

The Transpacific Origin of Mesoamerican Civilization: A Preliminary Review of the Evidence and Its Theoretical Implications

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Anthropologists generally assume that civilization developed independently in the eastern and western hemispheres. Review of the features that distinguish the Olmec culture of Mesoamerica from preceding village farming groups shows, however, that many are present in the earlier Shang civilization of China. If Olmec civilization originated from a transpacific stimulus, this has important implications both for reconstruction of New World cultural development and for formulation of a valid theory of the evolution of civilization.

ASIDE FROM CULTURAL EVOLUTION, no theory has provoked more violent dissension among anthropologists than transpacific contact. These two topics were considered intertwined by the early "diffusionists," who argued that American Indian civilizations were a consequence of introductions from Old World sources such as Egypt, Phoenicia, Israel, Atlantis, and Mu (Wauchope 1962). By contrast, recent theorists have taken for granted that civilization arose repeatedly (Carneiro 1970:733; Flannery 1972:400) or at least independently in the Old and New Worlds (Phillips 1966:314; Chard 1969:268; Daniel 1970). Those who accept the possibility of transpacific introductions often deny that they made a significant impact on local cultural development (Rowe 1966; Riley 1972:212-213; Graham and Heizer 1971:4; Sanders and Price 1968:64). Efforts to understand the processes leading to the emergence of civilization cannot be successful, however, without recognition that three possibilities exist: (1) civilization arose once and all examples are related; (2) civilization arose independently in the Old and New Worlds; and (3) civilization arose repeatedly in the eastern Mediterranean, Asia, and America. Until we know whether or not the earliest centers were of independent origin, we cannot separate the crucial factors from local variables. The fact that none of the explanations thus far proposed seems adequate may stem from failure to consider the possibility of a single origin (e.g., Adams 1966; Braidwood 1952; Wheatley 1971; Flannery 1972; Culbert 1973). This paper will review the context and characteristics of the earliest civilization of Mesoamerica, known as Olmec, and compare them with the Shang civilization of China. Discussion of the significance of the many striking similarities will illustrate some of the theoretical problems that must be resolved before a reliable foundation can be laid for a theory of the origin of civilization.

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THE INCEPTION OF CIVILIZATION IN MESOAMERICA

Most authorities agree that civilization began about 1200 B.C. in Mesoamerica with the appearance of Olmec culture (Heizer 1968:24; Coe 1968:63; Bernal 1969:11). Among the characteristics that support this evaluation are occupational division of labor, monumental art, elaborate religion, large-scale construction, an accurate calendar, the concept of the zero, writing, social stratification, and an extensive network for securing raw materials and probably also finished products. There seems also to be a consensus that the Olmec had a significant impact on subsequent Mesoamerican civilizations. Coe (1965b:773), for example, has stated that "all known major art styles of lowland Mesoamerica have a single origin in the Olmec style," and the artist-anthropologist Covarrubias (1946, Fig. 4) has traced the rain gods of later times to Olmec antecedents. Bernal (1969:193) views all of Mesoamerica as a single tradition and considers that "the world of the Olmecs and Olmecoids formed Mesoamerica and set patterns of civilization that were to distinguish this area from all other parts of the Americas." If these interpretations are correct, it becomes important to understand the genesis of Olmec civilization.

Mesoamerica Before the Olmec

The transition from dependence on wild foods to cultivated plants took place in Mesoamerica between about 5000 and 3000 B.C., when local groups in different types of environments adopted various methods that gradually increased the productivity of avocados, squash, maize, chili peppers, maguey, amaranth, beans, and other plants. By about 2000 B.C., the addition of garden produce to an abundant supply of seafood and terrestrial fauna supported a density of one village per kilometer in the estuary systems along the Chiapas-Guatemala coast (Coe and Flannery 1967:104). Aridity and the consequent higher risk of crop failure may explain the apparent lag in adoption of a village farming way of life in the highland basins, but by 1500 B.C. settlements of similar size and permanency existed there also.

On the Guatemalan coast, the early villages were probably inhabited by only one or two extended families. Pottery, the most abundantly preserved item of material culture, occurs principally in the form of neckless globular jars, which were often decorated adjacent to the rim with a red band or simple incised or punctate designs. This Ocos style has also been encountered in the Chiapas highlands and on the Gulf coast, where it antedates Olmec civilization. A different ceramic tradition is associated with the Purrón phase in the Tehuacán Basin, but Ocos influence is evident here too a few centuries after its appearance on the Pacific coast. The small size of the settlements, the lack of standardization in pottery and other artifacts, and the absence of luxury goods imply that social organization was unstratified. The only suggestion of occupational specialization is the presence of pottery figurines, which may indicate adoption of religious practices requiring part-time or full-time priests.

Olmec Civilization

About 1200 B.C., something unusual occurred; namely, the "sudden appearance of Olmec civilization in full flower" (Coe 1968:64; cf. Willey 1971:107; Heizer 1971:62; Clewlow 1974:9, 149). Although the presence of La Venta, San Lorenzo, and several other impressive sites has led to designation of the Gulf coast as the Olmec "core area," carbon-14 dates suggest that Olmec influence was felt almost simultaneously over most of Mesoamerica (Fig. 1). In the valleys of Mexico and Chiapas, the initial ceramics are "Olmecoid";

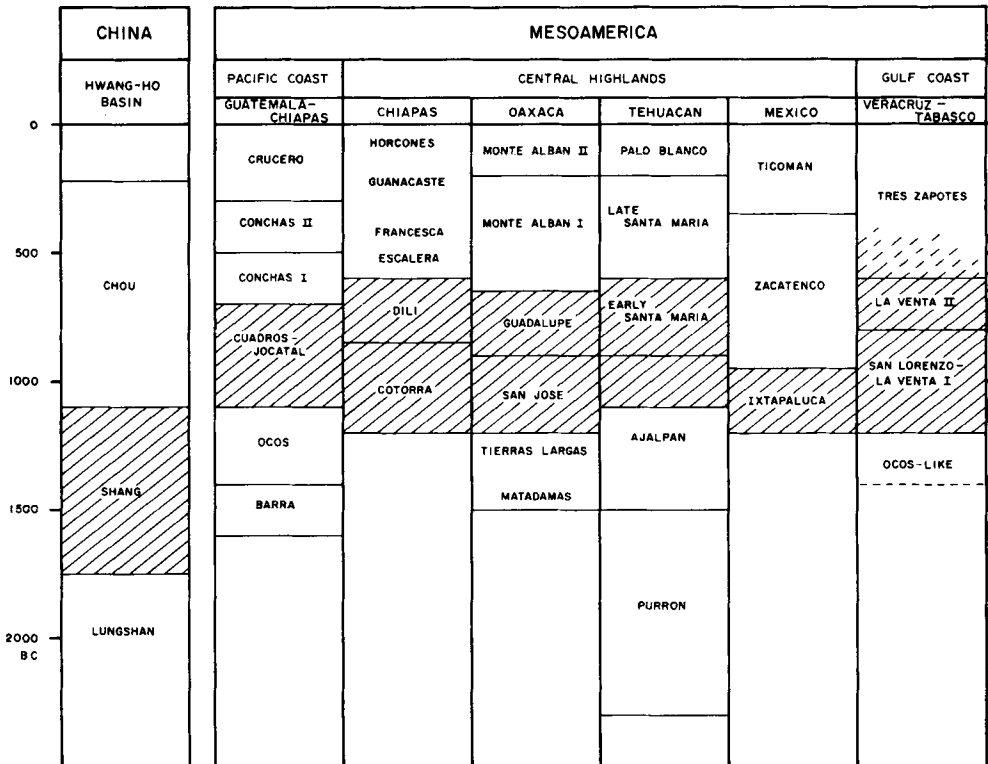


Figure 1. Comparison of the chronological positions of the Shang and Olmec civilizations (diagonal hachure) (after Green and Lowe 1967; Coe and Flannery 1967; MacNeish, Peterson and Flannery 1970; Tolstoy and Paradis 1971; Coe 1968).

elsewhere, "the Ocos-like complexes died out or were cut off . . . about 1100 B.C." (Green and Lowe 1967:63) and replaced by Olmec-related black pottery, often decorated with incision and excision. The Veracruz coast contains the most imposing sites yet discovered and is the only area where large earth mounds, colossal stone heads, monolithic altars, and ceremonial caches have been found. Most other diagnostic Olmec features are more widely dispersed (Fig. 2), among them carved jade, writing, the concept of the zero and place numeration, an accurate calendar, cylindrical stamps, north-south orientation of sites, and many symbols, including the St. Andrew's cross, the U motif, the paw-wing design, and the were-jaguar. Carvings and paintings executed in the distinctive Olmec style occur on natural rock outcrops in the Mexican state of Morelos (Grove 1968) and Guerrero (Grove 1970), as well as in Guatemala and El Salvador. Olmec sites and artifacts have also been reported from the states of Mexico, Oaxaca, Puebla, and Chiapas. Most of the small carved jades have come from Guerrero on the Pacific coast, where they appear to be concentrated in the Rio Balsas drainage (Coe 1965b:766).

The most spectacular and intensively studied Olmec ceremonial centers are La Venta, San Lorenzo, and Tres Zapotes on the coastal lowlands of Veracruz (Fig. 2). La Venta and San Lorenzo occupy the summits of natural rises in swampy terrain and are composed of a number of earth platforms and other features arranged along a north-south axis. Although at both places this happens to coincide with the longest dimension of the natural hill, the fact

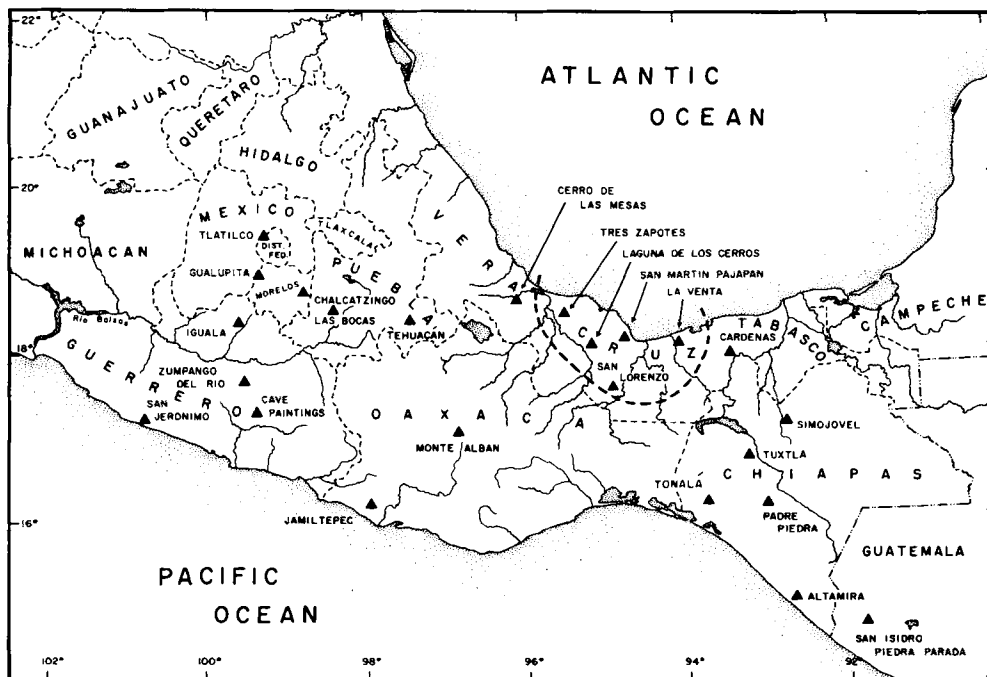


Figure 2. The principal Olmec sites in Mesoamerica; the dashed line defines the "core area."

that other Olmec sites exhibit the same orientation where the terrain does not require it indicates that the alignment was intentional. The principal ceremonial zone at La Venta contains two pyramids about a kilometer apart, connected by elongated platforms and plazas. With the exception of occasional use of columnar basalt for retaining walls and tombs, construction was entirely of earth. Presumably, La Venta platforms were surmounted by rectangular wattle-and-daub structures, as were those at San Lorenzo (Bernal 1969:49). The sparsity of domestic refuse, especially pottery, and the relative scarcity of subsistence resources in the vicinity suggest that the resident population consisted mainly of rulers, priests, and their attendants, who were provided with food, raw materials, and labor by the beneficiaries of their services (Heizer 1962:311). Sculptors, jade carvers, and other craft specialists may also have lived at the ceremonial centers.

In addition to colossal heads, stelae, altars, and other surface monuments carved from basalt, La Venta is permeated with offerings of polished celts, stone slabs, and serpentine mosaics, which were buried in large pits and covered with cinnabar. The celts were often arranged in the form of a cross, and one cache contained 258 examples. Two mosaics created from serpentine blocks have been interpreted as highly stylized jaguar masks. One measured about 4.7 by 6.2 meters and contained 485 cut and squared stones with one or both surfaces flattened and polished (Drucker, Heizer, and Squier 1959).

San Lorenzo is farther inland to the west (Fig. 2), on a natural elevation that was reshaped by cutting and filling around the margins. Excavation has revealed numerous stone sculptures, as well as a complicated system of stone-lined drains connected with reservoirs. The presence on the summit of more than 200 house mounds, frequently arranged in groups of three around a small square court, indicates a much larger resident population than at La

Venta. Greater domestic activity is also implied by the abundance of grinding stones and food remains (Coe 1968). Although the immediate region is more productive agriculturally than the vicinity of La Venta, it could not have sustained the number of permanent residents implied by the archaeological evidence; consequently, here too food must have been brought from more distant regions.

Other kinds of products were obtained from afar. In fact, one of the striking aspects of Olmec culture is the extent of the traffic in exotic raw materials. Obsidian, basalt, magnetite, ilmenite, hematite, serpentine, and jadeite reached La Venta and San Lorenzo from many sources, implying a communication system that covered most of Mesoamerica. Although only stone has survived, feathers, cacao, cotton, and rubber were probably also traded then as in later times. Our inability to recognize such perishable items may account for many of the blanks on the map of the sustaining area (Fig. 3).

Religion was another important aspect of Olmec civilization. By compiling and analyzing the motifs in Olmec art, Joraleman (1971:90-91) has distinguished ten major gods, the most important being the jaguar-dragon, "lord of fire and heat, . . . associated with volcanoes and caves, drought and fertility." Other deities seem connected with maize, rain, lightning and thunder, spring and resurrection, and death. The feathered serpent, which remained prominent in later religions, is described as "lord of life and wisdom, god of the wind, and the primary deity of Mesoamerican ruling classes." Many of the basalt monuments and rock paintings seem to have had ritual functions or to incorporate religious themes. A recurrent one is an adult seated in a niche or cave mouth and holding a child, which may have been a sacrifice (Joraleman 1971:91). The abundance of altars and stelae has led to the

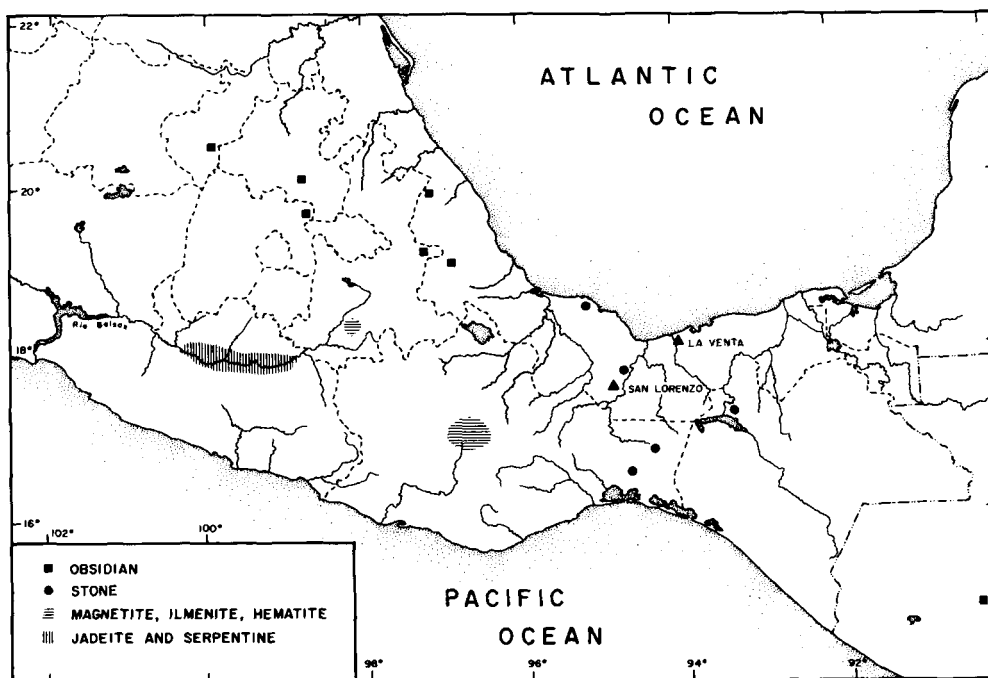


Figure 3. Sources of minerals found at the Olmec centers of San Lorenzo and La Venta (after Cobean and others 1971; Williams and Heizer 1965; Bernal 1971; Parsons and Price 1971).

interpretation of La Venta, San Lorenzo, and other sites in the "heartland" as ceremonial centers, where important rituals were performed periodically.

The kind of sociopolitical organization that produced the archaeological remains is not known and several forms seem compatible with the material evidence. There is general agreement that the high level of technological and artistic skill exhibited in the stone carving and other crafts is associated with occupational specialization. The construction of large earth mounds and the transportation of heavy basalt boulders over long distances would have required both a sizable labor force and competent, authoritative leadership. The ability of the elite to acquire tremendous quantities of materials from widely scattered and often remote sources implies some form of integration extending from coast to coast, between the states of Hidalgo and Mexico on the north and the highlands of Guatemala on the south. But what kind of integration? Coe (1968), who excavated at San Lorenzo, sides with Heizer (1960) in postulating the existence of a coercive state. Flannery (1968), viewing the situation from central Oaxaca, envisages a symbiotic relationship that would have been mutually beneficial to the rulers of politically autonomous centers by providing them with rare items that enhanced their prestige. Two other integrative mechanisms that have been suggested are an independent or "stateless" category of professional traders resembling that in Aztec times, and an inspirational religion involving pilgrimages, offerings, and other expressions of allegiance to the ceremonial centers (Willey 1962).

The Problem of Olmec Origins

Disagreement over the nature of Olmec political organization derives in part from the dispersed settlement pattern, which does not seem to provide an incentive for centralized control. Only after the number of people included within an interaction sphere reaches a critical level (suggested to be about 10,000 by Sanders and Price 1968:229) do kinship relationships cease to be an effective method of integration and become replaced by a stratified configuration, in which differences in wealth, occupation, and/or some other factor define unequal degrees of rank, power, and prestige. If population concentration remains low, as seems to have been true among the Olmec, it is difficult to understand how social stratification can develop.

Consideration of the archaeological evidence reveals two factors of potential significance for reconstructing Olmec sociopolitical integration and its origin. These are: (1) the break in continuity with the earlier village farming culture and (2) the speed with which the new elements spread over most of Mesoamerica. This rapid dispersal implies either that the innovations were so superior to earlier practices that they were adopted voluntarily as soon as they became known or that some form of coercion was exercised. Since both are common consequences of outside influence, it is worthwhile examining whether the innovations are present in the most ancient civilization of China, known as Shang, which arose several centuries prior to the appearance of the Olmec and was potentially accessible by a transoceanic route.

THE INCEPTION OF CIVILIZATION IN CHINA

The transition from hunting and gathering to settled life was earlier in China than in Mesoamerica, and by the beginning of the second millennium B.C. the region between the Hwang-ho and Yangsi Rivers was already occupied by a large population of village farmers. Subsistence was based on cultivated millet, rice, and wheat, and on domesticated pigs, dogs, cattle, sheep, goats, and chickens. Fishing was also important and some hunting was practiced. The existence of differential treatment of the dead implies incipient social stratification. Ancestor worship and divination were part of the religious complex.

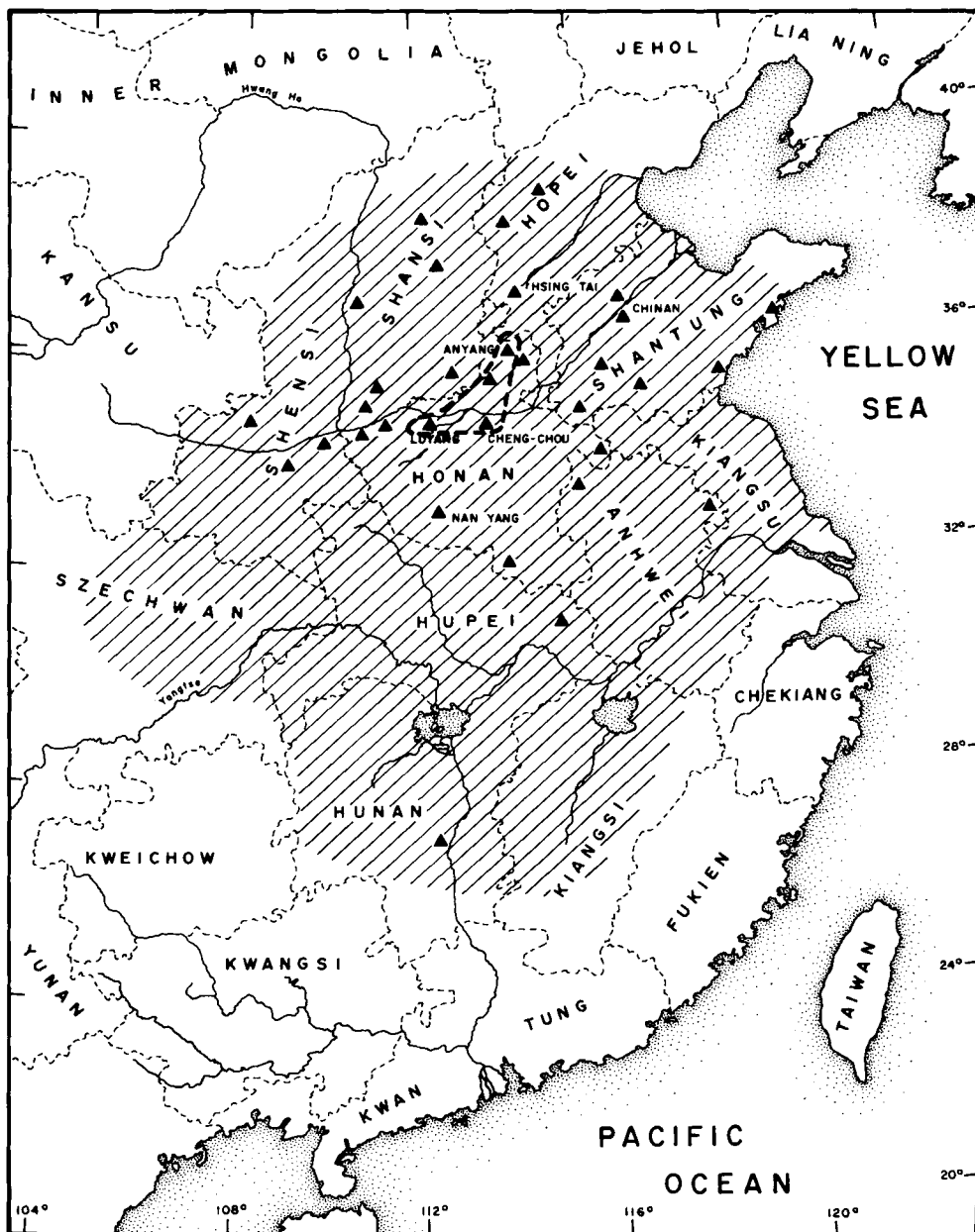


Figure 4. The region of Shang influence or domination (hachure), the "core area" (dashed line), and location of selected sites (after Chêng 1960, Map II; Herrmann 1966:4; Wheatley 1971, Fig. 8).

Around 1750 B.C., there was a "quantum transformation of Chinese society" (Chang 1963:142) with the advent of Shang civilization, characterized by writing, metallurgy, occupational specialization, social stratification headed by a ruling dynasty, special forms of architecture, and elaborate ritual. Although the archaeological evidence cited here comes mainly from excavations at two sites, Cheng-Chou and Anyang (Hsiao T'un), more than a hundred others had been investigated by 1960 (Chêng 1960:16). Considerable information on social organization and the function and significance of certain types of artifacts is provided by written records, which also document the founding of the Shang Dynasty in 1766 B.C. and its overthrow by Chou invaders about 1100 B.C. During this period, the location of the capital was changed six times. Although the historical description of the magnitude of the state has not been fully substantiated by archaeological evidence, Honan, Shansi, southern Hopei, and Shantung were certainly included within its boundaries (Fig. 4). Shang sites and traits have also been reported from Szechwan, Kiangsi, Hunan, Anhwei, Hupei, and Shensi (Chang 1963:145; Chêng 1960:xxvii).

Cheng-Chou, which dates from the earlier part of the Shang period, was an administrative and ceremonial center occupied by the ruling aristocracy. A wall of rammed earth estimated to have been 10 meters high and 20 meters in average width enclosed an area of about 2.0 by 1.7 kilometers, with the longest axis oriented north-south (Chêng 1960:17). It has been calculated that 10,000 persons working 330 days per year would have required eighteen years to excavate, transport, and compact the soil it contains. Outside the wall were the habitations and workshops of potters, bronze workers, jade and bone carvers, and other craft specialists. Most of the population lived in groups of hamlets, each tending to specialize in some activity, such as handicrafts, farming, or religion. At least one settlement in each group possesses architecture and artifacts implying an administrative function, among them rectangular houses with tamped-earth floors, ceremonial objects such as altars and oracle bones, complex tombs, bronze and jade articles.

Anyang, which became the Shang capital in 1384 B.C., contains numerous large platforms of rammed earth averaging two meters high (Watson 1961:61). A complicated system of water distribution underlies the central portion. Both the platforms and the site as a whole are oriented north-south. Cross-shaped tombs containing human and animal sacrifices, human skulls, chariots, and ornaments of bronze, jade, shell, and turquoise testify to the existence of a powerful elite.

According to written records, the Shang kingdom was divided into five regions, each containing a number of feudal states. All feudal lords were appointed by the ruler and some were members of the royal family. Their principal obligations were to guard the frontiers, to provide tribute at regular intervals, and to supply manpower for the army and labor for other kinds of activities. In return, they received military assistance, material rewards, and advice from the oracle, which was consulted on their behalf by the ruler. Agricultural productivity was a major concern because of the burden on the food supply created by the growing rural population, the ruling class, and the artisans (Chêng 1960). The existence of a well-defined administrative hierarchy is implied by reference in the oracle bones to some twenty titles. Officials were of three types: civil, military, and secretarial. The first category included both the administrative staff in the capital and the feudal lords. The last also contained individuals of high rank, among them priests, diviners, and councillors or ministers responsible for overseeing agricultural activities and making lower-level appointments.

The dispersed nature of Shang settlement pattern has been emphasized by Chang (1963:166), who states:

Because the term "urbanization" is somewhat arbitrarily defined in the archeological literature, we must carefully characterize the nature of city life of the Shang Dynasty in North China. The first and foremost feature of the Shang sites is that individual villages

were organized into intervillage networks in economy, administration, and religion. Each in the group depended upon others for specialized services, and offered in kind in return. There was a political and ceremonial center, (a walled enclosure in the case of Cheng-chou), where the royal family and the nobles resided. It apparently served as the nerval nucleus of the entire group and, when the capital of the dynasty was located there, as the center of political and economic control of the whole kingdom. Surrounding and centripetal to this nucleus were industrial quarters, with a high degree of specialization, and farming villages. Goods apparently circulated among the various villages, with the administrative center serving also as the center for redistribution. The population size of the entire settlement group was considerable, as indicated by the spatial dimensions of the groups and by the quantity and complexity of the cultural remains, and the social stratification and industrial specialization of the populace were highly intensified. We find in Shang Dynasty China no physical counterparts to such large population and architectural configurations as Ur of Mesopotamia, Mohenjo Daro of the Indus, and Teotihuacan of Mexico, yet the Shang capital sites performed all of the essential functions of a city, indicating a definite break from the Neolithic community pattern [cf. Wheatley 1971:96].

Tribute was sent to the capital from all parts of the empire (Herrmann 1966:4; Chêng 1960:204). The coastal regions provided hemp, salt, silk, pine trees, lead, rare stones, clays, pheasant feathers, pearls, cowrie shells, and fish. Bamboo, ivory, hides, feathers, oranges, large tortoises, copper, cinnabar, gold, silver, and turquoise were among the principal items sent from the south. From the west came bears, foxes, wild cats, minerals, and precious stones; the northeast contributed mulberry grounds, silk, and varnish. Some jade was obtained from Shensi province, but the best quality was imported from Sinkiang far to the west.

The Shang view of the cosmos was expressed in the orientation of structures and settlements toward the cardinal directions. The necessity that human activities be in harmony with the cosmic order required the performance of seasonal festivals and defined the relationship of the sacred center to its surroundings. Ancestor worship, which had begun in pre-Shang times, continued to be practiced. In addition, the Sky and the Earth were important agricultural deities, the latter often symbolized by the tiger. According to Speiser (1961:36),

We learn from the Anyang oracle inscriptions that the tiger is conceived as being in close connection with the earth, and that the earth is the central point in all religious conceptions and sacrifices In folklore even now the tiger is a good friend and protecting spirit, for he never needlessly attacks human beings, but destroys many pests to their fields.

Depictions on jade and bronze axes often have a gentle aspect because of the omission of projecting canines, whereas the most common art motif, the *t'ao t'ieh*, was a monster mask that has been described as a "distillation of feline ferocity" (Watson 1961:150). Typically, it lacked a lower jaw. The serpent was another important earth symbol; owls and other birds represented the air. Divination was the principal means of communication with the gods and took the form of questions written on bone or turtle shell. These inscriptions combine pictographs with abstract signs and are the earliest examples of Chinese writing. About a third of the characters have been deciphered and this is sufficient to indicate that the texts deal mainly with religious and military matters or the activities of the rulers (Watson 1961:101-102).

The Origin of Shang Civilization

Shang origins are a subject of disagreement. Although Chang (1963:136-141) notes that most of the innovations appeared some 1500 years earlier in the Near East, he believes that writing and bronze metallurgy were probably independently invented in China. Watson

(1961:57-58) and Li (1968), by contrast, consider an outside stimulus responsible for the "mysteriously abrupt" transformation of Chinese society. Although adherents to both positions stress that continuities outnumber innovations, they agree that Shang civilization was "a new phenomenon in the Huangho valley, the outcome of a quantum change, which put a full stop to the Neolithic way of life" (Chang 1963:37).

In both China and Mesoamerica, the existing data are equally inconclusive where origins are concerned. The greater willingness of archaeologists to attribute the initial civilization of China to outside influence probably reflects the existence of terrestrial continuity, although Shang territory is separated from the civilized portions of southwestern Asia by mountains and deserts as formidable as the ocean barrier intervening between China and Mesoamerica. This acceptance is particularly interesting because the resemblances between Shang and Near Eastern civilizations tend to be generic, taking the form of the idea of writing, new methods of social integration (tribute, conquest), advanced techniques of metallurgy, and sumptuous burials involving human sacrifice, whereas Shang-Olmec similarities are much more specific. A detailed comparison of selected traits will illustrate this point.

SOME TRAITS SHARED BY SHANG AND OLMEC CIVILIZATIONS

Writing

The most ancient system of writing appears to have been developed by the Sumerians in Mesopotamia about 3500 B.C. (Diringer 1962:35). During subsequent centuries, a variety of scripts came into use and by 2500 B.C. written records were being kept in the Indus Valley. In China, writing began with Shang civilization during the early part of the second millennium B.C. These scripts differ so much in appearance and the manner in which they reflect the spoken language that their comparison does not provide convincing evidence of common origin. Nevertheless, most experts seem to view the eastern Mediterranean as the primary center of evolution and to regard other styles of writing as adaptations of ideas developed there to the requirements of languages with different grammatical structures and sound combinations.

If one considers the striking contrast between the inscriptions on Egyptian stone monuments and on the clay tablets that filled the libraries of ancient Sumeria, in spite of the geographical proximity of these two areas, it seems unlikely that any resemblance need be expected between scripts employed by more widely separated peoples. It is surprising, therefore, to find similar characters in Shang inscriptions and Minoan Linear A writing, employed on Crete between 1700 and 1600 B.C. (Fig. 5). Although Shang-Olmec comparisons are impeded by the paucity of information about Olmec writing, a few often-repeated motifs on stone carvings have been interpreted as symbols and three of these resemble Shang characters. Cylinder seals were used by the Olmec, but their patterns are more reminiscent of emblems or trademarks than writing, and they may have been purely decorative (Coe 1965a:94-96). By around 500 B.C., when surviving Mesoamerican inscriptions become more numerous, the symbols resemble Maya glyphs (Caso 1946), which were read from top to bottom in Shang fashion.

Jade

The term "jade" is applied to several kinds of greenish, whitish, and bluish rocks, especially nephrite, jadeite, and serpentine. Jade was prized in China during antiquity and local deposits appear to have been exhausted before the Christian era. Thereafter, Turkistan became the chief source, "and the most colossal boulders of the mineral were constantly transported . . . over a trade-route unparalleled in extent and arduousness in Europe and

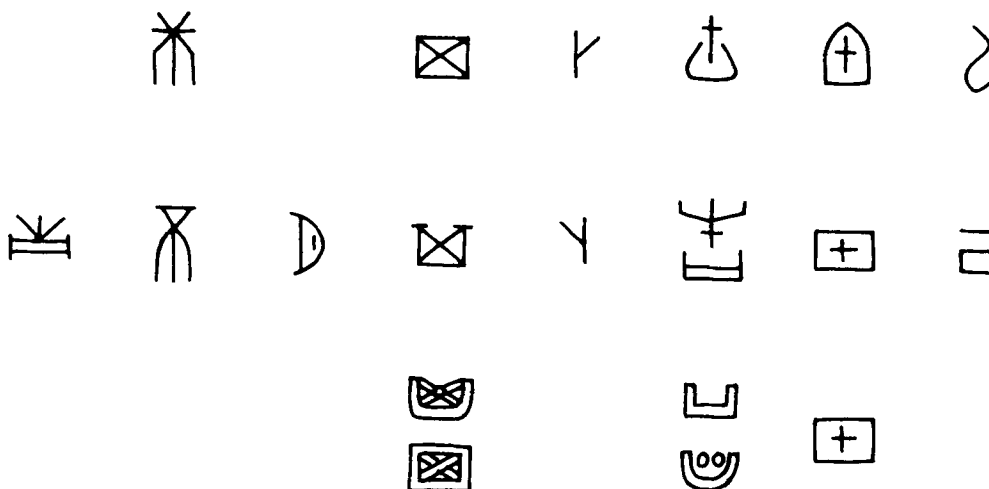


Figure 5. Comparison of characters in the Minoan Linear A script of Crete, dated between 1700 and 1600 B.C. (top row), with those on Shang oracle bones (middle row), and Olmec rock carvings (bottom row). (After Diringier 1962, Fig. 11; Chang 1963, Pl. VII; Hatch 1971, Figs. 14, 19, 20; Coe 1965b, Fig. 43).

requiring a four to six months' journey" (Laufer 1912:5). The greatest artistic achievements date from later Chou and Han times, but the presence of jade amulets, axes, and other items in Shang tombs, as well as the fact that symbols of prestige and rank were of jade, attest to the value placed upon this material by the Shang.

In Mesoamerica, jade was also esteemed. According to Bernal (1969:100),

It was the most precious of all materials, superior to gold itself Jade objects were offered in great ritual ceremonies and were placed in the tombs of priests. The association of jade with the heart of the earth or of the mountains and the heart of the people continued until the end.

During Olmec times, small amulets and figurines were beautifully carved and highly polished, but the art style lacks the ornateness and intricacy of pattern characteristic of later Maya jades. In Mesoamerica, as in China, jade was a primary commodity of long-distance trade.

Batons as Symbols of Rank

On assuming office, each Shang official received a flat, oblong, angular jade tablet as a badge of authority and rank (Ling 1965; Laufer 1912). Larger tablets, some nearly a meter long, were held by the sovereign while receiving visitors or performing sacrifices; other types were sent to feudal lords as rewards, warnings, or reprimands (Fig. 6). Jade axes were frequently buried with individuals of high rank.

Olmec depictions of elaborately dressed figures holding elongated objects of various shapes have generally been interpreted as scenes of warfare, implying that the Olmec fought with clubs rather than other kinds of weapons (e.g., Coe 1962:88). Heizer (1967:29), however, has suggested that they could "with equal plausibility be interpreted as an agricultural tool or a scepter or staff symbolic of special office," particularly since the individuals holding them wear costumes inappropriate for vigorous combat. A restoration of Stela 3 from La Venta shows two men with ornate headgear facing one another, one of them holding a "baton" in his right hand (Fig. 7b). Above are six smaller figures. Two carry

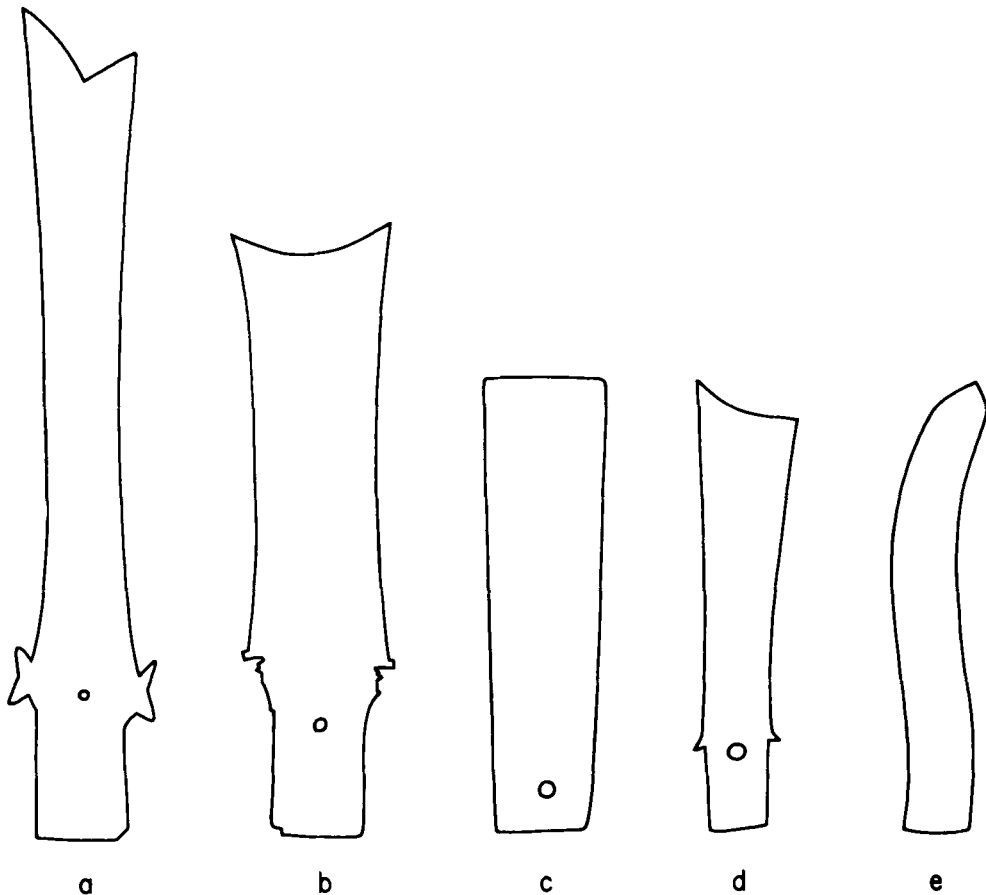


Figure 6. Types of jade tablets held by Shang sovereigns while receiving officials or used by feudal lords as symbols of rank and authority. Form e designates an official of third rank (a-d, after Ling 1965; e, after Laufer 1912).

batons, one of which has the sinuous shape associated with Shang officials of third rank (Fig. 6e). Stela 2 portrays another large figure also surrounded by six smaller individuals. All seven hold a baton in both hands. Among other Olmec depictions is a man holding an object with a bifurcated upper end (Fig. 7a), a shape represented among the badges of rank employed by the Shang (Fig. 6a).

Settlement Pattern and Architecture

Although the earlier dispersed type of settlement pattern was retained, Shang villages began to specialize in different commodities and services. One in each region became a ceremonial and administrative center occupied by an official responsible to the central government. These centers generally are recognizable by the presence of low earth platforms on which buildings once stood. The capital was a larger and more complex assemblage of earth platforms and was sometimes surrounded by a formidable earth wall. Towns and

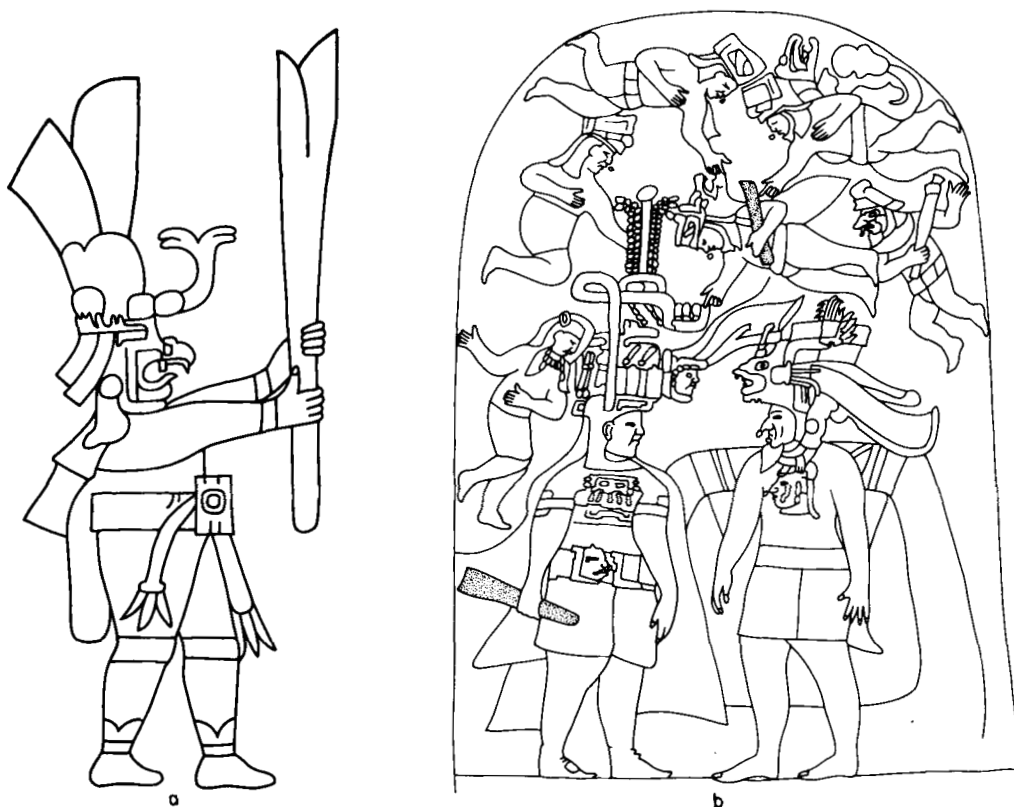


Figure 7. Olmec depictions of figures holding batons. a, individual holding a baton with a bifurcated top, similar to a type used by Shang rulers (cf. Fig. 6a) (after Piña Chán and Covarrubias 1964, Fig. 39). b, reconstruction of the scene on Stela 3 at La Venta; stippled batons duplicate Shang forms (cf. Fig. 6c, e) (after Heizer 1967, Fig. 1).

buildings were oriented toward the cardinal directions, with emphasis on the north-south axis. Drainage systems have been encountered in the central part of Anyang and in several sectors of Cheng-Chou (Wheatley 1971:92).

Earth platforms surmounted by perishable rectangular buildings and north-south orientation are also characteristic of Olmec sites. Buried drains occur at San Lorenzo. As in China, the earlier dispersed type of settlement pattern continued. The major centers were ceremonial and administrative in function and did not contain a large resident population.

Long-range Acquisition of Luxury Goods

The Shang rulers obtained a great variety of raw materials from the provinces under their administration, much of which was converted into finished products by specialized artisans residing in the capital. Most of what is mentioned in contemporary accounts is perishable, but archaeological verification of a system of long-range procurement is provided by the presence of tortoise shell available only in south China and other materials of distant origin in sites in the lower Hwang-ho Valley. The written documents also testify that redistribution was a function of the regional centers and the capital.

The magnitude of the area drawn upon by the Olmec for the acquisition of jade, obsidian, magnetite, basalt, and other minerals has been established by neutron activation and other methods of identifying quarry sites. Although not all the sources have been discovered, the evidence is sufficient to demonstrate that materials were brought to La Venta and San Lorenzo from distant parts of Mesoamerica (Fig. 3). Presumably, feathers, hides, fibers, and other kinds of perishable commodities formed part of this system. There is evidence that skilled artisans lived at the ceremonial centers, but some of the "tribute" apparently arrived in finished form.

Feline Deity

In Shang religion, the tiger was associated with the Earth god. Representations in bronze, jade, and other media run the gamut from placid, fangless forms to ferocious images with prominent canines (Figs. 8, 9a). In many instances, the lower jaw was omitted.

Although Covarrubias attempted to show that the Olmec jaguar was a rain god, others have suggested that it was probably associated with the earth and the fertility of the soil (Bernal 1969:103; Heizer 1962:313; Thompson 1951:36; Wolf 1959:72, 79, 81; Joraleman 1971:90). Depiction here too is highly variable. According to Bernal (1969:99), the jaguar was imbued with all forms: that of a deified animal, at times magnificently sculptured in jade or in stone; at times he is seen complete, or only his face is stylized in masks; at other times he is a humanized jaguar, a man-jaguar, or a child-jaguar Frequently we are not dealing with a simple jaguar, but with a monstrous jaguar far removed from a realistic representation.

Absence of a lower jaw (Fig. 9b) or protruding canines is common (Fig. 10a). In connection with the dragon-like attributes of what Joraleman believes to have been the primary Olmec deity, it is noteworthy that dragons have long been important religious elements in China.

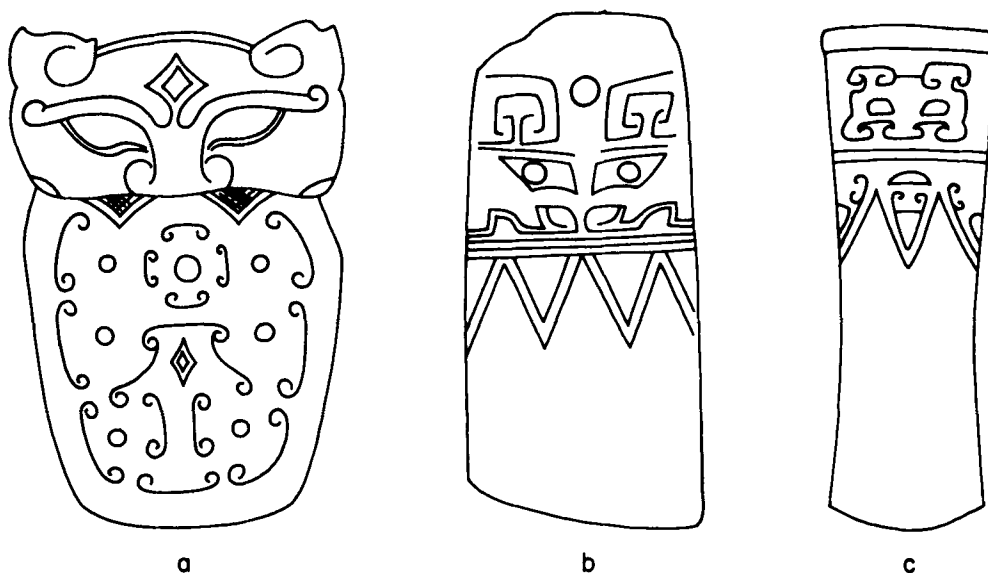


Figure 8. Feline ornamentation on Shang jade celts (a-b) and a bronze ax (c), illustrating the range from realistic to stylized depiction (a, after Laufer 1912, Fig. 83; b, after Laufer 1927, Pl. II-1; c, after Watson 1961, Fig. 20a).

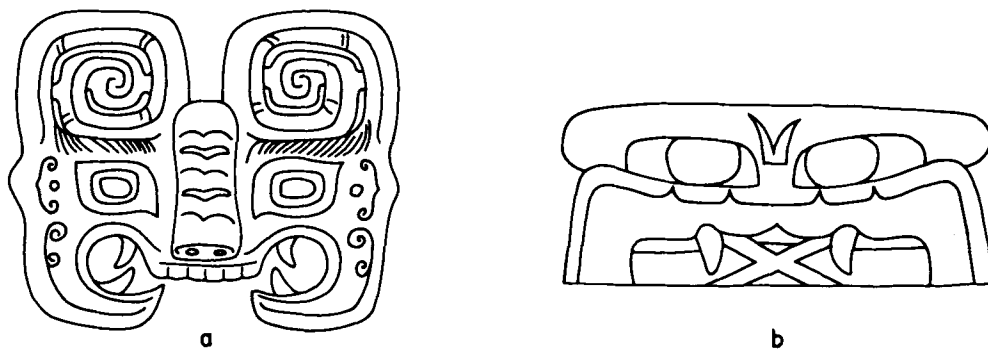


Figure 9. Feline depictions. a, bronze mask of Shang style (after Orta Nadal 1964, Fig. 5). b, face lacking a lower jaw, carved above the niche on Alter 4 at La Venta (after Hatch 1971, Fig. 18).

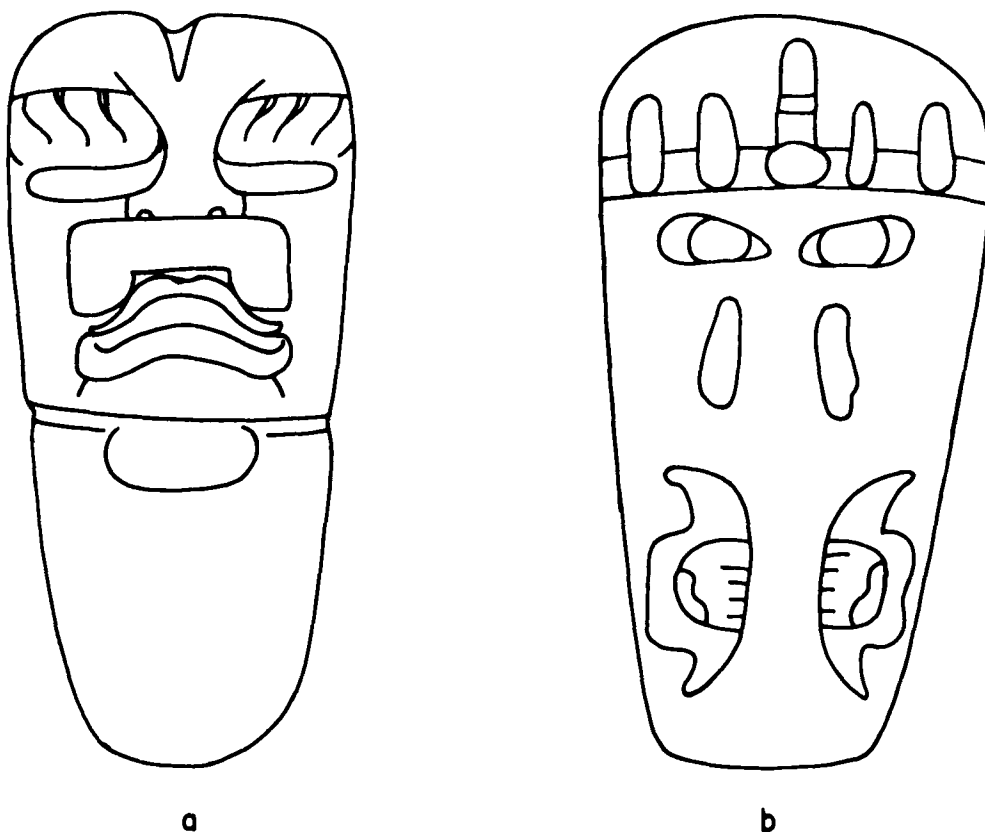


Figure 10. Olmec jade celts from La Venta with feline characteristics. a, typical "were-jaguar." b, highly stylized representation (after Bernal 1969, Pl. 38 and Fig. 11a).

Worship of Mountains

The association of mountains with rain gods is ancient in China and many of the Shang oracle-bone inscriptions relate to this topic. It was believed that the larger the mountain, the more rain it could provide (Lou 1957:79-80).

Mountains seem to have played a significant role in Olmec religion and mythology. Human figures are often shown seated at the mouth of a cave, and one carved on rock at Chalcatzingo in Morelos is associated with rain symbols (Grove 1968). Another clue is provided by the pyramid at the north end of the ceremonial complex at La Venta. Its fluted conical shape (ten well-defined vertical ridges alternating with ten grooves) and its large dimensions (about 130 meters in diameter and 30 meters high) make it unique among early Mesoamerican earthworks (Heizer 1968). Although the top is flattened, there is no evidence of the ramp or staircase typical of later pyramids. After examining and rejecting a number of other interpretations, Heizer and Drucker (1968:54) point to the resemblance between this pyramid and cinder cones in the Tuxtla Mountains northwest of La Venta and suggest that it was "an artifact made in imitation of a Tuxtla cinder cone, and that it was erected at this major ritual centre, which lies some distance off the highland area in the low-lying coastal plain, in order to serve as a surrogate for a familiar and ritually important form." Study of Olmec iconography has led Joraleman (1971) also to infer that volcanoes were important in Olmec religion.

Cranial Deformation

A particularly tantalizing bit of data is provided by Werner (1919:4) on a special kind of deformation of the skull practiced in ancient China:

not only are the heads of the early rulers represented as having . . . tapered form, but the heads of the earliest mythical rulers taper (if the word may still be used) not to one point, but to two. This is the case in the representations of Fu Hsi, Shên Nung, Nü Kua, and many apotheosized beings, who are depicted with heads looking almost as if they had been cut into from above by an axe, in the middle of the skull.

These rulers predate the Shang dynasty (Chêng 1960:xx).

One of the characteristics of Olmec anthropomorphic celts and other sculptures is a depression at the center of the head, which varies from a slight concavity to a deep V-shaped cut (Fig. 10a). Coe (1965a:85) has proposed that this may depict a congenital deformity, but its similarity to the unusual type of skull deformation attributed to early Chinese rulers suggests that it may represent the same practice. The existence of many Olmec figures without cleft heads may indicate that it was a mark of rank or divinity in Mesoamerica also.

Summary of Shang-Olmec Resemblances

The traits and complexes just reviewed vary greatly in magnitude and degree of specificity. At one extreme is a distinctive kind of skull deformation; at the opposite extreme is a settlement pattern embracing a number of characteristics (earth platforms, north-south orientation, wattle-and-daub buildings, ceremonial-administrative centers, etc.), each of which might have been listed separately. Expression ranges from material objects, such as jade celts, to abstract concepts, such as the religious significance of felines and mountains. Some elements are well documented archaeologically or historically in both areas, the long-range acquisition of products being an example. Others are inferences, among them the suggestion that batons were symbols of rank among the Olmec as they were among the Shang. Another variable is the disparate stylistic expression of traits that seem

comparable in general conception, obvious in the representations of felines. Considered as a whole, however, there are a remarkable number of striking resemblances between the inception and content of the earliest civilizations of China and Mesoamerica. They can be summarized as follows:

(1) At about 1200 B.C., there was a quantum change in Mesoamerica from a village farming way of life to Olmec civilization; a similarly abrupt transformation took place about 500 years earlier in China, when the Shang Dynasty was imposed on a pre-existing Neolithic population.

(2) The Shang and the Olmec are credited with the possession of writing, a reliable calendar, a social structure capable of procuring and directing labor for large-scale construction, an organized religion administered by a priesthood, and a trade or acquisition network that channeled materials from distant sources to the administrative or ceremonial centers; both treated jade as a material of exceptional value.

(3) The settlement pattern of both cultures consisted of small, scattered villages, the inhabitants of which contributed labor, luxury goods, food, and other commodities and services to centers occupied by an aristocracy. Among the Olmec, the nature and composition of the latter is unknown; among the Shang, the documents describe a hierarchy composed of a sovereign, administrators of differing rank, and feudal lords.

(4) The principal structures in Olmec centers and Shang capitals were rectangular earth platforms surmounted by perishable wattle-and-daub buildings; the main axis of the components and the site as a whole was north-south. Underground drains, dedicatory caches, and tombs are among the associated features.

(5) Shang documents indicate that the emperor and the subordinate lords employed specific types of jade batons as symbols of authority and rank; Olmec bas-reliefs depict elaborately attired men, some of whom hold a staff or plaque of similar shape in one or both hands.

(6) The feline was a major focus of religious expression among both Shang and Olmec, and was associated with the earth. Depiction ranges from realistic to highly stylized and from fanged and snarling to gentle and placid. Frequently, the lower jaw was omitted. Serpents and birds were also emphasized and features of these animals were sometimes combined in the iconography of both cultures to produce a dragon.

What is the significance of these resemblances? Are they evidence of the arrival in Mesoamerica about 1200 B.C. of immigrants of Shang origin or are they independent duplications explainable by the operation of general laws of cultural evolution? Let us consider some of the difficulties in choosing between these alternatives.

SOME THEORETICAL CONSIDERATIONS

Interpretation of archaeological evidence is impeded by the absence in anthropology of a standard theoretical framework and an unambiguous vocabulary for discussing cultural processes. Since this situation affects evaluation of the evidence for transpacific diffusion, it is worth reviewing some of the principal foci of disagreement (for more detailed discussion, particularly of transpacific issues, see Fraser 1965 and Jett 1971).

Complexity of the Diffusion Process

Although anthropologists frequently speak of diffusion, they seldom specify what they mean by the term in spite of the fact that its definition is basic to any discussion of the criteria by which its existence and impact are to be judged. At least four distinct processes

are potentially involved, each of which may have a different effect on the pattern of distribution and the extent of modification of a trait or complex. These are:

(1) Spread from the place of origin to adjacent and increasingly distant groups, each of which learned of the trait from its neighbor. This produces the classic "age-area" configuration, in which distribution is continuous and the antiquity of the trait decreases with increasing distance from the center of dispersal.

(2) Dissemination of objects or ideas by traders, missionaries, pilgrims, and other travelers. The result may be an irregular distribution, reflecting the differential receptivity of the cultures exposed to the trait and/or the route followed by the bearer.

(3) Migration and colonization. The distance traveled, the medium traversed (land or water), the number of people involved, the complexity of the transplanted culture, and the character of the new environment are among the variables likely to affect the degree to which the original configuration is preserved. Geographical discontinuity can be expected between the area of origin and the area of settlement.

(4) Conquest followed by partial or complete assimilation of defeated groups. Among the factors affecting the outcome are the policies of the victor, the degree to which the cultures differ in complexity, and the duration of the subjugation.

The variety of mechanisms subsumed under the label "diffusion" makes it obvious that criteria useful for identification of one may be irrelevant to recognition of the others. Transpacific introductions could have resulted from any of these processes (with the possible exception of the first) and the impact on a receiving group would have ranged from nil to annihilation depending on which was involved and the context within which it operated.

Limitations of the Archaeological Evidence

Archaeological remains are a fragmentary and biased representation of a formerly existing community. Even if it were possible to gather all surviving evidence by total excavation of every site, large sectors of the original complex would be missing because of their perishability or absence of material expression, or because of disturbance of the deposits subsequent to their formation. In actuality, only a minute fraction of the archaeological residue of any culture has ever been collected, with the result that significant information about an extinct configuration may have survived but not been encountered. This situation has important implications for the recognition of transpacific introductions. For example, if excavated sites do not span the total duration of a culture, the earliest known occurrence of a trait or complex in the receiving area may be more recent than its true age. Similarly incomplete knowledge of the donor area may make a trait appear too late to have served as an antecedent.

Perishable and intangible complexes are often impossible to detect archaeologically, with the result that their antiquity is seldom demonstrable in the absence of written records. The ambiguity of this kind of data is well illustrated by a detailed analysis of the blowgun by Jett (1970). After considering the distribution of fifty-five selected components, he was unable to decide whether the numerous correspondences in construction and use of this weapon among recent southeast Asian and South American groups were attributable to independent invention, convergence or diffusion. The significance of similarities between Asian and American calendar systems (Caso 1946; Kelley 1960), sailing rafts (Ling 1956; Doran 1971), and religious beliefs (Thompson 1951; Lou 1957) has been disputed in part because their priority in Asia has not been proved. A drawback to this criterion for rejection is that it serves equally well to account for missing New World antecedents. For example, Maya writing is preserved only in fully developed form, but has been ascribed to local invention by assuming that earlier stages were executed on perishable materials (Morley 1946:46).

Projection of Modern Concepts into Past Cultures

Two often mentioned objections to transpacific contact are: (1) the length of the ocean voyage would make survival unlikely and (2) the evidence consists of traits susceptible to repeated invention. These views appear to constitute an unconscious projection of twentieth-century conditions and experiences into the past. The existence of a highly stratified, occupationally specialized, and sedentary society has freed us from having to provide ourselves with the necessities to sustain life. Because we would probably perish if set adrift without supplies, we tend to attribute to earlier peoples a similar degree of vulnerability. A good case could be made, however, for the position that the lower the level of cultural development, the greater the likelihood of survival because each member of the society is familiar with all aspects of the economy, even though tradition may assign some tasks to men and others to women. This is not a hypothetical situation; historical records attest to the survival of individuals with this kind of background after eleven months adrift (Sittig 1896). Furthermore, populations exploiting the resources of the sea view it as a route rather than a barrier. Modern Micronesians, for example, do not hesitate to embark alone or with a single companion on a trip of several weeks to a distant island merely to pay a social call or to buy a pack of cigarettes.

The ease with which traits can be reinvented is also more often assumed than demonstrated. Our own culture encourages invention and duplicate discoveries are prone to occur as a result of access by a large number of people to a common body of knowledge (White 1949:209). The fact that this is a recent situation is generally overlooked. Throughout most of human history, security has resided in adherence to traditional ways and innovators have been viewed as eccentric or even dangerous. The continuing strength of this attitude is observable in the daily newspapers, which record the personal hostility or social sanctions directed toward advocates of abortion, racial integration, and other "radical" doctrines. The threat to society presented by new ideas not only makes it unlikely that duplicate invention was frequent during earlier human history, but raises the question of what circumstances encourage acceptance of innovations, whether generated locally or obtained from elsewhere.

Furthermore, many traits that seem simple to us turn out on closer inspection not only to be relatively complicated, but also to have a pattern of distribution through time and space consistent with dissemination from a single source. An example is the addition of a red coating or slip to the surface of a pottery vessel. Its nearly universal occurrence in the New World has been interpreted as indicating repeated reinvention, but the process requires a considerable knowledge of raw materials and their behavior during firing. Since some clays and minerals change color under the influence of heat while others do not, the production of a red slip is not simply a matter of adding a layer of red clay to the surface of an unfired vessel. In addition, examination of the earliest occurrences of red-slipped pottery shows that it appeared on the coast of Ecuador about 3200 B.C. and decreases in antiquity with increasing distance from this region, in accord with the age-area diffusion model (Ford 1969, Chart 17). Even so "obvious" a vessel form as the rounded bowl has a temporal and chronological distribution indicative of diffusion rather than reinvention (Ford 1969, Chart 14). In evaluating possible cultural relationships, it is thus important to keep in mind that what seems "simple" or "obvious" to us may be neither simple nor obvious to someone who has never seen the trait and who lives in a society where innovations are believed to endanger the survival of the group as a whole.

Modification by the Receiving Culture

Every community, society, or culture must maintain an internal integration to remain viable, and new traits incompatible with this configuration will be rejected or accepted only

after modification. As a result, alterations should be expected in traits disseminated by diffusion; furthermore, the larger the number of groups exposed to an innovation and the greater their variation in cultural complexity, the more heterogeneous the modifications are likely to be. Operation of these factors may permit similarities between widely separated complexes to be interpreted as consequences of convergence or independent invention rather than diffusion.

Innovations that do not conflict with established beliefs or threaten vested interests are more easily incorporated by civilizations than by simpler societies. During the process, however, they may be amalgamated with related traits, diluted by execution in the hands of artisans with different motor patterns, or affected by indigenous art styles—to mention only a few of the possible vehicles of transformation—with the result that they seem part of the original matrix, particularly if diffusion has operated over a long span of time. European culture history provides an illustration of this process; Medieval and Renaissance art and architecture are distinct from eastern Mediterranean styles, although history tells us that influences passed back and forth continuously by varying routes and methods.

Independent Duplication

The independent origin of many traits and complexes is beyond dispute. Masked dances, palisaded villages, warfare, and torture of captives are among the features shared by the forest Indians of coastal Brazil and the eastern United States at the time of European contact. Even more detailed correspondences exist between the settlement pattern, pottery shapes and decoration, and other aspects of the material culture of precolumbian agricultural groups in northwestern Argentina and the North American southwest. Most of these duplications can be shown to result from the availability of similar raw materials, access to common diffusion sources, and the operation of similar evolutionary selective processes (Meggers 1964:515-520; 1972).

In other cases, the small number of alternatives makes a certain amount of duplication inevitable. Descent, for example, can be traced in only three ways: through the female line, through the male line, or through both parental lines. Or, to take an element from technology, an arrow is more efficient if the head, shaft, and propulsor are of certain proportions, dimensions, and weights. The existence of such instances has encouraged the assumption that convergence or independent invention is more likely than diffusion to be responsible for similarities when historical connections are not obvious. Given the inadequacy of the archaeological record, however, it is equally appropriate to take the opposite position (unless environmental or functional limitations are clearly involved) and to view cultural resemblances as indicating past connection until proved otherwise.

Although the likelihood of independent origin is often considered to increase with the distance between two occurrences, magnitude of separation is less significant than the presence and nature of barriers between the regions involved. Two groups separated by a body of water, whether a lake or an ocean, are contiguous in the sense that there are no intervening populations through which a trait or complex could pass and by which it might be modified. For example, a coastal water route made Mesoamerican influences more accessible to residents of the Mississippi Valley than to less distant populations isolated by terrestrial barriers. This principle also accounts for the closer resemblance between Valdivia pottery of coastal Ecuador and Middle Jomon pottery of Japan, its postulated antecedent, than exists between Valdivia and other New World Formative ceramic complexes presumably derived from it (Meggers, Evans, and Estrada 1965).

Requirements of Proof

Anti-diffusionists tend to stack the cards against proponents of diffusion by establishing criteria of proof that cannot be met. Phillips, for example, has said that

Before any assertions can be made about the unity of New and Old World civilizations, it will be necessary not only to produce evidence of historical contacts, with some degree of precision as to time, place, and means of transport, but also to show that the role of such contacts was decisive in the development of Nuclear American civilizations *in their formative stages*, and that without such contacts the level of civilization would not have been attained [1966:297, emphasis in the original; cf. Chard 1969:168].

Scientific inquiry can only reveal what did happen, not what might have happened. We cannot judge whether diffusion played a crucial role in the appearance of civilization in the New World until we are able to recognize when, where, and what the introductions may have been.

Another frequent basis for rejecting transpacific diffusion is to enumerate "useful" traits that do not seem to have been adopted, especially the wheel. This approach has two defects: (1) it assumes that a trait important to us would be equally valuable in all other cultural contexts, and (2) it is not susceptible to archaeological verification. The fact that the wheel has not been accepted by many aboriginal New World peoples after several centuries of exposure to its "utility" suggests that it might have been known but rejected in precolumbian times as well for a number of practical reasons, among them absence of roads and suitable draft animals, the ability of a man to carry more than his weight in fragile cargo to its destination without breakage, and the ruggedness of the terrain.

CRITERIA FOR RECOGNIZING CULTURAL DIFFUSION

Given the deficiencies of the evidence and the variety of factors that may affect acceptance of a new trait or complex, what kinds of criteria can be employed to distinguish between diffusion and independent invention? Some seventy-five years ago, one of the founders of the science of anthropology, Edward B. Tylor, devoted considerable thought to this problem. As part of his evaluation of the significance of the similarities between the Aztec game of patolli and the Asiatic game of pachisi, he wrote:

I have found it useful at any rate as a means of clearing ideas, to attempt a definite rule by analyzing such phenomena into constituent elements showing so little connexion with one another that they may be reasonably treated as independent. The more numerous are such elements, the more improbable the recurrence of their combination. In the case of a language recurrence may be treated as impossible. If the invention of the gun be divided into the blow-tube, the use of metal, the explosive, the lock, the percussion, etc., and classed as an invention say of the 10th order, and the invention of chess with its six kinds of pieces with different moves indicated as of perhaps the 6th order, these figures would correspond to an immense improbability of recurrence. Such a game as *pachisi*, combining the invention of divining by lot, its application to the sportive wager, the combination of several lots with an appreciation of the law of chances, the transfer of the result to a counting-board, the rules of moving and taking, would place it in perhaps the 6th order, the recurrence of which might be less than that of chess, but according to common experience still far outside any probability on which reasonable men could count [1896:66; 1879].

More recently, similarly detailed comparisons have been made between the Asiatic and American occurrences of bark cloth (Tolstoy 1963, 1966; Ling 1961, 1962), rain gods and associated rituals (Lou 1957), calendar sequences (Kelley 1960), and sailing rafts (Ling

1956; Doran 1971). These investigators have all concluded that the duplications are so numerous and specific that they imply Asiatic contacts with western America during the precolumbian period.

Where archaeological sequences and cultural complexes are sufficiently well defined, this evidence may permit the differentiation of diffusion from independent invention or evolutionary convergence. In theory, a trait or complex acquired by diffusion should have the following characteristics:

(1) It should appear fully developed in the receiving area and, in the case of a complex, most of the constituent elements should be absent in the antecedent local archaeological record although incorporation of some indigenous elements can be expected.

(2) Its evolution should be traceable in the archaeological record of the donor area; if a complex rather than a single trait is involved, however, the evidence may be insufficient to demonstrate that all its components are more recent in the receiving area.

(3) Its extinction in the donor area should postdate its appearance in the receiving area if a direct transfer seems probable; if dissemination proceeded slowly, however, the trait or complex may have died out in its place of origin before reaching its maximum distribution.

(4) It should not have evolutionary, environmental, or functional limitations that make it subject to independent origin. This qualification applies to certain aspects of social organization that are correlated with population size and concentration, and to material traits such as house type, which may be influenced by climate and local raw materials. Tools may be independently invented if their efficiency is correlated with their form.

While these criteria are easy to specify, they are often difficult to apply to concrete situations for a variety of reasons. The incompleteness of the archaeological record has already been mentioned, and disagreements over the interpretation of existing data add another dimension of uncertainty. Dating is critical, but can rarely be established precisely in the absence of a written calendar. Although carbon-14 determinations are frequently treated by archaeologists as absolute dates, they are only approximations that may deviate by centuries from the true age of the cultural remains with which they are associated. Evaluation of the evidence for transpacific contacts is further impeded by barriers to communication between Asian and American archaeologists, who generally receive different kinds of training, publish in mutually unintelligible languages, and rarely have more than superficial knowledge of one another's areas. It is important to keep these obstacles in mind, not only because they influence interpretation of the similarities between prehistoric Old and New World cultures, but because they help to define the areas where research is most urgently needed.

THEORETICAL IMPLICATIONS OF THE SHANG-OLMEC SIMILARITIES

If the criteria for distinguishing diffusion from independent invention are applied to the resemblances between the Shang and Olmec civilizations, it is difficult to avoid the conclusion that transpacific communication took place. Most of the diagnostic Olmec characteristics are complex configurations with many arbitrary components. They have no antecedents in Mesoamerica, are earlier by several centuries in China, overlap in age in the two areas, and are not subject to environmental, evolutionary, or functional limitations that would predispose them to independent duplication. Although some of the Olmec features, such as the use of batons as emblems of rank, have been interpreted in other ways, a significance like that documented for Shang society has been suggested by one or more Mesoamerican experts. In the case of long-range acquisition of raw materials, different commodities were involved but the concept is the same; namely, the transport of a great

variety of rare or luxury items are not available locally to a prestigious center for use in ritual contexts or by an elite. Even in writing, where the diversity of expression exhibited by related scripts in the eastern Mediterranean indicates that little similarity should be expected, a few Olmec characters resemble Shang symbols. Both religions emphasized felines and dragon-like creatures and placed special emphasis on mountains; in iconography, the frequent omission of the lower jaw on feline representations cannot be attributed to any natural prototype.

The fact that continuities with the past outnumber new features has led most authorities on China and Mesoamerica to argue for the independent emergence of civilization (e.g., Chêng 1960:239-249; Wheatley 1971; Coe 1968). As long as the frame of reference is confined to either continent, this interpretation seems convincing. When the horizon is broadened, however, the existence of similar configurations in Asia and Mesoamerica becomes apparent and the possibility that Olmec civilization is a consequence of transpacific influence must be considered. A positive conclusion has implications that go far beyond the issue of whether or not communication took place. Many authorities already accept the interrelationship of all civilizations in the Old World; if diffusion also stimulated its appearance in America, all instances would be traceable to a single origin.

If civilization is a unitary phenomenon, two propositions follow: (1) efforts to transplant it will meet with differential success depending on the characteristics of the new environment, the level of development of the indigenous culture, the manner in which the traits are introduced (casual contact, invasion, colonization, etc.), and other local variables; and (2) areas able to support civilization may not realize their potential because of isolation from appropriate sources of diffusion. Even a superficial consideration of world cultural development brings to mind instances of both kinds. The history of European exploration and colonization alone provides numerous examples of the imposition of a higher level of sociopolitical, religious, and economic organization on village farming populations in Asia, Africa, and America. Many elements failed to be transplanted; others did not take root or were accepted only after modification. Concurrently, traditional patterns of behavior in both donor and receiver cultures were accommodated to the requirements of the new situation and a different kind of configuration emerged. Without written documentation that transoceanic contact had occurred and without maintenance of communication between the donor and receiver areas to help minimize assimilation of the invading minority, it might be impossible to decide in many of these cases whether the outcome was the result of independent development or outside stimulation.

Acceptance of this hypothesis would also explain two puzzling aspects of the Mesoamerican archaeological record: (1) the abrupt and drastic transformation of the village farming way of life, characterized by several authorities as a "quantum jump"; and (2) the emergence of centralized control and social stratification in the context of a dispersed settlement pattern, where kinship normally serves as a satisfactory means of integration. It would also eliminate the need for seeking special causes and incorporate the Olmec (and other "pristine" civilizations) into a general evolutionary model by recognizing them as offshoots from a previously civilized area.

If explaining the origin of civilization were a simple problem, it would have been solved long ago. Part of the difficulty lies in the unevenness and incompleteness of the archaeological evidence, but facts assume meaning only when placed in a theoretical context. The preceding discussion has attempted to show that the same data can be used to "prove" independent development or diffusion, depending on the theoretical position of the observer. Space has not permitted review of all the information available on the emergence and content of the Shang and Olmec civilizations, but the features described are sufficient to focus attention on the primary point I wish to raise, which is that our search for origins may

be handicapped by unrecognized biases in our premises. We cannot assume that civilization had two or more independent origins; we must discover whether or not this is the case. Only then will a reliable foundation be laid for understanding why and how these configurations appeared when and where they did.

NOTE

¹ While this article was in press, Marguerite W. Ekholm and Gordon F. Ekholm delivered a paper at the 41st International Congress of Americanists (Mexico, September 1974) entitled "The Scroll-wing Motif in Ancient China and Mesoamerica." Their detailed comparison adds another item to the Shang-Olmec resemblances.

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