

Archaeology and Mentality: The Making of China

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Archaeology and Mentality: The Making of China

The great problem for a science of man is how to get from the objective world of materiality, with its infinite variability, to the subjective world of form as it exists in what, for lack of a better term, we must call the minds of our fellow men.

—Ward H. Goodenough¹

COMPARATIVE STUDY of the differing ways in which major civilizations made the transition from the Neolithic to the Bronze Age has, in recent times, generally emphasized such common factors as developing social stratification, emergence of complementary hierarchies in the political and religious spheres, and complex division of labor.² In China, the transition from a kin-based, Neolithic society to an Early State, Bronze Age civilization—represented by the Late Shang cult center (ca. 1200–1045 B.C.E.) at Yinxu in northern Henan (see fig. 1)—may be characterized in such universal terms. Increasing sophistication in tool production in particular, and in lithic, ceramic, and construction technology in general, may be associated with increasingly sharp distinctions in economic and social status, concentration of wealth, declining status of women, development of human sacrifice, and the religious validation of exploitation and dependency. By the Late Shang an elite minority of administrators, warriors, and religious figures was controlling, and benefiting from, the labors of the rest of the population.³

Such analyses show us how Chinese civilization followed certain general patterns of social development, how the early Chinese were the same as other peoples. But if we are to understand more deeply the development of the Shang, and of the classical Chinese civilization that followed, we also need to consider the features that made the Shang different.

The features which characterize early Chinese civilization include millet and rice agriculture, piece-mold bronze casting, jade working, centralized, protobureaucratic control of large-scale labor resources, the strategic role of divination, a logographic writing system, a highly developed mortuary cult, and the development of social values, such as *xiao* (filiality), and of institutions, such as ancestor worship and the custom of accompanying-in-death, that stressed the hierarchical dependency of young on old, female on male, ruled upon ruler. The complex manner in which these elements coalesced, fed upon, and encouraged one another lies at the heart of our understanding of Shang civilization.

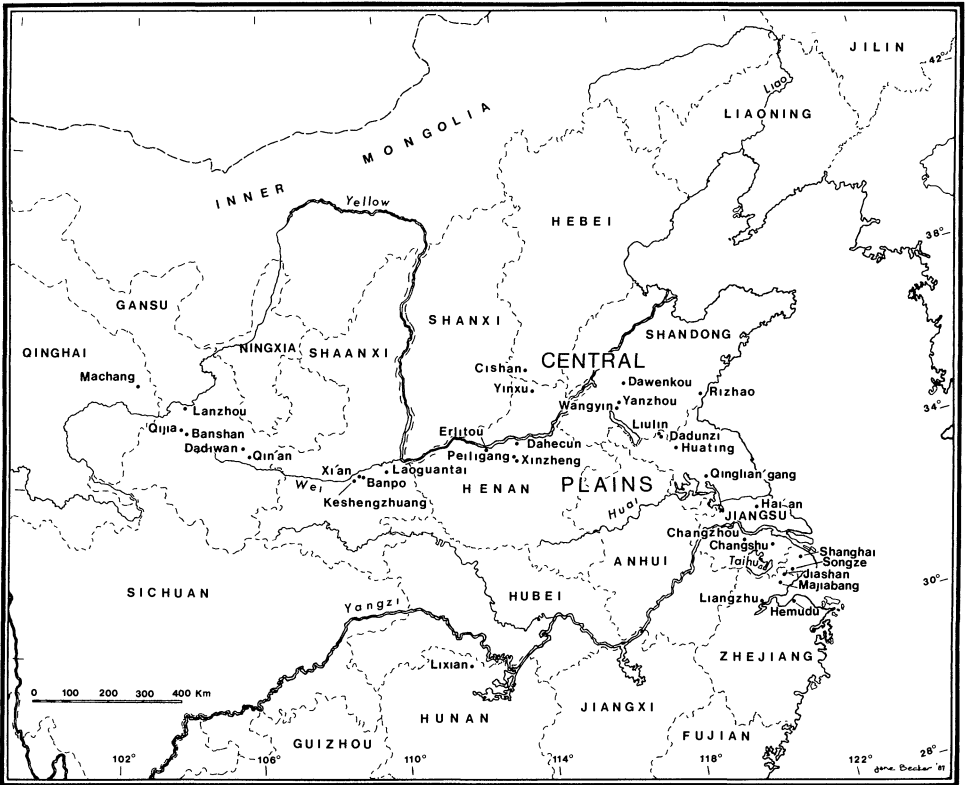


FIGURE 1. The major archaeological sites discussed in this essay.

All these and, no doubt, other features of early Chinese culture need to be studied comparatively and explained, that is, related genetically and structurally, to the other features of the natural and man-made environment if we are to understand what made China Chinese. The more modest intent of this article, however, is not to address such comparative questions directly but to suggest new ways of approaching the Chinese archaeological evidence as a preliminary to such comparative analysis.⁴ In what follows, I shall limit myself to the pre-Shang evidence, attempting to identify the particular features that reveal prehistoric habits of thought and behavior that were to play, I believe, a strategic role in the genesis of Shang culture.

I am aware that I occupy disputed ground in attempting to link artifacts to mentality. "New" archaeologists have declined to explain the past in mental terms, on the grounds that neither the thoughts nor the activities of individual actors are available to us.⁵ My own position is more traditional, in that I wish, so far as

possible, to ask historical and cultural questions of the material data, directed to particular events and the meaning they had for their participants. This places me among the ranks of the cognitive anthropologists, as indicated, for example, by the epigraph at the head of this essay. As Ian Hodder has written:

All daily activities, from eating to the removal of refuse, are not the result of some absolute adaptive expedience. These various functions take place within a cultural framework, a set of ideas or norms, and we cannot adequately understand the various activities by denying any role to culture. . . .

Behind functioning and doing there is a structure and content which has partly to be understood in its own terms, with its own logic and coherence.⁶

I believe that material culture expresses and also influences, often in complicated, idealized, and by no means exact ways, social activity and ways of thinking, and that the goal of archaeology must be *comprendre* as well as *connaître*. I do not use the word *ideas* in what follows, but I do attempt to infer, from pots and other artifacts, some of the structure and content of the mental activities that underlay the behavior of China's Neolithic inhabitants. Readers must judge for themselves whether the risks taken in this exploratory essay are worth the insights gained.

The essence of my argument is twofold. First, **I assume that the way people act influences the way people think and that habits of thought manifested in one area of life encourage similar mental approaches in others.** I assume in particular that **there is a relationship between the technology of a culture and its conception of the world and of man himself, that "artefacts are products of human categorization processes,"**⁷ and that style and social process are linked.⁸ It is this assumed linkage that encourages me to think in terms of mentality, whose manifestations may be seen in various kinds of systematic activity. If it is true that "the philosophies of Plato and Aristotle [strongly] bear the imprint of the crafts of weaving and pottery, the imposition of form on matter, which flourished in ancient Greece,"⁹ and if pottery manufacture, in particular, can, in other cultures, be found to reflect social structure and cultural expectations,¹⁰ then we are justified in attempting to discern similar connections in the crafts of prehistoric China. Artifacts provide clues, incomplete and distorted by material constraints though they must be,¹¹ to both the social structure and the mentality of those who made and appreciated them. To quote Hodder again, "the artefact is an active force in social change. The daily use of material items within different contexts recreates from moment to moment the framework of meaning within which people act."¹²

Second, **I assume that one of the essential features that distinguished Bronze Age from Neolithic mentality, in China as elsewhere, was the ability to differentiate customs that had hitherto been relatively undifferentiated, to articulate distinct values and institutional arrangements, to consciously manipulate both artifacts and human beings.** This is not to claim that prehistoric man did not make distinctions or that he was not conscious of what he was doing. The difference is

one of degree. In the prehistoric evidence, accordingly, I shall be looking for signs of enhanced differentiation, for signs of increasing order in both the material and mental realms, for signs of what Marcel Mauss called the “domination of the conscious over emotion and unconsciousness.”¹³

Two Cultural Complexes

With regard to the purposes of this paper, I believe that we can make considerable sense of the Chinese Neolithic without having to reconstruct, prematurely, the entire picture of its cultural development, desirable though the attainment of such a goal eventually will be. If we are not yet able to map the development of every Chinese cultural trait with assurance, and if, in particular, we are not yet able to determine whether similarity of traits in various Chinese sites and regions is *homologous*, implying genetic connection, or merely *analogous*, implying independent invention but convergent development, I nevertheless hope that this paper will demonstrate the importance of mapping certain, strategic traits by both space and time.

Even though it is important to think, both first and last, in terms of a mosaic of Neolithic cultures whose edges blur and overlap (see fig. 1),¹⁴ I believe that, for analytical purposes, one can—with all due allowance being taken for the crudity of the generalizations involved—still conceive of the Chinese Neolithic in terms of at least two major cultural complexes: that of Northwest China and the western part of the Central Plains, on the one hand, and that of the East Coast and the eastern part of the Central Plains, on the other.¹⁵ I shall, for simplicity, refer to these two complexes, which should be regarded as ideal types, as those of the Northwest and the East Coast (or, more simply, East). There were numerous regional cultures within these two complexes. In the sixth and fifth millennia, for example, cultures like Laoguantai, Dadiwan, and Banpo flourished in the Northwest; cultures like Hemudu, Qinglian’gang, and Majiabang arose in the area of the East Coast. The interaction between the two larger complexes is of great significance. By the fourth and third millennia, one sees East Coast traits beginning to intrude in both North China and the Northwest, so that the true Northwest tradition reaches its fruition during the third millennium in Gansu and Qinghai while fading away in the region of the Central Plains and even in the Wei River valley.¹⁶ As we shall see, the emergence of Shang culture in the Central Plains (ca. 2000 B.C.E.) owes much, though not all, to this infusion of elements from the East.

With assumptions and terminology thus established, I should now like to turn to the two central questions of this essay: what did the peoples of prehistoric China do? And what significant cultural conclusions can we draw from their activities?

Pottery Manufacture

Broadly considered, the essential characteristics of the East Coast ceramic tradition (figs. 2–13) include the following features: 1) pots were unpainted; 2) angular, segmented, carinated profiles were common; 3) pots were frequently constructed componentially; and 4) pots were frequently elevated in some way.¹⁷ The ceramic tradition of the Northwest (figs. 14–15), by contrast, was characterized by a more limited repertoire of jars, amphoras, and round-bottomed bowls and basins, only a certain proportion of which were painted.¹⁸ What can these two ceramic traditions tell us about the mentality of, as well as the material constraints imposed upon, the potters who made the vessels and the people who used them?

From the viewpoint of manufacture, the tectonic formality of sharp, angular silhouettes and the absence of rapidly painted surface decoration in the East (figs. 2–13) suggest deliberation and control, a taking of time to plan the shapes, to



FIGURE 2. East Coast pots, Longshan. Reproduced from Feng Xianming, et al., *Zhong-guo taoci shi* (A history of Chinese ceramics; Beijing, 1982), 15.



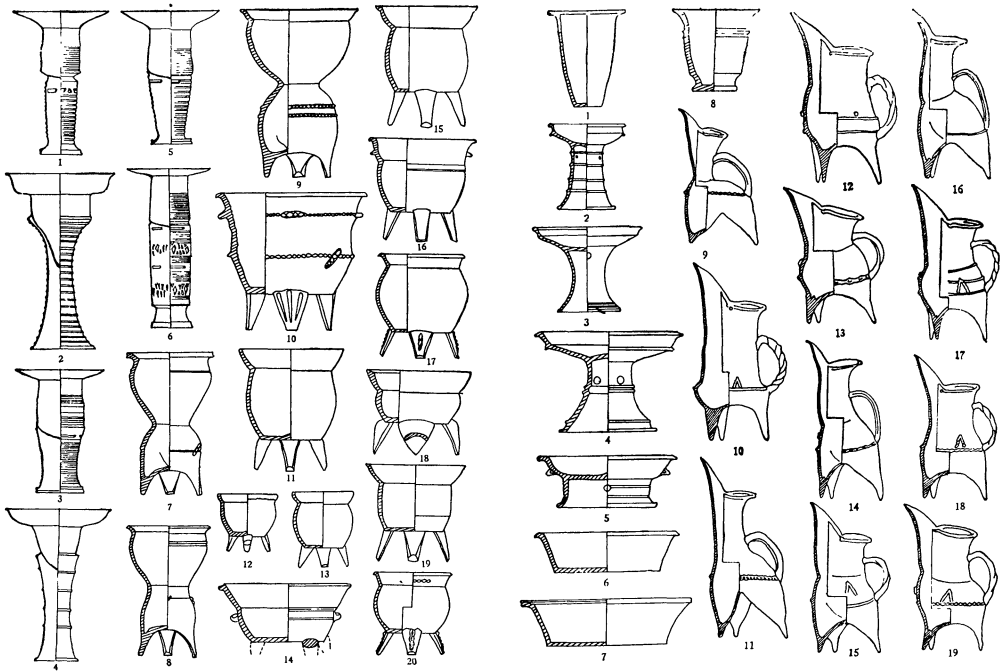
FIGURES 3–5. East Coast pots. *Top*: Dawenkou; *center*: Longshan; *bottom*: Majiabang. From *ibid.*, 21, 22, 28.

measure the parts, and to join them together. The interest in silhouette, frequently articulated or “unnaturally” straight-edged, rather than in surface decor, further suggests a willingness to do more than simply accept the natural, rounded contours of a pot.¹⁹ It suggests a willingness to impose design rather than merely accept it as given by the natural qualities of the clay. It suggests, as we shall see, that Eastern pots, by contrast with the “all-purpose” pots of the Northwest, were designed with specific functions in mind.

The existence of an East Coast disposition to manipulate and constrain is confirmed by a closer look at pot construction. Unlike the more practically shaped Northwest pots, most of which would have been built up *holistically* by coiling and shaping at one time, many of the characteristic East Coast pots—like the tall-stemmed *bei* drinking goblets (fig. 3, no. 6; fig. 6, nos. 1–6; fig. 10, nos. 12, 16, 17; figs. 11–13), the *ding* cauldrons (usually tripods; fig. 2, no. 6; fig. 4, nos. 1, 2; fig. 5, no. 2; fig. 6, nos. 10–20; figs. 8–9; fig. 10, no. 6), the *dou* offering stands (fig. 3, no. 1; fig. 5, no. 1; fig. 7, no. 4; fig. 10, nos. 3–5), and the hollow-legged *gui* pouring jugs (fig. 3, no. 7; fig. 4, no. 3; fig. 7, nos. 8–19; fig. 13) and *xian* steamers (fig. 6, nos. 7–9)—would have required the separate molding and piecing together of several elements—feet, stand, legs, spout, neck, handle, and so on, in a *prescriptive* method of manufacture. This distinction between holistic and prescriptive is of fundamental importance to my attempt to link artifacts to mentality.²⁰

The prescriptive, and thus componential, construction of pots²¹—which was inevitably involved whenever feet were prefabricated and added on to a vessel such as a *ding* cauldron, or whenever vessels were built up sectionally—appears to have developed as a significant method of manufacture in the Yangzi delta around the year 4000 B.C.E. In the fourth and third millennia, componential construction was frequently used in the Daxi and Liangzhu cultures of the Middle and Lower Yangzi and also in the Dawenkou culture area of Shandong and northern Anhui. It was present in the Late Neolithic Middle Yangzi culture of the third millennium, where, although the potter’s wheel was in use, most pots were still handmade, and where large ones were frequently built up by coiling, being produced in sections with appliqué bands being added where the parts were joined.²² It was also present, of course, in the Central Plains and Northwest as East Coast pot forms became more prevalent (see note 16).

A simple but elegant tripod from Songze (ca. 4000 B.C.E.) illustrates the nature of East Coast componential construction (fig. 8): 1) the bottom was shaped first; 2) the sides were then built up on a slow wheel; 3) the rim was luted on; 4) legs were fabricated separately and 5) appended to the body. It should be noted that whenever tripod legs or ring feet, which were both characteristic Eastern features, were added to a bowl, the body of the vessel would presumably have been turned upside down at that stage of manufacture. Such inversion would have involved what may be seen as more deliberate manipulation than the potters



FIGURES 6 and 7. East Coast pots from Shizihang. *Left*: Longshan; *right*: Dawenkou, Longshan. From “Shandong Wei xian Shizihang yizhi fajue jianbao” (Preliminary report of the excavation of the Shizihang site in Wei xian, Shandong), *KG* 1984, no. 8:678–79, figs. 7–8.

of the Chinese Northwest, who generally made legless vessels, would have had to employ.²³ The procedure may be seen as more artificial, as well as more deliberate, because it reversed the orientation of normal use.

A certain amount of componential building certainly was used by the Northwest potters. The rims of at least some *ping* amphoras and *guan* jars at Banpo (fig. 15, no. 7), for example, were added on.²⁴ The flaring, wide-girthed Banshan pots were made by constructing the bottom and top of the pot separately by ring coiling and then luting the two parts together.²⁵ Painted pottery vessels with tall or collared necks would also have been made in two or three pieces. The rare three-footed *bo* bowls from Dadiwan I would have had their legs pieced on.²⁶ Similarly, the Northwest potters were certainly capable of making “impractical” shapes that were componentially constructed.²⁷ But such forms were not common in the Northwest. As with most studies of the Chinese Neolithic, comprehensive statistics would greatly increase the reliability of conclusions that are fre-

quently subjective in nature. But there is little doubt, in this case, that tripods and other legged vessels, vessels constructed by section, ring feet, handles, spouts, fitted lids—all the elements that require prescriptive, componential construction—were far more prevalent in, much more characteristic of, far more valued by the cultures of the East Coast.

The point, in any event, is not merely one of numbers but of style. In the Northwest, such joinings were generally not integral to the design and visual impact of the pot; potters sought to conceal such joins so as to produce soft-cornered, harmonious, unified, globular shapes. The potters of the East, by contrast, tended to accentuate, to emphasize the discontinuities of silhouette and shape, so that their pots explicitly revealed the process by which they were made. The intentional “failure” of the slab legs to completely join with the body of the *ding* tripod (fig. 10, no. 2) found in a Huating burial at Dadunzi, for example, explicitly reveals the componential nature of its construction. The same aesthetic disjointure is found on Songze tripods where the shape, decor, and surface tex-



FIGURE 8. East Coast *ding* tripod from Songze. From René-Yvon Lefebvre d'Argence, ed., *Treasures from the Shanghai Museum: 6,000 Years of Chinese Art* (Shanghai and San Francisco, 1983), no. 3; reprinted by permission.

ture of the legs is at deliberate variance with that of the vessel body (fig. 9, nos. 4, 8, 9, 10).²⁸

It was not hard, in short, to discover, as the Northwest potters had also done from an early stage, the technique of sticking one pot part to another. But the practice became significant when it was emphasized, when it became integral, as in the cultures of the East, to the design and manufacture of major vessel types, and when it permitted the consistent and prevalent construction of vessel forms and shapes, such as the *ding*, *dou*, and *gui*, which the mere coiling or throwing of pots could not produce. The Northwest potters used the technique to continue making essentially holistic forms; the East Coast potters used it to make radically different, prescriptive ones that both required and emphasized the joining together of parts made separately but for each other.

Componential construction, furthermore, suggests the need for temporal coordination and scheduling in manufacture, for it requires that the bowl, legs,

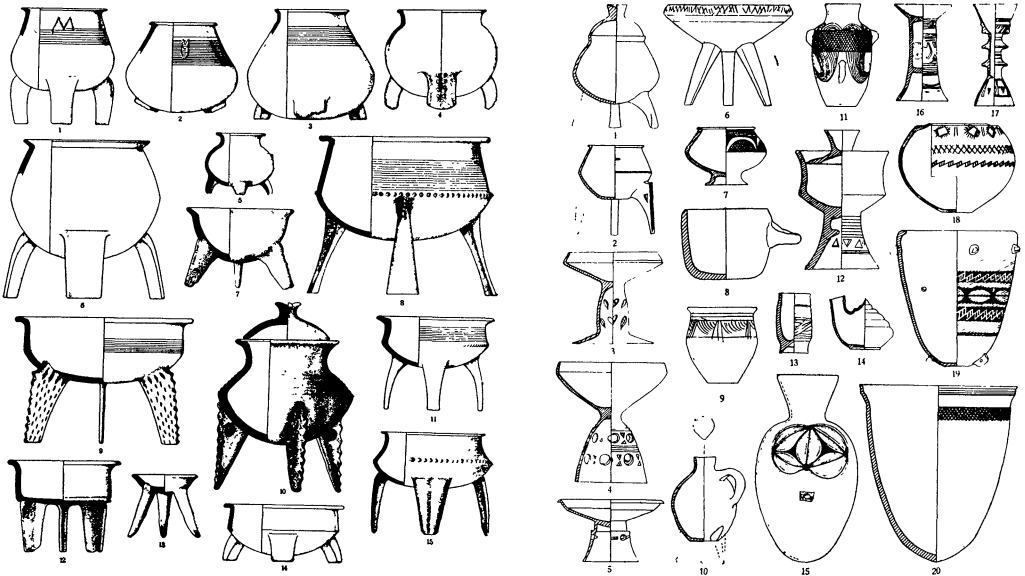


FIGURE 9 (left). East Coast *ding* tripod from Songze. From “Shanghai shi Qingpu xian Songze yizhi di shijue” (Trial dig at the site of Songze in Qingpu xian, Shanghai city), KX 1962, no. 2:13, figs. 10.4, 10.8–10.

FIGURE 10 (right). East Coast pots from Dadunzi (Huating style). From “Jiangsu Pi xian Dadunzi yizhi dierci fajue” (The second excavation at the site of Dadunzi in Pi xian, Jiangsu), *Kaoguxue jikan* 1 (1984): 44, fig. 19.2.

spouts, necks, handles, and so on be of the right, leathery consistency at the time they are joined together. The making of prescriptive, componential pots is, therefore, by its nature more rigorously scheduled than the making of holistic ones; it requires greater coordination on the part of the craftsman.²⁹ As the activities being coordinated become more complex, coordination is likely to have assumed increasing qualities of control. Such control in the Neolithic, to the extent that it existed at all, would probably have been personal and ad hoc, but it would have contained the seeds of the later “technical” and “bureaucratic” forms of control required by the prescriptive piece-mold bronze casting of the Shang.³⁰

One may note two final consequences of such construction techniques. First, Ursula Franklin has proposed that, in the sequential stages of prescriptive construction, “a considerable degree of abstraction and a thorough technical understanding is required to perceive a division of the process into unit processes dictated by the technical requirements of construction.”³¹ Prescriptive construction, in short, implies the ability to think more abstractly than does holistic construction. Second, the prescriptive nature of componential construction implies not only the allocation of time, and the planning and measurement of the component elements (see below), but it also implies talking. To the extent that certain potters might have specialized in the making of spouts, handles, legs, and so on (see note 29), the greater coordination of activities required to make a componential, prescriptive, East Coast pot implies more verbal communication, more articulation about final goals and immediate methods, than would have been required for the construction of a pot that could be coiled at one time and by one person, working in comparative independence, isolation, and silence about the task at hand. One cannot easily tell from the archaeological evidence if such Neolithic specialists did exist; it seems unlikely, however, that the tall, thin-walled, black ware of the classical Longshan (the four *bei* in fig. 11), for example, could have been turned on a fast wheel, constructed, and fired by amateurs (see too note 43 below). The East Coast articulation of pot components, in any event, admits the possibility of verbal as well as technical articulation. The greater variety of vessel types in the East further implies the existence of a larger vocabulary of vessel names.

Model Emulation

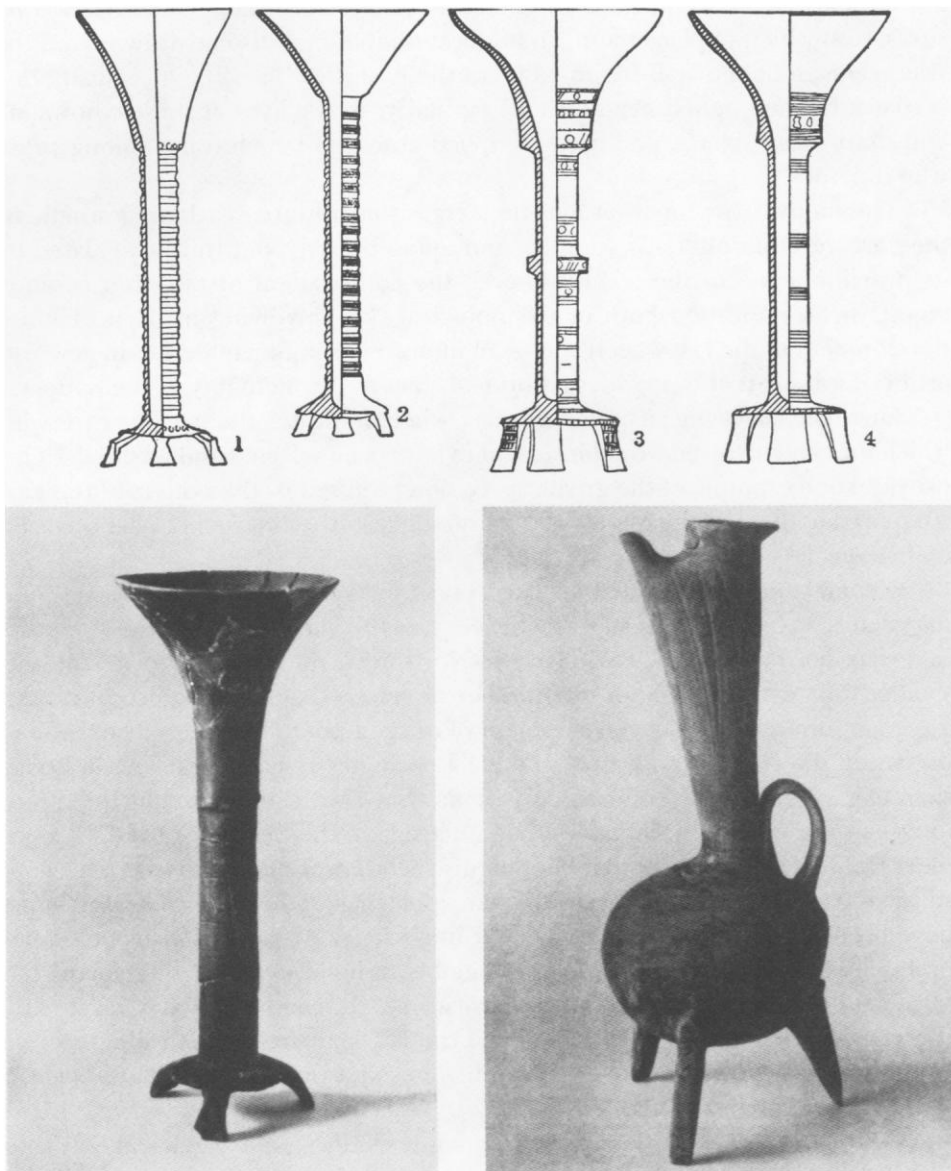
Still more is implied when we move from the solid-legged vessels to the hollow-legged ones like the mammiform *gui* tripod jug (fig. 3, no. 7; fig. 4, no. 3; fig. 7, nos. 9–19), the *xian* steamer (fig. 6, nos. 7–9), and the *li* tripod (fig. 2, no. 8), all associated in their origin or development with either the cultures of the East or the Central Plains. These vessels imply more than the technical skill to standardize lengths and shapes, to successfully coordinate the separate ele-

ments. To produce such bulbous-legged vessels, identity of leg size and shape was essential; it required, in some cases, the use of a central core about which the three legs could be individually molded.³² This is of significance technically, since it is from such procedures and conceptions that the piece-mold casting of the Shang bronze makers, who used a central core model and outer ceramic molds, developed.³³ But it is also of significance socially and conceptually, since it implies a vision of creation as one of molding, of conformation to a model, of standardization—of “engineering” in short. It is no surprise that the emulation of moral exemplars was to play such a central role in later Chinese social and political thinking.³⁴

Analogous conceptions lie behind the technique of rammed-earth construction, associated with the Late Neolithic cultures of Shandong and northern Henan, in which moist earth was rammed hard between the molding boards.³⁵ The same inspiration may also be related to the East Coast customs of skull deformation and tooth extraction—further instances of “engineering,” now applied directly to the human body.³⁶ It is plausible to think that such techniques for molding and modeling, whether applied to the human body, to clay, or to earth, must, by analogy, have reinforced, and been reinforced by, social and religious conceptions of discipline, order, and obedience to prescribed pattern.

Upward and Onward

Elevation—through the use of ring feet, legs, and stands of various sorts—was another characteristic feature of the East Coast pots, the elevation frequently being emphasized through the aspiring, upward-reaching shapes of the vessels themselves (e.g., fig. 2, nos. 3, 4; fig. 3, nos. 1, 6, 7; fig. 4, no. 3; fig. 6, nos. 1–6; fig. 7, nos. 9–19; fig. 9, nos. 8, 9; fig. 10, no. 6; figs. 11–13). The “leg-giness” and lightness of many of the East Coast *bei*, *dou*, *ding*, and *gui* lends them a certain perky, rapid, birdlike quality. The judgment is subjective, but the bird motifs carved on certain Eastern jades and bone implements, together with later legends of bird ministers and bird tribes in the region,³⁷ encourage us to view the cultures of the East as more “airborne” than those of the Northwest, whose more earthbound disposition can be discerned in their “semi-subterranean” pots (see below) and houses, and even in the construction of the querns used for grinding grain. At Banpo sites in the Wei River valley, for example, the querns were not footed and were presumably set directly on the ground;³⁸ in Peiligang sites in the Central Plains, by contrast, they were uniformly provided with four feet.³⁹ These querns from the sixth millennium, incidentally, may be some of the oldest four-footed objects in China. Since the legs were carved out of the grinding stone, the querns would have taken considerable effort to manufacture. The preference for feet, and generally for four feet rather than three (which were rarely found),⁴⁰



FIGURES 11–13. Tall-stemmed *bei* goblets and a *gui* pourer from the East Coast. *Top*: four *bei* from Dadunzi, Jiangsu. From “Jiangsu Pi xian Sihuan zhen Dadunzi yizhi tanjue baogao” (Trial diggings at Dadunzi in Sihuan zhen, Pi xian, Jiangsu), *KX* 1964, no. 2:37, fig. 30. *Bottom left*: *bei* from Liulin, Jiangsu. From *Jiangsu shen chutu wenwu xuanji* (Selection of cultural relics excavated in Jiangsu province; Beijing, 1963), no. 43. *Bottom right*: *gui* from Taiganshi, Xishanqiao, Jiangsu; from *ibid.*, no. 18.

implies that, in the Central Plains, the users of these grinding stones had a level surface on which to place them, an implication that may also be drawn from the precarious, footed or tall-stemmed *bei* of the East (figs. 11–12). Once again, one is struck by the implied neatness and regularity in the lives of those who made and used these objects, and by the implied absence of such traits among those who did not.

The motivations for what may be seen as this upward-reaching aesthetic of the East were undoubtedly complex and, quite possibly, not fully articulated by its practitioners. On the technical level, the construction of tall, thin ceramic objects is an indication both of technological skill (involving in particular the development of the fast wheel) and of an interest in shaping materials in new and artificial ways.⁴¹ It also provides additional clues to the mentality of the potters.

First, the throwing of pots on a fast wheel indicates the greater care with which the clays involved would have had to have been selected and washed.⁴² This provides one example of the greater precision required by the potters of the East compared to those of the Northwest. It also suggests the emergence of specialized craftsmen.⁴³

Second, to the extent that elevated pots might have saved kiln space,⁴⁴ one may detect a possible concern with efficiency on the part of the East Coast potters that may not have been present in the Northwest; the greater the height and smaller the girth, the greater the number of vessels that could be fired with the same amount of fuel. The development of oxygen-poor, reduction firing, which produced the characteristic grey and black ware of the East and classical Longshan (e.g., the *bei* from Liulin in fig. 12), may have been stimulated by the desire to economize on fuel; it indicates that, once again, the potters of the East were more willing to experiment than the “natural” potters of the Northwest, who were still firing their pots in open kilns.⁴⁵ Any efficiency of fuel use, however, must have been balanced against the evident inefficiency of the Eastern pot shapes themselves, which, by contrast with the globular, holistic pots of the Northwest, would have generally provided less capacity for the amount of clay used. The contradiction suggests that the potters of the East may have been willing to give aesthetic concerns priority over economic ones and that fuel may have been in shorter supply than fine clay.

Third, elevation may also have been connected to a more general desire to get off the ground, to distinguish and separate oneself and one’s possessions from the earth. This impulse was evidently present in the pile dwellings built at Hemudu, for example,⁴⁶ and it may indeed have been originally a response to the dampness of the low-lying lands and house floors of the Yangzi delta. Whatever the origins of this upward-reaching feature of the East Coast cultures, it stands in contrast to the more “down to earth” aesthetic of the Northwest potters, whose houses, as well as pots, tended to be semi-subterranean or seated in the

ground (see the narrow, unpainted pot bottoms in figs. 14–15) rather than placed above it.

Fourth, one may note that the upward vision of the East Coast peoples appears to have been maintained even in death. My preliminary research suggests that, in the cultures of the Northwest, there was a tendency for grave goods to be placed near the legs and feet of the deceased. Most painted Northwest pots, being decorated only on their upper surface, were designed to be viewed from the top;⁴⁷ the dead maintained that same vantage point. By contrast, grave goods and tools in the Eastern cultures were more likely to be placed all around the deceased or near the hands, waist, or upper abdomen.⁴⁸

Fifth, one may speculate that the willingness to think in vertical terms and to value height may also have been connected to emerging social stratification in the East, and thus to the way in which Eastern-derived culture traits, such as

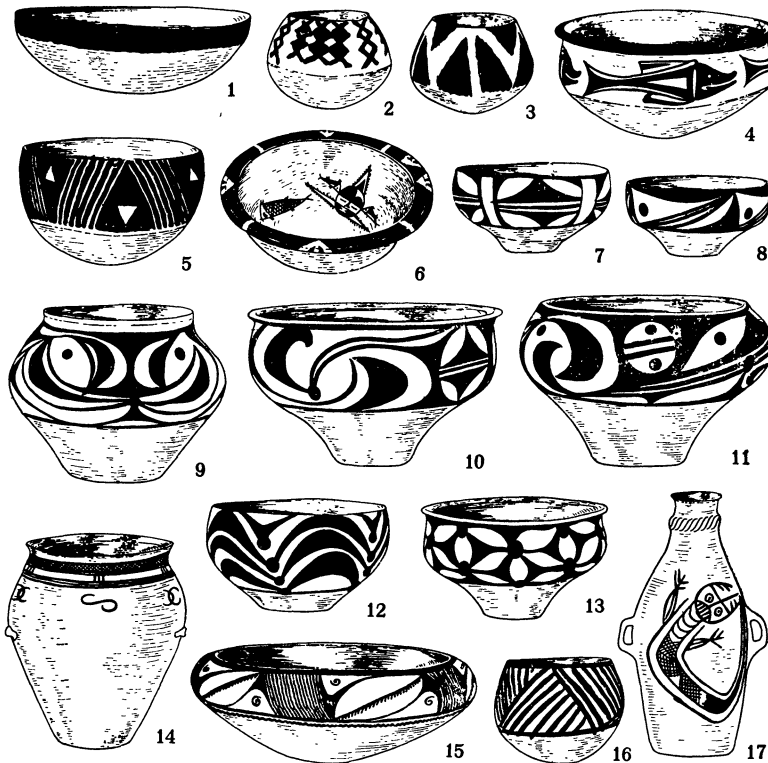


FIGURE 14. Northwest pots, painted ware. From Feng, *Zhong-guo taoci shi*, 10.

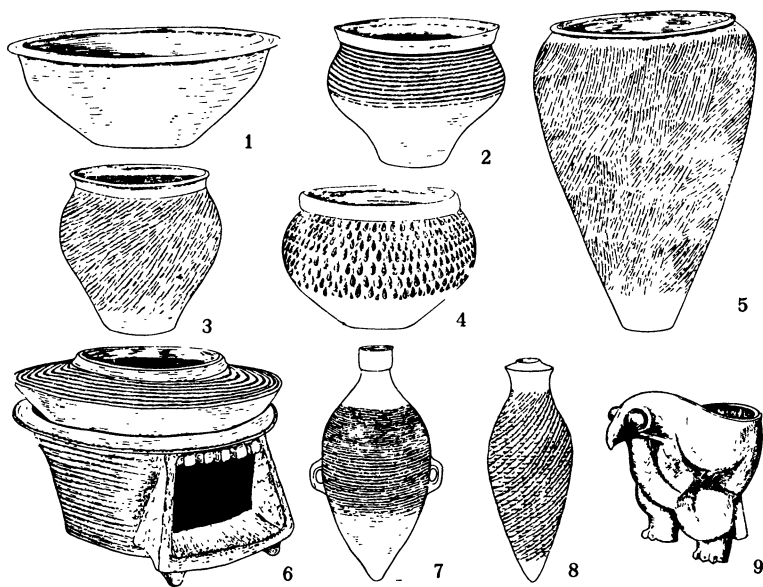


FIGURE 15. Northwest pots, unpainted ware. From *ibid.*, 11.

upwardly aspiring pot forms and rammed-earth housing platforms, together with the culture bearers of those traits, eventually dominated, became ascendant over and superior to, the Northwest cultures of the Central Plains and beyond. **The connection between elevation and dominance, which may be a human universal, was certainly appreciated by the Shang and Zhou Chinese.**⁴⁹

Pottery Use

Now that we have considered pot shape, pot manufacture, and mentality, I should like to turn to **pot shape and usage, with a view to discovering what further clues the functions of these vessels can provide about the mentality of not just their makers but their users.**

The first and most obvious point is that the East Coast peoples and the later cultures that derived from them made and used a far greater variety of shapes (figs. 2–13) than did the peoples of the Northwest, whose repertoire consisted essentially of round-bottomed bowls, jars, and amphoras (figs. 14–15), used, so far as we can tell, rather indiscriminately. Apart from the broad and by no means rigorous or consistent distinction posited by modern scholars between pots used

for cooking, eating, and storing, the Northwest vessels seem in general to have been vessels of general purpose. There is no way, for example, to tell, on the basis of shape, what might or might not have been a ritual vessel. Pot usage, and presumably other aspects of life, was not yet differentiated in this way.

In the East, by contrast, in addition to the bowl and jar shapes, one also finds *ding* tripods, *dou* serving stands, *bei* drinking goblets, *gui* pouring jugs (see figs. given at p. 97 above), *he* spouted kettles (fig. 3, no. 8), and, in the Late Neolithic, Eastern-derived cultures of Henan, Shaanxi, and, rarely, Shandong, the mamiform, three-legged, *li* cooking tripod (fig. 2, no. 8).⁵⁰

This greater variety of pot forms implies, in the first place, a greater willingness to experiment, to devise new solutions. Franklin has argued that an “essential predictability” is inherent in the prescriptive process; “there is no room for surprise.”⁵¹ This is undoubtedly true at the level of the craftsman who works on only one part of the manufacturing process. But there is no reason why the overseers could not, within the limits of invention permitted by the technology, plan for new shapes. Certain of the componential forms did indeed manifest a considerable degree of variability.⁵² As Friedrich Engels is said to have noted, “The separation of planning for labor from the labor itself . . . contributed to the rise of an idealistic world outlook, one that explains people’s actions ‘as arising out of thoughts instead of their needs.’”⁵³ To the extent that supervision of componential construction implied divorce from the actual labor, one may detect the seeds of such labor-free “idealism,” so potent for the development of civilization, in the ceramic technology of the East Coast Neolithic.

In the second place the greater variety of pot forms suggests greater practicability in such basic activities as pouring accurately or in cooking, where a *ding* tripod, placed over a fire, would presumably have been more efficient and easier to use—in terms both of heat transfer (when the legs were hollow) and stability—than a round-bottomed pot. Globular Heartland pots, presumably placed directly in the ashes, might have been more susceptible to thermal shock and would certainly have been less stable than the tri-legged vessels of the East.⁵⁴ I suspect that the peoples of the East particularly valued the stability that legs gave to steamer vessels. These *zeng* and *xian* (fig. 6, nos. 7–9), popular in the East,⁵⁵ necessarily involved a certain tallness of design, for the grill on which the food was steamed had to be placed above the boiling liquid below; globular-based steamers would have been prone to tipping over. Some of the Northwest pots were certainly marvelously well designed for their function—one thinks in particular of the *ping* amphoras for drawing water from rivers (fig. 14, no. 17; fig. 15, nos. 7, 8)—but the larger, more varied repertoire of East Coast vessels indicates a greater willingness to innovate and specialize.

When routinized and standardized, the separate fabrication of the various elements suggests, as we have seen, specialization of manufacture. It also suggests

specialization of use, for some of the vessels that resulted were so thin and fragile (figs. 11–13) that they imply special, and probably ritual, function. Not only did such vessels require a compartmentalization of manufacture, therefore; their specialized shapes also imply an analogous compartmentalization of experience, with some pots being reserved for nonroutine, perhaps nonsecular, functions.⁵⁶ In accordance with Louis Sullivan's dictum that form follows function, the variety of Eastern forms suggests a greater variety of functions.

One may suppose that if Eastern pots were being assigned special functions, so were human beings—and not just in the ceramic workshops but in other social and political activities. It must be noted that the relationship is not merely analogical. Specialized pots would have been made to satisfy specialized functions; greater differentiation in pottery would have resulted from a more socially differentiated society.⁵⁷ Once again, it is worth stressing that we are dealing with matters of degree. There would have been no reason for a hypothetical Northwest conservative, looking at the ceramic technology of the East, to lament, as Thomas Carlyle was to do the impact of the Industrial Revolution, that “men have grown mechanical in head and in heart, as well as in hand.”⁵⁸ Nevertheless, Carlyle's protostructuralist assertion that “the same habit regulates not our modes of action alone, but our modes of thought and feeling” is relevant. The “sprouts” of such compartmentalization, of a social, political, and above all intellectual, revolution in human organization, were certainly present in the making, and in the using, of the pots of the Neolithic East Coast.

Channels of Constraint

Vessel shapes and vessel use affect one another in a variety of miniscule yet cumulative ways. This is well demonstrated if we consider such seemingly insignificant innovations as pouring lips, pouring spouts, single handles, lids, and legs.⁵⁹ These were rarely present on Northwest vessels of the sixth to fourth millennia, whose makers evidently found no special virtue or pleasure in such refinements. Spouts, handles, lids, and legs variously appeared in the Yangzi delta area starting in the fourth millennium and continued to figure prominently in the developing cultures of the Middle Yangzi and the East, frequently serving as characteristic horizon markers for the regional Late Neolithic cultures.⁶⁰ (The degree to which such features appear in the bronze and ceramic vessels of the Shang needs no emphasis here.)⁶¹

Lips, spouts, handles, and legs constrain the way in which pots can be used. Pots so furnished are designed for, and indeed they require, a particular kind of use. Unlike the Northwest peoples, who could, in general, pour from or pick up their all-purpose bowls and vases in a variety of ways—and presumably did so, for safety's sake, with two hands⁶²—the East Coast peoples would have been likely

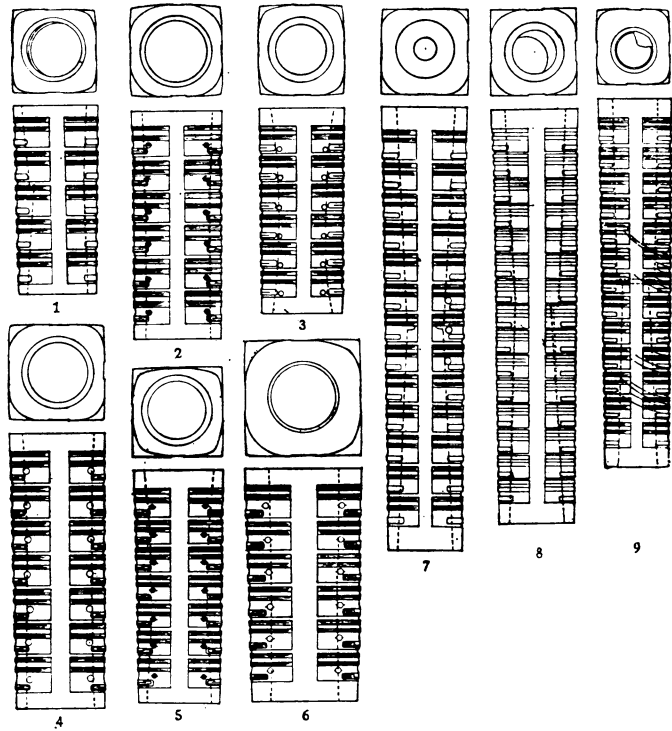


FIGURE 16. Jade *cong* tubes excavated at Sidun. From “1982 nian Jiangsu Changzhou Wujing Sidun yizhi di fajue” (The 1982 excavation of the site at Sidun in Wujing, Changzhou, Jiangsu), *KG* 1984, no. 2:119.

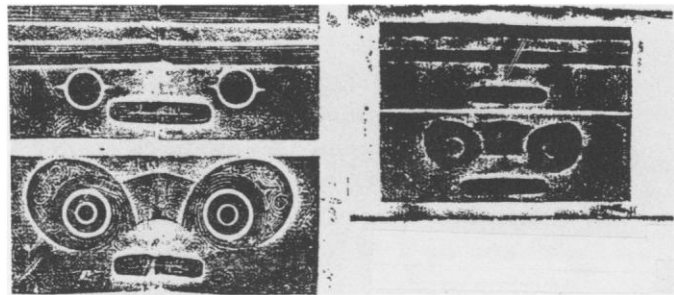


FIGURE 17. Animal face designs on the corners of *cong* excavated at Sidun. From *ibid.*, 120.

to pick up a single-handled *gui* pitcher, *he* pourer, or handled *bei* cup, for example, in a certain way, usually with their right hands, and would have poured from a lip or spout in a certain direction. Handles give man a better grip on, a better control over, his creations.⁶³ Like spouts, they standardize the way vessels are to be used.

This channeling of options implies greater efficiency. It also implies greater care for the handling of vessels. Given the design of their vessels, there would now have been, for the peoples of the East Coast, a *right way* and a *wrong way* to do things, a rightness and wrongness that would have been less likely to confront the users of typical, handleless, spoutless Northwest pots that lacked orienting

appendages. It may be noted, incidentally, that this concern with correct placement is also revealed by the jade *cong* tubes so characteristic of the Lower Yangzi cultures of the fourth and third millennia (see below). Recent archaeological discoveries have revealed that the *cong* were placed with the slightly narrower end at the bottom so that the highly abstract, “animal mask” designs carved onto the corners of the registers were suitably oriented (figs. 16–17).⁶⁴ Once again, there was a right way and a wrong way to do something, that rightness and wrongness being designed into the artifact itself. Similarly, the bird profiles carved onto the surface of certain East Coast jade *bi* disks⁶⁵ required that they be oriented in one correct direction. These “unipositional” pots and jades stand in contrast to the multipositional pots of the Northwest cultures, whose flowing, abstract designs, even when divided by cartouches into a “four quarters” pattern, did not require, or even provide, an indication that one orientation was to be preferred to another.

In the same way, well-made lids, especially fitted ones that were more characteristic of the East Coast and descendant cultures,⁶⁶ imply a concern with careful storage, with cleanliness, even with that ultimate indicator of civilized man, delayed gratification. And they imply the willingness to design and construct permanent containers to satisfy those concerns. The Northwest potters (who may have used stoppers made of perishable materials) were more casual about lids, generally preferring to invert a bowl over the mouth of another vessel.⁶⁷ The issue, in this case, is not one of efficiency—such makeshift lids can provide an excellent seal—but of the Northwestern potters’ indifference to making objects for precise functions and to precise specifications. Such indifference is entirely consonant with the awkwardness of their early, and generally abortive, experiments with legged or footed vessels.⁶⁸

The users of the East Coast pots, in short, were faced with a series of mini-constraints that would have produced greater convenience and efficiency—there is less spilling when spouts are used, for example, less risk of dropping a pouring vessel when there is a handle by which to hold it—but which also standardized and structured the routines of daily life: vessels were expected to be picked up in a certain way, and even to be placed in a certain position, with the handle oriented so that they could be picked up easily again. Vessels with legs, and cups and pedestals with high feet or stems, had to be set down with care, lest they tip over (figs. 11–13). Similarly, fitted lids were not only troublesome to make, but they had to be replaced with some precision.

Each one of these mini-constraints—involving legs, feet, spouts, handles—would, taken individually, have had minimal impact on the mental habits of the users, but the cumulative effect, of both using these prescriptive vessels and of designing and making them, would, I suggest, have been sufficiently significant to distinguish, in terms of both material and mental culture, the inhabitants of the East Coast from those who lived in the Northwest. People who make their pots differently live their lives differently and, it goes without saying, vice versa.

Fit and Mensuration

The prescriptive style of their ceramic technology provides further indication that the peoples of the East Coast were more concerned than those of the Northwest with **precise measurement and fit**. This is seen in the identical size required of the legs on *dìng* tripods, *guì* pitchers, and *hè* kettles (see p. 102 above). It is seen in the way the separately formed elements of any of the componentially constructed vessels had to be planned and shaped with precision. It is seen in the way close-fitting lids had to be shaped and fired so that they would fit their parent vessels.

Turning from clay to wood, we find an equal concern with mensuration in the Southeast. This is seen in the exactitude of the mortise and tenon construction used in the pile dwellings at Hemudu (stratum 4, ca. 5000 B.C.E.).⁶⁹ It is seen in the remarkable regularity—remarkable, given the stone axes, adzes, and chisels available to the carpenters—with which the planks used in house construction in Majiabang sites of the fourth millennium had been trimmed.⁷⁰ It is seen in the exact measurements used to construct a late Liangzhu well (ca. 2000 B.C.E.?) with the boards of the shaft braced by cross struts fitting into measured holes.⁷¹

The most striking precision, however—striking both for the difficulties involved and for the early date of the evidence—is surely that manifested by the craftsmen working in jade. The sawing, drilling, grinding, and polishing of ritual and ornamental jade and jadelike hard stones (nephrite, tremolite, and actinolite) is perhaps the most characteristic and most revealing of all the horizon markers of the East Coast cultures from Qinglian'gang and Hemudu onwards.⁷² The *bi* rings and *cong* tubes were crafted with remarkable precision. At Sidun, in Jiangsu, for example, in Liangzhu strata of the third millennium, the diameters of the individual *bi* **did not vary by more than about 1 millimeter in any direction**, and the differences in the sizes of the registers found on individual *cong* were even smaller.⁷³ **These multiregistered *cong*—which resemble rulers in appearance, though not perhaps in function—represent the essence of prescriptive, standardized, design, each register being identical to the rest** (fig. 16).⁷⁴ The central hole in both the *bi* and *cong* was bored from both sides of the object, resulting in a hole that was slightly wider at its opening than at the center where the two bores met. In a fair number of instances, especially in the case of the *cong*, which might be as tall as 36.1 centimeters (fig. 16, no. 7, with thirteen registers), the two bore-holes did not meet exactly in the middle, so that a small ridge was left inside the jade (e.g., fig. 16, nos. 1 and 8). But these ridges are remarkably small—only 0.05–0.1 millimeters wide—and occur in less than half of the *cong* found at Sidun,⁷⁵ and in only one of the four *bi* found in the Liangzhu site at Jialingdang, near Changshu in Jiangsu.⁷⁶ In at least half of the *cong*, therefore, the drilling from one side through some 10 to 15 centimeters of jade was so skillful that it could meet with great accuracy a bore drilled the same distance from the other

side with no ridge being left at all. Such results could only have been achieved by the most persistent attention to precise measurement.⁷⁷

In the pot making, carpentry, and jade working of the East Coast, therefore, measurement was vital and may well have been associated with—to the extent that numbers must have been used—a more mathematical view of the natural world than the peoples of the Northwest would have found necessary or congenial. These were workers who followed a prescribed plan, who conformed to molds or models (either real or conceived), who employed their sophisticated tools with care and precision, who manifested a comprehensive competence in designing and building structures of various sorts.

I would note, finally, that, in the Aegean, writing seems to have developed as an aid to overcoming problems of mensuration and reckoning.⁷⁸ Such a connection is not out of the question in the East Coast cultures of China, especially when we recall that the componential construction of vessels required some form of scheduling, that is, the mensuration of time. And one might even see a significant correlation in the nature of the subsequent written script which, at least by Late Shang (ca. 1200 B.C.E.) was as “componential” in its construction, with graphs being composed of both phonetic and semantic elements, as were the vessels of the East Coast tradition and their piece-mold, cast-bronze descendants. The “componential” protograph designs found on certain Liangzhu jades⁷⁹ and Huating pots⁸⁰ are predictable products of the componential cast of mind I detect in the cultures of the East; the origins of the writing system of the Shang, which is characterized by its combination of semantic and phonetic symbols, may well have been associated with these mental dispositions. Few if any of the marks scratched on Northwest pots are similarly componential in character.

One cannot, in conclusion, assign particular meaning to the shapes of the pots or jades of the East Coast. But the shapes of these East Coast artifacts, and the planning and technology involved in their manufacture, suggest a world view that was more fundamentally controlled, precise, measured, standardized, mathematical, componential, articulated, and differentiated. And the special, fragile quality of some of the East Coast vessels, together with the impressive amounts of labor required to produce the jades, further suggests a world that was more hierarchical, a world in which certain finely made objects were reserved for special functions and, presumably, for special people. Craftsmen were not only working to prescribed plan. They were working for others.

The Mentality of the East

Man in the Northwest was the surface designer, the embellisher of globular, holistic forms. Man in the East Coast was the maker of shapes, the manipulator, the “handler,” the coordinator, the measurer, the one who was more

likely to be buried with his tools at hand. Of the products of the two culture areas, those of the East Coast potters, carpenters, and jade craftsmen represent the greater triumph, not necessarily of mind over matter—though that would be a fair judgment insofar as the working of jade (and also, it may be remarked, of lacquer)⁸¹ is concerned—but, in the realm of handicrafts and in the social organization associated with those handicrafts, of articulation over inarticulation. Their technological achievements imply an increasing differentiation in craft, in society, and in spiritual conceptions.⁸² The degree to which the eventual technological and political domination of the Eastern traditions may have involved the movement of peoples from the East Coast into the Central Plains and beyond is not yet clear.⁸³ It may be supposed, however, that the demographic and political successes of the Late Neolithic, Eastern-influenced if not Eastern-derived, regional cultures, sprang ultimately from intellectual pressure, applied to the environment—natural, material, and social.

On the basis of the archaeological evidence, one also has reason to think that it would have been in the cultures of the East that theological and social justifications for the rituals involved in the strategic mortuary cult would have begun to be articulated and isolated. I call the cult “strategic” because the early Chinese treatment of the dead, in both the Northwest and the East, was so remarkably rich and assiduous that it must be regarded as one of the defining features of early Chinese culture.⁸⁴ The Neolithic mortuary evidence in Greece is trivial by comparison and provides little or no evidence of ritual concerns.⁸⁵ Such strong mortuary concerns had the potential for significant cultural consequences, depending upon the way they intersected with other activities.

Significant regional differences in early Chinese religious belief are reflected in such mortuary practices as secondary burial, placement and quality of grave goods, display of those grave goods on ledges, use of coffins and coffin chambers, construction of ramps to permit access to tombs, and offering of animal victims. Here again, firm conclusions must await the publication of more archaeological data and its comprehensive mapping. Several suggestive features, however, bear on the argument of this essay. First, the sex ratios so far reported for the skeletons in large Neolithic cemeteries indicate, down to the third millennium, a higher ratio (frequently of the order of two to one) of males to females in East Coast, as opposed to Northwest, cemeteries. At least two inferences may be drawn. Either—if we assume that female infanticide or preferential feeding explains these disparities—the cultures of the East treated their female children in a more “Spartan” manner than did those of the Northwest. Or, the women of the East were less likely to receive formal, cemetery burial than men.⁸⁶ One may also note that infants may have received special mortuary treatment earlier and more consistently in the Northwest than in the East. Both these findings, if confirmed by subsequent reports, suggest that the inhabitants of the Northwest were more tender with their children, less disposed to regard them, before adulthood, as

expendable,⁸⁷ and that the inhabitants of the East, by contrast, paid greater attention to “social engineering.”⁸⁸

This mortuary evidence suggests that Eastern religious practices—particularly those involving the burial of highly crafted mortuary jades, the display of grave goods, and the construction of coffin chambers—would have served to validate and articulate the expressions of order and control that I have discerned in the realms of technology and social organization among the various East Coast cultures and among their Late Neolithic regional descendants in the Middle and Lower Yangzi, Shandong, and the Central Plains.⁸⁹ If more recent finds confirm an Eastern origin for the scapulimancy and plastronomy by which the peoples of the Late Neolithic communicated with the spirits, presumably their ancestors, in an attempt to divine and influence the future, this would be a further instance of the way in which the peoples of the region were able to devise new, differentiated methods for religious communication.⁹⁰

What the peoples of the Northwest or Central Plains invented or discovered, the peoples of the regional Late Neolithic cultures, influenced to greater or lesser degree by the technologies and work habits of the East, frequently elaborated and put to more extensive use.⁹¹ I would include the introduction of metal working into China in this category; the holistic, wrought-metal working of copper may well have been discovered in Northwest China,⁹² but in the earliest cast bronzes of the Central Plains it appears to have been adapted to the prescriptive, precisely measured, proto-piece-mold techniques of the East Coast peoples, who saw how they could “translate” metal from wrought to cast and who already had the prescriptive, quasi-industrial ceramic technology and mental dispositions, and perhaps the social organization, to do so.⁹³

To sum up, these East Coast inhabitants were the fabricators of sharply shaped and sharply differentiated vessels, some modeled on ceramic cores, some constructed componentially. The specialized designs of their pots required coordination and constraint in both manufacture and usage. They were supremely successful in the drilling, grinding, and perforation of hard-stone artifacts such as axes, spades, and beads, and the jade *bi* and *cong* that were evidently reserved for burial with the dead. They carved and incised their designs on jade, stone, and pottery. They practiced tooth extraction and skull deformation, the application of molding and ramming techniques to the human form. Their treatment of children, particularly of girls, seems to have been more severe than that in the Northwest. They appear to have pioneered the practice of scapulimantic communication with the spirits. They may have accompanied their rituals with millet wine;⁹⁴ if intoxication were involved, this may be seen as another form of manipulation, this time of consciousness itself, that permitted a cathartic release, perhaps, from the strictly ordered patterns of their daily experience as well as from the rigid order imposed by death.⁹⁵

These cultures, in short, were the elaborators and beneficiaries of a tradition

that believed in shaping, reshaping, and manipulating, and in making deep, permanent, marks on pots, on jades, and, perhaps, on the world itself; they emphasized neither two-dimensional, surface decoration nor “natural,” globular form. These Easterners were, one is tempted to say, the ectomorphs, the proto-Confucians (at least in their ritualizing and ordering mode), of the Chinese Neolithic, by comparison with the endomorphs, the dreamers, the surface decorators, the “proto-Taoists” of the Northwest tradition. The delicate and precarious nature of the ritual pots of the East suggests a concern that, in particular contexts of importance, things should be in their right places. And it is worth recalling that the prescriptive process by which some of their most characteristic pot forms were made was, in Franklin’s view, characterized by its “essential predictability,” its lack of surprise.⁹⁶ One may detect, indeed, in the peoples of the East that quality which Marcel Mauss has referred to as “education in composure.” This is not quietism but “a mechanism inhibiting disorderly movements . . . [which] subsequently allows a co-ordinated response of co-ordinated movements setting off in the direction of a chosen goal.” And he concludes with a passage that appositely sums up the distinctions I have been attempting to make about the East Coast and the Northwest of the Chinese Neolithic. “This resistance to emotional seizure is something fundamental in social and mental life. It separates out, it even classifies the so-called primitive societies; according to whether they display more . . . unreflected, unconscious reactions or on the contrary more isolated, precise actions governed by a clear consciousness.”⁹⁷

It is important to repeat that we are dealing only with differences of degree. The various painted-pot traditions of the Chinese Northwest certainly give evidence of considerable experimentation with the possibilities of abstract surface design. Many of these pots, despite their all-purpose shapes, would have required great care to plan, to shape, and to paint. They may even have been used in differentiated ways, even in rituals, that have left no archaeological trace. But the fact remains that the pots were not greatly differentiated, one from the other, in shape or function. Neither, one suspects, were the people. The Northwest potters did one thing and they did it very well. They were more the “hedgehogs” of the Chinese Neolithic; the peoples of the East were more the “foxes.” The Easterners were, metaphorically speaking, Neolithic “Marxists”—their goal was not simply to understand, or even to depict and imitate the world, but to change it.

What I am proposing, in short, is that certain features of Neolithic Chinese culture, recoverable from the archaeological record, mattered very much and that if we merely content ourselves with cataloging pot shapes and artifact types we risk reducing archaeology to antiquarianism. These certain features would include: sedentary agriculture (a necessary source of stability for most if not all the other features);⁹⁸ decent, well-provided burials; mortuary rituals; male dominance; a particular theology of the afterlife that validated status distinctions and obligations in this one; sacrifices, both animal and human, that would have served

the same function; houses raised off the ground; vessels raised off the ground; vessels specialized by design and function; prescriptive, componential ceramic technology; prescriptive jade working; the use of molds and models; careful attention to mensuration and planning; and, eventually, some system of notation, of proto-writing.

These features would have been present to a greater or lesser degree in various parts of China during the Neolithic. I would not argue that in every instance the peoples of the East Coast did something first or did it exclusively. But it was in the cultures of the East that these traits were sufficiently strong and became sufficiently concentrated to work on one another in what Colin Renfrew, writing of the Aegean, has termed the “multiplier effect.”⁹⁹ These traits eventually produced in combination what none would have produced in isolation—a new, more highly differentiated society that was more competent, both technologically and socially, and more explicit, both theologically and intellectually.

Most of these strategic Eastern features serve to define Shang culture: the articulated shapes of the footed and legged ritual vessels in both bronze or clay; lips, spouts, handles, and fitted lids; highly worked jades; lacquer wares; monster masks (as in fig. 17) carved into the precisely measured piece molds used in prescriptive bronze casting; the use of clay cores; impressive burials with animal and human accompaniers-in-death and ledges for the display of burial goods; lavish animal and human sacrifices; use of rammed earth to fill graves and to raise house foundations above the soil surface; elaborate forms of pyromantic divination with permanent records carved into the bone; male domination; extensive social control directed by a central elite.

Strong filiations, which link the Shang culturally to their East Coast antecedents, confirm the degree to which certain roots of later Chinese culture, to say nothing of social and political organization and technical skills, are to be found in the religion, craft, and mentality of the prehistoric cultures of the East Coast where, as we have seen, the archaeological record indicates a developing emphasis on models, mensuration, control, planning, manipulation, specialization, efficiency, and ritual, all of which served to enhance and concentrate, as they ordered and constrained, the productive and organizational capacities of the society.

The characteristic role played by the potter’s, carpenter’s, and jade worker’s metaphors of molding, bending, grinding, and measuring in Eastern Zhou writings on human nature and good government (mainly from the sixth to the third centuries B.C.E.), and the degree to which such metaphors appear in writings of men whose cultural roots were in the East, supports the argument that many of the techniques described in this essay were of fundamental and ancient importance. Just as Neolithic craft techniques had shaped and been shaped by the mentality of their practitioners, so did the metaphors and analogies of Eastern Zhou shape, as they expressed, the way in which social reality was conceived and struc-

tured. The Confucian philosopher Xunzi (298–238 B.C.E.), to cite but one example, wrote:

All rules of decorum and righteousness are the products of the acquired virtue of the sage and not the products of the nature of man. Thus, the potter pounds and molds the clay and makes the vessel—but the vessel is the product of the potter’s acquired skill and not the product of his original nature. Or again, the craftsman hews pieces of wood and makes utensils—but the utensils are the product of the carpenter’s acquired skill and not the product of his original nature. . . . So then the rules of decorum and righteousness and laws and institutions are similarly the products of the acquired virtue of the sage and not the products of his original nature.¹⁰⁰

It is not surprising, given the antiquity and power of these cultural features, that Zhou thinkers found it congenial to argue about morality and human nature in terms of the manufacture of artifacts.¹⁰¹

One obvious caveat needs to be stated. For all the weight I attach to the mentality and social organization of the peoples of the East, the fact remains that the early Bronze Age culture of the Shang—or possibly of the pre-Shang, which some archaeologists now identify as Xia—did not arise in the East but in the Central Plains, particularly in the sites associated with Erlitou in north central Henan.¹⁰² This Early State culture evidently developed at the end of the Late Neolithic as a result of Eastern stimulation, but also as a result of local predispositions to accept and develop whatever innovations arrived from outside. The precise nature of the cultural mixing involved still remains to be explored, but there was, apparently, insufficient “multiplication” in the East to produce Shang culture in that region.¹⁰³ Craftsmanship and material evidence cannot explain everything about a culture’s noncraft, nonmaterial aspects. For all its Eastern qualities, Shang culture was not merely the product of the East.¹⁰⁴

When Engels stressed the centrality of labor—as expressed in toolmaking—he referred only to the way in which tools elevated *Homo faber* above the animals.¹⁰⁵ But particular kinds of tools and products make a particular kind of man. In the case of China, where the contrast between the material remains of the Northwest and East Coast cultures is, in certain technological and aesthetic features, so striking, we may, I suggest, use the material culture, in the ways adumbrated above, as a vital clue to the mental life, the tacit knowledge, the sensibility of the tool makers. Even if one does not accept, in the deliberately broad terms employed in this essay, the primacy of East Coast traits in the eventual Bronze Age synthesis of the Central Plains, one can still appreciate the importance of asking how artifacts were made, how they were used, and what social habits and mental dispositions the answers to such questions imply. For not all artifacts are created equal. We need to ask in each case how their making and their using—whether in different parts of Neolithic China, or in different cradles of civilization elsewhere—may be related to the cultures that made them, used them, and were made by them.

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1. Ward H. Goodenough, "Cultural Anthropology and Linguistics," in Paul Garvin, ed., *Report of the Seventh Annual Roundtable Meeting on Linguistics and Language Study* (Washington, D.C., 1957), 173.
2. For the origins of the state, see, e.g., Elman R. Service, *Origins of the State and Civilization: The Process of Cultural Evolution* (New York, 1975); Jonathan Haas, *The Evolution of the Prehistoric State* (New York, 1982).
3. Paul Wheatley, *The Pivot of the Four Quarters: A Preliminary Enquiry into the Origins and Character of the Ancient Chinese City* (Chicago, 1971), 3–106; Kwang-chih Chang, *Shang Civilization* (New Haven, 1980), 361–67; Richard Pearson, "Social Complexity in Chinese Coastal Neolithic Sites," *Science* 213 (4 September 1981): 1078–86.
4. For my initial explorations of this topic, see David N. Keightley, "Early Civilization in China: Reflections on How It Became Chinese" (forthcoming in a conference volume edited by Paul Ropp).
5. See, e.g., Colin Renfrew, *The Emergence of Civilisation: The Cyclades and the Aegean in the Third Millennium B.C.* (London, 1972), 16.
6. Ian Hodder, "Theoretical Archaeology: A Reactionary View," in Hodder, ed., *Symbolic and Structural Archaeology* (Cambridge, 1982), 4. Goodenough's earlier formulation is equally apposite. Culture, he wrote in 1957, "does not consist of things, people, behavior, or emotions. It is rather an organization of these things. It is the forms of things that people have in mind, their models for perceiving, relating, and otherwise integrating them"; "Cultural Anthropology and Linguistics," 167.
7. Daniel Miller, "Artefacts as Products of Human Categorization Processes," in Hodder, *Symbolic and Structural Archaeology*, 17–25. Such an awareness may have been in Confucius' mind when he declared, "The *junzi* [noble man] is not to be treated as a vessel" (*Analects* 2.12); the moral man was not to be shaped by the conventional categories that produced either pots or people. For further discussion of this passage, and the links between Neolithic craft and conceptions of society, see David N. Keightley, "Craft and Culture: Metaphors of Governance in Early China" (Paper delivered at the Second International Conference on Sinology, Taipei, December 1986), 33. I shall be glad to supply, upon request, copies of my various unpublished papers cited in this essay.
8. Daniel Miller, *Artifacts as Categories: A Study of Ceramic Variability in Central India* (Cambridge, 1985).
9. A. J. Ayer, review of J. David Bolton, *Turing's Man*, in *New York Review of Books*, 1 March 1984, p. 16. See too Friedrich Solmsen, "Nature as Craftsman in Greek Thought," *Journal of the History of Ideas* 24, no. 4 (1963): 473–96, who documents how "many of the verbs employed by Plato suggest a carpenter's or builder's work" (481).

- and how, in Aristotle, “nature acts like a modeller, a painter, a cook, a carpenter, a housebuilder, or a channelbuilder” (489).
10. Brian Moeran, *Lost Innocence: Folk Craft Potters of Onta, Japan* (Berkeley, 1984), esp. 174, 217, demonstrates the relationship, in one area of twentieth-century Japan, between pottery manufacture, social change, and aesthetic ideals. His conclusion that “so-called aesthetic *mingei* [folk craft] ideals are in fact no more and no less than prescriptions for the organization of Japanese society” (217) is particularly suggestive for the argument of this essay.
 11. On the inadequacy of the archaeological record to recover many of the simple techniques, such as pounding and binding, that people employ, see Marie Jeanne Adams, “Style in Southeast Asian Materials Processing: Some Implications for Ritual and Art,” in Heather Lechtman and Robert Merrill, eds., *Material Culture: Styles, Organization, and Dynamics of Technology*, 1975 Proceedings of the American Ethnological Society (St. Paul, Minn., 1977), 25–26.
 12. Hodder, “Theoretical Archaeology,” 10.
 13. Marcel Mauss, “Techniques of the Body,” *Economy and Society* 2, no. 1 (February 1973): 76, 86; this article was originally published in *Journal de psychologie normale et pathologique* 32 (1935): 271–93.
 14. An Zhimin, “Tanshisi duandai he Zhong’guo xinshiqi shidai” (Carbon-14 dating and the Chinese Neolithic), *Kaogu* (Archaeology; hereafter abbreviated as KG) 1984, no. 3:273, fig. 2, presents a recent table of cultures arranged by period and region but based, however, upon uncalibrated carbon-14 dates (271).
 15. This division corresponds, superficially, to the old dichotomy between painted-pottery, Yangshao culture in the west and black-pottery, Longshan culture in the east. For an account of this two-culture theory, which dates back to the work of Li Chi in the 1930s, see Kwang-chih Chang, *The Archaeology of Ancient China* (3rd ed., revised and enlarged; New Haven, 1977), 146–47. I prefer to avoid the use of Yangshao and Longshan as general designations. Yangshao village was, in fact, a Miaodigou II site much influenced from the East; Longshan was a Late Neolithic culture whose manifestations were generally limited to Shandong.
 16. The degree to which the cultures of the East penetrated the Central Plains and beyond, and the precise dating and nature of that penetration, require further study. Initial discussions of the emergence of Eastern traits in the Northwest may be found in William Watson, *Cultural Frontiers in Ancient East Asia* (Edinburgh, 1971), 35; Barbara Stephens, “Technology and Change in Shang China” (Paper delivered at the Association for Asian Studies Annual Meeting, Chicago, 31 March 1973); Jessica Rawson, *Ancient China: Its Art and Archaeology* (London, 1980), 27, 33, 35; Louisa G. Fitzgerald Huber, “The Traditions of Chinese Neolithic Pottery,” *Bulletin of the Museum of Far Eastern Antiquities* 53 (1981): 120; Huber, “The Relationship of the Painted Pottery and Lung-shan Cultures,” in David N. Keightley, ed., *The Origins of Chinese Civilization* (Berkeley, 1983), 204.
 17. For much of this characterization of the cultures of the East, though she does not unify them as broadly as I do here, I am indebted to Huber, “Painted Pottery and Lung-shan Cultures,” 187–202. Margaret Medley, *The Chinese Potter: A Practical History of Chinese Ceramics* (Oxford, 1976), 28, also argues for the existence of two distinct ceramic traditions “in terms of technique, form and decoration.”
 18. Data bearing on the question of proportion have not been consistently reported. It has been estimated that only 2–3 percent of the Banpo phase pots (fifth millennium B.C.E.) in Gansu were painted; Yan Wenming, “Gansu caitao di yuanliu” (The origins

- of Gansu painted pottery), *Wenwu* (Cultural Relics; hereafter abbreviated as *WW*) 1978, no. 10:63. In the Miaodigou remains (first half of fourth millennium), we are told either that 10–15 percent or 14.02 percent of the pots were painted; in the 1964 excavations at Majiayao (late fourth to early third millennium) the proportion was said to be 30 percent; “Cong Majiayao leixing bo Waxiliyefu di ‘Zhong’guo wenhua xilai shuo” (A refutation, on the basis of the Majiayao type, of Vasiliev’s ‘Theory that Chinese culture came from the west’), *WW* 1976, no. 3:27; Yan, “Gansu caitao di yuanliu,” 63. Over 64 percent of the 4,705 Machang-style pots (last half of third millennium) excavated in the burial area at Ledu were decorated; “Qinghai Ledu Liuwan yuanshi shehui mudi fanyingchu di zhuyao wenti” (The main issues posed by the primitive-society cemetery at Liuwan, Ledu, in Qinghai), *KG* 1976, no. 6:366.
19. Whether vessel shapes were related to types of clay needs study. It is possible, for example, that Eastern potters adopted componential construction (see text below) because the body of their clays was too weak to bear the full weight of large, holistically constructed pots (suggestion of Brian Moeran, 19 September 1986). Systematic studies of the temper and type of clay used in the various culture areas have not yet been undertaken, however, and I do not address such questions below.
 20. Ursula Martius Franklin, “The Beginnings of Metallurgy in China: A Comparative Approach,” in George Kuwayama, ed., *The Great Bronze Age of China: A Symposium* (Los Angeles, 1983), 96, defines these terms as follows: “A holistic process . . . involves basically a single, step-wise approximation toward the final object. The craftsman, starting with a selection of suitable raw material, must know intimately the whole sequence of steps necessary to produce the object.” Prescriptive processes, on the other hand, represented quintessentially by bronze casting, involve the making of a model and “a sequence of unit processes.” She calls “this type of subdivided or subdividable process ‘prescriptive’ in order to indicate the characteristic external pre-ordering and normalizing inherent in it.”
 21. The term *componential construction* has been applied to the Chinese case by Clarence F. Shangraw, *Origins of Chinese Ceramics* (New York, 1978), 39, 40. My use of the phrase includes the meaning of two distinct Chinese terms: *fenduan shengchan* (production by sections) and *fenbie zuohao hou zai jiehe qilai di* (made separately and then joined together).
 22. He Jiejun, “Changjiang zhongyou yuanshi wenhua chulun” (A preliminary discussion of primitive culture in the middle reaches of the Yangzi), *Hunan kaogu jikan* (Papers on Hunan Archaeology) 1 (1982): 50–51.
 23. This inversion represents an interesting antecedent to the analogous, if not homologous, Shang bronze-casting practice in which container vessels were frequently cast in the upside-down position.
 24. See too, *Xi’an Banpo* (Banpo village at Xi’an; Beijing, 1963), pls. 122.1–2, 123.3–4, 135.6, 137.1–6. I am grateful to Shi Xingbang (conversation of 25 October 1984) for calling these examples to my attention.
 25. Shangraw, *Origins of Chinese Ceramics*, 28.
 26. E.g., “Gansu Qin’an Dadiwan yizhi 1978 zhi 1982 nian fajue di juyao shouhuo” (Main results of the 1978 to 1982 excavations at the site of Dadiwan in Qin’an, Gansu), *WW* 1983, no. 11:22, fig. 4.
 27. E.g., a narrow-waisted, painted *guan* jar excavated from Yongdeng and a *ping* amphora, with a trumpet-shaped neck, from Yuzhong—both on display in the Gansu Provincial Museum in late October 1984.
 28. See too, the *fu*-shaped *ding* from early period graves at Wangyin; “Shandong Yan-

- zhou Wangyin xinshiqi shidai yizhi fajue jianbao” (Preliminary report of the excavation of the Neolithic remains at Wangyin in Yanzhou, Shandong), *KG* 1979, no. 1:8, figs. 3.4, 3.7–8; p. 9, figs. 5.1–3.
29. Moeran, *Lost Innocence*, 50, 203, notes that in Onta it was the women who put on the handles and spouts and that teacup handles were thought too troublesome to attach.
 30. For the various types of control that may develop from the coordination of manufacturing activities, see Richard Edwards, *Contested Terrain: The Transformation of the Workplace in the Twentieth Century* (New York, 1979), 16–22.
 31. Franklin, “Beginnings of Metallurgy in China,” 96.
 32. It has been suggested that Henan was the original home of molded ceramic ware; Noel Barnard and Satō Tamotsu, *Metallurgical Remains of Ancient China* (Tokyo, 1975), 53, citing the work of G. D. Wu, Cheng Te-k’un, and Li Chi. I suspect, however, that the inspiration derived from the hollow-legged *gui* forms of the East. The legs of some *li* were apparently made on a wheel and were then patted and shaped, using a core as interior support; conversation with Zheng Guang, 22 October 1984, referring to 59AHG H2/H14 on display at the Xiaotun research station. Other *li* legs were made not by molding but by forming tubes and then pinching them at the bottom; conversation with Lin Yun, 23 June 1986. In this case, it would still have been necessary to make the tubes of equal diameter and length (see the discussion of mensuration in the text below).
 33. See, e.g., Cheng Te-kun, “Metallurgy in Shang China,” *T’oung Pao* 60 (1974): 223–24.
 34. For a discussion of “model emulation” in the philosophical sphere, see Donald J. Munro, *The Concept of Man in Early China* (Stanford, Calif., 1969), esp. 96–102; Keightley, “Craft and Culture,” 28–31.
 35. Chang, *Archaeology of Ancient China*, 280.
 36. *Dawenkou: Xinshiqi shidai muzang fajue baogao* (Dawenkou: Excavation report of the Neolithic burials; Beijing, 1974), p. 12, pl. 2; Han Kangxin and Pan Qifeng, “Wo guo baya fengsu di yuanliu ji qi yiyi” (The origin and significance of the custom of tooth extraction in our country), *KG* 1981, no. 1:64–76.
 37. E.g., “Hemudu yizhi diyi fajue baogao” (Report on the first season of excavation at the site of Hemudu), *Kaogu xuebao* (Acta Archaeologica Sinica; hereafter abbreviated as *KX*) 1978, no. 1:60, fig. 14.4, pl. 8.11; Julia K. Murray, “Neolithic Chinese Jades in the Freer Gallery of Art,” *Oriental Art* 14, no. 11 (November 1983): p. 16, fig. 4; p. 17, figs. 6, 7; Wu Hong, “Yizu zaoqi di yushi diaoke” (A group of early jade carvings), *Meishu yanjiu* (Fine Arts) 1979, no. 1:67; Wu, “Bird Motifs in Eastern Yi Art,” *Oriental Art* 16, no. 10 (October 1985): 36. On the basis of both the archaeological and legendary evidence, Wu Hong argues in his two articles for the existence of bird totemism in the Shandong region; see, too, David N. Keightley, “The Eastern Yi: Archaeological and Textual Evidence” (Paper delivered at the Association for Asian Studies Annual Meeting, Chicago, 21 March 1986).
 38. E.g., *Xian Banpo*, pp. 70–73, pl. 86.2; “Yijiuqi nian Baoji Beishouling yizhi fajue jianbao” (Preliminary report of the 1977 excavations at the site of Beishouling in Baoji), *KG* 1979, no. 2:105.
 39. E.g., “Henan Xinzheng Shawoli xinshiqi shidai yizhi” (The Neolithic site at Shawoli in Xinzheng, Henan), *KG* 1983, no. 12, pl. 1.2; “1979 nian Peiligang yizhi fajue baogao” (Report on the 1979 excavations at the Peiligang site), *KX* 1984, no. 1, pls. 2.1, 2.3. Many other four-footed querns have been reported from Peiligang sites. I know of no querns, footed or unfooted, from the East Coast.

40. Cishan querns with three feet have been reported; see An Zhimin, "Peiligang, Cishan he Yangshao" (Peiligang, Cishan, and Yangshao), *KG* 1979, no. 4:336; Yan Wenming, "Huanghe liuyu xinshiqi shidai zaoqi wenhua" (Early Neolithic culture in the Yellow River basin), *KG* 1979, no. 1:46.
41. The slow wheel or turntable was used in many areas of Neolithic China. The general development of the fast wheel has not yet been comprehensively studied, but it is likely that it was developed first and more extensively by the cultures of the East. Richard Pearson, "The Neolithic Cultures of the Lower Yangtze River and Coastal China" (Paper delivered at the Symposium on the Origin of Agriculture and Technology: West or East Asia, Moesgard, Denmark, 1978), documents the gradual appearance of the potter's wheel at Dawenkou. Wheel-made (fast?) pottery was common in the Liangzhu culture of the Yangzi delta (third millennium); An Zhimin, "Luelun sanshi nian lai wo guo di xinshiqi shidai kaogu" (A brief account of the last thirty years of Neolithic archaeology in our country), *KG* 1979, no. 5:400. Traces of the fast wheel have been detected on pots from Late Neolithic Middle Yangzi sites, though most of the pots were still handmade; He, "Changjiang zhongyou," 50. The eggshell blackware of the Late Neolithic in Shandong (e.g., fig. 11) was turned on a fast wheel. The development of the fast wheel may have been associated with or stimulated by the rotary saws that the Liangzhu jade cutters are thought to have used; Wang Zunguo, "Liangzhu wenhua 'yu lian zang' shulue" (A brief account of 'shrouding and burying in jade' in Liangzhu culture), *WW* 1984, no. 2:33.
42. Medley, *Chinese Potter*, 26. She notes that "the use of the wheel for throwing was confined to the production of the dark grey and black ware [characteristic of the East—D. N. K.]. This is because it was not possible to throw satisfactory shapes with clays that had a variable or very coarse particle size; a relatively fine and even particle size is a prerequisite for this method of construction."
43. Medley, *ibid.*, 26–27, argues that the use of the wheel "inevitably led to a greater degree of specialization in social terms, since those good at making pottery by the older coiling method, or by using the pad and beater, might not be sufficiently skilled in the use of well prepared clay to throw well on the wheel, while the skilled thrower might not have the patience to engage in coiling and using the pad and beater."
44. Moeran, *Lost Innocence*, 199, 202. Unfortunately, I know virtually nothing about kiln-loading techniques in the Chinese Neolithic.
45. For an introduction to the evolution of Neolithic kilns and reduction firing, see Watson, *Cultural Frontiers*, 67–70; Clarence F. Shangraw, "Early Chinese Ceramics and Kilns," *Archaeology* 30, no. 6 (November 1977): 382–93.
46. "Hemudu faxian yuanshi shehui zhongyao yizhi" (Important remains of the primitive society excavated at Hemudu), *WW* 1976, no. 8:12, fig. 27; "Hemudu yizhi," pp. 42–48, fig. 5.
47. Gu Wen, "Mantan xinshiqi shidai di caitao tu'an huawen dai zhuangshi buwei" (Informal discussion of the decorative location of pictures and design bands on Neolithic painted pottery), *WW* 1977, no. 6:67–69.
48. For particular burials that support this view, see David N. Keightley, "Truth Is in Details: Archaeological Methods and Historical Questions in the Chinese Neolithic" (Paper delivered at the Conference on Ancient China and Social Science Generalizations, Airlie, Va., 22–26 June 1986), p. 39, n. 74.
49. The assumption that good is up and bad is down is certainly central to many expressions in English; see the examples in George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago, 1980), 16. The Shang oracle-bone inscriptions referred to the

- more senior ancestors as *gao*, “high.” The early Zhou referred to Shang Ti, “the Lord on High.” As a statesman in the “Chu yu” section of the *Guo yu* (probably compiled in the third century B.C.E.) is reported to have said: “On earth there is high and low; in heaven there is dark and bright. Among people there are lords and servitors; among states there are capitals and appanages. This is the ancient system”; *Guoyu Wei Zhao zhu* (Discourses of the States with commentary by Wei Zhao; 1800 ed.; reprint ed., Taipei, n.d.), *juan* 17, p. 9b. Numerous Eastern Zhou philosophical texts refer to elites and subordinates as “upper” and “lower,” *shang* and *hsia*; as Han Fei Tzu (d. 233 B.C.E.), for example, wrote, “If the ruler [*shang*] loses an inch, his subordinates [*hsia*] gain a yard”; *Han Fei Tzu*, trans. Burton Watson (New York, 1964), 40.
50. For further illustrations of these shapes, see “Tantan Dawenkou wenhua” (A discussion of Dawenkou culture), *WW* 1978, no. 4:62–63. The *li* was probably a vessel form developed in the Central Plains, though its antecedents were presumably the hollow-legged forms of the East Coast; Shangraw, *Origins of Chinese Ceramics*, 22; Rawson, *Ancient China*, 30.
 51. Franklin, “Beginnings of Metallurgy in China,” 96.
 52. See, e.g., the variety of *gui* shapes listed at p. 97 above. Barnard and Satō, *Metallurgical Remains*, 7, contrast “the remarkable variety of shapes and structures” of the ceramic *li* tripods and solid-legged vessels toward the close of the Longshan period (i.e., the Late Neolithic) and particularly during the early phases of Early Shang, with the “comparatively sluggish development continuing in flat-base and rim-base types.”
 53. Eleanor Burke Leacock, paraphrasing and quoting Engels in her editor’s introduction to Friedrich Engels, “The Part Played by Labor in the Transition from Ape to Man,” in *The Origins of the Family, Private Property and the State* (New York, 1972), 245.
 54. A nonglazed pot, its exterior fairly damp, would be subject to fracture if placed in the fire too quickly (conversation with Brian Moeran, 19 September 1986). Experiment would be needed to determine if the shape of *ding* tripods or hollow-legged vessels protects against thermal shock.
 55. David N. Keightley, “Pot Makers and Users in the Central Plains: Cultural Interaction in the Chinese Neolithic” (Paper delivered at the American Historical Association Annual Meeting, New York City, 28 December 1985), appendix 4, “Steamer Vessels: Origins and Distribution.”
 56. The correctness of this interpretation is suggested by the clusters of drinking goblets found in the earth fill of certain Dawenkou burials. Their placement above the corpse, at the edge of the pit, suggests they were not grave goods belonging to the deceased but had been used by the mourners in some final rite of farewell as the grave was filled in. For a discussion of these and other “ritual” vessels found in burials, see David N. Keightley, “Dead But Not Gone: The Role of Mortuary Practices in the Formation of Neolithic and Early Bronze Age Chinese Culture, ca. 8000 to 1000 B.C.” (Paper delivered at the Conference on Ritual and the Social Significance of Death in Chinese Society, Oracle, Ariz., 2–7 January 1985), 44–46.
 57. As W. David Kingery has proposed, “the development of ceramic techniques and materials is always a consequence of societal change rather than a cause”; “Interactions of Ceramic Technology with Society,” in Prudence M. Rice, ed., *Pots and Potters: Current Approaches in Ceramic Archaeology*, Monograph 24, Institute of Archaeology, University of California (Los Angeles, 1984), 171–72.
 58. Thomas Carlyle, *Signs of the Times*, quoted by Moeran, *Lost Innocence*, 10, 11.
 59. For *spouts*, see, e.g., fig. 2, no. 4; fig. 3, nos. 2, 7, 8; fig. 7, nos. 9–19; fig. 13; for *single*

- handles: fig. 2, no. 4; fig. 3, no. 4; fig. 7, nos. 9–19; fig. 10, nos. 8, 10; fig. 13; for lids: fig. 2, no. 11; fig. 4, nos. 2, 3, 5; fig. 9, no. 10; fig. 10, nos. 1, 12; for legs: fig. 6, nos. 7–20; fig. 7, nos. 9–19; fig. 9; fig. 10, no. 6; figs. 11–13.
60. For spouts and lips, see, e.g., *Dawenkou*, p. 86, fig. 69; p. 91, fig. 74.3; p. 92, fig. 76; “Jiangsu Pi xian Dadunzi yizhi dierci fajueh” (Second excavation of the Dadunzi site in Pi county, Jiangsu), *Kaoguxue jikan* (Journal of Archaeology) 1 (1981): p. 44, fig. 19.14, pls. 12.2, 12.7. Handles are, of course, a feature of the East Coast *gui* (see p. 97). For teacup-like handles of East Coast *bei*, see, e.g., “Zhejiang Jiaxing Majiabang xinshiqi shidai yizhi di fajue” (Excavation of the Neolithic site at Majiabang in Jiaxing, Zhejiang), *KG* 1961, no. 7:350–51, figs. 8, 9; “Hemudu faxian,” p. 13, figs. 20, 21.
 61. See, e.g., Barnard and Satō, *Metallurgical Remains*, p. 4, fig. 1.
 62. In the Northwest, two small loop handles were frequently found on opposite sides of painted-pottery *hu* vases of the third millennium; they were presumably for the passage of supporting ropes or rods. Small “finger” handles sometimes appear at the necks of these vessels, for either the passage of a rope or, perhaps, for lifting them off the ground with two hands. Examples of these various handle types can be seen in “Gansu Lanzhou Jiaojiazhuang he Shelidian di Banshan taoqi” (Banshan pottery from Jiaojiazhuang and Shelidian in Lanzhou, Gansu), *KG* 1980, no. 1, pl. 1. In general, however, the Northwest handles were not sufficiently large or correctly placed to be held or manipulated by one hand.
 63. One may note in this connection that stone hand axes with hand grips were a special feature of Liangzhu sites; *Jiangsu sheng chutu wenwu xuanji* (Selection of cultural relics excavated in Jiangsu province; Beijing, 1963), no. 44; this was a culture that liked to grasp and grip.
 64. Murray, “Neolithic Chinese Jades,” 19 (note, however, that the *cong* in her figs. 1.7 and 1.8 are reproduced upside down); Wang, “Liangzhu wenhua,” 28.
 65. Murray, “Neolithic Chinese Jades,” p. 16, fig. 4; p. 17, fig. 6.
 66. E.g., “Li xian Dongtian Dingjiagang xinshiqi shidai yizhi” (The Neolithic site of Dingjiagang in Dongtian, Li county), *Hunan kaogu jikan* 1 (1982): p. 11, fig. 13.2; *Shanghai gudai lishi wenwu tulu* (A pictorial record of ancient historical relics from Shanghai; Shanghai, 1981), 18, 23; René-Yvon Lefebvre d’Argencé, ed., *Treasures from the Shanghai Museum: 6,000 Years of Chinese Art* (Shanghai and San Francisco, 1983), no. 6; “Jiangsu Hai’an Qingdun yizhi” (The site of Qingdun in Hai’an, Jiangsu), *KX* 1983, no. 2:175, figs. 27.25–27. In the Keshengzhuang II culture the lids of *weng* urns were apparently made as one with the vessel and were then cut away before firing, being scored to make a tight fit; “Shilun Qijia wenhua yu Shaanxi Longshan wenhua di guanxi” (Exploratory discussion of the relations between Qijia culture and the Longshan culture of Shaanxi), *WW* 1979, no. 10:61.
 67. E.g., the urn-burial containers depicted in *Xian Banpo*, pl. 145.
 68. E.g., the stubby-footed vessels from Dadiwan I; “Gansu Qin’an Dadiwan xinshiqi shidai zaoqi yicun” (Remains from the early Neolithic at Dadiwan in Qin’an, Gansu), *WW* 1981, no. 4:8, figs. 13–16.
 69. “Hemudu faxian,” p. 12, fig. 27; “Hemudu yizhi,” pp. 42–48, fig. 5.
 70. Wu Shanjing, “Luelun Qinglian’gang wenhua” (Preliminary discussion of Qinglian’gang culture), *WW* 1973, no. 6:58.
 71. “Zhejiang Jiashan Xin’gang faxian Liangzhu wenhua mu tong shuijing” (A wooden-tube water well of Liangzhu culture discovered at Xin’gang in Jiashan, Zhejiang), *WW* 1984, no. 2:94–95.

72. Wu, "Luelun Qinglian'gang wenhua," 58; "Hemudu yizhi," p. 72, fig. 25.3–5.
73. "1982 nian Jiangsu Changzhou Wujing Sidun yizhi di fajue" (The 1982 excavation of the site at Sidun in Wujing, Changzhou, Jiangsu), *KG* 1984, no. 2:118–19, fig. 9; p. 123, pl. 41.
74. My measurement of the registers carved into the *cong* in the Freer Gallery did not reveal a standard "Neolithic inch," though a wider sample should be studied with this question in mind; on three of the *cong* (Freer 16.157, 16.410, 16.500A) the registers were all ca. 24 mm high. The registers of two of the nine *cong* illustrated at fig. 16 were also approximately 24 mm high (my measurements are approximate since I derive them from the figure itself, which is drawn to scale). The registers on no. 4 were 25 mm high; on no. 6 they were 23 mm; the other registers ranged between 18 and 21 mm in height.
75. According to "1982 nian Sidun yizhi," 118, the tubular saws did not quite meet in fourteen out of thirty-three cases; Wang, "Liangzhu wenhua 'yu lian zang' shulue," 31, refers to fourteen out of thirty-two.
76. "Jiangsu Changshu Liangzhu wenhua yizhi" (The Liangzhu culture site at Changshu, Jiangsu), *WW* 1984, no. 2:14.
77. Further noting that the circles, which formed the eyes of the animal masks that decorated the *cong* registers, were only 2 mm in diameter, Wang, "Liangzhu wenhua 'yu lian zang' shulue," 33, has suggested that metal, tubular drills, presumably of bronze, must already have been in use. Clarence Shangraw has suggested to me that some of the grid designs painted on Northwestern pots filled their spaces so neatly that he believes a jig might have been used (conversation of 9 July 1984); this may well be so, but the distinction remains that in the Chinese Northwest such measurement would have been applied to surface decoration rather than to the construction and shaping of the pot or jade itself.
78. Renfrew, *Emergence of Civilisation*, 407.
79. E.g., the "sun and moon" within the cartouche carved on the jade *bi*, Freer 17.348A; or on the small bracelet, Freer 17.385A. See Wu, "Yizu zaoqi di yushi diaoke," 64–70; Murray, "Neolithic Chinese Jades," p. 16, fig. 4; p. 17, fig. 6.
80. Chang, *Archaeology of Ancient China*, p. 163, fig. 72, gives three componential examples involving sun, moon, and fire-or-mountain shapes.
81. Evidence for the early use of lacquer among the cultures of the East Coast is only beginning to appear. Primitive lacquer objects have been reported from the Majiabang culture site of Weidun in Changzhou, southern Jiangsu (first half of the fourth millennium?); see Wang Zunguo, "Taihu diqu yuanshi wenhua di fenxi" (Analysis of the primitive culture of the Taihu region), *Zhong'guo kaogu xuehui diyici nianhui lunwenji* (Collected papers of the first annual meeting of the Chinese archaeological society; Beijing, 1979), 119. The Zhejiang Provincial Museum was displaying (November 1984) wooden bowls and barrels painted with lacquer from Hemudu (first quarter of the fifth millennium B.C.E.). Since lacquer is a poison, its use provides one further example of "unnatural" Eastern manipulation of raw materials. Lacquer was another Eastern feature that characterized the Shang.
82. On the development of differentiated religious symbol systems, see Robert N. Bellah, *Beyond Belief: Essays on Religion in a Post-Traditional World* (New York, 1970), 16. The humanization of spiritual forces that Wu Hong ("Yizu zaoqi di yushi diaoke," 68) sees in the jade carvings of the East represents precisely the kind of clarifying, defining, and incarnating world view I discern in the technologies of the area. The sharp-toothed savagery of some of the jade masks he discusses—which anticipate in spirit,

if not in form, the *taotie* “monster masks” on the Shang bronzes—also suggests a harsher approach to reality than that found in either the pot forms or designs of the Northwest. (On the probable Eastern origins of the *taotie* itself, see, e.g., Rawson, *Ancient China*, 38–40.)

83. My initial study of burial customs, artifact types, and housing patterns at one site, that of Dahe village, suggests no major influx of Eastern populations into that area of northern Henan in the centuries on either side of 3000 B.C.E., the period of greatest Eastern influence at the site; Keightley, “Pot Makers and Users,” 83. The site has not yet been fully reported, however, and numerous similar surveys need to be conducted in the Central Plains before any reliable generalizations can be made.
84. Keightley, “Dead But Not Gone,” 75–76; “Spirituality in China: The Neolithic Origins,” in Charles Long, ed., *World Spirituality: An Encyclopedia of the Religious Quest*, vol. 1, *Asian Archaic Spirituality* (in press).
85. Renfrew, *Emergence of Civilisation*, 63–80, esp. p. 79; T.W. Jacobsen and Tracey Cullen, “A Consideration of Mortuary Practices in Neolithic Greece: Burials from Franchthi Cave,” in S.C. Humphreys and Helen King, eds., *Mortality and Immortality: The Anthropology and Archaeology of Death* (London, 1981), 89, 94, 95. That large numbers of Neolithic cemeteries have been found in China, and relatively few in, say, Greece or Mesopotamia, may be due to the accidents of archaeological discovery, but the consistent divergence in the evidence so far available is striking.
86. The evidence is presented in Keightley, “Truth Is in Details,” pp. 32–33, table 1. A third inference, as noted in that paper, would stress the difficulty involved in sexing skeletons accurately. It is possible that the reported variation in sex ratios reflects the bias of the modern archaeologists—some of whom may have assumed more than others, for example, that big skeletons and bones were male, small ones were female—rather than the Neolithic situation.
87. *Ibid.*, 34–36.
88. Such a conclusion may need to be qualified, however, when we consider the custom of accompanying-in-death. Here again, the evidence is scanty and the practice does not seem to have been widespread. My preliminary research suggests that, during the last part of the third millennium, accompanying-in-death was more common in parts of the Northwest—along the network of rivers on the Qinghai-Gansu border to the west of Lanzhou—than in the East. This suggests the degree to which the elites of the Machang and Qijia cultures in this area may occasionally have developed ties of obligation and servitude. The elites of the East, by contrast, may have preferred to take advantage of the skilled labor of the living, as opposed to the post-mortem labor of dead companions; such preference would be indicated by the highly worked jade *bi* disks and *cong* tubes placed in the Eastern burials. On these issues, see *ibid.*, 48–54.
89. For the distribution of these features, see Keightley, “Dead But Not Gone,” and “Truth Is in Details,” 30–57.
90. Scholars such as Shi Zhangru and Itō Michiharu have argued for the Eastern origins of such divination; see the sources cited by David N. Keightley, *Sources of Shang History: The Oracle-Bone Inscriptions of Bronze Age China* (Berkeley, 1978), p. 8, n. 26.
91. For the view that a variety of prototypical vessels, such as early forms of the *ding* tripod, the *dou* pedestal bowl, and the *zeng* steamer originated in the Central Plains but were subsequently elaborated in the East and were there given more precise functional definition, greater structural strength, and greater aesthetic coherence, see Keightley, “Pot Makers and Users,” 75, 92–114.

92. An Zhimin, “Zhong’guo zaoqi tongqi di chubu yanjiu” (Preliminary study of early bronze artifacts in China), *KX* 1981, no. 3:287–90; Yan Wenming, “Lun Zhong’guo di tong shi bingyong shidai” (On China’s chalcolithic age), *Shiqian yanjiu* (Prehistory) 1984, no. 1:36–41.
93. Ursula Martius Franklin, “On Bronze and Other Metals in Early China,” in Keightley, ed., *Origins of Chinese Civilization*, 288, stresses the particular kind of social order required by the large-scale bronze production of the Shang.
94. Modern scholars have frequently assumed that the tall-stemmed goblets, which were characteristic East Coast vessels (e.g., figs. 11–12), may have been filled with wine drunk in mortuary rituals. For the probable use of alcohol in the Neolithic East, see Keightley, “Dead But Not Gone,” 44–46; “Eastern Yi,” 10–13. See too the evidence cited in n. 56 above.
95. An anthropologist’s explanation of the “lively, even tumultuous socializing and play” that characterizes the funerals of the Bara of Madagascar is relevant here. “An important aspect of the representation of vitality is the idea that it is chaotic, as opposed to the order of the ancestor cult. . . . It is in this regard that rum takes on special significance. Rum is served not merely because intoxication is pleasant, but because disorderly conduct is essential”; Richard Huntington and Peter Metcalf, *Celebrations of Death: The Anthropology of Mortuary Ritual* (Cambridge, 1979), 114.
96. Franklin, “Beginnings of Metallurgy in China,” 96.
97. Mauss, “Techniques of the Body,” 86.
98. To the extent that any ecological explanation bears on the voluntarist, activist strain proposed for the cultures of the East, one is tempted to suggest that the rice cultivation upon which these cultures, at least in the lower Yangzi drainage, depended was more demanding in terms of scheduling and social discipline than the millet agriculture of the Northwest. One would need to know more than may be archaeologically recoverable, however, about the way in which Neolithic rice was grown, how much attention the paddy fields, if any, required, whether water flow had to be allocated and measured, how frequently the shoots had to be weeded, and so on. If it is true, as Karl A. Wittfogel suggested (“The Foundations and Stages of Chinese Economic History,” *Zeitschrift für sozialforschung* 4, no. 1 [1935]: 36), that the danger of flooding made the North China plain difficult for habitation (he, in fact, pronounced it “uninhabitable” before the construction of dikes), then we would have another environmental challenge to which the peoples of the East might have had to respond.
99. Renfrew, *Emergence of Civilisation*, 27–44, 476–504.
100. Wm. Theodore de Bary, Wing-tsit Chan, and Burton Watson, eds., *Sources of Chinese Tradition* (New York, 1960), 121; *Xunzi* (Taipei, 1964; Sibū beiyao), *juan* 17, pp. 2b–3a.
101. Keightley, “Craft and Culture.”
102. Chang, *Shang Civilization*, 335–55.
103. For the kind of detailed study needed, see Louisa G. Fitzgerald Huber, “The Role of Art in Questions of Cultural Contact in Neolithic and Early Shang China” (Paper delivered at the Annual Meeting of the American Historical Association, New York City, 28 December 1985); see too the works cited in nn. 16 and 17 above. Any future explanation for the genesis of Shang culture is probably going to have to take account of the contribution made by the Hongshan culture, situated in Liaoning, Jilin, and Heilongjiang, with its amazingly rich jades, and by the Lower Xiajadian culture, found in northern Hebei, southeastern Inner Mongolia, and western Liaoning, with its striking painted pots and early bronzes. Though these cultures, whose importance

has only recently been appreciated, may to varying degrees be associated with the cultures of the East Coast, their more northern location and their various affiliations with the Central Plains suggest one of the many ways in which the idealized Northwest-East Coast dichotomy utilized in this essay stands in need of qualification. They also confirm that Neolithic cultures near China's borders by no means observed modern political boundaries. For an introduction to these cultures, see, e.g., for Hongshan: *Xin Zhong'guo di kaogu faxian he yanjiu* (Archaeological Excavation and Research in New China; Beijing, 1984), 172–76; the group of articles in *WW* 1984, nos. 6 and 11; Su Bingqi, “Liaoxi guwenhua gucheng guguo” (Old culture, old city, and old state in western Liaoning), *WW* 1986, no. 4:42–43. For Lower Xiajiadian: An Zhimin, “Some Problems Concerning China's Early Copper and Bronze Artifacts,” trans. Julia K. Murray, *Early China* 8 (1982–83): 59–61 (the original article appeared in *KX* 1981, no. 3:269–84); Su, “Liaoxi guwenhua,” 43.

104. The contribution that the peoples of the Northwest made to the eventual Shang synthesis needs to be explored, but it seems that the “mental” dimension of their activities has not left the kind of archaeologically recoverable traces that I discern in the East. There may well indeed have been right ways and wrong ways to use the painted pots of the Northwest. Nor can one argue that the relative simplicity of Northwestern pot manufacture and usage necessarily implies noncomplex social or ritual arrangements. What distinguished the cultures of the East, however, was precisely their ability to express their social arrangements in their crafts, doing so to a degree that was not replicated in the Northwest.
105. Leacock, in Engels, *Origins of the Family*, 247.