FRANCIS D.K. CHING

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A GLOBAL HISTORY OF ARCHITECTURE

THIRD EDITION

WILEY

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Preface

What is a global history of architecture? There is, of course, no single answer, just as there is no single way to define words like *global*, *history*, and *architecture*. Nonetheless, these words are not completely open-ended, and they serve here as the vectors that have helped us construct the narratives of this volume. With this book, we hope to provoke discussion about these terms and at the same time furnish a framework students can use to begin discussion in the classroom.

This book transcends the necessary restrictions of the classroom, where in a semester or even two, the teacher has to limit what is taught based on any number of factors. The reader should understand that there is always something over the horizon. Whereas any such book must inevitably be selective about what it can include, we have attempted to represent a wide swath of the globe, in all its diversity. At the same time,however, the book does not aspire to be an encyclopedia of everything that has been built; nor does it assume a universal principle that governs everything architectural. The buildings included are for us more than just monuments of achievement; we see them as set pieces allowing us to better appreciate the complex intertwining of social, political, religious, and economic contexts in which they are positioned. As much as possible, we emphasize urban contexts as well as materials and surfaces. We have also tried to emphasize quality as much as quantity. From that point of view, the word *global* in the title is not so much a geographic construct as an eruditional horizon. In that sense, this book is not about the sum of all local histories. Its mission is bound to the discipline of architecture, which requires us to see connections, tensions, and associations that transcend so-called local perspectives. In that respect, ours is only one of many possible narratives.

Synchrony has served as a powerful frame for our discussion. For instance, as much as Seoul's Gyeongbok Palace is today heralded in Korea as an example of traditional Korean architecture, we note that it also belongs to a Eurasian building campaign that stretched from Japan (the Katsura Imperial Villa), through China (Beijing and the Ming Tombs), to Persia (Isfahan), India (the Taj Mahal), Turkey (the Suleymaniye Complex), Italy (St. Peter's Basilica and the Villa Rotonda), France (Chambord), and Russia (Cathedral of the Assumption). In some cases, one can assume that information flowed from place to place, but such movement is not itself a requirement for the architecture to qualify as "global." It is enough for us to know, first, that these structures are contemporaneous and that each has a specific history. If there are additional connections that come as a result of trade, war, or other forms of contact, these are for us subsidiary to contemporaneity.

This is not to say that our story is exclusively the story of individual buildings and sites, only that there is a give and take between explaining how a building works and how it is positioned in the world of its influences and connections. We have, therefore, tried to be faithful to the specificities of each individual building while acknowledging that every architectural project is always embedded in a larger world—and even a worldview—that affects it directly and indirectly.

Our post-19th-century penchant for seeing history through the lens of the nation-state often makes it difficult to apprehend such global pictures. Furthermore, in the face of today's increasingly hegemonic global economy, the tendency by historians, and often architects, to nationalize, localize, regionalize, and even micro-regionalize history—perhaps as meaningful acts of resistance—can blind us to the historical synchronicity and interconnectivity of global realities that existed long before our present moment of globalization. What would the Turks be today if they had stayed in East Asia? The movement of people, ideas, food, and wealth has bound us to each other since the beginning of history. And so without denying the reality of nation-states and their claims to unique histories and identities, we have resisted the temptation to streamline our narratives to fit nationalistic parameters. Indian architecture, for instance, may have some consistent traits from its beginnings to the present day, but there is less certainty about what those traits might be than one may think. The flow of Indian Buddhism to China, the opening of trade to Southeast Asia, the settling of Mongolians in the north, the arrival of Islam from the east, and the colonization by the English are just some of the more obvious links that bind India, for better or worse, to global events. It is these links, and the resultant architecture, more than the presumed "Indianness" of Indian architecture, that interests us. Furthermore, India has historically been divided into numerous kingdoms that, like Europe, could easily have evolved (and in some cases did evolve) into their own nations. The 10th-century Chola dynasty of peninsular India, for example, was not only an empire but possessed a unique worldview of its own. In writing its history, we have attempted to preserve its distinct identity while marking the ways in which it maps its own global imagination.

Broadly speaking, our goal is to help students of architecture develop an understanding of the manner in which architectural production is always triangulated by the exigencies of time and location. More specifically, we have narrated these interdependencies to underscore what we consider to be the inevitable modernity of each period. We often think of the distant past as moving slowly from age to age, dynasty to

dynasty, or king to king, and only of our recent history as moving at a faster pace. In such a teleological view, the present is the apex of civilization, and history becomes a narrative of progress that is measured against the values of the present. By contrast, we have tried to present every historical period in terms of its own challenges, and the history of architecture as the history of successive and often dramatic changes spurred on by new materials, new technologies, changing political situations, and changing aesthetic and religious ideals. These changes, spelled out differently in different times, have always challenged the norm in a way that we, in our age, would call modernity.

The Sumerian urbanization of the Euphrates River delta made the earlier village-centered economy of the Zagros Mountains obsolete. The introduction of iron in the 9th century BCE spelled the demise of the Egyptians and allowed societies such as the Dorians, the Etruscans, and the Nubians, who were once relatively marginal in the global perspective, to suddenly dominate the cultural and architectural landscape. The Mongolian invasion of the 13th century may have destroyed much, but in its wake came unprecedented developments. The Bantu expansion into southern Africa and the Polynesian expansion into the Pacific were just as dramatic in their own time as the admittedly more effective and rapid colonialization of the planet by the Europeans. By concentrating on the modernity of each historical example, we have used the global perspective to highlight the drama of historical change, rather than viewing the history of architecture as driven by traditions and essences.

Turning now to the term *architecture*, few would have any difficulty in differentiating it from the other arts, such as painting or sculpture. But what architecture itself constitutes is always the subject of great debate, particularly among architects, architectural historians, and critics. Some have argued that architecture arises out of an urge to protect oneself from the elements, others that it is an expression of symbolic desires, or that it is at its best only when it is embedded in local traditions. In this book, without foreclosing the discussion, we hope that the reader begins to see architecture as a type of cultural production. In that sense, this book is a companion to *Architecture of First Societies* (Wiley, 2013), which looks in depth at the history of pre-agricultural worlds and the transition to agriculture.

Here, we have emphasized issues of patronage, use, meaning, and symbolism where appropriate, and have attempted to paint a broad historical picture of time and context while, at the same time, making sure we have covered the salient formal features of a structure. Of course, words like *culture* and *civilization* are, like the word *architecture*, open to contestation and will have different meanings in different contexts. Yet, despite such ambiguities, we believe that civilization is unthinkable without those buildings that are given special status, whether for religion, governance, industry, or living. Just like the processes of agricultural domestication, architecture emerged in our prehistory and will remain an integral part of human expression to the very end.

Because we have dealt primarily with buildings of quality, we do not have the space to paint a picture of the historical development of vernacular and domestic spaces. This is not because we do not recognize their importance, but because we wanted to remain consistent to a line of reasoning that allows us to see architectural history as connected to the history of ideas, technologies, theories, religions, and politics. Each chapter introduces the set of terms that shape the architectural production and meaning of that age. Changes in some places are perhaps more dramatic than in others, but in all cases we try to explain the causes. The ancient Egyptian pharaohs, for instance, during a period of time commissioned pyramids; but then they stopped and instead built huge temples. The reader needs to come to understand the political reasoning that necessitated this change. Not only did Buddhism morph as it filtered its way into East and Southeast Asia; so, too, did Buddhist architecture. The rock-cut temples of Ellora did not appear out of a vacuum, but the technology of rock-cutting had never been attempted at that scale and would die out by the 13th century. In that sense we ask readers to compare architecture not only across space, but also across time.

Organization of the Book

Rather than preparing chapters on individual countries or regions, such as India, Japan, or France, we have organized the book by "time-cuts." Eighteen chronological slices of time, beginning with 3500 BCE and ending with 1950 CE, comprise the armature of the book. Each time-cut marks not the beginning of a time period, but roughly the middle of the period with which each chapter is concerned. The 800 CE time-cut, for instance, covers the period from 700 to 900 CE. Yet we have not been strict about the scope of a particular time-cut. Whenever necessary for coherence, we have not hesitated to include material from before and after its prescribed limits. Each time-cut should, therefore, be seen more as a marker amid the complexity of the flowing river of history, rather than a strict chronological measuring rod.

We have begun each time-cut with an introductory essay addressing the historical forces graphing that period of time, followed by a map and a timeline locating all of the major buildings we discuss. Discussions of individual buildings and groups of buildings are in a series of small subsections marked by relevant subcontinental location—East Asia, Southeast Asia, South Asia, West Asia, Europe, Africa, North America, Central America, or South America.

Rather than arrange all the time-cuts in the same order, we have arranged each according to its own internal logic. Despite the difficulties this may pose, we have chosen this strategy to remind readers that the globe does not really begin in the East or the West but can indeed start and end anywhere. We have arranged the sequence of the subsections as needed to maintain continuity in the narrative of a particular chapter. Often this continuity is provided simply by geographical adjacency; in other cases, we have linked subsections to make a point about historiographical issues such as the influence and movement of ideas, or contrasts between kingdoms.

The individual subsections, which may be a single page or as long as four or five pages, are conceived as mini case studies, coherent in themselves. These can be assigned as independent readings. Besides ensuring that the relevant facts and descriptions of each significant project we address are

adequately covered, we have emphasized the cultural and global investments of its creator. For instance, a discussion of the Italian High Renaissance consists of pages on the Piazza del Campidoglio, il Gesù, the Villa Farnese, Il Redentore, Palladian villas, and the Uffizi. The number of case studies accompanying each civilizational discussion is not uniform. Sometimes there are six; at other times, just one or two. The differences are largely a measure of our judgment of the importance of the material and the availability of literature on a topic. Indeed, there exists a great disparity in the availability of information. While we know much about the early civilizations of Mesopotamia; we know startlingly little about pre-Columbian civilizations. An archaeologist we spoke with estimated that only 15 percent of pre-Columbian sites have been excavated. And there are also many inaccessible archaeological sites in war-torn countries around the world, and even sites that cannot be excavated because of lack of funding or awareness. A fully fleshed-out picture of architecture's history is, therefore, still a dream that we can only aspire to.

The book's drawings are intended to be integral to the narrative. They not only illustrate the text, but also help tell a story of their own. Not everything in the text is illustrated by drawings, just as the drawings can be used to communicate things that are not referenced in the text. We have tried to make a virtue out of this fact by sharing the physical and epistemological space on each page as evenly as we could between text and image. The drawings also speak to the diminishing art of drawing in an age of photography and computer-enhanced plans. Though faculty may not want to organize their syllabi by the time-cuts, they may find it useful to cut and paste selectively chosen subsections together to suit their historical narrative. Such selections could be made geographically or by other means. Once again, the fact that the individual subsections are conceived as case studies allows them to be read coherently, even out of sequence.

A book like this faces almost insurmountable problems in trying to establish a single standard for names, terms, and spellings, particularly those of non-Western origin. A particular mosque, for instance, might have different English, Arabic, Persian, and Hindu names. Which does one use? Should one say Nijo-jo or Nijo Castle (the suffix *–jo* in Japanese means castle)? Should one call a pagoda a *ta*, as it is called in Chinese, or should we persist with its conventional English name? Generally speaking, we have tried to use the names that are most common in current scholarship in English. It would be foolish to dispense with the Greek word for those Egyptian buildings that we call pyramids, named after the Greek bread called *pyramidos*, but, on the other hand, we would like to suggest that Angkor Wat be called by its real name, Vrah Vishnulok, to cite one counterexample. Once we have made a choice regarding the spelling of a particular proper noun, we have tried to remain consistent in our use of it. However, at several places, we have intentionally used non-English terms, even when there is a common English usage. This we have done whenever we have felt that the English is misleading (the English *pagoda*, for instance, has nothing to do with the *ta*) or when discussion of local linguistic practice is in some way illuminating. Our aspiration is to initiate movement toward a more diverse and appropriate vocabulary for the world's architecture. Language, like architecture, is a living thing with indistinct boundaries and, as such, reflects architecture's status as a multifaceted cultural signifier.

In conclusion, we would like to acknowledge that in preparing and writing this book, a process that we have enjoyed at every turn, we were continually reminded of our ignorance on many matters. Conversations with colleagues were particularly valuable, as were trips to some of the sites we cover. But in the end, a work like this can only be the beginning of a long process of refinement. So we ask all readers who wish to do so to contact us, to point out inaccuracies, to tell us about things that should be included in subsequent editions, or to open a conversation about history, the world, and our place within it.

3500 BCE

1.1 !Kung hut

INTRODUCTION

For a million years, humans lived off hunting, food gathering, and fishing. From the perspective of our advanced world today we tend to look back at this and wonder how we could even have survived given all the difficulties. We once labeled these people savages or barbarians, and then we called them primitives. More recently we call them hunter-gatherers, as if all they do is obsess about food acquisition. But the !Kung, who have lived in the Kalahari Desert in Botswana for hundreds of thousands of years, spend only about 40 percent of their time hunting and gathering. The rest of the time, they do what most of us might do: they socialize, dance, cook, and rest.

In the Kalahari, mongongo trees, which produce tasty and nutritious nuts by the thousands, proliferate in mile-long groves. Tubers can be dug from the ground, and animal herds migrate through the territory, easy prey for a canny hunter and his poison-tipped arrows. The !Kung live in camps that are rebuilt every year near seasonal water holes. Women make the huts around a common campfire, usually under the shade of a large tree. The huts are not really to live in, since people tend to live mainly outdoors, but serve as storage areas for tools and as shade on a hot day. The modern world has little respect for its venerable ancestors. Because of forced relocations, mining on their territory, and fences cutting across their land, the !Kung people's survival into the next decades is much in doubt. It is not the natural world that endangers them, but our civilized world.

As populations expanded, groups would bud off to form new communities in the next valley or further along the shores. In this way, the first groups of people left Africa some 1.5 million years ago with a second group, our human ancestors, following around 60,000 BCE to slowly yet persistently colonize the globe, reaching the southern tip of South America around 13,000 BCE. First Society people, however, were not nomads as is so mistakenly assumed. Instead they tended to live within prescribed and familiar territories, moving seasonally between winter camps near rivers and upland summer camps for hunting and fishing. The ancient people of Australia, for example, moved in predictable cycles: in some parts of the year they lived in relative isolation, and in other parts they would get together for large annual ceremonial and social events.

During the Ice Age (ca. 25,000 BCE–ca. 15,000 BCE), humans faced a global phenomenon the likes of which we have never seen since. The extreme cold, which sent massive, mile-deep ice sheets far to the south of the polar regions, impacted Europe in particular. But the people there did not leave. This was not because they were trapped. It was because those areas had become a hunter's paradise, with bears, lions, and, above all, huge herds of horses, reindeer, and mammoth moving across the grassy landscape. The Gravettian Culture was the first to master the cold. They developed leather-making and the needle to create fur-lined clothing, boots, and jackets. In great festivals, they congregated near caves where artists had painted brilliant images of animals on the walls and ceilings. What form of magic these places produced is still unknown, but the quality of the art staggers the imagination even today. The animals were painted not as carcasses but as living creatures moving and breathing, and were made by artists who had practiced their skills over a lifetime. As the weather warmed, the hunters moved to the east, crossed Siberia, and around 13,000 BCE crossed Alaska to enter the open plains of North America. Called the Clovis People, they hunted mammoth and then, when the mammoth were all hunted out, they switched to bison. Their sacred landscapes include Seminole Canyon in Texas, with its ancient rock art depicting shamans and sacred animal spirits.

1.2 Haida settlement, Canada

The warming of the weather raised the levels of the oceans, separating Japan from China, and England from mainland Europe. It created vast rivers, swamps, and forests teeming with animals and plants, drawing humans to the river shores. It was, one might say, an age of affluence. At Lepenski Vir along the Danube River, a settlement of triangular huts emerged. The people there caught sturgeon, a fish that averaged some 3 meters long. Why go hunting when catching one fish would feed an entire community? The nearby forests provided a wide assortment of berries, mushrooms, and nuts to complement the diet. Nor was this village a solitary community. Similar villages lined the shores, and their inhabitants traveled by boat to connect with each other for ceremonial events.

Half a world away, another affluent society emerged along the northwest coast of Canada. It was a favorable site for many reasons. It was in a pocket of relatively mild weather, the result of cross-Pacific winds; it was also sited along the migration path of whales, and salmon came in the thousands to swim upstream to spawn. Huge cedar trees, sacred to the Haida, provided material for houses and boats. The tree was not just "wood." Its red color and sweet smell were indicators of its connection to the world of the spirits. Linear settlements sprang up along the shore, composed of large, clan-based community houses facing the water. Each house was a sacred diagram designed in relation to the cosmos, which for the Haida was divided into three shamanistic zones: the sky world, the earth, and the oceanic underworld. The building's frame system consisted of massive roof beams, often more than half a meter in diameter and spanning the width of the house, which ranged from 7.5 to 15 meters. These beams were supported by posts carved to represent important family ancestors or supernatural beings associated with the family's history. Walls were clad with split-cedar planks tied horizontally between paired upright poles.

It was not just rivers and shores that attracted human habitation to make the first settled communities, but also the emerging great rain forests. The Bambuti in Congo still today pay homage to a forest spirit, Jengi, whose power is thought to emanate through the world. Jengi is seen as a parental figure and guardian. Society is organized around individual households consisting of a husband, a wife, and their children, forming settlements that can number up to about fifty residents. The women build the huts that, in the shape of upside-down baskets, are made out of a frame of saplings and clad with leaves. Other rain forest cultures developed in Brazil, Central America, and Southeast Asia.

Beginning around 10,000 BCE in some places, the great First Society traditions that had sustained human life for so long began to change. Instead of hunting animals, humans began to herd them, and instead of gathering and tending plants, they began to domesticate a few chosen plants and grow them in organized fields. These changes altered

1.3 **Village scene**

1.4 **Pottery making**

the imaginaries of the spirit world. Cattle in particular were seen as living gods, requiring daily attendance and a culture of respect. They were not killed for food but were sacrificed to mark special events in the life of the community. Among the Dinka in the Sudan, a man knows his cattle by special names, sings songs to them, and sleeps next to them for long periods of time. Cattle are sacrificed only on special occasions, such as at weddings or funerals. Although only a few cattle-centric societies remain today, the impact of this worldview can be felt even in modern religions.

Just as important was the shift from gathering plants to farming. Rice in southern China and eastern India, millet in Africa and northern China, wheat and barley in the Levant, and corn in Guatemala—all rose from being just one of thousands of plants that humans tended to the precious focus of effort and devotion. The combined transformation of our relationship to animals and plants produced a new way of life: agropastoralism. While today we call this period the birth of agriculture, we have to remember that crops like rice and barley were not raised as food. They were gods. We have so secularized food production today that we forget that the birth of what we call agriculture coincided with profound transformations that deified certain foods and thus, it might be said, guaranteed the proper and complex work ethic needed for their production. The impact on women was particularly profound; harvesting, grinding, storing, and cooking were all largely women's work, as was pottery making, basket weaving, and, of course, the raising of children.

The emergence of pastoral and agropastoral cultures produced village societies organized around chiefs with more or less power depending on circumstances. Villages were well calibrated to meet the needs of the animals, to deal with the calendar of planting and harvesting, and to produce the necessary equipment for life, such as the bowls and containers that stored grain and water and that allowed fermentation and cooking to take place. These activities were all governed by ritual practices and unwritten rules of behavior that shaped the destiny of all. But village society could not spread just anywhere. It needed the right combination of good soil for farms, grasslands for cattle, forests for firewood, and upland areas for hunting—and, of course, water and salt.

The Mesopotamian highlands were perfect for such agropastoral societies, and beginning around 9000 BCE compact villages began to spread along the slopes above the great rivers in the plains. A similar expansion took place along the Sahel in Africa, where sorghum was the main plant, as well as in the foothills of the Baluchistan Mountains (barley), in northern China (millet), and along the Yangtze River (rice). By 5000 BCE these places had also established themselves as profoundly different from the First Society worlds that neighbored them, even if they maintained some aspects of the older traditions. Whereas the agropastoral tradition in Mesopotamia, the Indus Valley, China, and Egypt remained confined by their ecological niches, a remarkable transformation took place in Europe, where between 9000 and 4000 BCE, agropastoral cultures moved slowly along rivers and shores to reach even northern Ireland. There the newcomers thrived and built one of the greatest structures of the time, Newgrange, a vast artificial mound with a sacred chamber in its interior that was designed to mark the first rays of the winter solstice.

1.5 **Herding**

3500 BCE


Monte Verde
Valdivia Culture
Clovis Culture
Haida Society
Newgrange
Carnac
Catal Hüyük
Abydos
Samarra
Nabta Playa
Eridu
Mehrgarh
Niuheliang
Banpo
China: Hemudu Culture
ca. 5000–3500 BCE
Nabta Playa
ca. 9600–6000 BCE
Göbekli Tepe
ca. 9000–7500 BCE
Jericho
ca. 9000 BCE
Vinca Culture
ca. 5700–4200 BCE
Tell Aswad
ca. 9000–7500 BCE
Eridu settled
ca. 5000 BCE

China: Yangshao Culture
5000–3000 BCE

Hongshan Culture
4700–2900 BCE

Longshan Culture
3000–2000 BCE

▲ **Banpo**
ca. 4500 BCE

▲ **Niuheliang Ritual Center**
ca. 3500–3000 BCE

▲ **Yaoshan Ritual Altar**
ca. 3300–2000 BCE

Indus Valley: Early Harappan Period
ca. 5000–2600 BCE

▲ **Mehrgarh**
ca. 6500–2800 BCE

▲ **Harappa**
ca. 3000–1900 BCE

▲ **Dholavira**
ca. 2650–2100 BCE

4500 BCE **3500 BCE** **2500 BCE**

Late Neolithic Period
ca. 5000–2000 BCE

Early Bronze Age
ca. 3000–2000 BCE

◉ Bronze casting begins in the Near East.
ca. 3600 BCE

◀ **Catal Hüyük**
flourishes ca. 7400–5500 BCE

Mesopotamia: Ubaid (Eridu) Culture
ca. 5300–4300 BCE

Uruk Period
ca. 4000–3100 BCE

◀ **Tell es-Sawwan**
6000–3500 BCE

▲ **White Temple**
Begun ca. 4000 BCE

▲ **Temple at Uruk**
ca. 3400 BCE

▲ **Temple at Eridu**
4500–3800 BCE

◉ Invention of the wheel
ca. 3600 BCE

◉ Earliest readable documents in Mesopotamia
ca. 3200 BCE

Egypt: Pre-Dynastic Period
ca. 4500–3100 BCE

Early Dynastic Period
ca. 3100–2649 BCE

▲ **Tombs of Hor Aba**
ca. 3100 BCE

▲ **Royal Tombs at Umm el-Qaab**
3100–2890 BCE

▲ **Tombs of Hor Aba**
ca. 3100 BCE

Earliest tumulus tombs in Portugal
ca. 5000 BCE

Europe: Passage Tombs and Dolmens of Megaliths
ca. 3500–2500 BCE

▲ **Newgrange**
ca. 4000 BCE

▲ **Stonehenge**
Begun ca. 3000 BCE

▲ **Passage grave: Île Longue**
ca. 4100 BCE

◉ Saracen Ring added at Stonehenge
2500 BCE

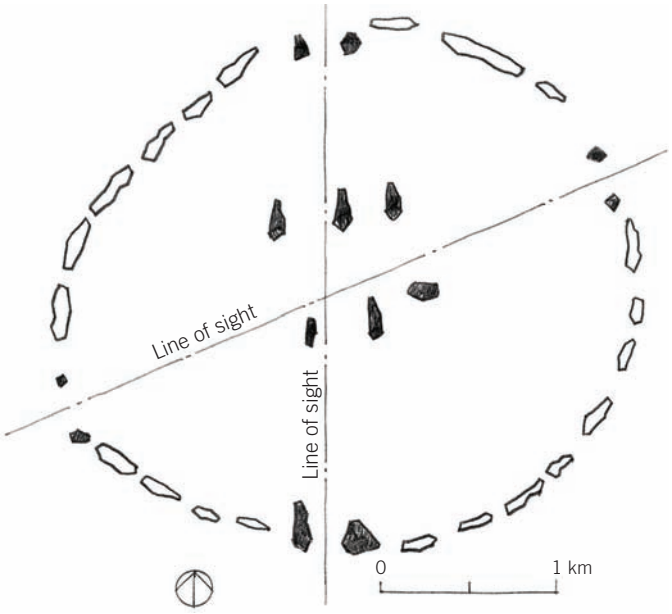
▲ **Carnac Stones**
ca. 3500 BCE

◉ Cursus tradition in England
ca. 3500 BCE

RITUAL CENTERS

In the agropastoral environment, humans began to think and act differently than their First Society ancestors had. Forests had to be chopped down, clay had to be gathered for pots that then had to be fired in kilns, granaries had to established, animals tended to, wool harvested and made into cloth; plants that were once considered food were now thought of as weeds that had to be culled from gardens and farm plots. Decisions had to be made about priorities; children had to learn their respective roles as adults; and priests had to secure the privilege of the divine. Customs had to be followed about social ranking, finding a mate, and building a house. Herds could die because of disease or predators, and crops could be lost to pests or carelessness. Grains could rot, and neighboring tribes could attack. The marshaling of energies that the village required, the stratification of gender activities along with the creation of a new set of powerful gods in privileged communication with the elites, produced a type of cognitive revolution. The cohesiveness that this required is impressive, and in many parts of the globe the village world is still the glue that holds society together.

One of the first sites where we see the transformation is Nabta Playa in what is today southern Egypt, some 80 kilometers west of Abu Simbel. It is now an inhospitable desert, but in 9000 BCE it was next to a large lake with pastured shores. The site featured a circle of slender upright stones, the main stones being four pairs set close together. Compared to Stonehenge, built 6.000 years later, the circle is small, measuring roughly 4 meters in diameter, but its purpose was similar: to organize time according to the seasons. Two of the stone pairs are aligned north–south, the other two pairs northeast–southwest. They aided in the observation of the motion of the sun and probably of the constellation Orion. Priests and their associated clans probably came to live at Nabta Playa permanently, with the population swelling periodically with the seasonal arrival of herder tribes who would have come from far afield with their cattle for large celebratory



1.6 Plan: Nabta Playa, Egypt

events. By 3500 BCE, however, Nabta Playa had become increasingly arid: the lake dried up, and the site was abandoned. The exodus from the Nubian Desert to the Nile River played a large role in the development of social differentiation in the pre-dynastic cultures of the Nile Valley. One important link between Egypt and the ancient cattle cult of Nabta Playa was Hathor, the goddess of fertility.

Another ritual site was on top of a hill near the village of Urfa in southeastern Turkey. Here, too, the now arid site was once a lush forest. The oldest layer of the site appears to date back to around 9000 BCE. The structures, called Göbekli Tepe, consist of several circular dry-stone walls, each of which contains monolithic pillars of limestone up to 3 meters tall. Since there is no indication of any roof covering, it seems that the circles were open-air ritual chambers. They are now called temples, but it is unlikely that they were temples in the sense of being used by a priesthood with organized devotional practices. What went on in these spaces is not known, but they most certainly had links to ancestor cults and might have been used in conjunction with mortuary rituals. The floors consisted of a concrete-like substance made of burnished lime. A low bench runs around the inside of the circle walls. The pillars show detailed reliefs of foxes, lions, cattle, wild boars, herons, ducks, scorpions, ants, and snakes, all executed with great skill, demonstrating that precision work—even without metalworking tools—was possible even at this early time.

If we add to these two sites the Niuheliang Ritual Center (ca. 3500–3000 BCE) in northern China, with its numerous platforms and structures, and, of course, Stonehenge (ca. 3000 BCE), we have four ritual centers—and there are certainly countless more—that served as gathering places and eventually as religious centers for newly settled communities. Niuheliang will be discussed in this chapter; Stonehenge, perhaps the last of the great early ritual centers, will be discussed in the next.

Around 3500 BCE something quite remarkable happened in four places on the earth: groups of people developed something that we today call cities. This transformation was not as natural as one might assume, even though it was dependent on several thousand years of village life and the necessary cohesion that came with it. In Mesopotamia, the farmers in the hills at first stayed away from the vast, overgrown, flood-prone swamps of the Tigris and Euphrates Rivers. But an intrepid group must have set out one day to try their luck. Finding a knoll, they dug up the reeds, planted barley, and carved out canals, activities that were hugely

1.7 **Göbekli Tepe, near Urfa, Turkey**

1.8 **Elam, a typical Mesopotamian city with walls and towers, as depicted in this bas-relief commemorating Assyrian king Ashurbanipal's conquest and destruction of the city in 647 BCE.**

labor-intensive. It was a success, built on the simple premise that by doing one thing well—growing barley—the inhabitants of an isolated place could trade for everything that they did not have. They created the wheel to speed up travel; they created writing to document trade transactions; they created city-scaled gods to protect them; they laid the foundation for laws and regulations; and they created walls to defend their precious grain surpluses on which the entire operation depended. The first cities of Mesopotamia were thus experiments in an extreme landscape. They were governed by an elite, with most of the work done by slaves from nearby conquered regions. Some cities thrived, some did not, but over time, the power and wealth that they created for themselves pushed their destiny forward. In Egypt, the story is similar, but here the rise of cities—more like sprawling villages—was the consequence of the rapid influx of refugees from the expanding Sahara Desert. Prior to about 5000 BCE the Nile was an unruly, lightly populated, swampy river, but with the drier climate that created the desert, thousands of people came with their animals and agricultural skills. Over time they refashioned the Nile into a fertile paradise. The intensity of this foreshadowed the rise of a controlling elite who became first chiefs, then gods.

In India along the Indus River, cities also emerged, spectacular in nature, because unlike in Mesopotamia and Egypt where the building material was largely mud-dried brick, here the inhabitants made kiln-fired bricks that could not only withstand the test of time but also allowed them to build close to the river, and to build pools, drainage systems, and multistory houses. Ships from these cities traded with the Mesopotamians to the north.

In China, the development of cities had a slightly different cast. Village communities had formed in the south in the swampy regions around Hangzhou Bay and the Yangtze River estuary, where rice could be planted. Villages were also forming in the north where people had long since discovered the value of millet, a hardy plant that grows on hillsides. Here people used a form of architecture well-known in the north since 25,000 BCE, the pit house. Dug partially into the ground with a superstructure of thatch held in place by posts and beams, these communal buildings were dry and warm and the focus of a range of ritual activities. Unlike the Mesopotamian cities, which were import-export centers, these dense villages were more self-sustaining as they attained the scale of cities. There were areas for the manufacturing of pottery and bronze, just as there were areas reserved for the elites.

These first cities produced a concentration of wealth and power that was to have significant implications for the destiny of humans and indeed for their definition of themselves as "civilized." But as much magic as they worked on the human imagination, these cities' experimental nature should not be forgotten. Cities were made; they were also made to be destroyed. The Chinese, in fact, would continuously destroy their cities; with a new dynasty, the old capital was often burned or leveled and the inhabitants forced to relocate. The Mesopotamians and Egyptians glorified their destruction of enemy cities, and so it went on—until even today.

Although urban densities were able to pull a large amount of resources into their orbits, around 3500 BCE they constituted only a tiny percentage of the world population, maybe as small as .001 percent. Most people lived in spread-out village societies, and many more lived in a world with no agriculture at all, as humans had for hundreds of thousands of years.

BEGINNINGS OF CHINA'S CIVILIZATIONS

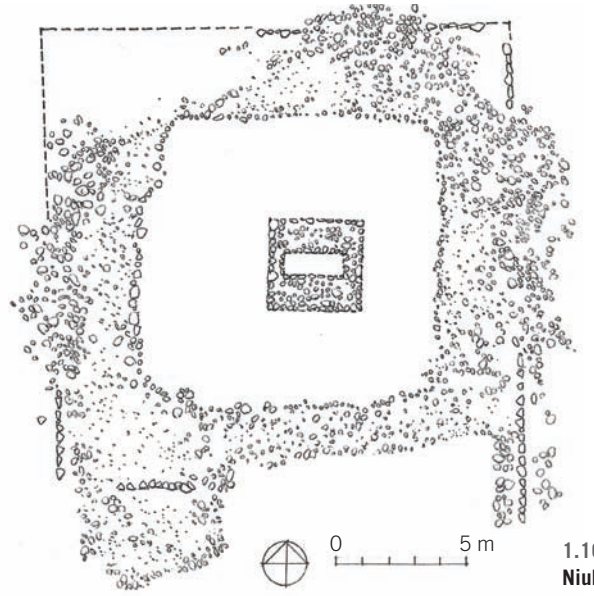
In China, the shift to an agricultural/village world took place around 9000 BCE. There was, however, no single "origin" of Chinese civilization. Instead, there was a gradual multinucleated development taking place somewhat independently at first, with the emphasis to the south on rice and to the north on millet and pigs. Rice grew wild and was then domesticated on the swampy shores and in the delta of the Yangtze River. Millet, which prefers a cooler climate, grows wild on hillsides, where it over time was also domesticated. Pigs played a role in village life from early times and, along with sheep, were introduced to northern cultures by 5000 BCE, if not earlier. By 4000 BCE, especially in the north, small but well-organized regional communities emerged. These included the Hongshan Culture (4700–2900 BCE) to the north of Bohai Bay in Inner Mongolia and Hebai Province, and the Yangshao Culture (5000–3000 BCE) in Henan Province. Geographically between the two, and developing later, was the Longshan Culture (3000–2000 BCE) in the central and lower areas of the Yellow River. The emergence of walls around communities is a clear indication that the political landscape was very much in flux. To the north, villages were generally composed of pit houses that, whether large or small, trace their ancestry back to 20,000 BCE and possibly earlier. Pit houses were used throughout Inner Asia by steppe hunters. People to the south developed houses on stilts, a natural response to the swampy soil of the rice paddies.

1.9 China's early agriculture

Niuheliang Ritual Center

The Hongshan Culture, with its villages focusing on millet and sheep and pig grazing, was located along the Laoha, Yingjin, and Daling Rivers, which empty into Bohai Bay. Though scattered over a large area, the community's ritual life focused on a sacred landscape in which a mountain known locally as Pig Mountain must have played a part, as its silhouette is visible to the south. The ritual center consisted of at least fourteen burial mounds and altars over several hill ridges. It dates from around 3500 BCE, but its importance could well have been established earlier.

Though rituals would have been performed here for the elites, the large area of this sacred landscape implies that audiences for the ritual would have encompassed all the villages of the Hongshan Culture. The site might even have attracted supplicants from further afield. A key building was a structure that is called a goddess temple, though its purpose is not known. The walls, made of interwoven branches and covered with packed mud, leaned inward to form a tunnel-like space. Its main body was 25 meters from south to north, with secondary spaces projecting from that. On the outside, its surviving footings show that its surface was covered with geometric designs in high relief that were painted yellow, red, and white, all of which certainly suggests that it stood out in the landscape in a colorful way. To its north was a single detached room where excavations have uncovered clay body parts, including a head, a torso, and arms, belonging to an image of a protectress or goddess (from which the site got its name).

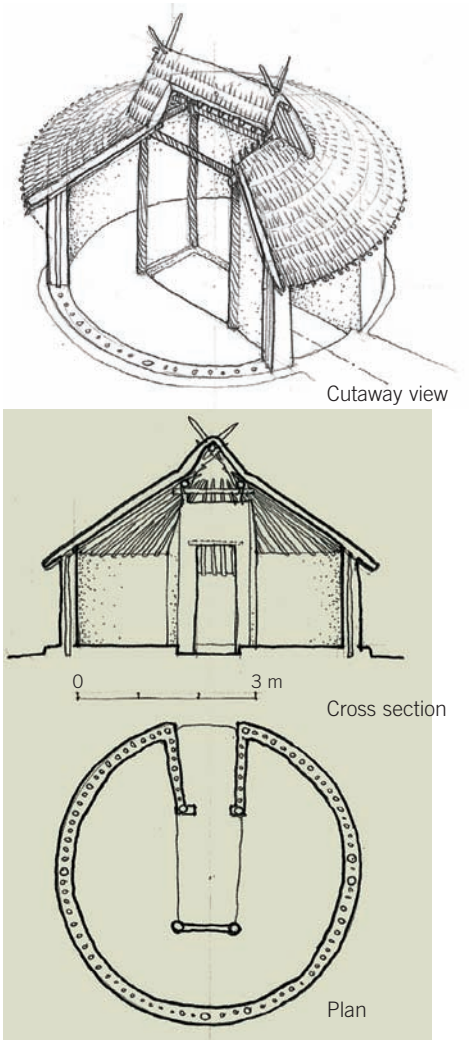


1.10 Plan: Cairn with stone tomb, Niuheliang Ritual Center, tomb site II

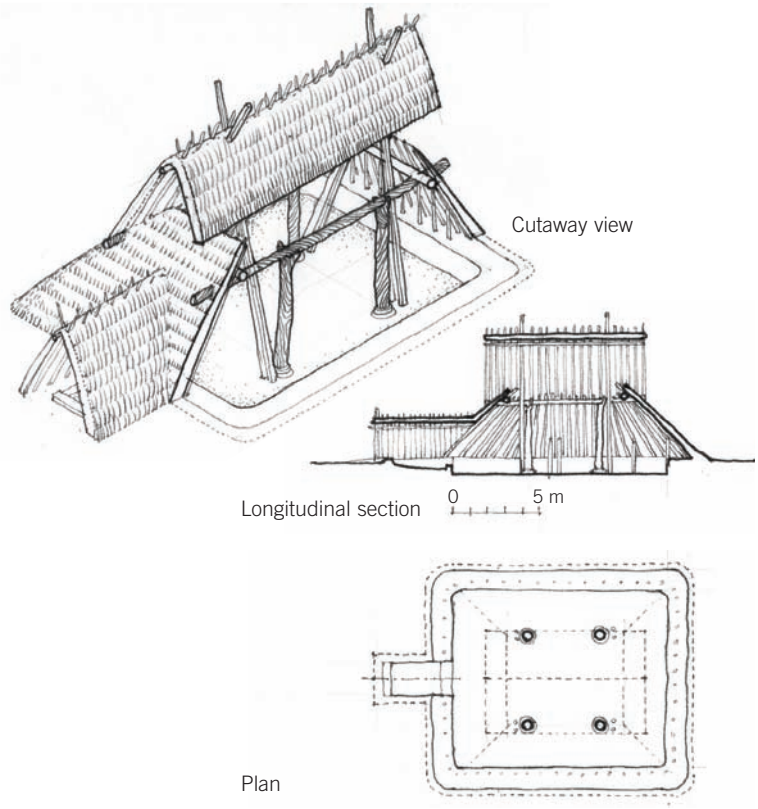
Another structure of interest to archaeologists is an artificial hill at the entrance to the valley. On the ground level, the mound is encircled by a ring of squared white stones. Another ring of white stones is embedded at the middle height of the mound; a third was placed near the top. Artifacts found near the top of the mound include crude clay crucibles used for smelting copper. Since the top of a hill is a surprising place to melt copper, the structure seems to have been meant for ritual events. Burial grounds on hills seem to mark the north and south extremes of the moonrise in the east. All in all, this center contains the essential elements of Chinese ancestor worship—burial cairns, platforms, and a ritual temple—as evidenced, for example, by the Ming tombs built five thousand years later.

1.11 Reconstruction of Banpo village, China

In the valleys of the Yellow River we see the emergence of several compact villages, such as Banpo (near the modern-day city of Xi'an), which dates to about 4500 BCE and was part of the Yangshao Culture. It was surrounded by a ditch or moat 5 to 6 meters wide, probably for drainage and defense. The homes were circular structures of mud and wood with overhanging thatched roofs, all raised on shallow foundations with fire pits at the center. Entrance ramps sloped down into the dwelling. Such pit houses, with furs lying on the floors and hanging from the inner walls for insulation, were comfortable places to live. If the timber beams could be kept dry and the thatch was properly maintained, a pit house could last twenty years. The dead were buried in the back of nearby sacred caves or in simple pits outside the village in a communal burial area. The remains of children, it seems, were interred in urns just outside their homes. Within the town there were large open plazas and storage holes, and at the center of the village was a large house, presumed a clan or community center, which was built of a heavy timber construction. One area of the village was dedicated to the production of pottery, indicating the emergence of craft specialization. Pottery was used not only in daily life but also in mortuary rituals.



1.12 Reconstruction of circular dwelling at Banpo

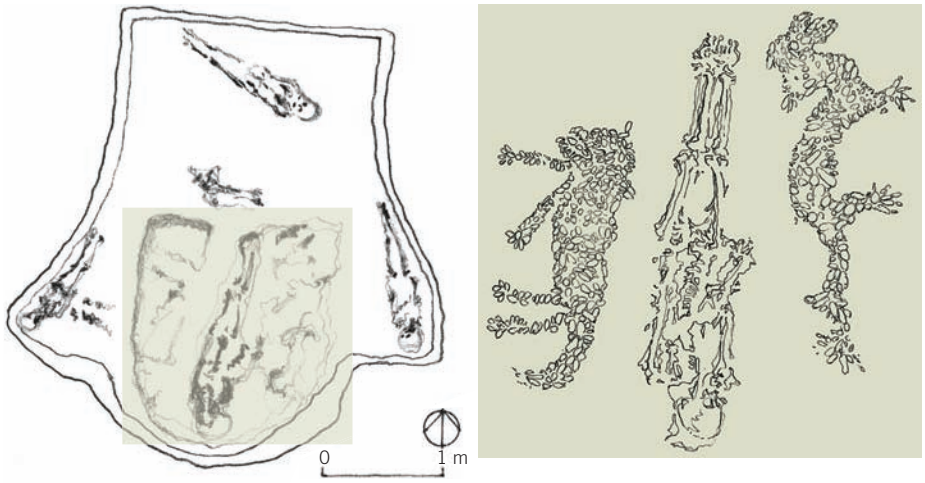


1.13 Reconstruction of meeting hall at Banpo

In terms of religion, the Hongshan and Yangshao cultures were shamanistic. A shaman is an intermediary between the natural and the spiritual worlds who travels between these worlds in a trance. A tomb at Puyang, dating from about 4000 BCE, is likely that of a shaman priest. It was made in the shape of a single, squarish room with a lobed space at the rear. A man was buried in the pounded earth floor, flanked by a dragon on one side and a tiger on the other, both painstakingly and beautifully made of hundreds of shells. Dragons and tigers, still central to Chinese Confucian symbolism, are considered to be prospectors in both life and death. Hill ranges, especially those with prominent peaks, are considered to be dragons.

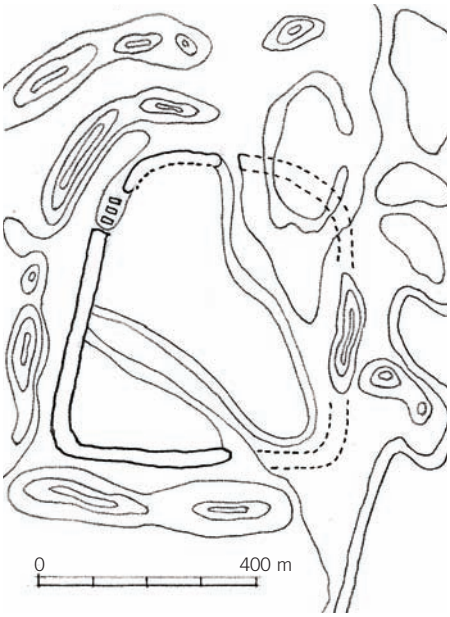
Along the Yangtze River, farmers had developed rice as their prime staple by around 5000 BCE, if not earlier. It was a labor-intensive crop that required level fields and the precise monitoring of water levels. The first culture to master rice farming was the Hemudu. Given the swampy nature of the land, the people at Hemudu built elevated houses that served for both living and storage. The houses were also ritual centers. This house type was introduced by rice growers to other parts of the world, most notably to Japan and the Philippines.

By the time of the Liangzhu Culture (3400–2250 BCE), located in the Yangtze River delta, we see the emergence of numerous small cities. Some, such as Shijiahe, had walls, others had none; some were regional centers with villages around them, others were more autonomous. A city near Yuhang, south of modern Shanghai, was quite large—3 million square meters. A roughly rectangular city, about 0.5 kilometers long, located a few kilometers east of the modern town of Pingyao, is believed to have been the capital of the kingdom. It had a fortification wall and a planned irrigation system.



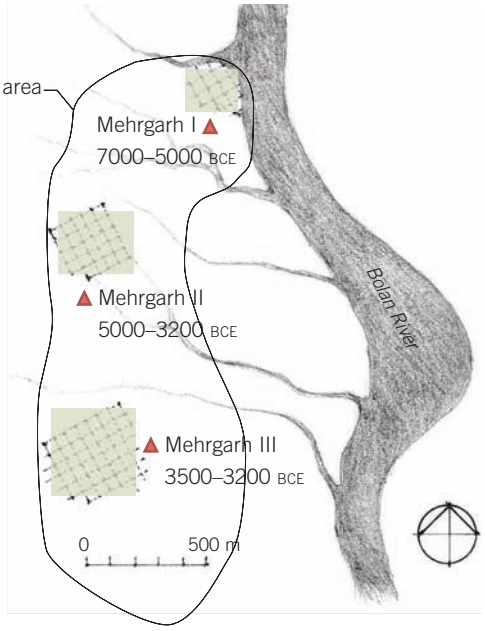
1.14 Dragon, human, and tiger figures found in tomb at Xisuipo, Henan Province, China

Rammed earth platforms on which palaces and temples were built were now a common feature of Chinese architecture. These platforms (known as *hang-t'u*) were created by pounding layers of 12 to 14 centimeters of earth onto each other with wooden or stone mallets, creating a very hard and long-lasting material. Since what was built on top was made of wood, nothing of this superstructure remains. A Liangzhu Culture ritual altar at Yaoshan, located to the west of Tai Lake, gives some indication of the religious edifices of the time. A ditch defines a sacred precinct extending over 25 meters square, at the center of which is a platform measuring 6 by 7 meters constructed of rammed red earth, red being a particularly sacred color. Archaeologists found twelve graves, presumed to have belonged to priests, arranged in two rows within the platform. It is still unknown how this platform was used, though it most probably involved ancestor worship and ritual feast offerings. The use of jade for religious and devotional objects was by this time common to all of the Chinese cultures; the quality of Liangzhu jade was, however, quite remarkable. Though there were several sources, one was in the mountain deserts of modern-day Xinjiang Province in the northwest of China.



1.15 Walled city of Shijiahe, China

1.16 Location of the Indus civilizations of Mehrgarh and Harappa
This period is characterized by the elaboration of ceramics and the beginning of copper metallurgy, stone-bead making, and seal-bone carving. The beginning of writing is seen in the form of graffiti on pottery from around 3500 BCE.



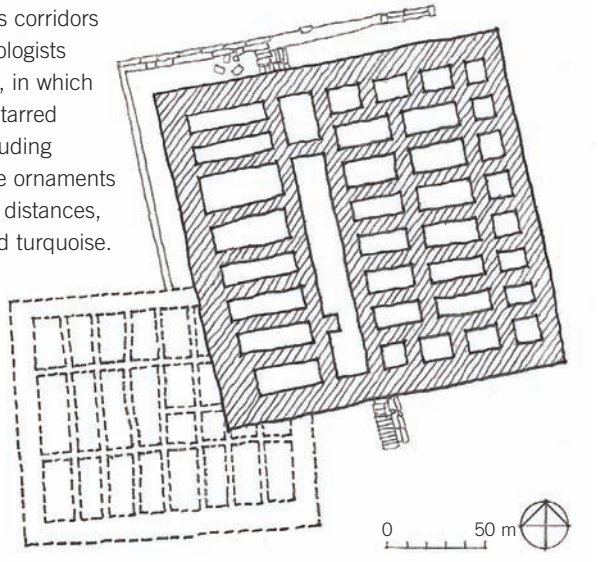
1.17 Site plan of Mehrgarh, Pakistan

MEHRGARH AND EARLY INDUS SETTLEMENTS

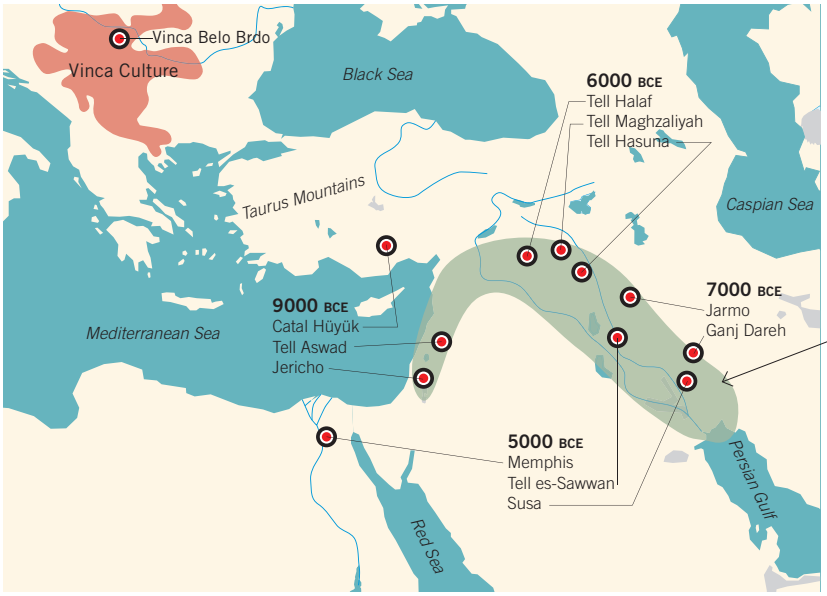
Though evidence of the Neolithic occupation of India dates back to 10,000 BCE, settled cultures began to emerge around 7000 BCE, in the eastern hills of the Baluchistan Mountains in today's Pakistan. It was an agropastoral environment typical for the age, allowing farming along the slopes above the river, herding in the flat lands of the valley, and hunting in the hills and mountains. Around 6500 BCE, one community seemed to rise in importance and became the first in a long line of proto-urban environments that were soon to grow here. Known as Mehrgarh, it was strategically located overlooking the Kachi Plain southeast of modern Quetta near the Bolan Pass, an important gateway connecting South Asia to the rest of the continent. Its five-thousand-year history can be traced from a village to a regional trading center that covered, at the peak of its development, an area of 200 hectares.

By 3500 BCE, its occupants had mastered extensive grain cultivation. Dominating the urban landscape were mud-brick buildings presumed to be granaries, designed as multi-roomed rectangular structures with a long narrow corridor running more or less down the center. The absence of doors suggests that grain was fed from the top, as it would be into a silo.

Though the presence of these granaries connotes social organization, there is no evidence of dominant temples or ritual structures, nor are the granaries aligned with adjoining structures. And yet it is clear that the granaries were the center of social and ritual life. Outside one such granary, along its western wall, a large hearth has been found, complete with several hundred charred grains. Along the southern wall, archaeologists found the remains of the stone tools and drills of a steatite- or soapstone-cutter's workshop. On the eastern side, there were heaps of animal bones mixed with ashes, indicating the presence of intense butchering activity. Life, in other words, was organized around the sacred granaries. The granaries were also associated with mortuary practices: human bones, presumably those of priests, were found buried in its corridors and intermediary spaces. Archaeologists excavated about 360 such tombs, in which the dead, sometimes buried with tarred baskets, had funerary effects including skillfully crafted ornaments. These ornaments used materials brought from long distances, such as seashells, lapis lazuli, and turquoise.



1.18 Plan: Mud-brick granaries, Mehrgarh II



Mesopotamia comes from the Greek words *mesos* and *potamas*, meaning "middle river," and refers to the fertile plain between the Tigris and Euphrates Rivers.

The Fertile Crescent is an agricultural region that runs along the foot of the Taurus and Zagros Mountains in a broad arc from the eastern shores of the Mediterranean to present-day Iraq.

1.19 Fertile Crescent: An early, dense network of cities and villages

THE VILLAGE NETWORKS OF MESOPOTAMIA AND THE BALKANS

The shift to village-world farming took place in the Levant around 9000 BCE. During a few centuries of cold weather, two plants in particular seemed to thrive, wheat and barley. The locals figured out how to tend these grasses into larger and larger patches. This, combined with the domestication of sheep and goats and the herding of cattle, produced a culture far different from that of their ancestors. Ritual practices changed, as did gender roles. Clan lineages became important, and with clans there emerged chieftains, who along with ritual specialists managed the complex sequence of activities. By 8000 BCE, a network of agropastoral villages had formed in the highlands of the Levant and from there spread eastward into the upland reaches above the Euphrates River and even northward into the Balkans.

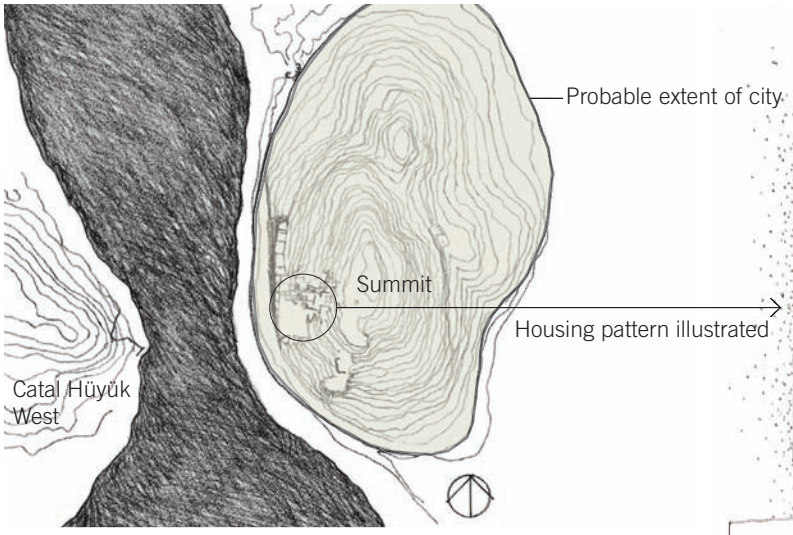
Catal Hüyük

As village communities developed in the hills of the Levant and overlooking the Tigris and Euphrates Rivers, one commodity was sought after in particular: obsidian. This black volcanic rock with its sharp edges could be fashioned into small blades that were attached to sickles. The result was a much faster harvesting time. The problem was that obsidian was a rare commodity that came from the mountains in Anatolia.

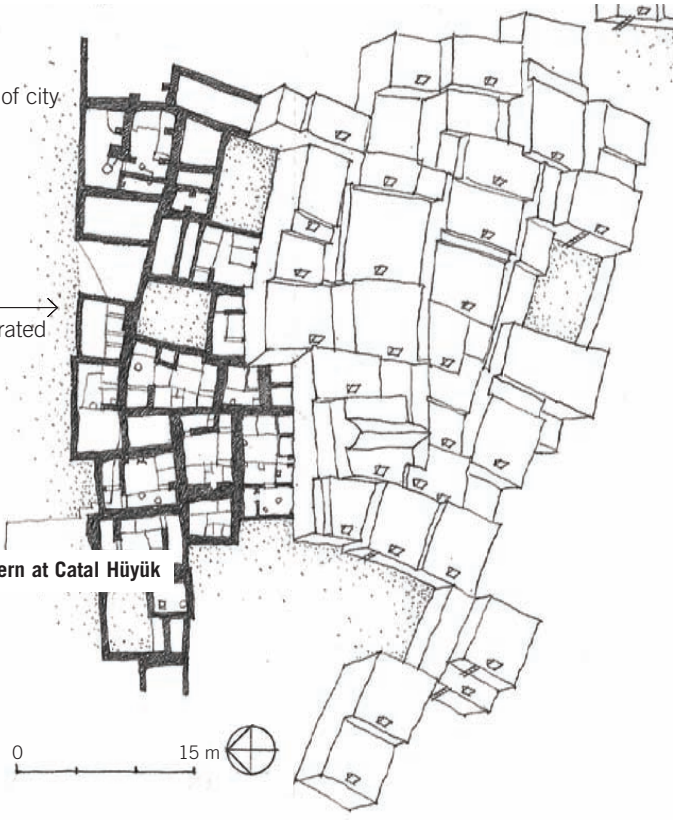
A remarkable settlement developed as one of the main suppliers of obsidian. Known as Catal Hüyük, the city (near the modern city of Konya, Turkey) dates back as far as 7400 BCE; by the third millennium BCE it had a population of about eight thousand. The city was located in the center of a large, well-watered valley and next to a river that fed into a nearby lake. The lake and river have long since dried up. What has been recovered archaeologically is but a small part of the city that followed the slopes of the hill.

The city consisted of rectangular flat-roofed houses packed together into a single architectural mass with no streets or passageways. Astonishingly, walls made of mud bricks reinforced by massive oak posts were not shared, meaning that where we see a wall, we are really seeing two walls, one for each house. Why this developed has not been clearly answered. Inhabitants moved across rooftops and descended into their homes through the roofs via ladders. Light came through small windows high in the walls. If a family died out, its house was abandoned for a period of time, leaving gaps in the urban fabric, until eventually the space was reclaimed. The typical residence contained one large room connected to smaller storage rooms. The main room was

1.20 Typical Iranian mountain village



1.21 Site plan: Catal Hüyük, near Konya, Turkey

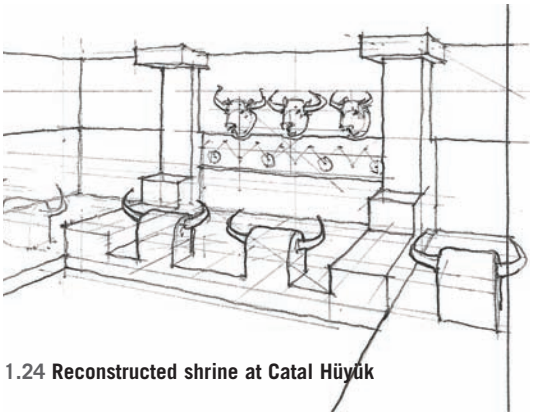


1.22 Housing pattern at Catal Hüyük

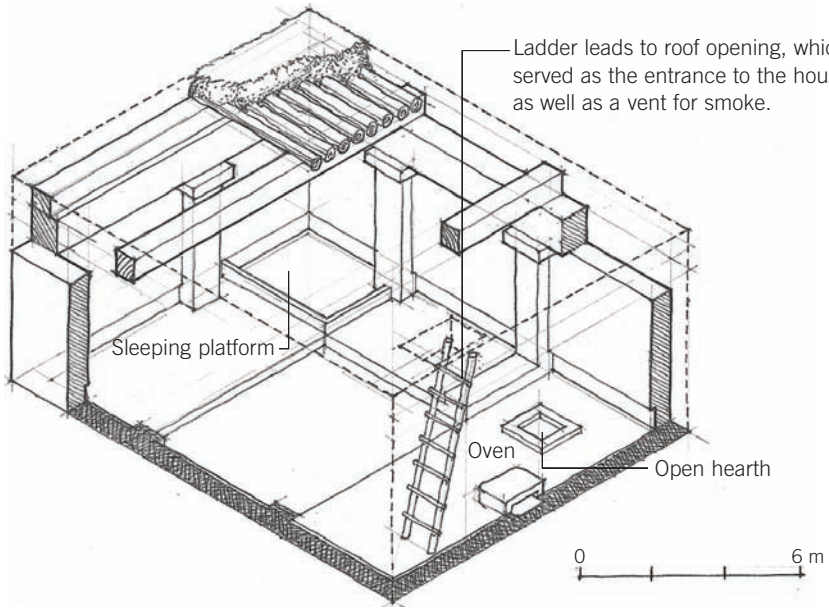
equipped with raised benches, ovens, and bins, and its average size was a generous 5 by 6 meters. Walls were plastered, and many were decorated with hunting scenes, textile patterns, or landscapes. The horns of animals, especially cattle, were mounted on walls.

There was no central, communal sacred space. Each house had its own shrine consisting of a wall decorated with bulls' horns. In some cases, pairs of horns were set in clay at the edge of platforms or embedded in benches. The dead of the family were buried in this room and their bones incorporated into the shrine. (Bodies were left outside until only the bones remained.) It seems that over time, some houses were used more as clan ancestor shrines and less as houses.

1.23 Bull design on a shrine wall at Catal Hüyük



1.24 Reconstructed shrine at Catal Hüyük



1.25 Typical house in Catal Hüyük

1.26 Terra-cotta figurine of seated goddess from Catal Hüyük

The principal deity was the mother goddess. Figurine representations of her, made of a variety of materials, have been found throughout the village. One statue, remarkable for its bold three-dimensional design, is of a voluminous seated woman giving birth. The chair on which she sits has armrests in the shape of lions. The figurine represented fecundity and regeneration, and was part of the widespread mother-goddess worship typical of European and Mediterranean late Stone Age and early Bronze Age societies.

Catal Hüyük was at the northern end of a zone of developing urbanization that reached from Jericho (in Israel) to Tell Aswad (in Syria) and Susa (in Iran). Jericho was a major city—probably the largest in the whole area. Like Catal Hüyük, it had the benefit of local mines. Susa had the benefit of a well-established network of nearby villages in the Zagros Mountains, which constituted a close supply of metals. The Karun River, a river no less important than the Tigris and Euphrates, connected the city to the world at large; grains, figs, and lemons were raised in the river's broad valley.

Tell es-Sawwan

The climate in Mesopotamia back then was cooler than it is today, meaning that the verdant valleys of the Tigris and Euphrates Rivers were far different from the deserts found in the region today; in the highlands, forests were interspersed with steppes and savannas rich in flora and abounding with goats, boars, deer, and foxes. Farmers worked in the valley, but the community lived in the more easily fortifiable hills. Shepherds lived in the steppe regions between the farms and the deserts. In the areas around the Black Sea, one would have found a similar fabric of habitation, except there the locals discovered that their hills contained obsidian, copper, and salt, which became important commodities for trade. Around 5000 BCE the two worlds cohered into recognizable cultural formations: the Vinca in Romania and the Samarra in Iraq. A few places stood out, like Jericho (in Israel) and Tell Aswad (in Syria, 30 kilometers east-southeast of Damascus), which were larger than the rest. Also important was Catal Hüyük in Turkey, which was a key source of obsidian, a volcanic glass that was needed for sickle blades.

One of the most important groupings of villages dating from this period (6000–3500 BCE) was located just to the east of a rain-fed agricultural zone that arches northeastward from the northern tip of the Persian Gulf along the flanks of the Zagros Mountains. Among these settlements was Tell es-Sawwan, on the left bank of the Tigris near Samarra. It started as a small village that became fortified, growing over time into a substantial community. The plan shows a clear hierarchy, with the important buildings in the southern half. The central building is symmetrical and has a hall or corridor down the center; it was built at a later stage in the development of the village. Its purpose is unknown, but it was possibly a granary. There are about seven or eight houses that have nearby areas for sheep and goats. The basic building material was mud and timber; the mud was mixed with reeds and dried in a mold to create bricks, an innovation that remains a characteristic of the region even today. Rooms were rectilinear, measuring, on average, about 1.5 by 2 meters. The horizontal roofs were made of beams of oak on which were placed a layer of branches and reeds sealed with mud, bitumen, and gypsum. The interior wall surfaces were decorated with gypsum plaster, which had been developed as early as 7000 BCE and which was to remain a central part of building construction in the entire area. From the extensive outcrops of rock gypsum in northern Iraq and Syria, stone blocks were mined, stacked, and burnt to form an easily transportable white powder. This building material was not only used locally but also exported as a trade commodity. The development of trade in craft goods, pottery, building materials, and metal objects stimulated the economies of the region and played a central part in its drift toward craft specialization and urbanization. The Samarra Culture produced abundant grain, which was then exported to surrounding regions.

Though we often think of the Tigris and Euphrates region as the birthplace of urban civilization, the truth is that civilization—if that complex and awkward word can be used, at least in this area—was the product of a combined culture in which some people raised grain while others built mines. The oft repeated image of Mesopotamia as a "Fertile Crescent" is flawed if one does not add the Metal Crescent that embraced it. In Mesopotamia, grain and metal were mutually reinforcing commodities. The principal copper-producing areas stretched from the Caspian Sea through Anatolia and around the Black Sea.

An important early Copper Age society, known as the Vinca Culture, flourished from 5500 to 4000 BCE in an area that stretches from present-day Bosnia to Romania. Whereas the Mesopotamians developed mud-brick walls covered with plaster to protect the walls against moisture, the Vinca lived in freestanding rectangular houses with walls made of wattle and daub. The roofs were pitched and made of thatch. Their ritual world was intense. The Vinca had house shrines with an assortment of strangely carved deities that governed fertility and that spoke to the ancestors or gave omens.