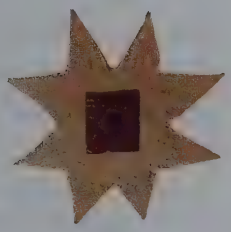


1 PREHISTORIC ROOTS: LATE NEOLITHIC CULTURES

WELL-DEVELOPED VILLAGE societies had appeared in many macroregions of China by about 5000 BCE. This volume begins with this "Late Neolithic" period (c. 5000–2000 BCE) and with a focus on the working of two abundant materials: stone and clay. These topics represent the artistic roots of historic cultures we call "Chinese." Some archaeologists in modern-day China see all of the archaeological cultures of that vast geographical area as "Chinese." It is probably more accurate to say that, while some cultures contributed significantly to later Chinese civilization, others had little impact. We should also remember that we nowadays have more knowledge of the distant past than earlier generations did; indeed, some of the cultures featured in the first chapters of this book could not have been known to the people of later historic periods. It would not be true to the evidence to assume automatically that all that came before contributed to a grand narrative of Chinese civilization.

Knowledge of this period of some three thousand years comes from the material record and the various kinds of reasoning applied to it. Just as gaps in that record make some questions difficult to investigate, so too certain types of reasoning may lead our discussion in one direction at the expense of others. Many statements below are necessarily inferential. Many of them are drawn from analogy, from more secure knowledge of how humans have acted and made things in historic or contemporary societies, including China. Inferences and analogies, including Chinese ones, are not inevitable. One can find many alternative models in comparative data, so our interpretations of this prehistoric material must remain tentative and subject to continual revision.

1-1 Bottle with painted decoration
Yangshao Culture, Majiayao phase, 4th millennium BCE. Earthenware, height 11" (28 cm). Minhe, Qinghai. Qinghai Institute of Archaeology, Xining

VILLAGE SOCIETIES

Archaeologists have employed the term "Neolithic" to characterize archaeological cultures that made stone tools by grinding or polishing. The regular shapes and smooth surfaces of such tools are readily recognized. Indeed polished stone celts (axes) first led J.G. Andersson to investigate the Yangshao site, the namesake for the Yangshao or "Painted Pottery" Culture, in 1912. Ground or polished tools contrast with those made by percussion, in which the shape, edge, and surface reveal that they were struck by a hammer stone or had pressure applied from a point (as in the Palaeolithic). Classifying societies by technological yardsticks marked an important conceptual advance in the history of European archaeology. Such terms, however, tell us little about how human groups actually lived. The making of stone tools cannot in itself serve as an index of social complexity or economic organization.

In China, as in other parts of the world, the appearance of ground and polished tools figures in a larger complex of interrelated changes that can be isolated in the archaeological record

after the last Ice Age. These changes often, but to a varying degree, include a settled life in which people built villages with semi-permanent houses. Village populations relied on cultivated plants and domesticated animals as food sources to complement gathering and hunting. This shift in diet is attested from storage pits and the vessels needed for food, from stone tools (such as querns—stone hand mills—and rollers) used to process foodstuffs, and from the animal bones (both their kind and quantity) found in refuse pits. These changes often, but not always, included the making of pottery, generally the most abundant artifacts at a site of this kind.

In combination, these changes suggest a social organism larger than family groups. Local societies of this kind comprise several lineage groups that find it beneficial to live together and to share resources and labor for such activities as agriculture and mutual defense. By at least 5000 BCE, the landscape of North China supported many villages with populations of several hundred people. These villages may have been occupied for a limited time, only to be abandoned and perhaps later reoccupied. Discontinuous occupation could reflect instability in these communities; it might also result from the rapid exhaustion of arable fields if, for example, slash-and-burn agriculture was practiced. Most of the objects described in this chapter (with the exception of the Liangzhu jades and Longshan "eggshell" wares) came from village-level, local societies.

1-2 Plan of Jiangzhai village
Lintong, Shaanxi.
Yangshao Culture, 5th millennium BCE

Like its neighbor, Banpo, the Jiangzhai site may have supported several hundred people within its encircling ditch, their 120 houses clustered in several groups, each with a large "clan house" for communal gatherings. The central open area held graves (not shown on this plan), in addition to those outside the ditch on the east and southeast. Four kilns near the Lin River on the southwest served village potters.

Archaeologists in the People's Republic of China (PRC) generally employ a terminology to describe these societies that they derived from nineteenth-century European and American social scientists, especially the writings of Karl Marx, Friedrich Engels, and Lewis Henry Morgan. In their parlance, early societies changed over time from a matrilineal (or matriarchal) organization, in which women occupied a privileged place in the community and descent was reckoned through mothers, to a patrilineal (or patriarchal) one in which men became socially dominant and descent was reckoned through fathers. Unfortunately, little if any archaeological data as such unambiguously support the existence of either social organization or a transition from one to the other.

Village Life

While hundreds of Neolithic village sites have been investigated, only a handful have been well preserved, thoroughly explored, and thoroughly reported. Two sites east of modern-day Xi'an (Shaanxi), representing the Yangshao Culture, provide our best picture of villages at the beginning of the Late Neolithic. The first site, named Banpo, was discovered in 1953 and excavated for five seasons from 1954 to 1957. The description and analysis of this one site have set the tone for many subsequent discussions of the Neolithic in China. The second site, Jiangzhai, nearby in Lintong County, further east from Xi'an, was excavated over eleven seasons between 1972 and 1979. Their points in common far outweigh their differences, and the present discussion depends on both. However, the excavators cleared only about a fifth of the Banpo area, whereas nearly all the Jiangzhai site was exposed.

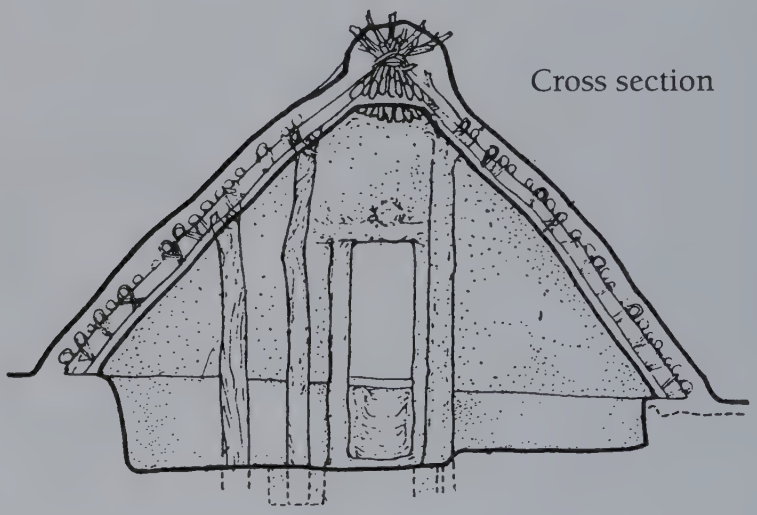
Both sites occupy terraces above streams, in each case tributaries of the Wei River. The high ground afforded safety from flooding, while the streams provided reliable water. Both sites were surrounded by large ditches several yards or meters deep and wide (see FIG. 1-2). Unexcavated sections in the ditches facilitated entering and leaving. Traces of a wooden palisade at Jiangzhai suggest the ditch had a defensive role. Inside the ditch enclosure at Jiangzhai, about one hundred houses were grouped into five clusters, each cluster including a single, much larger house. This leads to the inference that the village consisted of five lineages or clans living in distinct areas. The large houses could have served as clan lodges. Similarities at Banpo and other sites suggest that Yangshao communities shared this village plan and social structure. At Jiangzhai, the large open area near the center of the village functioned as a cemetery, and house doors generally opened onto this central area.

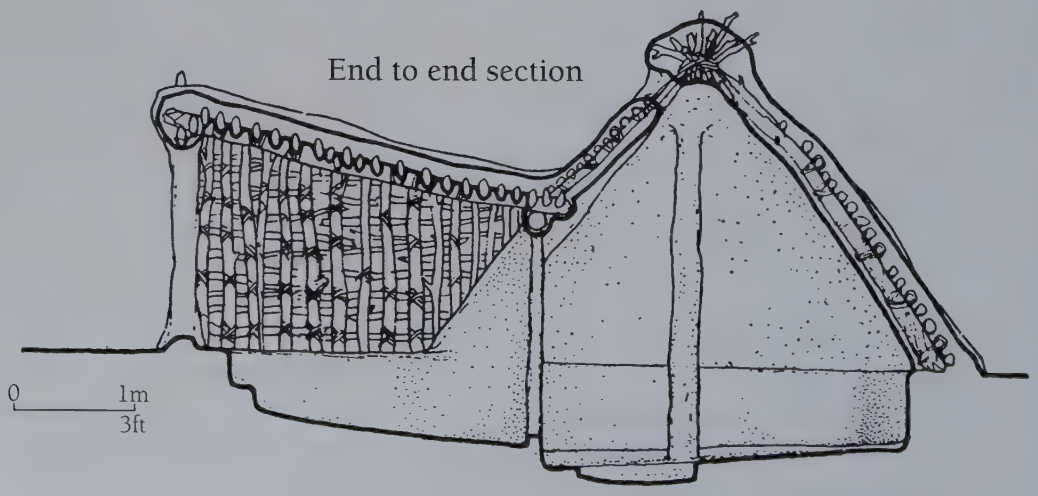
Both villages also had hundreds of subterranean pits for storage and refuse, traces of pens for holding livestock, as well as several pottery kilns at one edge of the site. Thus it appears that agricultural resources were kept within the defensible village, while pottery production took place on the margin with kilns used in common. The villages depended on cultivated millet as their main cereal food. Many of the ground stone tools must have been used to clear and till the fields and to harvest grain. Other domesticated grains and vegetables (including what we call Chinese cabbage!) figured in the diet, as did seasonal wild nuts and berries. Domesticated pigs and dogs furnished animal protein, supplemented by wild animals such as deer and by fish. Stone points for spears and arrows confirm game hunting, as do skeletal remains, and the quantity of carved bone hooks points to a reliance on fishing.

Houses at Banpo and Jiangzhai stood either on the surface or slightly below ground level and were either rectangular or circular in plan (see FIG. 1-3). There may have been a trend over time to build more houses at ground level and to favor rectangular plans. These houses were constructed around several large posts set into the ground and covered with a skin of wattle and daub, with tree branches woven together for the walls and roof and coated with mud plaster. The tamped floors and walls sometimes show signs of burning. A hearth near the center of the floor allowed indoor cooking, and presumably a smoke hole pierced the roof. A raised threshold at the doorway protected the interior from water running in. The interiors of these houses

1-3 Wattle-and-daub house
Banpo, Xi'an, Shaanxi. Yangshao Culture, 5th millennium BCE. Rendering by Yang Hongxun

Semi-subterranean houses like this one were commonplace throughout North China during the Late Neolithic. A tentlike canopy of mud on a frame of interwoven small branches (wattle and daub) was carried by a few larger tree trunks anchored in the ground. The hearth provided warmth and a cooking fire, but many activities must have been pursued out of doors.





vary from 140 to 320 square feet (10–30 sq. m). Larger ones might be adequate for a family group of five or more individuals. If a village such as Jiangzhai had as many as one hundred houses at one time, as many as five hundred people could have lived there.

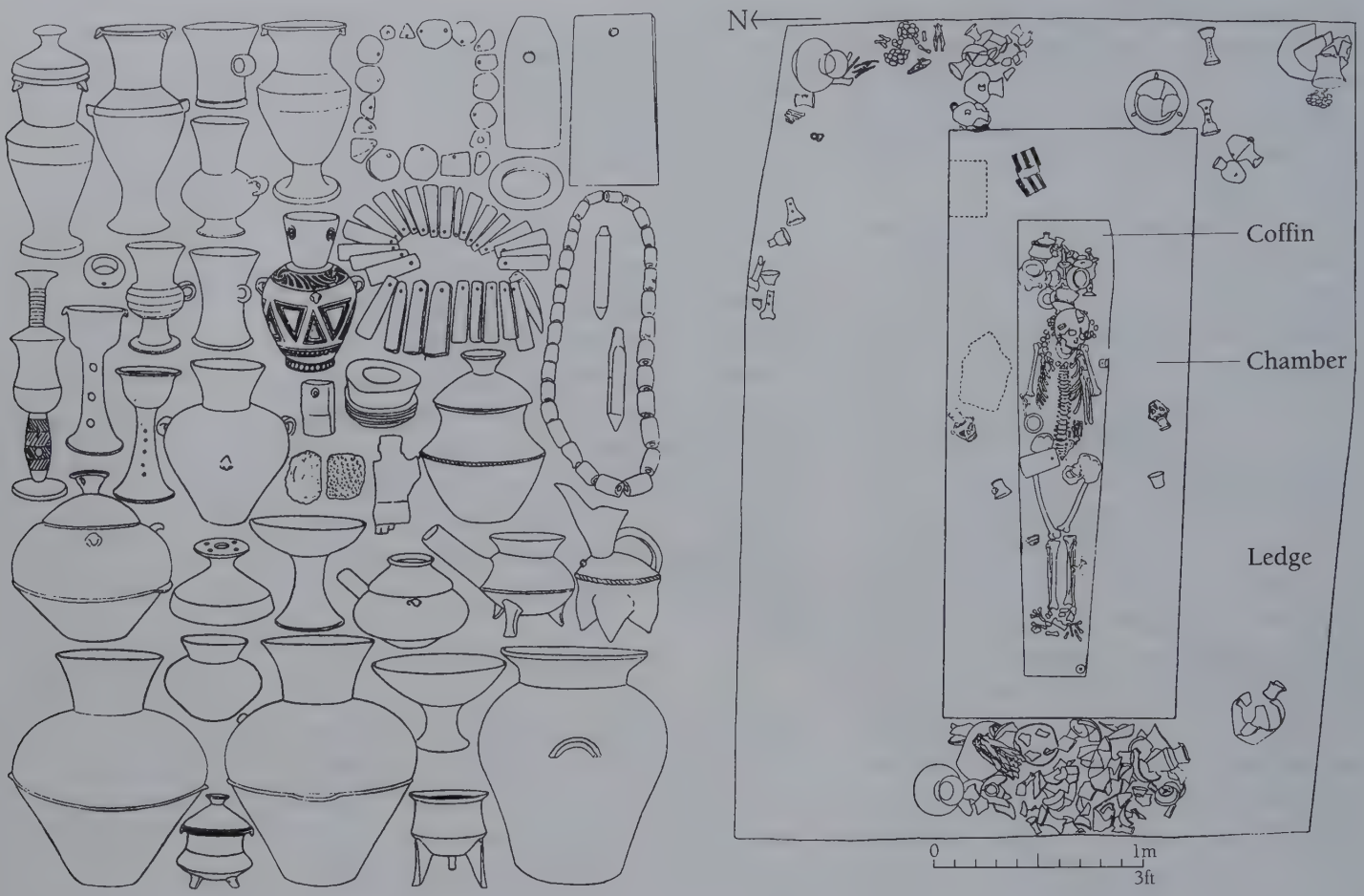
These villages at Banpo and Jiangzhai were occupied for much of the period from 5000 to 4000 BCE. We have much less evidence concerning village plans for other archaeological cultures of this same period, such as the Dawenkou Culture of the lower Yellow River and the East Coast of China, where traces of similar houses have been documented. At the Hemudu site south of Hangzhou Bay (Zhejiang), remains of wooden stilt houses indicate that here people lived on the wet margins of a marsh or lake. In some high elevations of the middle Yellow River, traces of cave dwellings seem to anticipate peasant housing of the loess lands—wind-blown, fine clay and silt deposits—in historic times. In the Northeast macroregion (Inner Mongolia and Liaoning), stone played an important role in housing, as at Xinglongwa. Fragmentary data from these other regions leave open the question of how those villages were laid out and hence limit our inferences about social organization. Substantial cemeteries characterize many cultures for which we lack data on villages, especially those of the East Coast. The sizable numbers of graves could be explained as the result of large village populations or lengthy occupation, or perhaps because several neighboring villages shared a common cemetery. The existence of large settlements or clusters of villages therefore seems plausible during the later fifth and fourth millennia.

By c. 3000–2000 BCE, several macroregions yield evidence of large, walled settlements. Neolithic walled sites have been known since the excavations at Chengziyai (Shandong) and Hougang (Henan) in the 1930s. Walled sites can now be documented across the middle and lower Yellow River drainage areas and in the Middle and Lower Yangzi macroregions. None of these sites, except Wangcheng'gang (Dengfeng County, Henan), has been presented in a formal report, and this actually ranks among the smallest. Here two fragmentary walled compounds measuring less than 330 feet (100 m) on a side survive. Other sites in Henan and Shandong are known only from brief reports and news items, as are several sites of the Qujialing Culture in Hubei. In addition archaeologists have discovered a large earthen platform with walls in the center of the Liangzhu Culture sites discussed below (see pages 34–39). The construction of these sites implies a social organization that could marshall large labor forces, probably a chiefdom, perhaps even an incipient state. A better understanding of these walled sites will require regional settlement analyses that determine how sites of various sizes are related within regional domains, as well as more detailed investigations of the contents of the sites themselves. Such efforts represent the cutting edge of prehistoric research today.

Death and Burial

While villagers buried young children near houses in urns within the ditch enclosures at both Banpo and Jiangzhai, they buried adults in cemetery tracts. At Banpo, 174 adult burials were excavated, most north of the village. At Jiangzhai a similar number were found in several directions around the ditch as well as at the center of the village. Most burials are single graves: one person interred with a few grave goods such as stone tools, pottery, and personal ornaments. Somewhat later in time, secondary burials, graves with many skeletons reinterred after their initial burial, appear at Yangshao sites. At both Banpo and Jiangzhai rich graves do not figure in the excavations. There are no reported finds of putative chiefs' graves or burials that suggest one clan was richer or of higher status than another. From the grave goods, Banpo and Jiangzhai appear to be egalitarian societies.

At other Neolithic cemeteries, however, disparities in grave construction and furnishings do suggest social differentiation. Contrasts in burials suggest that some members of these villages enjoyed higher status and greater wealth in life than did others. But treatment of the dead need not be dictated simply by status in life. The Dawenkou site (Tai'an and Ningyang Counties, Shandong) affords one of the best examples of



1-4 Plan of Grave 10 with grave goods
Dawenkou cemetery site, Tai'an, Shandong. Dawenkou Culture, 4th millennium BCE

The plan (right) shows a rectangular coffin with skeletal remains placed within a larger trench, the latter surrounded by a ledge for displaying grave goods (pictured at left). The woman buried here had dozens of pottery vessels, including storage crocks and drinking goblets, as well as hardstone axe heads and several necklaces. One painted pot (left, top center) complements the others.

contrasts in grave sizes and furnishings. Excavated in summer 1959, this large cemetery contained at least 133 graves that could be classified in three successive periods. Grave 10 (FIG. 1-4), located in a cluster of twelve burials at the north edge of the cemetery, can be dated to the late period. It held the skeletal remains of a woman aged 50–55, a very advanced age. The skeleton occupied a large rectangular pit more than 13 feet long and 10 feet wide (4 x 3 m). Placed around her on ledges were several dozen white, black, and painted pottery vessels, as well as hardstone axe heads and a carved ivory tube. She herself wore three stone necklaces as well as other jewelry. These furnishings may indicate an elaborate funeral rite. Together the grave goods constitute a considerable amount of wealth consigned to the ground upon this woman's death. Only a few of the many graves are so large and none so richly furnished.

While most of the objects discussed below came from graves, most were not made specifically for burial. Stone tools and pottery are of course common in the dwelling areas of Neolithic villages, but they are rarely so well preserved if recovered there. For the best specimens we rely on goods placed with the dead, but even so, much of the pottery has been restored. This kind of sampling has its drawbacks. We illustrate and discuss objects deemed suitable for a grave rather than the whole range of object types in actual use. On the other hand, whole vessels tell us much more about shape and surface treatment than sherds alone can and must be examined if we wish to understand the full accomplishments of Neolithic potters.

MATERIAL CULTURE: MAKING THINGS

The people who lived in these villages created complex material cultures utilizing the abundant resources of their environment. They carved the bones from hunted and domesticated animals

into a variety of tools and ornaments and utilized animal hides for shelter, clothing, and for vessels to hold water. They used wood and bamboo for constructing houses and for a variety of other purposes including palisades, fencing, bows, arrows, spears, digging sticks, and containers. Mats and baskets could be made from plant materials; their impressions can be seen on pottery and on daub from houses. Woven cloth is documented, again on the basis of impressions found in clay.

Of all of the natural materials worked by human hands, hardstone and clay have particular qualities of endurance; even when pottery is smashed into pieces, the sherds survive. As a result stone and clay artifacts account for the great bulk of material recovered from both habitation sites and burials. Moreover, quite early, these societies worked stone and clay with exceptional skill. Shapes and surfaces elicited considerable attention, sometimes far beyond that required purely by practical requirements. Finely worked stones and decorated pottery carry much information in addition to what physical traits suggest about manufacture or shapes suggest about function. Stone carving and pottery decoration link us imaginatively to these ancient people (see pages 46–53 below). Like them, we find interest and pleasure in contemplating these well-made things.

In China, the oldest stone tools so far known have been found in southern Shanxi, near the Yellow River at a site called Xihoudu dated to 1.8 million years ago. Developed grinding techniques appeared much later but never entirely supplanted the percussion methods used to make flakes

Working Hardstones and Jade

Hard minerals must have been the most challenging materials to work for the prehistoric lapidary or stone cutter. They required grinding with a medium like sand (such as quartzite or carborundum), harder than the mineral to be worked. In order to hold the abrasive sand in place, some kind of a matrix—such as a paste or glue—was needed. The work of shaping, smoothing, and decorating hardstones also required distinct tools to guide the sand. A bamboo tube, for example, could hold the abrasive against a surface and gradually (after many tubes) produce a drilled perforation. Sand imbedded in a twisted bowstring could incise a straight line or even saw through a slab. The most impressive prehistoric hardstones required several techniques: slicing and shaping, making perforations of large diameter (such as *bi* disks) and great depth (such as *cong* tubes; see FIG. 1-9 below), removing surface to leave delicate relief bands, and, not least, incising extraordinarily fine line patterns within exceedingly small areas (see FIG. 1-10). These techniques, in turn, imply a secure method to hold or mount the object being worked, a ready power source for the tool guiding the abrasive sand, and possibly even magnification to permit the jade worker to see minute designs.

In the Northeast and Lower Yangzi macroregions, from the fourth millennium onward, we find a selective appropriation of certain minerals (all considered *yu*, "jade," by the later Chinese) distinguished by their colors, surface, and especially their extraordinary toughness. These hardstones are generally nephrite, in mineralogical terms an amphibole with a microstructure of "randomly-oriented bundles of felted and twisted fibers" (Wen and Jing, "Chinese Neolithic Jades," p. 254). The toughness of nephrite, second in the natural world only to carbonado ("black diamond"), derives from this structure. The smaller the bundles of fibers and the higher the degree of their misorientation, the more difficult the nephrite is to work. The minerals most often found in the Chinese Neolithic are actinolite and tremolite, especially in the Lower Yangzi. While only one source for these minerals can be confirmed in this region (Liyang, Jiangsu), most Chinese researchers believe local sources must have been worked during this period. Perhaps they are now exhausted. (It is interesting that prehistoric cultures closest to the Xinjiang sources of nephrite have so far not produced evidence of working this kind of hardstone.) The coloration of these nephrites results from their chemical composition. They range from various greens and yellows to white, but the whiter, milkier shades seem to have been preferred by many Neolithic lapidaries. The other stone commonly called "jade" in English is the mineral jadeite (in Chinese *feicui*), never found in any ancient Chinese context. Jadeite—a sodium pyroxene with a different microstructure—actually has greater toughness and a different range of colors than nephrite. Its glassy appearance also contrasts with the cloudy nephrites.

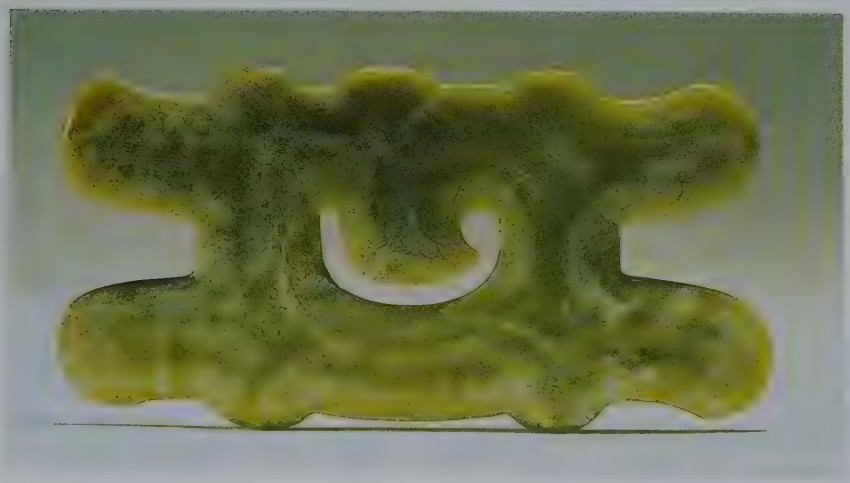
1-5 Bird
Hongshan Culture, 4th millennium BCE. Turquoise, height 1" (2.5 cm). Dongshanzui, Kezuo, Liaoning. Liaoning Museum, Shenyang

(see "Working Hardstones and Jade," page 33, for an introduction to the techniques of working stone). Around the beginning of the recent geological age (the Holocene), twelve to ten thousand years ago, gatherers and hunters in several parts of China began to experiment with making ground stone tools. Such stone working continued well into historic times when both prestige objects and practical ones were predominantly bronze. Ground stone knives, sickles, points, and other forms continued in use as important parts of tool kits throughout the Bronze Age.

Hardstones of the Hongshan and Liangzhu Cultures

Objects made of nephritic hardstones have been recovered from a great variety of Neolithic sites, but only in the 1980s did scholars focus on two regions especially rich in these products. The quantities of hardstones and their fine quality have prompted discussions of an "Age of Jade" as a developmental stage after the Late Neolithic and prior to the Bronze Age. However, hardstones did not play as prominent a role in Late Neolithic cultures in general as they did in the Northeast and East Coast cultures in particular, so the concept seems ill-suited for general use. The prominence of hardstones in these cultures nonetheless suggests increasing social complexity. Indeed, chiefdoms may have appeared in these regions by this time. Differential distribution of wealth, specialized labor, luxury goods production, and control over precious resources all characterize such societies, and all these traits seem to fit the archaeological cultures discussed below.

Excavations have documented an early jade-using culture in the Liao River drainage of the Northeast macroregion (specifically Inner Mongolia and Liaoning). Named after a site in Inner Mongolia, the Hongshan Culture is dated to the fifth to early third millennia BCE, contemporaneous with Yangshao in the North and Northwest. Some Hongshan sites exhibit stone architectural features, including putative ritual structures and graves. A certain amount of painted pottery has been found, but only hardstone carvings concern us here. At sites such as Hutougou and Niuheliang (both in Liaoning), small pieces of hardstone shaped as birds (FIG. 1-5), tortoises, and as abstract curl or cloud forms (FIG. 1-6) have been found in cist graves. Two other characteristic artifacts—the so-called "pig–dragons" (FIG. 1-7) and "cuffs"—have been noted in several burials. Found near the waists and heads of skeletons, respectively, they could have been worn as a part of the dress or headgear. In general, jades of the Hongshan Culture have rather simple shapes and minimal surface detail. Small animal plaques present a typical silhouette with few additional details. The pig–dragons—a thick disk with a slit—usually have restrained linework suggestive of rudimentary facial features. The name is clumsy; beyond the snout or nose and large eye circles, this design lacks recognizable animal features. To call it a pig or dragon requires a leap of the imagination.



1-6 Hooked-cloud ornament
Front view. Hongshan Culture, 4th millennium BCE. Hardstone, length 8⅞" (22.5 cm). Niuheliang, Jianping, Liaoning. Liaoning Museum, Shenyang

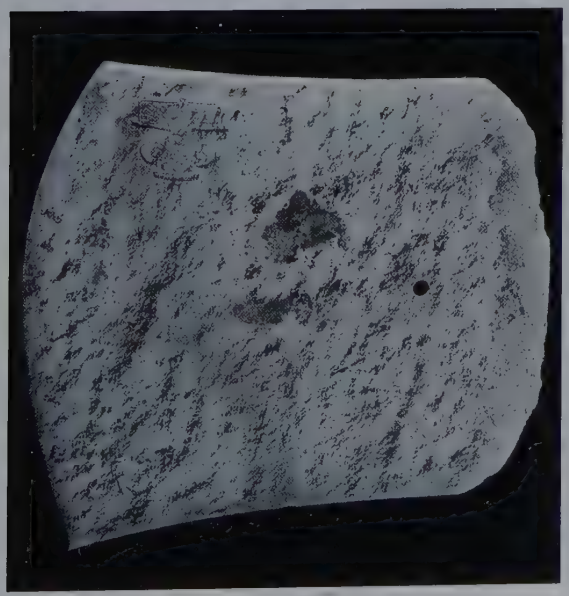
The Liangzhu Culture of the Lower Yangzi centered on Lake Tai (in modern Jiangsu, Shanghai, and Zhejiang) utilized hardstones in large quantities. Its name derives from a site first found in the 1930s. Major excavations of the 1970s–1980s uncovered numerous burials, but as yet no villages have been reported. Some of the graves yielded exceptional quantities of hardstones,

literally hundreds of items in a single burial. This culture seems to be the successor to a lengthy local sequence and dates to the late fourth and third millennia BCE, contemporaneous with the late Dawenkou Culture in Shandong. The well developed jade-working industry cannot have depended on household production. Minerals had to be prospected, mined, and transported over some distance. The volume of production itself required workshops with a considerable labor force. Highly skilled workers must have engaged in their craft for lengthy periods. A craft-producing population, in turn, demanded the support of others. Like the "eggshell" wares from the Shandong Longshan Culture discussed below (see FIG. 1-18), Liangzhu jades most probably emanated from a chiefdom.

We can infer functions for many Liangzhu jades from several dozen well-preserved, rich burials. Small beads and tubes arrayed near the heads and necks were probably necklaces. Large rings on wrists and arms presumably were bracelets. Flat plaques of several shapes, a fitting with three prongs, and awl-shaped jades also appear near skulls. It has been suggested they were part of headdresses, possibly differing for men and women. Elaborate headdresses appear in the composite motif found on the most impressively worked Liangzhu Culture jades (see FIG. 1-10 below).

Other forms found in the Liangzhu Culture most probably had ceremonial uses. Large axe blades with perforations have been found at one side of skeletons in several graves at the Fanshan site northwest of Hangzhou (Zhejiang). The blades are accompanied by a fitting that ornamented the butt end of the axe handle and another piece that served as a finial (FIG. 1-8). The axe measured about 32 inches (80 cm) in length. Excavators found minute pieces of jade in the area where the now decayed handle lay. These axes may have been limited to male burials. At the Fuquanshan site (in rural Shanghai), excavators found several graves with many axe heads, although none are as elaborate as the examples found at Fanshan. Such axes could have been tokens of chiefly rank or warrior status. Although hafted and shaped much like the more common stone axes found in many other Neolithic cultures (and depicted among the Dawenkou emblems; compare FIG. 1-21 below), their cutting edges are not sharpened, and the stone is too brittle to withstand vigorous use, either as a tool or in combat. The blade from Fanshan also bears a complex composite image (see FIG. 1-10). This too suggests its owner had a special status.

1-7 Pig–dragon
Hongshan Culture, 4th millennium BCE. Hardstone, height 6½" (16.5 cm). Niuheliang, Jianping, Liaoning. Shanghai Museum



1-8 Axe blade with handle fittings
Liangzhu Culture, 3rd millennium BCE. Hardstone. Fanshan, Yuhang, Zhejiang. Zhejiang Institute of Cultural Relics and Archaeology, Hangzhou

Found in one of the richest of the Fanshan graves (M12), this "ceremonial" axe originally consisted of a wooden handle (itself inlaid with small stones) and top and bottom fittings made from the same mottled purple-brown nephrite. The blade, tied in place, was made from a different stone with green bands in its creamy white matrix. (Compare with FIG. 2-24)

1-9 Squared tube, *cong*
Liangzhu Culture, 3rd millennium BCE. Hardstone, height 11½" (29.6 cm). Sidun, Wujin, Jiangsu. Nanjing Museum

Other distinctive types cannot be linked readily to any obvious use either as adornment or as weaponry. Antiquarian scholars have long known about flat disks with perforations, *bi*, and squared tubes, *cong*, but the proper origin and dating of these objects remained obscure. A series of burials reported in the 1980s verified their attribution to the Liangzhu Culture. One grave near Sidun, Changzhou (Jiangsu), for example, contained no less than 24 disks and 33 tubes arrayed under, around, and on the skeleton of a 20-year-old male. The disks and tubes showed discoloration and fractures, perhaps caused by fire. The excavators hypothesize that there was a funeral rite in which the disks were laid down in the grave, burned, the corpse placed on the fire, and then tubes added around the body. Pre-modern scholars associated *bi* disks with the round dome of heaven and *cong* tubes with the square earth. These concepts and associations, however, only developed in the Warring States and early imperial periods (fifth–first centuries BCE), and there is no particular reason to believe that prehistoric peoples of the Lower Yangzi associated similar ideas with these types. The frequent pairing of these two forms may have significance. *Bi* disks look like enlarged renderings of spindle whorls used in weaving, and not unlike some axe heads with large perforations. To some modern scholars, the regular horizontal bands on the *cong* tubes suggest a concern with measuring. Whatever utilitarian forms and functions lie behind the shape and decoration of these objects, by the time the Liangzhu Culture flourished these hardstones had acquired special functions.

Disks in Liangzhu burials usually lack decoration, but other forms display extraordinarily complex and miniaturized surface detail. The *cong* tubes range from 1–2 (2.5–5 cm) to 12–16 inches (30–40 cm) in height. They are divided into two to fifteen superimposed registers of repeated patterns oriented at the four squared corners (FIG. 1-9). The pattern often consists of little more than a raised horizontal ribbon with drilled or raised circles placed above it on adjoining faces of the tube. Each register is delimited by undercutting below the ribbon and a pair of raised bands above the circles. Some smaller tubes, more like

rings or bracelets, suggest that the patterns found on taller tubes may actually be reduced renderings of a more complex motif: a mask that combines both human and animal elements. An animal mask generally appears below a less elaborate pattern register such as that on taller tubes. Its drilled concentric circles (read here as "eyes") have a raised area with fine engraved lines surrounding them. These relief areas are connected by a crimped band (a nose ridge?) bearing similar line work, so that the horizontal ribbon below seems to represent a mouth. Many dozens of these smaller tubes have come from burials, their patterns given greater or lesser elaboration through relief and fine lines. Some scholars now propose that the small braceletlike forms with elaborate masks actually represent the beginning of a lengthy development and attribute the taller *cong* with simplified multiple registers to a later period.

Even more elaborate mask motifs, in turn, play a central role in the most complex imagery found on the Liangzhu Culture jades (FIG. 1-10). This motif seems to be restricted to certain large and impressive forms: axe blades, large *cong*, and plaques used as headdresses or hair fittings. As on the more common small forms, the mouth, eye sockets, and bridge linking them are rendered in relief, complemented by a broad "nose." Above these features lies another relief area consisting of a rudimentary miniature face within a trapezoidal head bearing a wide headdress resembling feathers. Indeed the simplified features of this face suggest the upper register pattern of small tubes. The two areas of relief are integrated by fine incised

1-10 Mask motif from axe
Detail of FIG. 1-8

lines that delineate a torso, arms, and legs. Seen in this way, a body surrounds the raised eyes of the lower mask. Its hands meet the mask's eyes, while its clawed feet curl up under the mouth. The more common two-tier mask motifs found on small tubes and the radically simplified repeated patterns on tall tubes may both be references to this complex, fully elaborated form.

Scholars debate the possible identification and meaning of the composite mask figure. Since masks serve in many cultures as attributes of shamans and shamanesses, some suppose these motifs connect to a shamanic cult. The human-like figure of the composite motif could be either a deity served by a shaman or the shaman himself. In this view, many of the richest Liangzhu Culture burials should be attributed to shamans, presumably attired in their most impressive costume with jewelry and headgear. Indeed, one Liangzhu burial site at Yaoshan (Zhejiang) lies within an artificial earthen platform (or "altar") to which Chinese archaeologists ascribe religious ceremonies. This interpretive strategy deserves attention, but unfortunately much of the context for this cult remains unknown. Some writers see the mask-figure motif as the spirit or totem of

Working with Clay

Pots have been made in remarkably consistent ways throughout the world, perhaps because their basic ingredients and characteristics are also uniform. Clay fired at relatively low temperatures (c. 900°C) is called earthenware. It is relatively soft, easily broken, and porous. The ceramics discussed in this chapter would be placed in this category. When fired at higher temperatures (c. 1200°C), clay becomes harder and less porous; this is stoneware. According to present evidence, stonewares appeared only in the Bronze Age (see chapter 2). Firing clay requires a special oven or kiln where the raw vessels can be baked for a period of time. Kilns at the Banpo and Dawenkou sites have separate chambers for burning fuel and for baking vessels. When the air within the latter is oxygen-rich, combustion changes the iron in the clay to a reddish color. This is an oxidizing atmosphere. On the other hand, when the air in the kiln lacks oxygen, combustion draws oxygen out of the clay, turning it gray; this is a reducing atmosphere. The red wares described below came from oxidizing kilns, while gray wares and the "eggshell" black wares were made in reducing atmospheres.

The clay used for potting was common loess, the fine-particle soil deposited over much of North China by winds and rivers since the last Ice Age. The clay may be processed (levigated) before use to make its particles fine and regular. When dampened, the sticky quality of the clay allows it to be modeled plastically. Using slabs and coils of clay to construct shapes was the most common technique. Coils can be built up to make walls of vessels of any size and then melded by paddling. For this the potter holds the vessel in the hand or on a stand and beats the surface with a tool that is covered with twine so that it will not stick to the surface. Paddling reduces the visibility of the coils on the exterior as it strengthens the walls, but one can usually still feel the coils on the inside of a vessel. Larger jars had to be made in two halves and then joined together with wet clay (luting). Similarly, small filaments of clay can be luted to the surface for lugs. Potters finished many vessels on a slow wheel or turntable. By rotating the vessel, surfaces and shape could be made more regular, and some painting was also done in this way (see FIG. 1-1). The true fast wheel appeared rather late, notably in the regional Longshan cultures. In vessels actually turned on a fast wheel, one can feel where the clay has been worked up. Only the "eggshell" black wares (see FIG. 1-18) discussed below required a true fast wheel.

The great majority of pots were given some surface treatment, such as cordmarking, scratching, and comb patterns. Cordmarking uses a paddle wrapped with cord or a stick wound with cord and then applied as a roller. Painted pottery of the Yangshao and East Coast cultures was burnished prior to painting. A piece of shell or smooth stone was used to polish the surface, imparting a glossy appearance. Paint can be applied either before or after firing. If applied before firing, the decoration will be less prone to flake. The painting utilizes slip, a liquid suspension of clay, with minerals that burn to various colors when baked. Some pots have a slip coating as a ground on which additional painting was then applied (see FIG. 1-16). Many materials could have been used to apply pigment. From the appearance of strokes and lines, it seems that some brushes consisted of pliant plant material.

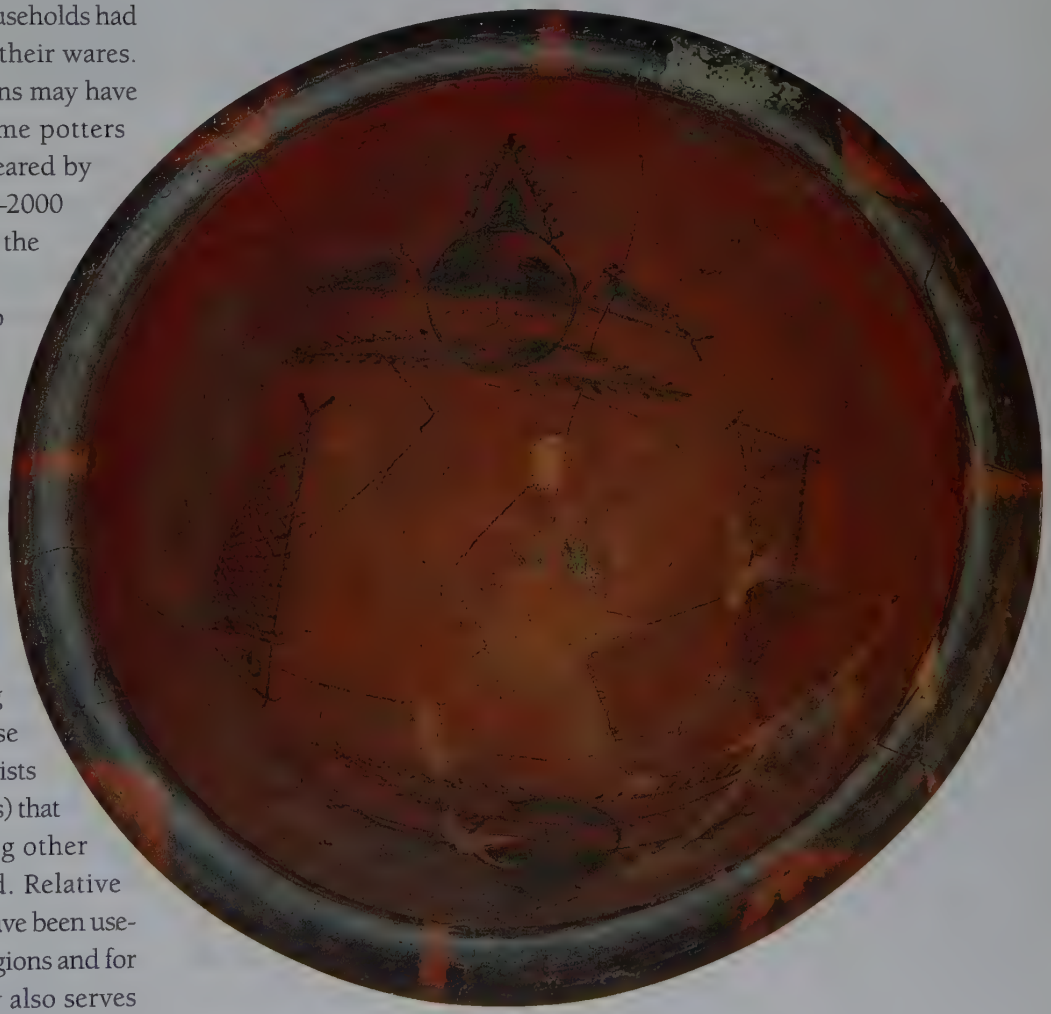
the Liangzhu Culture people. Another bird motif, so far less often found in excavated objects than in objects in collections without provenance, has been linked to a sun cult or sun-bird totem. In a few rare instances the composite mask and bird images occur together. More discoveries and research will no doubt lead to renewed thinking on these topics.

Pottery

While pottery can be found at Early Neolithic sites that date before 7500 BCE, only after that date, in Middle Neolithic cultures, does it become truly abundant. In subsequent times and places, pottery marks the spot where prehistoric human groups lived. For most of the Neolithic period, part-time, perhaps seasonal, potters, both women and men, made pottery. Household production could achieve large output and high levels of quality. At Banpo and Jiangzhai, kilns clustered at one edge of the village suggest that all households had access to the kilns in order to fire their wares. Obtaining fuel and firing up the kilns may have been group tasks. Skilled, full-time potters supported by others probably appeared by the end of the Late Neolithic (c. 3000–2000 BCE), perhaps in chiefdoms such as the Shandong Longshan Culture.

Excavators analyze pottery to create convenient yardsticks for estimating time. This is made possible by the large quantities of pottery produced and by the everyday breakage that requires potters to produce new vessels continually. Pottery changes shape gradually but steadily over time, and decoration also undergoes a continuous long-term modification. By sorting sherds and whole vessels with these visible changes in mind, archaeologists establish relative sequences (seriations) that then become a standard for dating other deposits wherever they are found. Relative datings based on pottery seriations have been useful for comparing sites in different regions and for tracking long-term trends. Pottery also serves archaeologists as a marker for recognizing "archaeological cultures" and their phases. Within sites occupied for relatively short times, pottery exhibits considerable consistency in its wares, shapes, and surface. At sites inhabited for longer periods or on several occasions, on the other hand, archaeologists can recognize the presence of one or more phases (or even cultures) from sherds in stratified deposits. Surveys and trial excavations that plot the areal distribution of a culture or its phases over space generally depend on such diagnostic sherds.

Moreover, pottery can be a source of data about cognitive processes and symbolic communication. Surface decoration, especially painting, offers the possibility of insight into the mind of an ancient potter. Yangshao potters decorated their basins and bottles with a variety of representational and non-representational designs. For modern researchers, the non-representational designs—common among many potters through



1-11 Bowl with painted decoration
Yangshao Culture, Banpo phase, 5th millennium BCE. Earthenware, diameter 15½" (39.5 cm). Banpo, Xi'an, Shaanxi. Historical Museum, Beijing

the ages—serve as a point of entry into such questions as group identity. Representational designs, on the other hand, while less common in real numbers, are equally inviting (see pages 47–53 below). Speculations about symbolic connotations, however, are regarded here as the proverbial "slippery slope." How can we be confident that our assertions about a design we see as a "flower" or a "shaman's mask" correspond to what the ancient potters themselves saw or wished to make?

Pottery vessels served practical purposes for their makers and users, but by Late Neolithic times some pottery production fulfilled certain non-utilitarian purposes as well. Any vessel can be analyzed initially by mentally taking it apart and describing each of its attributes or features. For example, a vessel with a small flat base, wide ovoid body, open mouth, and everted rim (such as FIG. 1-11) may be common both in burials and in dwelling sites. It could have served a variety of purposes within the span of a day and over its life. Holding raw vegetables, serving cooked grain, holding water for washing hands, or covering a large crock as a lid would all be possible functions. A consistent combination of attributes, like those listed above, defines a type, but a single type could serve several functions, and many types probably shared common functions. Modern scholars have no choice but to call vessels such as this one (FIG. 1-11) "bowls," but it should not be assumed that such names designate their actual roles in all contexts.

We can be more confident about functions if the context or contents provide specific clues. Residues such as the dregs of a liquid or the charred remains of cooked grain or meat indicate contents, while tripods recovered from a hearth with carbon on their legs clearly served as cooking pots. Attributes that fulfill a specific purpose in themselves—such as legs, ring feet, lugs, spouts, lids, and knobs—also help to isolate functions. If lugs surround the mouth of a vessel, especially one with a large capacity, it may be that a lid or cover was tied down with a perishable material to seal the vessel and protect its contents. An argument about whether some pottery was non-utilitarian or "ceremonial" often depends on clues derived from its attributes and context. For example, vessels with especially large pedestal bases, elaborate lids, and other features that make them inconvenient to handle may have been display wares and thus tokens of wealth or rank. Vessels like the "eggshell" cups (see FIG. 1-18) that only appear in burials may also be classed as ceremonial with some assurance.

Yangshao Cultures

Since J. Gunnar Andersson's initial work at the Yangshao type site, this culture has often been equated with painted pottery. In fact, painted vessels make up a small percentage of the total ceramic inventory at any excavation and within any context (except for burials of the Banshan and Machang phases). At Banpo the excavators collected five hundred thousand sherds and restored a thousand whole vessels. Of this total, only a few dozen whole vessels carried painted decoration. At Banpo potters painted vessels made from a fine hard red clay (accounting for 35 per cent of the sherds) with a burnished surface. Such red wares were primarily to hold water and food and appear in fairly high percentages in burials. Therefore it seems that the painted pottery at Banpo was of better than average quality and was preferred for both eating and burial uses.

The development of pottery shape and decoration within the Yangshao Cultures can be examined using wide-mouth bowls or basins, *pen*. At Banpo in the fifth millennium BCE, these basins were built up by coiling from a flat base. They have a gently swelling silhouette, but the upper register of the body contracts slightly below an everted rim (see FIG. 1-11). Painting may appear on the exterior upper register, on the rim itself, and inside the basin. Black and red slips (liquid suspensions of clay) were used to apply a variety of motifs. Among the more distinctive are: a fish in silhouette with alternating infilled and reserved (unpainted) areas; a "mask" with slit eyes, nose, and mouth, sometimes with flanking fish; and such creatures as deer and frogs. These representational motifs are of a piece with an abundant repertoire of geometric patterns, such as rectangular panels with infill reminiscent of fish bodies. Several early analyses of these motifs suggested that the "representational" fish came

1-12 Basin with painted decoration
Yangshao Culture, Miaodigou phase, 4th millennium BCE. Earthenware, height 14¼" (36.5 cm). Miaodigou, Sanmenxia, Henan. National Museum of History, Beijing

earlier and that "non-representational" forms derived from them—an overall trend toward abstraction. While this makes for a logical formal sequence, it cannot be supported from the stratigraphy of the finds at Banpo and other sites, or from the shapes of the vessels with decoration. Abstract motifs can be found at lower (earlier) levels, while representational ones persist in upper (later) strata. Vessels of the same shape and hence same relative position in a seriation may carry either kind of design. The common animal motifs of Banpo and other Yangshao sites (Jiangzhai, Beishouling) did not, however, persist in later Yangshao phases.

In the Miaodigou phase, in the fourth millennium BCE, as exemplified by its type site in northwestern Henan, potters continued to make basins, but their shapes changed (FIG. 1-12). Although constructed on a small flat base, the slope of the vessel wall now angles sharply and the upper wall curves smoothly back to the mouth, so that the vessel's widest diameter is below the rim at the curve in the wall. Painting appears on the upper half of the outer wall and rim, but never on the interior. The most common motifs might be called abstract, unless one instead identifies reserved areas as "leaves" or "petals" and sees them as arrayed around infilled dots, the centers of "flowers." Some vessels have neatly composed patterns of five "petals" disposed around the surface so that individual petals serve two adjacent "flowers." Many examples, however, are anything but static. Potters pulled and stretched reserved areas, creating a constantly changing flow of motifs looking rather like sails filled by a strong gust of wind. Like the Banpo potters, the people of Miaodigou exploited the potential of painted and unpainted areas to create strong effects with only a single color of slip.

Similar basins are found in the Majiayao Culture of Gansu and Qinghai to the northwest of the Wei and Yellow River heartlands (fourth millennium BCE). This culture coexisted with Miaodigou to its east and the Dawenkou Culture (see below) of the eastern coast. Motifs of both the Banpo and Miaodigou phases are found on pottery from early strata at sites in Gansu. The local Majiayao

1-13 Basin with painted decoration
Yangshao Culture, Majiayao phase, 4th millennium BCE. Earthenware, diameter 11¾" (30 cm). Minhe, Qinghai. Qinghai Institute of Archaeology, Xining

potters, even while retaining the early Yangshao basin shape, developed a distinctive repertoire of painted motifs not found in Shaanxi and Henan. A beautiful basin from Minhe County (Qinghai), painted both on the exterior and interior of its burnished, buff-colored body, shows the local style (FIG. 1-13). Contrasting infill and reserve areas are played off through undulating, modulated lines held in place at intervals by solid dots and set off by elongated, infilled "petal" forms that recall Miaodigou motifs. Inside this basin, the potter subdivided the area into equal segments using dots and then disposed dots at equal intervals around the rim. Majiayao designs generally exhibit careful geometry, but their outstanding characteristic must be their flowing lines gracefully moving around the vessel. In many cases it appears the vessel was painted on a turntable (see FIG. 1-1). A brush held stationary at right angles to the vessel surface could create evenly spaced, parallel lines while the vessel itself was rotated. Most of the surfaces of Majiayao basins are covered with monochrome designs, as are large bottles and jars.

These brief descriptions illustrate how vessel forms and painted decoration developed differently over both space and time. Archaeologists working at sites from Henan westward to Gansu and Qinghai recognize these wares and their cultural identities from just a few sherds due to the formal traits of such basins and their decoration. Cataloguing such data and systematically synthesizing it constitutes one of the main achievements of Chinese archaeologists since the 1950s. The time-and-space framework for Chinese Neolithic cultures derives in large measure from such analyses.

1-14 Basin with painted decoration
Dawenkou Culture, 4th millennium BCE. Earthenware, height 4½" (11.3 cm). Dadunzi, Pi County, Jiangsu. Nanjing Museum

East Coast Cultures

The Yangshao and Majiayao Cultures of Henan, Shaanxi, Gansu, and Qinghai did not have a monopoly on painted pottery. Impressive painted wares occur in the east, especially in the modern-day coastal provinces of Shandong and Jiangsu, where

the Dawenkou Culture flourished from the late fifth to mid-third millennium BCE. The excavation of extensive cemeteries at Dadunzi (northern Jiangsu) and at Dawenkou (southern Shandong) has supplied much of the data for studying this pottery. Like the Yangshao, the Dawenkou Culture existed for a lengthy period; many regional variations and chronological phases can be recognized. Here too, painted pottery was relatively rare even when it flourished; it is almost unknown in later phases.

Basins found in northern Jiangsu have shapes very much like Miaodigou vessels and feature similar painted designs. For example, the decoration on several basins from the Dadunzi site (Pi County, Jiangsu) reproduces extremely accomplished renderings of the same kinds of dots and "petals" (FIG. 1-14). Here, however, the decoration requires three colors of slip: reddish orange, brown-black, and white. Patterns are painted onto a ground that has previously been covered with slip, a practice not common in Miaodigou pottery. When redrawn, the pattern resembles either four circles created from petals and then filled with paired dots connected by horizontal lines or four flowers consisting of four petals each. Some examples also parallel Miaodigou pottery by replacing a regular, highly patterned disposition of these elements by distorted shapes and varied, dynamic placement. Dawenkou painted pottery carries other motifs, such as an eight-pointed star outlined in dark slip (FIG. 1-15) and filled in white with a reserved red square (the actual body color).

Many scholars argue for contact between the Miaodigou Culture of Henan and the Dawenkou Culture of Jiangsu and Shandong as the best explanation for their similar shapes and decor. Absolute dates from carbon-14 dating tests place the two phases within the same chronological range, and indeed the western periphery of the Dawenkou distribution overlaps the eastern periphery of the Miaodigou. A site north of Zhengzhou (Henan) called Dahecun revealed a lengthy occupation. Its pottery in turn represents a gradual transition from earlier to later Yangshao phases, including impressive painted pottery utilizing several slips (FIG. 1-16) that suggests contact with Dawenkou. The vessel shown

1-15 Pedestal bowl with painted decoration
Dawenkou Culture, 4th millennium BCE. Earthenware, height 11½″ (29 cm). Dawenkou, Tai'an, Shandong. Shandong Institute of Cultural Relics and Archaeology, Jinan

1-16 Basin with painted decoration
Yangshao Culture, 4th millennium BCE. Earthenware, height 8¼″ (21 cm). Dahecun, Zhengzhou, Henan. Zhengzhou City Museum

in this figure descends from the short, wide-mouthed basin first encountered at Banpo and later developed in both Miaodigou and Dawenkou. Its decoration consists of a white ground with other pigments played off against it, known earlier from the east. Movement back and forth from the Henan interior to the east coast was feasible and must have been increasingly common over time. Throughout the Late Neolithic such regional interaction became more and more powerful and must be considered one of the essential mechanisms for gradually creating a supra-regional, "Chinese" culture.

In addition to the three regions discussed above, painted pottery has been found in other cultures, including the Banshan and Machang of Gansu and Qinghai, the Hongshan Culture of the Northeast, the Daxi Culture of the Middle Yangzi, and the Taosi Culture of Shanxi. It is still too early to demonstrate that sustained interaction with adjacent Yangshao or Dawenkou Cultures had a decisive impact on these painted wares. The Taosi Culture is still known only from preliminary reports, and very little of its painted pottery has been published. In its own time period (c. 2500–1500 BCE), Taosi painted pottery was a rarity, except for the Northwest macroregion (the Banshan, Machang, and subsequent cultures). In the early Bronze Age painted wares also appear in the Xiajiadian Culture of the Northeast (see chapter 2).

The Shandong Longshan Culture

For several decades, "Longshan" has been a general term for a host of regional cultures in North China and the Yangzi drainage zone that share certain features and fall chronologically in the third millennium BCE. This meaning exceeds the initial use of this term, when it applied only to the culture first recognized at a site called Chengziyai (east of Jinan, Shandong). Pottery found at that site by G.D. Wu and others in 1930–1931 included a range of gray, dull black, and lustrous lacquer black wares. Some were wheel-made. Excavations at earlier Dawenkou sites have demonstrated that Shandong Longshan wares descend from shapes that evolved over a long term in that culture. Both in their earlier Dawenkou incarnations and in their later, Longshan ones, these vessels do not exhibit much, if any, surface embellishment except for raised ridges and incised lines made while turning on a wheel. The Shandong Longshan wares were among the earliest pottery made by specialists rather than part-time or seasonal potters. The Shandong Longshan Culture with its walled settlements certainly exceeded a village-level society, and, as with the Liangzhu Culture to the south, the term "chiefdom" probably fits.

Two kinds of pottery from this culture deserve special attention. A distinctive spouted pitcher, *gui* (FIG. 1-17), made from red, gray, or white clays has been found throughout its distribution. The white clay used for these vessels (but rarely for any other) is called *ganzi tu*, a porcellaneous clay (kaolin) that burns to a yellow-white color when fired at high temperatures. This may be the earliest instance in North China of such a clay being used for ceramics. (White clay is an indispensable ingredient in much later true porcelain.) The tripod body (called a *li*) consists of three bulbous, hollow legs terminating in solid, conical feet. Above the level at which these three legs join is a round neck with a turned rim. One portion of that rim is drawn out to create a large, troughlike spout. Directly opposite, attached below the neck and onto one leg, the potter affixed a strap handle. The form of the vessel, especially its aligned spout and handle, favored a pouring function, presumably for liquid contents warmed in the bulbous legs. Function and shape anticipate (or parallel) several bronze pouring vessels of the early Bronze Age (for example, see FIG. 2-13 below).

Taking into account their physical characteristics, find spots, and associations, the finest Shandong Longshan wares must have served ritual functions. This ware has been called "eggshell" black (FIG. 1-18) because it compares in thickness to a chicken's eggshell. Characteristic vessels are small goblets, *bei*, consisting of a round base, thin stem, and cuplike body with a flaring rim; they weigh only 1.5–2.5 ounces (50–70 g). Each component shows traces of having been thrown on a fast wheel. Some vessels actually have a separate cup cradled by the stem. The amazing thinness of the walls required a very fine clay

1-17 Pitcher
Longshan Culture, 3rd millennium BCE. White pottery, height 11½" (29.7 cm). Yaoguanzhuang, Weifang, Shandong. Shandong Museum, Jinan

Representative of a type that survived for several thousand years in the East Coast Neolithic (Dawenkou and Longshan) cultures, this *gui* was designed to permit its liquid contents to be heated rapidly and then poured with precision. It stands near the inception of a long tradition of wine service vessels that served ritual needs throughout later times (compare the early bronze *jue*, see FIG. 2-13).

1-18 Stem cup
Longshan Culture, 3rd millennium BCE. "Eggshell" ware, height 10½" (26.5 cm). Donghaiyu, Rizhao, Shandong. Shandong Institute of Cultural Relics and Archaeology, Jinan

without impurities or temper (inclusions added by the potter). The paste is a uniform black throughout, although burnishing enhanced the luster of the surfaces. Making walls so thin may have necessitated scraping the exteriors with a sharp cutting tool while the half-dry vessel rotated on the wheel. Two formidable challenges thus faced potters making such objects. The power train driving the wheel had to be steady, more so than a kick wheel. Secondly, unfired vessels had to be able to withstand high temperatures inside the kiln without collapsing.

The functional role of this ware can be seen at a Longshan cemetery site near Chengzi (Zhucheng, Shandong; not to be confused with the more famous Chengziyai). Here only 6 per cent of the graves contained "eggshell" black ware cups. All of those graves, in turn, were large trenches with traces of wooden chambers and an assortment of other pottery, including some *gui* pouring vessels. A single cup was found near the upper torso or head of the skeleton or, in a few cases, near the hand. When compared to other graves of the same phase in the same cemetery, these few instances with cups seem richly endowed, and we infer both that their occupants had some special status and that cups and associated pottery figured in a rite at the burial. Like painted wares from Taosi, the "eggshell" wares from Shandong were probably made in limited quantities for special persons and functions. As with fine Liangzhu hardstones, some portion of society dedicated itself to specialized craft production for the needs of the elite.

MIND IN MATTER

It may seem presumptuous to study prehistoric artifacts for an understanding of abstract and complex notions. Our assumption, however, is that modes of thinking can be in some sense "visible." Visible, if and when data can be brought together to inform the deductions and speculations required to "see" them. An object utterly without context—without any clue to its time or place of origin, the human group that made it, or its function—becomes a blank slate on which an observer

can inscribe virtually any meaning. Interpretations of this kind must inevitably be idiosyncratic and, since they cannot be tested, may or may not be persuasive. On the other hand, observations and deductions about objects situated within contexts—as is generally the case for archaeological artifacts—lead beyond mere description and classification. With some measure of imagination and plausible speculation, interpretations of objects do in fact offer access to such topics as how people conceptualized themselves and their world.

Images of Animals and Humans

Several of the cultures surveyed above produced pottery vessels with the shape or attributes of real animals. For example, pouring vessels in the shape of boars and dogs (see, for example, FIG. 1-19) from the Dawenkou Culture of Shandong served as utilitarian objects and were essentially pod-based containers with spouts and loop handles. Legs and bodies were given feet, necks, and tails, while spouts were modeled with a mouth, snout and nostrils, eyes and ears. These vessels have been recovered from graves furnished with other, more common pottery and such items as roebuck tusks or the jaws of a pig. Animal offerings at graves are far more common than vessels shaped like animals, but correlating the two customs might be meaningful. Pigs and dogs were domesticated animals in this culture. Both animals presumably figured as significant food sources for at least some of the population. Each animal may also have been linked to hunting (wild boars were hunted, dogs were used in hunting). Both animals, moreover, supplied the tusks, bone, and ivory found in graves.

A modern observer created the pattern of associations sketched here from among all of the possible facts included in an archaeological description of grave contents. Nonetheless some of these associations could have been in the minds of the people who made such animal-shaped vessels. Hypothetical associations can be revised as more examples of graves and vessels are found. To date, all of the animal-shaped vessels in the Dawenkou Culture have been found with the associated grave goods mentioned above. One grave was a mature female's burial, while the rest were males. It is not unusual to associate mature males with hunting and the task of procuring valuable food. Many societies past and present have assigned roles of this general kind to men. If we carry this line of thinking still further we raise many questions: were boars and dogs "fierce" or "powerful" animals? Was the hunter who killed such an animal or used such an animal likewise fierce or powerful? Did social prestige accrue to successful hunters? Did grave rituals and grave goods commemorate prowess as hunters or status as powerful figures within the village? When such artifacts and grave goods are found in a female's burial, can we extrapolate that she too

1-19 Pig
Dawenkou Culture, 4th millennium BCE. Earthenware, height 8½" (21.5 cm). Dawenkou, Tai'an, Shandong. Shandong Museum, Jinan

1-20 Owl
Yangshao Culture, 4th millennium BCE. Earthenware, height 14" (36 cm). Quanhucun, Hua County, Shaanxi. Institute of Archaeology, Beijing

was a potent hunter or otherwise powerful? One can adduce ethnographic data from societies in which hunting a boar becomes a source of social prestige; however, an analogy only demonstrates the possibility of such a linkage in the prehistoric case. It does not establish a fact for a prehistoric society such as this one.

Other vessels in the shape of animals cannot, however, be related to hunting; a gray pottery owl from Quanhucun (Hua County, Shaanxi; FIG. 1-20) serves as a convenient example. Here no published data on the excavation context has been made available. Although a related owl's head has been found in the same county, the species does not correlate with other grave goods (such as the Dawenkou tusks or pig jaws). Moreover, given its shape, the Quanhucun owl actually serves less well as a vessel. Although suitable perhaps for storage, it would be hard to handle, especially when filled. The owl's features—especially beak and eyes—incorporate well-observed details that distinguish it from generic bird representations. Without additional clues such as the status of pigs as domesticated or the grave goods of the Dawenkou Culture, however, it becomes impossible to theorize the significance of the owl. Is this vessel exceptional? Whose owl was it? Later associations of birds in historic and literate Chinese cultures, for example as the voices of omens, have little value here, except as yet another fund of comparative data that could be invoked when more circumstantial information becomes available. Owl-shaped vessels are an appealing feature of Late Shang bronze casting and marble carving (see FIGS. 2-10, 2-1, below).

Precursors to Writing?

Some scholars see the origins of the characteristic Chinese logographic script in scratches on the rims of Banpo pottery sherds from the fifth millennium BCE. These marks were made by intention and did serve some purpose for potters or users. Some marks recur within a site or across sites, but they are generally so rudimentary (such as two parallel lines) that attributing specific meaning, much less linguistic function, to them seems ill advised. In order to be a precursor of proper writing, a mark must have had a demonstrable linguistic role representing sound (phonemes) and meaning (morphemes). It is possible that marks signifying meanings without sound values pre-dated true logographs, which convey both. Numerals would be a likely case in point. Other signs may have been employed as emblems—symbols that stand for something by conventional association. The earliest true Chinese writing system, the script of the Shang (c. 1200 BCE; see FIG. 2-5 below), already utilizes true logographs that carry both phonemic and morphemic value through several techniques of graphic representation and combination (see "Divination: Communicating with the Ancestors," page 61).

Sherds at sites such as Banpo, Jiangzhai, and Liuwan offer abundant evidence for marks made by potters. The assortment of marks in a given excavation can be quite extensive. At the Liuwan cemetery (Qinghai, c. 2400–2000 BCE), Machang Culture vessels bore thirty-eight distinguishable marks painted onto the lower portion of vessels. These marks systematize some 679 examples recovered from the graves of this one culture. If each household was making its own pottery, these marks could approximate the number of makers (households) at the time. On the other hand, if a few potters were producing wares for a larger community of users, different marks might indicate users or owners instead. The excavators of the Liuwan cemetery found a significant correlation between certain marks and certain graves, and some marks were found in multiple graves. If marks designated family identity, the association of the burials with identical marks might tell us about social organization.

1-21 Detail of emblem incised on vessel
Dawenkou Culture, 4th millennium BCE. Lingyanghe, Ju County, Shandong. Ju County Museum

More complex signs are found in the late Dawenkou Culture, datable to c. 3000–2000 BCE (FIG. 1-21). These marks consist of incised line drawings of a few repeated kinds: for example, a stone axe head on a handle, or a combination of a disk (sun?) and a crescent (moon?), sometimes with a pointed shape (mountain?). At present eight or more distinct signs have been collected, albeit in very limited numbers. They can be found only on the exterior of large containers and have been documented at several sites distributed over the Shandong peninsula. In describing the line drawings, the words in parentheses above (namely sun, moon, and mountain) give possible readings proposed by Chinese archaeologists. Once we acknowledge these readings, however, it becomes difficult to see the drawings as anything else. By the same token these identifications are not strained. Some logographs of the Shang period in fact parallel them and provide one basis for such identifications. Perhaps these marks were emblems of groups (as small as a family or as large as a tribe) that had spread across the area documented by their archaeological distribution. This would be a matter of some importance for later periods, especially the early Bronze Age, when "clan emblems" figure prominently in many inscriptions on bronze ritual vessels.

Isolated potters' marks or emblems notwithstanding, there has been little evidence for a sequence of signs (logographs) that might represent a phrase or sentence. If efforts at writing employed perishable materials such as wood, bamboo, or leaves, their one-time existence would necessarily be absent from the archaeological record. The sophistication of Shang writing argues for a period of development in which principles for constructing logographs were devised. That development has yet to be rediscovered.

1-22 Vessel with human head
Yangshao Culture, 4th millennium BCE. Earthenware, height 12½" (32 cm). Dadiwan, Qin'an, Gansu. Gansu Museum, Lanzhou

Most Neolithic cultures also yield some evidence for human representation. The best known examples come from the Yangshao Culture of the Wei River and the Majiayao Culture of the Gansu corridor. J.G. Andersson first collected pottery human images in the Gansu corridor during the 1920s, but his specimens could never be linked to specific archaeological contexts. Analogues have been rare in controlled excavations since that time. A fine example of this type is a tall painted bottle with human head from the important Dadiwan site in Gansu (FIG. 1-22). Here the potter finished off a burnished and painted red ware bottle with a modeled head. The face, a flat plane built out from the neck, has a raised nose ridge and rudimentary loop ears at either side. The facial features are generalized and masklike. The painted decoration on the body, a rendition of characteristic Miaodigou motifs (compare FIG. 1-12), does not extend to the head. By contrast, several examples collected by Andersson show painting on both heads and necks. Moreover, their zigzag edges suggest these heads were cut from the upper part of large vessels (perhaps only when they were collected for Andersson?). Two comparable vessels with heads attached come from the Machang Culture. These large pots, recovered at the Liuwan cemetery (Ledu, Qinghai), have painting on the face and head, like Andersson's examples, but the decoration on the vessel body does not relate to the heads. Painting on the faces has led scholars to speculate that the heads represent shamans or some other special status within the village, or possibly a custom like tattooing.

One vessel collected (not excavated) from the Liuwan cemetery integrates elements of a human figure with the characteristic Machang "frog" or stick-figure painted motif (FIG. 1-23). Except for the treatment of its surface, this tall pot matches hundreds of Machang vessels excavated at this site. The potter pinched clay at the neck and shaped it into nose, ear, and mouth ridges. There are crudely shaped arms, legs, nipples, belly button, and phallus on the vessel body. Touches of black slip reinforce some of these features, while the bent lower limbs of a stick-figure motif bracket the design at the bottom. A fully realized stick figure occupies the opposite surface. The Liuwan

vessel remains a true rarity, and once again, because it lacks context, it cannot be associated in any specific way with the extensive burials documented at the Liuwan site. As an "ithyphallic" image—one that presents the male generative organ—this design could also be associated with cult or shamanic activity, but what exactly did it represent? Some writers see the design as androgynous, with both male and female secondary sexual characteristics. A Machang Culture site at Shangsunjiazhai (in Datong County, Qinghai) is the find spot for a large basin with a procession of stick figures painted inside the bowl. The figures, rendered in profile, are also ithyphallic. Moreover, at the earlier Dadiwan site (Majiayao Culture), a hard-packed house floor had painted designs of ithyphallic type. These several examples establish at best a limited regional context for interpreting this imagery. Chinese scholars have generally used phallic imagery as evidence supporting the claim that Late Neolithic society became patrilineal, as well as in an argument asserting the early origins of ancestor worship.

Two Hongshan Culture sites in Liaoning, Dongshanzui and Niuheliang (see the discussion of hardstones above), present another unusual case. These sites have in common soft-baked clay images of nude female figurines, ranging in size from miniatures to fragments that are life-sized or larger. The torsos reveal only generalized modeling, but several figurines with distended stomachs have been described as pregnant females. A well-preserved head from Niuheliang (FIG. 1-24) with inlaid stones as eyes is almost life-sized. Compared to the much smaller modeled heads from the northwest sites discussed above, the features are more fully described, with nostrils and eye sockets. The surface is covered with a white slip, and the eyes are turquoise. This fair-skinned, blue-eyed figure might be evidence for a population group with similar traits on the steppe margins of North China. Small female figurines are known from several Neolithic cultures, but no other sites have as yet revealed such a quantity of figurines and body parts. The published accounts remain too incomplete to facilitate more informed speculation, but some scholars already hypothesize a "goddess" cult something like the Venus figurines of prehistoric Europe as the context for their creation.

1-23 Vessel with modeled ithyphallic design
Yangshao Culture, Machang phase, 3rd millennium BCE. Earthenware, height 13" (33 cm). Liuwan, Ledu, Qinghai. Historical Museum, Beijing

All properly documented animal and human images were recovered from burial contexts or putative ritual ones. As the earliest relatively sophisticated representations from these regions, they stand near the beginning of attempts to represent the world of the people who made them. But these ideas—"images" and "representation"—come from our modern-day categories of description and analysis. We should not assume that their makers regarded these objects this way. Were such images somehow endowed with life spirit or power as effigies or fetishes? Were they parts of a larger cultic and ritual context that incorporated perishable objects long decayed as well as various activities (music, dance, life-cycle rites) that do

1-24 Head
Niuheliang site, Lingyuan, Liaoning. Hongshan Culture, 4th millennium BCE. Clay, height 8¾" (22.5 cm)

not leave behind durable traces? (For example, the stick figures painted inside the bowl from Qinghai may actually be dancers.) Contemporary scholars aspire to understand the cultural contexts and significance of this imagery, but until more pieces of evidence can be gathered the questions scholars can pose far exceed the confident answers they can deliver.

In historical retrospect, and until earlier examples become known, many scholars will see these artifacts as the beginnings of Chinese art. Yet such an evaluation has limited validity. In this discussion, "China" can only stand for a modern-day geographical entity; it did not exist at the time. Most later, historic cultures within China probably did not know of these artifacts. Nor can we assert unproblematically that later artistic traditions can be connected seamlessly back over the millennia to these examples. While in later times Chinese culture occupied some of these regions,

this does not mean that they should necessarily be included within the history of that culture.

This chapter emphasizes features of the current archaeological record that in many cases can be plausibly connected to later cultures. Pride of place has gone to such topics as working hardstones, pottery and its painted decoration, the earliest representational sculpture, and possible steps toward writing. Each of these categories of making things has a history that links prehistoric human groups with cultures that flourished from the second millennium BCE onward and to which we attach the label "Chinese." A different picture of prehistory in North China and neighboring regions could be assembled from present archaeological data, perhaps one emphasizing linkages to the north, to the Japanese islands, or to Central and Western Asia. Moreover, the material actually described above is the tip of a proverbial iceberg of data. More data accumulate year by year through the untiring efforts of field archaeologists and research scholars. The Liangzhu Culture *cong* tubes were misattributed to a late, historic period within recent memory and have been correctly identified only recently. Other examples of wholesale rethinking will also be necessary in the future. Here perhaps, more than in any other field, the future holds great promise for breakthroughs that will allow us to reinvent the past.