding human affairs. The Torah taught that Yahweh would reward individuals who obeyed his will and punish those who did not. It also taught that Yahweh would reward or punish the whole community collectively, according to its observance of his commandments.

Historical and archaeological records tell a less colorful story than the account preserved in the Hebrew scriptures. Historical and archaeological evidence shows that Israelites maintained communities in the hills of central Palestine after 1200 B.C.E. and that they formed several small kingdoms in the region after 1000 B.C.E. There are signs of intermittent conflicts with neighboring peoples, but there is no indication that Israelites conquered all of Palestine. On the contrary, they interacted and sometimes intermarried with other peoples of the region. Like their neighbors, they learned to use iron to fabricate weapons and tools. They even honored some of the deities of other Palestinian peoples: the Hebrew scriptures are full of indications that the Israelites worshiped gods other than Yahweh. The recognition of Yahweh as the only true god emerged about the eighth century B.C.E. rather than in the early days of the Hebrews' history.

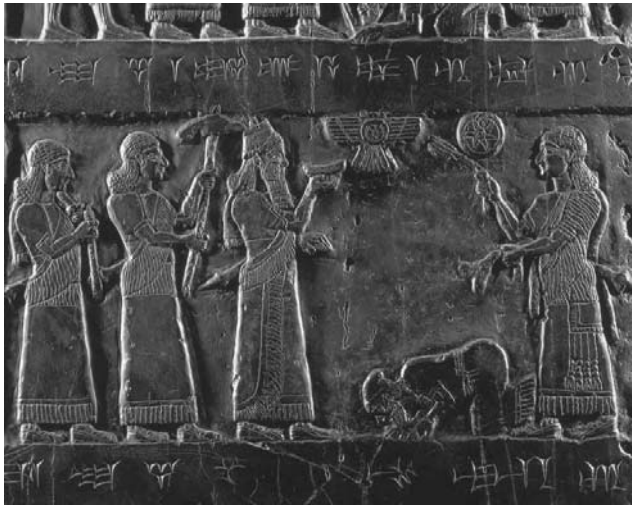
Assyrian and Babylonian Conquests

The Israelites placed increasing emphasis on devotion to Yahweh as they experienced a series of political and military setbacks. Following King Solomon's reign, tribal tensions led to the division of the community into a large kingdom of Israel in the north and a smaller kingdom of Judah in the land known as Judea to the south. During the ninth century B.C.E. the kingdom of Israel came under pressure of the expanding Assyrian empire and even had to pay tribute to Assyrian rulers. In 722 B.C.E. Assyrian forces conquered the northern kingdom and deported many of its inhabitants to other regions. Most of these exiles assimilated into other communities and lost their identity as Israelites. The kingdom of Judah retained its independence only temporarily: founders of the New Babylonian empire toppled the Assyrians, then looked south, conquered the kingdom of Judah, and destroyed Jerusalem in 586 B.C.E. Again, the conquerors forced many residents into exile. Unlike their cousins to the north, however, most of these Israelites maintained their religious identity, and many of the deportees eventually returned to Judea, where they became known as Jews.

Ironically, perhaps, the Israelites' devotion to Yahweh intensified during this era of turmoil. Between the ninth and sixth centuries B.C.E., a series of prophets urged the Israelites to rededicate themselves to their faith and obey Yahweh's commandments. These prophets were moral and social critics who blasted their compatriots for their materialism, their neglect of the needy, and their abominable interest in the fertility gods and nature deities worshiped by neighboring peoples. The prophets warned the Israelites that unless they mended their ways, Yahweh would punish them by sending conquerors to humiliate and enslave them. Many Israelites took the Assyrian and Babylonian conquests as proof that the prophets accurately represented Yahweh's mind and will.

The Early Jewish Community

The exiles who returned to Judea after the Babylonian conquest did not abandon hope for a state of their own, and indeed they organized several small Jewish states as tributaries to the great empires that dominated southwest Asia after the sixth century B.C.E. But the returnees also built a distinctive religious community based on their conviction that they had a special relationship with Yahweh, their devotion to Yahweh's teachings as expressed in the Torah, and their concern for justice and righteousness. These elements enabled the Jews to maintain a strong sense of identity as a people distinct from Mesopotamians and others, even as they participated fully in the development of a larger complex society in southwest Asia. Over the longer term, Jewish monotheism, scriptures, and moral concerns also profoundly influenced the development of Christianity and Islam.



An Assyrian relief sculpture depicts King Jehu of Israel paying tribute to King Shalmaneser III of Assyria about the middle of the ninth century B.C.E.

The Phoenicians

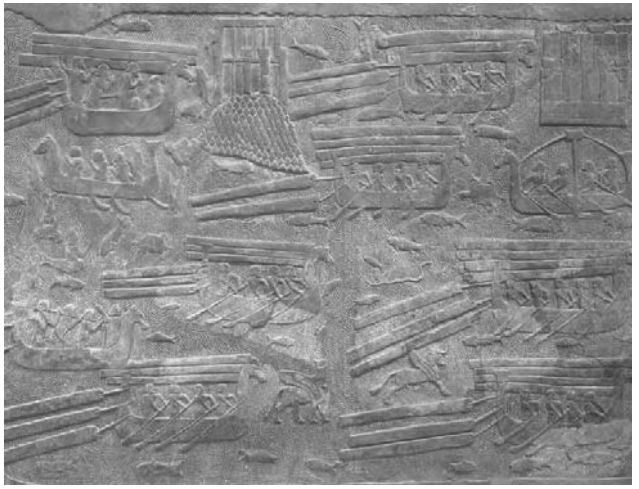
North of the Israelites' kingdom in Palestine, the Phoenicians occupied a narrow coastal plain between the Mediterranean Sea and the Lebanon Mountains. They spoke a Semitic language, referring to themselves as Canaanites and their land as Canaan. (The term *Phoenician* comes from early Greek references.)

The Early Phoenicians

Ancestors of the Phoenicians migrated to the Mediterranean coast and built their first settlements sometime after 3000 B.C.E. They did not establish a unified monarchy but rather organized a series of independent city-states ruled by local kings. The major cities—Tyre, Sidon, Beirut, and Byblos—had considerable influence over their smaller neighbors, and during the tenth century B.C.E. Tyre dominated southern Phoenicia. Generally speaking, however, the Phoenicians showed more interest in pursuing commercial opportunities than in state building or military expansion. Indeed, Phoenician cities were often subject to imperial rule from Egypt or Mesopotamia.

Phoenician Trade Networks

Though not a numerous or militarily powerful people, the Phoenicians influenced societies throughout the Mediterranean basin because of their maritime trade and communication networks. Their meager lands did not permit development of a large agricultural society, so after about 2500 B.C.E. the Phoenicians turned increasingly to industry and trade. They traded overland with Mesopotamian and other peoples, and they provided much of the cedar timber, furnishings, and decorative items that went into the Israelites' temple in Jerusalem. Soon the Phoenicians ventured onto the seas and engaged also in maritime trade. They imported food and raw materials in exchange for high-quality metal goods, textiles, pottery, glass, and works of art that they



A relief sculpture from an Assyrian palace depicts Phoenician ships transporting cedar logs, both by towing them and by hauling them on top of the boats.

produced for export. They enjoyed a special reputation for brilliant red and purple textiles colored with dyes extracted from several species of mollusc that were common in waters near Phoenicia. They also supplied Mesopotamians and Egyptians with cedar logs from the Lebanon Mountains for construction and shipbuilding.

The Phoenicians were excellent sailors, and they built the best ships of their times. Between 1200 and 800 B.C.E., they dominated Mediterranean trade. They established commercial colonies in Rhodes, Cyprus, Sicily, Sardinia, Spain, and north Africa. They sailed far and wide in search of raw materials such as copper and tin, which they used to make bronze, as well as more exotic items such as ivory and semiprecious stones, which they fashioned into works of decorative art. Their quest for raw materials took them well beyond the Mediterranean: Phoenician merchant ships visited the Canary Islands, coastal ports in Portugal and France, and even the distant British Isles, and adventurous Phoenician mariners made exploratory voyages to the Azores Islands and down the west coast of Africa as far as the Gulf of Guinea.

Like the Hebrews, the Phoenicians largely adapted Mesopotamian cultural traditions to their own needs. Their gods, for example, mostly came from Mesopotamia. The Phoenicians' most prominent female deity was Astarte, a fertility goddess known in Babylon and Assyria as Ishtar. Like the Mesopotamians, the Phoenicians associated other deities with mountains, the sky, lightning, and other natural phenomena. Yet the Phoenicians did not blindly follow Mesopotamian examples: each city built temples to its favored deities and devised rituals and ceremonies to honor them.

Alphabetic Writing

The Phoenicians' tradition of writing also illustrates their creative adaptation of Mesopotamian practices to their own needs. For a millennium or more, they relied on cuneiform writing to preserve information, and they compiled a vast collection of religious, historical, and literary writings. (Most Phoenician writing has perished, although some fragments have survived.) After 2000 B.C.E. Syrian, Phoenician, and other peoples began experimenting with simpler alternatives to cuneiform. By 1500 B.C.E.

Sources from the Past

Israelites' Relations with Neighboring Peoples

When Solomon succeeded David as king of the Israelites, he inherited a state at peace with neighboring peoples, and he was able to construct a temple to Yahweh. To do so, however, he needed to establish trade relations with neighboring peoples, since the Israelites did not have the raw materials or construction skills to build a large and magnificent temple. Thus he dealt with Hiram, king of the Phoenician city of Tyre, who provided timber and construction workers and also helped Solomon obtain gold, precious stones, and decorative items for the temple.

And Hiram king of Tyre sent his servants unto Solomon, for he had heard that they had anointed him king in the room of his father, for Hiram was ever a lover of David. And Solomon sent to Hiram, saying, "Thou knowest how David my father could not build a house [temple] in the name of the Lord his God because of the wars which were about him on every side, until the Lord put [his enemies] under the soles of his feet. But now the Lord my God hath given me rest on every side, so that there is neither adversary nor evil occurring. And behold, I plan to build a house in the name of the Lord my God. . . . Now therefore command thou that they hew me cedar trees out of Lebanon, and my servants shall be with thy servants, and unto thee will I give hire for thy servants according to all that thou shalt appoint, for thou knowest that there is not among us any that has skill to hew timber like the Sidonians [Phoenicians].". . .

And Hiram sent to Solomon, saying, "I have considered the things which thou sent to me for, and I will do all thy desire concerning timber of cedar, and concerning timber of fir. My servants shall bring them down from Lebanon unto the sea, and I will convey them by sea in floats unto the place that thou shalt appoint me, and will cause them to be discharged there, and thou shalt receive them, and thou shalt accomplish my desire, in giving food for my household." So Hiram gave Solomon cedar trees and fir trees according to all his desire. And Solomon gave Hiram twenty thousand measures of wheat for food for his household, and twenty measures of pure oil. Thus gave Solomon to Hiram year by year. And the Lord gave Solomon wisdom, as he promised him, and there was peace between Hiram and Solomon, and they two made a league together.

And king Solomon raised a levy out of all Israel, and the levy was thirty thousand men. And he sent them to Lebanon, ten thousand a month in turns. A month they were in Lebanon, and two months at home. . . . And the king commanded, and they brought great stones, costly stones, and hewed stones, to lay the foundation of the house. And Solomon's builders and Hiram's builders did hew them, and the stonemasons. So they prepared timber and stones to build the house. . . .

And king Solomon made a navy of ships in Ezion-geber [a port on the Gulf of Aqaba]. And Hiram sent in the navy his servants, shipmen that had knowledge of the sea, with the servants of Solomon. And they came to Ophir [probably southern Arabia or Ethiopia], and fetched from thence gold, four hundred and twenty talents, and brought it to king Solomon. . . .

And the navy of Hiram, that brought gold from Ophir, brought in from Ophir great plenty of almug trees and precious stones. And the king made of the almug trees pillars for the house of the Lord.

FOR FURTHER REFLECTION

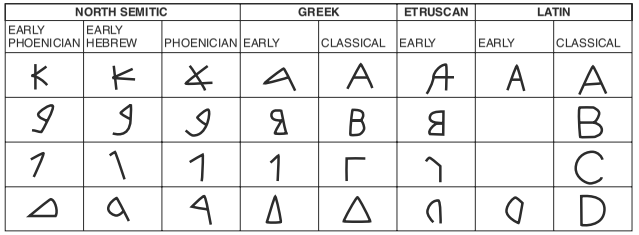
In what ways does the Hebrew scriptural discussion of Solomon's temple portray the Israelites as participants in a larger world of diplomatic, commercial, and cultural interaction?

SOURCE: 1 Kings 5:1–18, 9:26–28, 10:11–12 (Authorized Version). (Translation slightly modified.)

Phoenician scribes had devised an early alphabetic script consisting of twenty-two symbols representing consonants—the Phoenician alphabet had no symbols for vowels. Learning twenty-two letters and building words with them was much easier than memorizing the hundreds of symbols employed in cuneiform. Because alphabetic writing required much less investment in education than did cuneiform writing, more people were able to become literate than ever before.

Alphabetic writing spread widely as the Phoenicians traveled and traded throughout the Mediterranean basin. About the ninth century B.C.E., for example, Greeks

Phoenician, Greek, Hebrew, and Roman letters.



modified the Phoenician alphabet and added symbols representing vowels. Romans later adapted the Greek alphabet to their language and passed it along to their cultural heirs in Europe. In later centuries alphabetic writing spread to central Asia, south Asia, southeast Asia, and ultimately throughout most of the world.

The Indo-European Migrations

After 3000 B.C.E. Mesopotamia was a prosperous, productive region where peoples from many different communities mixed and mingled. But Mesopotamia was only one region in a much larger world of interaction and exchange. Mesopotamians and their neighbors all dealt frequently with peoples from regions far beyond southwest Asia. Among the most influential of these peoples in the third and second millennia B.C.E. were those who spoke various Indo-European languages. Their migrations throughout much of Eurasia profoundly influenced historical development in both southwest Asia and the larger world as well.

Indo-European Origins

Indo-European Languages

During the eighteenth and nineteenth centuries, linguists noticed that many languages of Europe, southwest Asia, and India featured remarkable similarities in vocabulary and grammatical structure. Ancient languages displaying these similarities included Sanskrit (the sacred language of ancient India), Old Persian, Greek, and Latin. Modern descendants of these languages include Hindi and other languages of northern India, Farsi (the language of modern Iran), and most European languages, excepting only a few, such as Basque, Finnish, and Hungarian. Because of the geographic regions where these tongues are found, scholars refer to them as Indo-European languages. Major subgroups of the Indo-European family of languages include Indo-Iranian, Greek, Balto-Slavic, Germanic, Italic, and Celtic. English belongs to the Germanic subgroup of the Indo-European family of languages.

After noticing linguistic similarities, scholars sought a way to explain the close relationship between the Indo-European languages. It was inconceivable that speakers of all these languages independently adopted similar vocabularies and grammatical structures. The only persuasive explanation for the high degree of linguistic coincidence was that speakers of Indo-European languages were all descendants of ancestors who spoke a common tongue and migrated from their original homeland. As migrants established separate communities and lost touch with one another, their languages evolved along different lines, adding new words and expressing ideas in different ways. Yet they retained the basic grammatical structure of their original

Similarities in Vocabulary Indicating Close Relationships between Select Indo-European Languages

English	*German*	*Spanish*	*Greek*	*Latin*	*Sanskrit*
father	vater	padre	pater	pater	pitar
one	ein	uno	hen	unus	ekam
fire	feuer	fuego	pyr	ignis	agnis
field	feld	campo	agros	ager	ajras
sun	sonne	sol	helios	sol	surya
king	könig	rey	basileus	rex	raja
god	gott	dios	theos	deus	devas

speech, and they also kept much of their ancestors' vocabulary, even though they often adopted different pronunciations (and consequently different spellings) of the words they inherited from the earliest Indo-European language.

The Indo-European Homeland

The original homeland of Indo-European speakers was probably the steppe region of modern-day Ukraine and southern Russia, the region just north of the Black Sea and the Caspian Sea. The earliest Indo-European speakers built their society there between about 4500 and 2500 B.C.E. They lived mostly by herding cattle, sheep, and goats, while cultivating barley and millet at least in small quantities. They also hunted horses, which flourished in the vast grasslands of the Eurasian steppe stretching from Hungary in the west to Mongolia in the east.

Horses

Because they had observed horses closely and learned the animals' behavioral patterns, Indo-European speakers were able to domesticate horses about 4000 B.C.E. They probably used horses originally as a source of food, but they also began to ride them soon after domesticating them. By 3000 B.C.E. Sumerian knowledge of bronze metallurgy and wheels had spread north to the Indo-European homeland, and soon thereafter Indo-European speakers devised ways to hitch horses to carts, wagons, and chariots. The earliest Indo-European language had words not only for cattle, sheep, goats, and horses, but also for wheels, axles, shafts, harnesses, hubs, and linchpins—all of the latter learned from Mesopotamian examples.

The possession of domesticated horses vastly magnified the power of Indo-European speakers. Once they had domesticated horses, Indo-European speakers were able to exploit the grasslands of southern Russia, where they relied on horses and wheeled vehicles for transport and on cattle and sheep for meat, milk, leather, and wool. Horses also enabled them to develop transportation technologies that were much faster and more efficient than alternatives that relied on cattle, donkey, or human power. Furthermore, because of their strength and speed, horses provided Indo-European speakers with a tremendous military advantage over peoples they encountered. It is perhaps significant that many groups of Indo-European speakers considered themselves superior to other peoples: the terms *Aryan, Iran,* and *Eire* (the official name of the modern Republic of Ireland) all derive from the Indo-European word *aryo,* meaning "nobleman" or "lord."

Indo-European Expansion and Its Effects

The Nature of Indo-European Migrations

Horses also provided Indo-European speakers with a means of expanding far beyond their original homeland. As they flourished in southern Russia, Indo-European speakers experienced a population explosion, which prompted some of them to move into the sparsely inhabited eastern steppe or even beyond the grasslands altogether. The earliest

Indo-European society began to break up about 3000 B.C.E., as migrants took their horses and other animals and made their way to new lands. Intermittent migrations of Indo-European peoples continued until about 1000 C.E. Like early movements of other peoples, these were not mass migrations so much as gradual and incremental processes that resulted in the spread of Indo-European languages and ethnic communities, as small groups of people established settlements in new lands, which then became foundations for further expansion.

The Hittites

Some of the most influential Indo-European migrants in ancient times were the Hittites. About 1900 B.C.E. the Hittites migrated to the central plain of Anatolia, where they imposed their language and rule on the region's inhabitants. During the seventeenth and sixteenth centuries B.C.E., they built a powerful kingdom and established close relations with Mesopotamian peoples. They traded with Babylonians and Assyrians, adapted cuneiform writing to their Indo-European language, and accepted many Mesopotamian deities into their pantheon. In 1595 B.C.E. the Hittites toppled the mighty Babylonian empire, and for several centuries thereafter they were the dominant power in southwest Asia. Between 1450 and 1200 B.C.E., their authority extended to eastern Anatolia, northern Mesopotamia, and Syria down to Phoenicia. After 1200 B.C.E. the unified Hittite state dissolved, as waves of invaders attacked societies throughout the eastern Mediterranean region. Nevertheless, a Hittite identity survived, along with the Hittite language, throughout the era of the Assyrian empire and beyond.

War Chariots

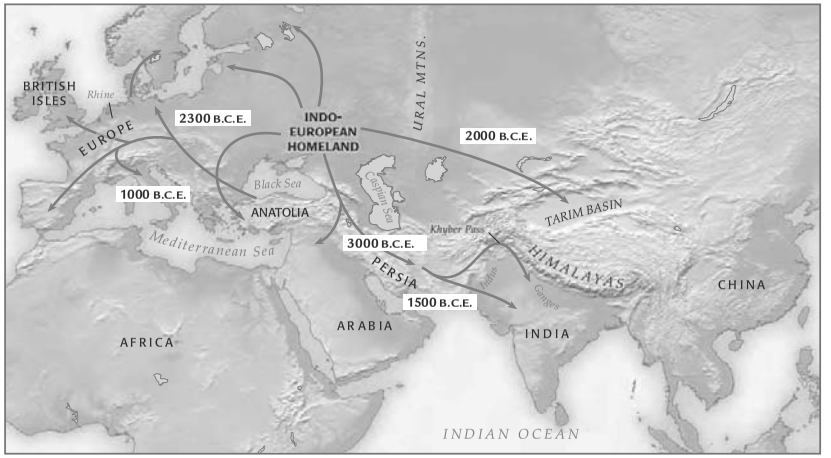
The Hittites were responsible for two technological innovations—the construction of light, horse-drawn war chariots and the refinement of iron metallurgy—that greatly strengthened their society and influenced other peoples throughout much of the ancient world. Sumerian armies had sometimes used heavy chariots with solid wooden wheels, but they were so slow and cumbersome that they had limited military value. About 2000 B.C.E. Hittites fitted chariots with recently invented spoked wheels, which were much lighter and more maneuverable than Sumerian wheels. The Hittites' speedy chariots were crucial in their campaign to establish a state in Anatolia. Following the Hittites' example, Mesopotamians soon added chariot teams to their armies, and Assyrians made especially effective use of chariots in building their empire. Indeed, chariot warfare was so effective—and its techniques spread so widely—that charioteers became the elite strike forces in armies throughout much of the ancient world from Rome to China.

Iron Metallurgy

After about 1300 B.C.E. the Hittites also refined the technology of iron metallurgy, which enabled them to produce effective weapons cheaply and in large quantities. Other peoples had tried casting iron into molds, but cast iron was too brittle for use as tools or weapons. Hittite craftsmen discovered that by heating iron in a bed of charcoal, then hammering it into the desired shape, they could forge strong, durable implements. Hittite methods of iron production diffused rapidly—especially after the collapse of their kingdom in 1200 B.C.E. and the subsequent dispersal of Hittite craftsmen—and eventually spread throughout all of Eurasia. (Peoples of sub-Saharan Africa independently invented iron metallurgy.) Hittites were not the original inventors either of horse-drawn chariots or of iron metallurgy: in both cases they built on Mesopotamian precedents. But in both cases they clearly improved on existing technologies and introduced innovations that other peoples readily adopted.

Indo-European Migrations to the East

While the Hittites were building a state in Anatolia, other Indo-European speakers migrated from the steppe to different regions. Some went east into central Asia, venturing as far as the Tarim Basin (now western China) by 2000 B.C.E. Stunning evidence of these migrations came to light recently when archaeologists excavated burials of individuals with European features in China's Xinjiang province. Because of the region's extremely dry atmosphere, the remains of some deceased individuals are so well preserved that their fair skin, light hair, and brightly colored garments are still clearly visible. Descendants of these migrants survived in central Asia and spoke Indo-European languages until well after 1000 C.E., but most of them were later absorbed into societies of Turkish-speaking peoples.



Map 2.4 Indo-European migrations, 3000–1000 B.C.E. Consider the vast distances over which Indo-European migrants established communities. Would it have been possible for speakers of Indo-European languages to spread so widely without the aid of domesticated horses?

Indo-European Migrations to the West

Meanwhile, other Indo-European migrants moved west. One wave of migration took Indo-European speakers into Greece after 2200 B.C.E., with their descendants moving into central Italy by 1000 B.C.E. Another migratory wave established an Indo-European presence farther to the west. By 2300 B.C.E. some Indo-European speakers had made their way from southern Russia into central Europe (modern Germany and Austria), by 1200 B.C.E. to western Europe (modern France), and shortly thereafter to the British Isles, the Baltic region, and the Iberian peninsula. These migrants depended on a pastoral and agricultural economy: none of them built cities or organized large states. For most of the first millennium B.C.E., however, Indo-European Celtic peoples largely dominated Europe north of the Mediterranean, speaking related languages and honoring similar deities throughout the region. They recognized three principal social groups: a military ruling elite, a small group of priests, and a large class of commoners. Most of the commoners tended herds and cultivated crops, but some also worked as miners, craftsmen, or producers of metal goods. Even without large states, Celtic peoples traded copper, tin, and handicrafts throughout much of Europe.

Indo-European Migrations to the South

Yet another, later wave of migrations established an Indo-European presence in Iran and India. About 1500 B.C.E. the Medes and Persians migrated into the Iranian plateau, while the Aryans began filtering into northern India. Like the Indo-European Celts in Europe, the Medes, Persians, and Aryans herded animals, cultivated grains, and divided themselves into classes of rulers, priests, and commoners. Unlike the Celts, though, the Medes, Persians, and Aryans soon built powerful states (discussed in later chapters) on the basis of their horse-based military technologies and later their possession also of iron weapons.

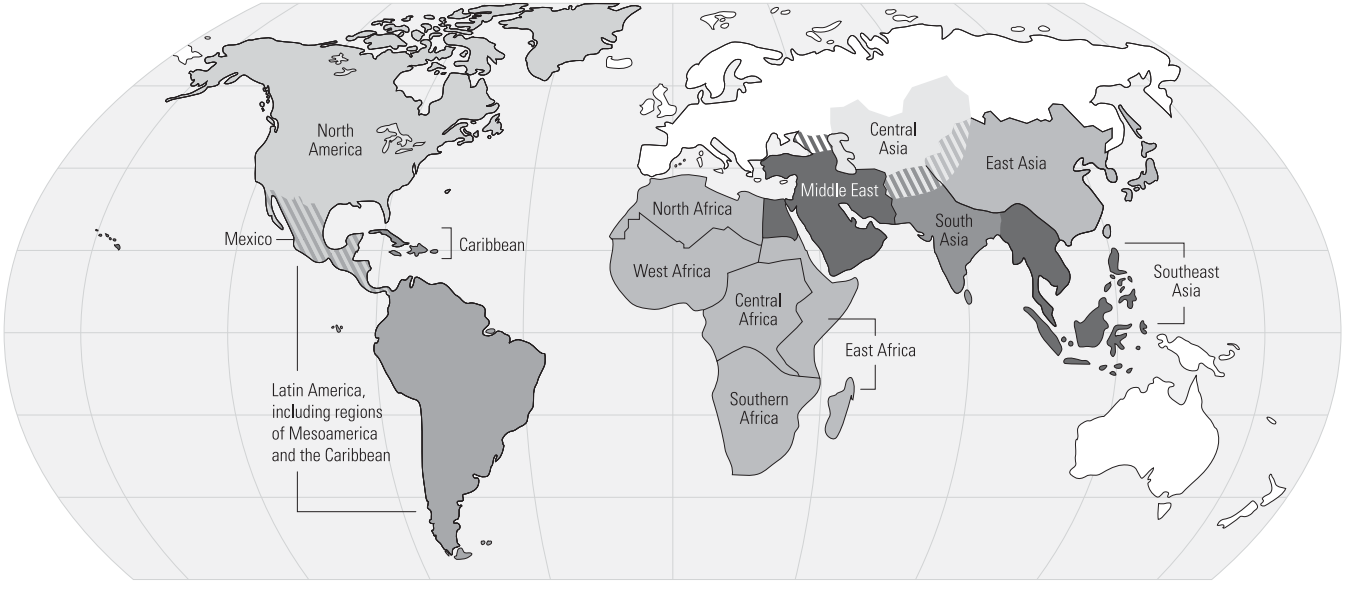
Building on neolithic foundations, Mesopotamian peoples constructed societies much more complex, powerful, and influential than those of their predecessors. Through their city-states, kingdoms, and regional empires, Mesopotamians created formal institutions of government that extended the authority of ruling elites to all corners of their states, and they occasionally mobilized forces that projected their power to distant lands. They generated several distinct social classes. Specialized labor fueled productive economies and encouraged the establishment of long-distance trade networks. They devised systems of writing, which enabled them to develop sophisticated cultural traditions. They deeply influenced other peoples, such as the Hebrews and the Phoenicians, throughout southwest Asia and the eastern Mediterranean basin. They had frequent dealings also with Indo-European peoples. Although Indo-European society emerged far to the north of Mesopotamia, speakers of Indo-European languages migrated widely and established societies throughout much of Eurasia. Sometimes they drew inspiration from Mesopotamian practices, and sometimes they developed new practices that influenced Mesopotamians and others as well. Thus, already in remote antiquity, the various peoples of the world profoundly influenced one another through cross-cultural interaction and exchange.

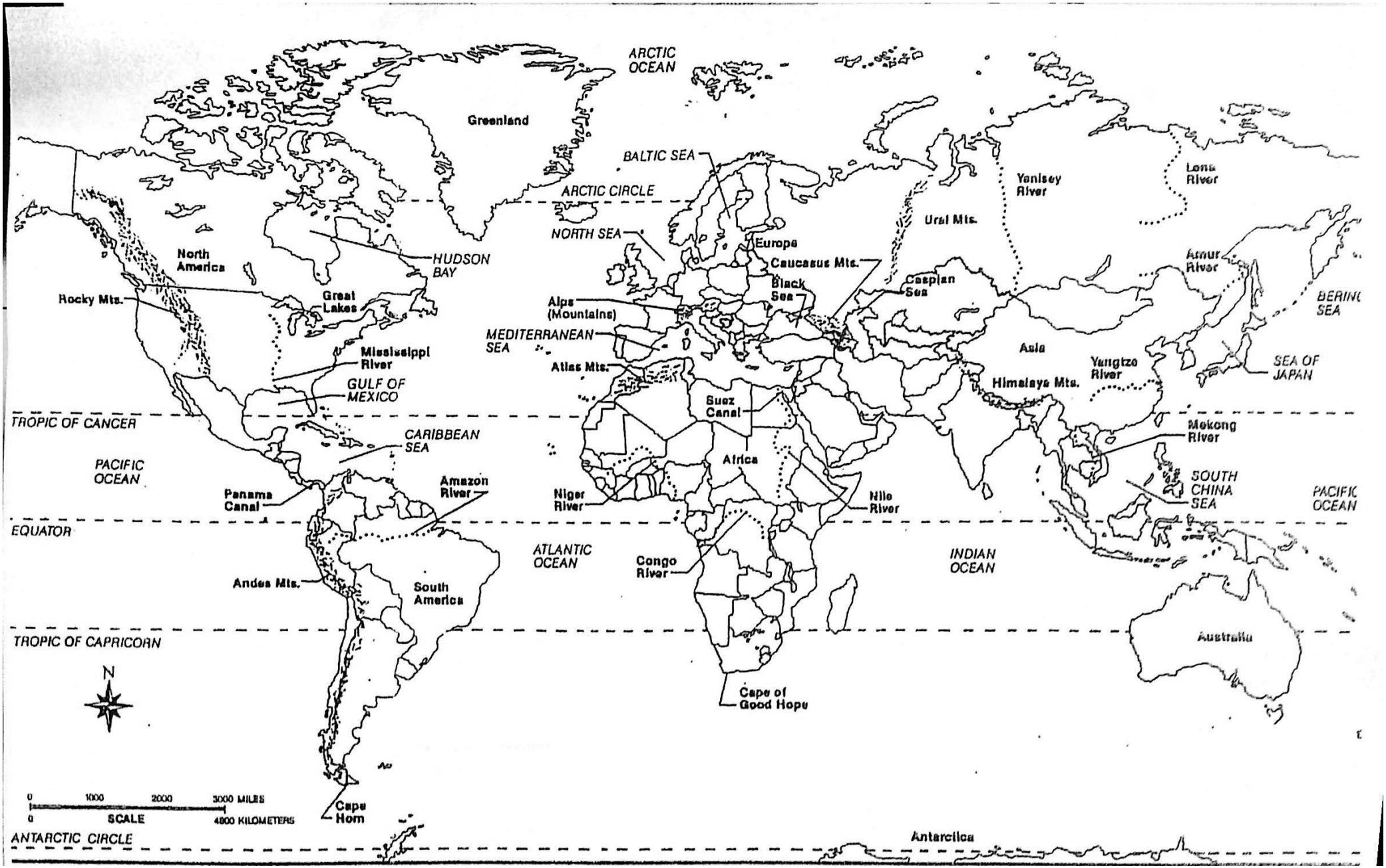
CHRONOLOGY

3200–2350 B.C.E.	Era of Sumerian dominance in Mesopotamia
3000 B.C.E.–1000 C.E.	Era of Indo-European migrations
2350–1600 B.C.E.	Era of Babylonian dominance in Mesopotamia
2334–2315 B.C.E.	Reign of Sargon of Akkad
1792–1750 B.C.E.	Reign of Hammurabi
1700–1200 B.C.E.	Era of Hittite dominance in Anatolia
1000–612 B.C.E.	Era of Assyrian dominance in Mesopotamia
1000–970 B.C.E.	Reign of Israelite King David
970–930 B.C.E.	Reign of Israelite King Solomon
722 B.C.E.	Assyrian conquest of the kingdom of Israel
605–562 B.C.E.	Reign of Nebuchadnezzar
600–550 B.C.E.	New Babylonian empire
586 B.C.E.	New Babylonian conquest of the kingdom of Judah

AP World History: World Regions — A Big Picture View

AP World History: World Regions — A Closer Look




ARCTIC OCEAN
Greenland
BALTIC SEA
ARCTIC CIRCLE
NORTH SEA
Europe
Caucasus Mts.
Black Sea
Caspian Sea
Ural Mts.
Yenisey River
Lena River
Amur River
BERING SEA
North America
HUDSON BAY
Rocky Mts.
Great Lakes
Alps (Mountains)
MEDITERRANEAN SEA
Atlas Mts.
Mississippi River
GULF OF MEXICO
Asia
Yangtze River
Himalaya Mts.
SEA OF JAPAN
TROPIC OF CANCER
Suez Canal
CARIBBEAN SEA
Mekong River
PACIFIC OCEAN
Africa
SOUTH CHINA SEA
Panama Canal
Amazon River
Niger River
Nile River
PACIFIC OCEAN
EQUATOR
ATLANTIC OCEAN
INDIAN OCEAN
Congo River
Andes Mts.
South America
Australia
TROPIC OF CAPRICORN
N
Cape of Good Hope
0 1000 2000 3000 MILES
0 SCALE 4000 KILOMETERS
Cape Horn
ANTARCTIC CIRCLE
Antarctica