Territorial expansion and primary state formation

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A major research problem in anthropology is the origin of the state and its bureaucratic form of governance. Of particular importance for evaluating theories of state origins are cases of primary state formation, whereby a first-generation state evolves without contact with any preexisting states. A general model of this process, the territorial-expansion model, is presented and assessed with archaeological data from six areas where primary states emerged in antiquity: Mesoamerica, Peru, Egypt, Mesopotamia, the Indus Valley, and China. In each case, the evidence shows a close correspondence in time between the first appearance of state institutions and the earliest expansion of the state's political-economic control to regions lying more than a day's round-trip from the capital. Although additional research will add detail and clarity to the empirical record, the results to date are consistent with the territorial-expansion model, which argues that the success of such long-distance expansion not only demanded the bureaucratization of central authority but also helped provide the resources necessary to underwrite this administrative transformation.

archaic states | comparative archaeology | political evolution

The state and its bureaucratic governing style are pervasive in today's world, and yet people have not lived in state societies for most of humanity's time on this planet; it is not surprising that the origin of the state has long been a major topic of research in anthropology (1–8). Here I present a general model of the origin of the state, which I call the territorial-expansion model, and apply it to six cases of primary state formation, a process by which a first-generation state evolves in pristine fashion, without contact with any preexisting states. All six cases occurred before detailed written records were kept and are thus known primarily through archaeology.

Defining the State

Early influential theorists of the state include Engels (9), Mosca (10), Michels (11), and particularly Weber (12), who defined three fundamental types of authority: charismatic, traditional, and rational, the last of which he associated with the bureaucratic state. For Weber, the essence of bureaucratic governance was a hierarchy of administrative offices occupied by full-time specialists with differentiated functions. During the 1960s and 1970s, a general framework reminiscent of Weber's was promoted by anthropologists such as Service (13), Fried (14), and Flannery (15). They asserted that sociopolitical evolution had proceeded through a series of general stages: egalitarian society, rank society (or chiefdom), and state. Flannery argued that a salient trend in this evolutionary process was an increase in the complexity of information processing and decision making.

In egalitarian societies, political authority is uncentralized, and there is no permanent, institutionalized inequality among fundamental social units such as families and villages. Leadership tends to be ephemeral, and the individual leaders that emerge do so because they exhibit unusual personal characteristics, like intelligence or bravery, that attract followers, along the lines of Weber's charismatic mode of authority. Leadership status is achieved, not ascribed at birth. Effective decision making often requires key members of constituent social units to come together in periodic aggregations that take the form of communal feasts, dance societies, village festivals, war parties, ritual fraternities, and the like (16, 17).

In rank societies or chiefdoms, authority is permanently centralized in the office of chief, which exists apart from the person who occupies it and upon his death must be filled by someone of similarly elite descent (15); high status is largely inherited, as in Weber's traditional form of authority. Decisions can be made more quickly in a chiefdom than they can in uncentralized societies, although chiefly authority is usually much more expensive to maintain. Chiefs support themselves and their retinues through the mobilization of surplus resources within their domain and the management of this political economy is a key touchstone of chiefly success (18). Separate chiefdoms frequently interact with one another through raiding and/or exchange, but it is uncommon for chiefdoms to engage in the conquest and long-term control of distant territories (19). Yet, chiefs often participate in networks of prestige-good exchange with elites in distant polities, obtaining exotic items that symbolize and reinforce their higher status (19, 20).

The difference between chiefdoms and states has been of particular concern to Wright (8). Wright defined the chiefdom as a society with centralized but not internally specialized authority; he defined the state as a society with a centralized and also internally specialized administrative organization, consistent with the Weberian concept of the rational bureaucracy. Chiefly authority is thus centralized but nonbureaucratic, a design that sees linguistic expression in the relatively few terms employed to designate elite decision-makers in ethnographically and ethno-historically documented chiefdoms. By contrast, even relatively small states exhibit a plethora of named administrative posts (19).

From Wright's perspective, the origins of bureaucracy can be found in those cases where chiefdoms evolved into the first pristine states through the process of primary state formation. There have been few examples of primary state formation worldwide, probably no more than six: in Mesoamerica, Peru, Egypt, Mesopotamia, the Indus River Valley, and China (7). These cases are a valuable resource for comparative analysis and the testing of general models of primary state formation, including the territorial-expansion model that I will now discuss.

Territorial-Expansion Model of Primary State Formation

For Wright (8), the different administrative principles that define chiefdoms and states are necessarily associated with correspondingly distinct optimal regulatory strategies. Because central authority in a chiefdom is not permanently divided into multiple specialized parcels, any delegation of chiefly authority approaches total delegation, a situation ripe with potential for insubordination, insurrection, or fission. Thus, the optimal strategy for a chief is to avoid delegating authority, which means he has to rule his entire domain from the center. As a consequence, there is a spatial limit to the territory size that a chief can effectively control. In a preindustrial context, this limit lies about one-half day of travel from the chiefly center, some 25–30 km by foot; a

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chief, or a chief's representative, could go from the center to the periphery of the domain and back in 1 day (19–21).

In a state, the central decision-making process is divisible into separate functions that are performed by a variety of administrative specialists, usually organized into a hierarchy, the upper echelons of which set policy, whereas the lower are assigned specific tasks. As a consequence, the state is able to engage in the effective delegation of partial authority (21). A state ruler can dispatch subordinates to locations near and far from the state capital to manage local affairs, and, if the authority of the dispatched official has been defined narrowly enough, this can be done with little risk of insurrection. The ability to delegate partial authority to subordinates gives a state the potential to intrude into local affairs and finance itself with a variety of extractive techniques. Moreover, the delegation of partial authority allows the state to expand its political-economic territory well beyond the spatial limits associated with chiefly decision-making principles. Wright (8) has argued that the optimal regulatory strategy for a state ruler is to engage wholeheartedly in such delegation, to divide and segment authority as much as possible so as to minimize the likelihood of insurrection by subordinates. In discussing the evolutionary transition from chiefdom to state, I (19) suggested that if a chief seeks to implement a new strategy of internal administrative specialization, the chances of success will be enhanced if the shift is made quickly and extensively. This will help ensure that the new parcels of authority are defined narrowly enough so that no dispatched administrative assistant in the new order enjoys sufficiently broad authority to foment a successful insurrection. From this perspective, we would expect an evolutionary transition from chiefdom to state to be marked by a qualitative shift in administrative principles and associated optimal regulatory strategies, representing a profoundly transformational process of change (21).

It is not my view that chiefdoms will inevitably evolve into states; nor do I see them as static. Rather, I note that chiefdoms are prone to repeated cycles of political growth, marked by an increase in the power and resources (both human and nonhuman) controlled by the chief, followed by a period of decline (22). The growth portion of this cycle is financed by increasing resource mobilization, which is ultimately limited by the territorial constraints on regulatory efficacy that result from the centralized but not internally specialized nature of chiefly decision making.

Previously, I proposed a mathematical model that shows how a polity can reach a critical threshold when chiefly political growth approaches these limits, at which point a new strategy for resource mobilization must be devised or the downward portion of the chiefly cycle will ensue (23). One way to avoid a decline would be for the polity that has reached this threshold to enlarge the political-economic territory well beyond the spatial limits of chiefly regulatory efficacy. Political control could be extended into the territories of adjacent polities, a strategy that would be especially feasible if those adjacent polities were smaller and weaker than the aggressor (24). Of course, such an attempt at expansion could fail; its success would require a major change in the regulatory principles and strategies of the expanding polity. Among the most important of the new strategies would be the delegation of partial authority to subordinate administrators who would be stationed in the newly annexed territories to maintain control and manage the extraction and transfer of resources. The political viability of this strategy of delegation requires the implementation of a new principle of administrative organization, one emphasizing the internal specialization of the central decision-making process. In short, the success of the territorial-expansion strategy is linked to the onset of bureaucratic governance and the state. Although the nascent state will be more expensive to sustain than the antecedent chiefdom, the new resources gained through successful territorial expansion will do much to defray the costs of the administrative transformation. The growth and proliferation of bureaucratic governance will continue as more and more resources are harnessed, leading to further delegation of authority, more territorial expansion, and still more resource extraction—a positive-feedback process that reinforces the rise of a state government qualitatively and quantitatively more complex and powerful than the chiefdom that preceded it (23).

When we apply the territorial-expansion model to the empirical record of primary state formation, we should expect to find a close correspondence in time between the appearance of state institutions and a dramatic expansion of political-economic territory. This expectation, it should be noted, runs counter to the conventional idea that the territorial expansion of state control is a phenomenon that typically occurs well after the initial formation of the state, during what is sometimes called an "imperial" phase of development. In contrast, this model makes territorial expansion an essential, integral part of the process of primary state formation itself (23, 24).

Mesoamerica

Mesoamerica's earliest case of state formation, according to current evidence, occurred in Mexico's Oaxaca Valley, focused on the archaeological site of Monte Albán (25), which sits atop a hill in the central part of the valley and exhibits a diverse array of institutional buildings such as palaces and specialized temples (Fig. 1), architectural expressions of the internally differentiated administration that used them (26). Archaeological research over the past three decades has helped clarify the sequence of state formation in Oaxaca (Fig. 2). During the Rosario phase (700–500 B.C.), just before the founding of Monte Albán, the three-lobed Oaxaca Valley was occupied by three chiefdoms, one each in the Etla (northern) subvalley, the Ocotlán-Zimatlán (southern) subvalley, and the Tlacolula (eastern) subvalley; the founders of Monte Albán probably came from the Etla subvalley (27). Evidence of state organization is lacking for the Early Monte Albán I phase (500–300 B.C.). By the Late Monte Albán I phase (300–100 B.C.), Monte Albán had grown to cover some 442 ha (appendix I in ref. 28), with an estimated population of 10,200–20,400 (ref. 25, p. 44); it presided over a regional site-size hierarchy of four tiers (29), which is one of the key archaeological indicators of state organization (30).

Spencer and Redmond (31) drew on several lines of evidence to argue that, during the Late Monte Albán I phase, Monte Albán's political territory probably included the Etla and Central areas but not the Ocotlán-Zimatlán and Tlacolula subvalleys; by the next phase, Monte Albán II (100 B.C.–A.D. 200),

Fig. 1. Main Plaza of Monte Albán in Mexico's Oaxaca Valley showing several institutional buildings; in the foreground is the Sunken Patio of the North Platform and the probable royal palace, looking southwest. Photo by C.S.S.

Phase	Tiers in Settlement Hierarchy	Palace	Multiroom Temple	Long Distance Conquests	Valley-wide Integration
MA II	**4**	**YES**	**YES**	**YES**	**YES**
Late MA I	**4**	**YES**	**YES**	**YES**	No
Early MA I	3	No	No	No	No
Rosario	3	No	No	No	No

AD 200 / 100 BC / 300 BC / 500 BC / 700 BC

Fig. 2. Five categories of archaeological evidence pertaining to political complexity in Oaxaca for four phases spanning the time of primary state formation.

Monte Albán extended its control over the entire Oaxaca Valley. This interpretation is supported by changes in the distribution of a particular kind of pottery, *crema* ware, the clay body of which came from a single source near Monte Albán (32); other contemporaneous wares were made from more widely available clays. Using ceramic data collected on regional survey by Kowalewski et al. (28), I carried out an analysis (Fig. 3) that showed that Late Monte Albán I phase sites in the Etla-Central subvalley had significantly higher frequencies of *crema* sherds than contemporaneous sites in the Tlacolula or Ocotlán-Zimatlán subvalleys (Kruskal-Wallis statistic = 17.954; $P < 0.001$). By contrast, Monte Albán II phase sites in all three subvalleys had relatively more similar frequencies of *crema* sherds (Kruskal-Wallis statistic = 4.829; $P = 0.089$). During the Late Monte Albán I phase, polities in the Ocotlán-Zimatlán and Tlacolula subvalleys evidently pursued various strategies of resistance, including population nucleation, construction of fortifications, increasingly hierarchical political organization, and a continuation of local traditions of public construction, all of which signaled their independence from Monte Albán. This independence elicited a reduced participation in the kinds of exchange that would have brought *crema* wares to the southern and eastern subvalleys during Late Monte Albán I times. By the Monte Albán II phase, however, their resistance was overcome as Monte Albán brought the entire Oaxaca Valley into its domain (33).

Royal palaces and standardized multiroom temples are also recognized as important features of state organization that can be detected archaeologically (34). The earliest royal palace thus far excavated in Oaxaca was built around 300 B.C., at the onset of the Late Monte Albán I phase, as shown by associated radiocarbon dates and ceramics (35). Although this find was made near Tilcajete at the El Palenque site, the capital of an independent secondary state in the Ocotlán-Zimatlán subvalley, it is possible that the remains of a comparable palace lie beneath Monte Albán's North Platform, the likely location of the Late Classic (*ca*. A.D. 600) royal palace (36). Also dating to the Late Monte Albán I phase are Oaxaca's earliest excavated temples with multiple rooms (37), considered to be evidence of a specialized priesthood (34). Again, these discoveries were made at the El Palenque site, but it is likely that contemporaneous multiroom temples will be excavated in future fieldwork at Monte Albán, since such temples dating to the succeeding Monte Albán II phase have already been recovered there. Because Monte Albán continued to be occupied for several centuries after A.D. 200, it has been difficult for excavators to recover Late Monte Albán I and Monte Albán II buildings beneath the massive later
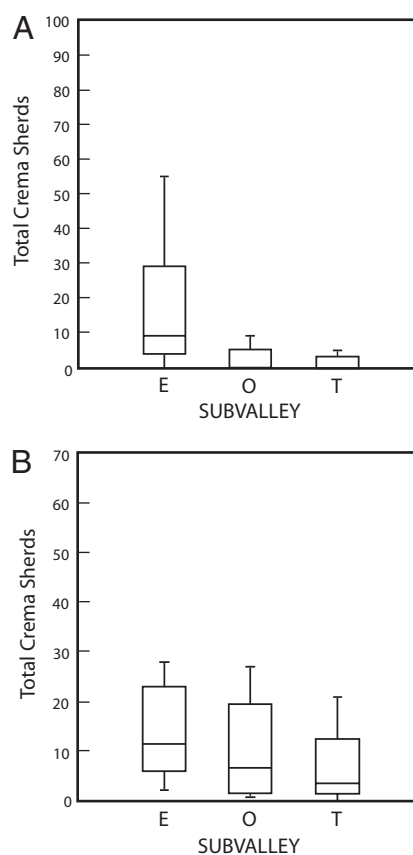

Fig. 3. Distribution of crema sherds at sites in the Etla-Central (E), Ocotlán-Zimatlán (O), and Tlacolula (T) subvalleys of the Oaxaca Valley. Based on surface collection data of the Valley of Oaxaca Settlement Pattern Project (appendix VI of ref. 28). (*A*) Total of 48 sites listed as Late Monte Albán I (300–100 B.C.) "central places" by Kowalewski et al. (table 6.4 of ref. 28), of which 22 were in Etla-Central, 12 in Ocotlán-Zimatlán, 14 in Tlacolula; total sherds for 10 crema pottery types of the Late Monte Albán I phase (appendix II of ref. 25). (*B*) Total of 40 sites listed as Monte Albán II (100 B.C.–A.D. 200) "central places" by Kowalewski et al. (table 7.4 of ref. 28), of which 20 were in Etla-Central, 8 in Ocotlán-Zimatlán, 12 in Tlacolula; total sherds for 9 crema pottery types of the Monte Albán II phase (appendix II of ref. 25). Analysis by C.S.S., assisted by A. Maziarski.

constructions; the application of architectural tunneling might prove fruitful in this regard.

During the Early Monte Albán I phase, the newly founded center of Monte Albán probably controlled little more than the Etla-Central zone of the Oaxaca Valley (38). Then, in the Late Monte Albán I phase, Monte Albán succeeded in annexing at least two extravalley regions to the north and southwest that lay more than a 2-day round trip from the capital—even though it still did not dominate the Tlacolula and Ocotlán-Zimatlán subvalleys to the east and south (Fig. 4). One of the annexed extravalley regions was the Cañada de Cuicatlán, a canyon some 80 km north of Monte Albán. The evidence of its conquest includes an inscription at Monte Albán interpreted as referring to the conquest of the Cañada (39); a major settlement pattern disruption in the Cañada around 300 B.C., including the abandonment of all pre-300 B.C. settlements, accompanied by burning and other evidence of violence; the establishment of new villages on higher ground overlooking the previously occupied zones, which were converted into irrigated fields; the construction of a large military outpost at the northern end of the conquered region; the appearance of a ceramic boundary north of this outpost, with ceramics in the Cañada south of the
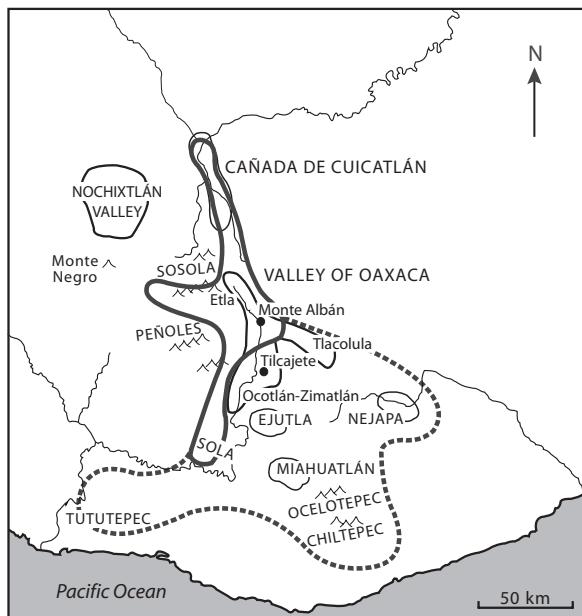
Fig. 4. Proposed territorial extent of the Monte Albán polity: during the Late Monte Albán I phase (300–100 B.C.), solid bold line; expanding in the Monte Albán II phase (100 B.C.–A.D. 200), dashed bold line; redrawn by J. Steffey from Spencer et al. (figure 13 of ref. 32).

boundary showing much stronger stylistic ties to the ceramics of Monte Albán than to regions north of the boundary; dramatic changes in patterns of residence, ceremonial behavior, and economic activities at village sites in the conquered Cañada, including evidence of stepped-up agricultural production, probably in response to tribute demands, and the erection of a skull rack as a symbol of terror (40). Radiocarbon analyses indicate that the conquest of the Cañada began about 300 B.C., at the beginning of the Late Monte Albán I phase, and persisted until about A.D. 200, the end of the Monte Albán II phase (41).

Balkansky (42) has argued that the Sola Valley, about 75 km southwest of Monte Albán, was also brought under Monte Albán's control by the Late Monte Albán I phase, as evidenced by a dramatic shift in settlement patterns; it was the Sola Valley's strategic location on a major route to the Pacific coast that probably attracted Monte Albán's interest (43). Settlement pattern shifts also may reflect Monte Albán's impact in the northern Peñoles region, some 50 km west of Monte Albán, in the Late Monte Albán I phase (44). Marcus and Flannery (ref. 27, pp. 196–207) propose that the territory dominated by Monte Albán continued to grow through the Monte Albán II phase (Fig. 4), although additional research will be required in several regions to clarify the nature of their relationships to Monte Albán.

It is reasonable to conclude that the earliest evidence of state organization is concurrent with the earliest evidence of the expansion of the territory dominated by Monte Albán to regions lying well beyond a 1-day round trip from the capital, consistent with the territorial-expansion model (38). Moreover, this pattern of territorial expansion was markedly asymmetric. Monte Albán evidently extended its control first to the north, west, and southwest, into regions that had relatively small and weak polities. More powerful rivals in the subvalleys and extravalley regions to the south and east were apparently able to mount an effective resistance and were bypassed at first, although eventually they too fell under Monte Albán's sway (32).

Peru

The setting for primary state formation in Peru was most likely the arid north coast (Fig. 5). The well-researched Moche state

emerged by *ca*. A.D. 200–400 in the Moche Valley and quickly extended its control over several coastal valleys (45–47), in apparent concordance with the territorial-expansion model (43). Yet, there is tantalizing evidence of an even earlier case of state formation during the Gallinazo period (*ca*. 100 B.C.–A.D. 200) in the Virú Valley, 35 km south of Moche (48, 49). Willey (50) recorded 94 Gallinazo sites in Virú. Although he did not systematically record all site sizes, he did define a dozen site types that undoubtedly reflect a complex, multitiered settlement hierarchy (ref. 50, p. 177). The probable political capital was the Gallinazo Group, a concentration of 30 mound sites (or huacas) scattered over 500 ha in the lower valley. The largest site of the group is Huaca Gallinazo, a 6.5-ha complex of adobe mounds, the tallest reaching 25 m above the surrounding terrain. Bennett (51) carried out excavations in the Gallinazo Group and reported a dense "honeycomb" pattern of habitation; he estimated that the entire site group must have contained 30,000 rooms. In addition to this striking demographic aggregation at the Gallinazo Group, several other Gallinazo sites appear to have had specialized functions. Among them are Huaca San Juan, which sits at the optimal take-off point for irrigation canals and was probably involved with managing the distribution of water, and four "Castillo Fortification Complexes," such as Castillo de Tomaval, which are located on rocky eminences and appear to have functioned as military garrisons (50). Excavations were conducted by Millaire at Huaca Santa Clara, which he interpreted as a medium-sized administrative site in the Virú-Gallinazo state system (ref. 52, p. 152). These excavations yielded samples of Gallinazo period ceramics, including the distinctive Gallinazo Negative type (decorated with negative or "resist" painting) and a series of radiocarbon dates, the earliest of which has a 2-Sigma calibrated range that extends from the middle of the second century B.C. to nearly the end of the second century A.D. (figure 9.4 of ref. 52). More recent investigations by Millaire at the Huaca Gallinazo (V-59) component of the Gallinazo Group have provided further evidence of the group's urban nature, with a total estimated population of 14,440 to 28,880, consistent with its likely role as a regional political capital (49). In addition, Millaire's excavations yielded a series of radiocarbon dates, the earliest of which has a 2-Sigma calibrated range extending from the middle of the first century B.C. through the middle of the second century A.D (49). Overall, the picture that emerges from Virú for Gallinazo times is one of centralization at the Gallinazo Group plus the appearance of specialized subsidiary centers of administration; the data are consistent with the
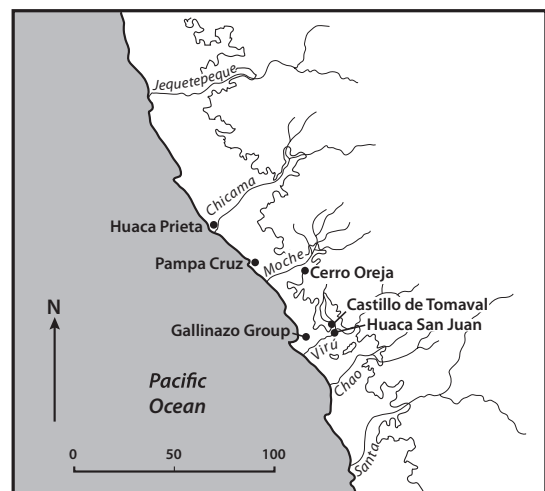

Fig. 5. Virú, Moche, and Chicama Valleys on the north coast of Peru, showing the Gallinazo Group of Virú and other key sites (by J. Steffey).

formation of a primary state in the early years of the Gallinazo period (48, 49).

There is some evidence, at this point more suggestive than definitive, that the early Virú-Gallinazo state sought to expand its territory northward to the Moche and Chicama Valleys. Billman (45) noted that the Gallinazo period in the Moche Valley was a time of population dislocation and warfare; large areas of the valley were abandoned and there was an increase in sites in defensible locations and with fortifications. Population became more aggregated, as the eight site clusters of the previous phase were replaced by two during the Gallinazo period: one cluster was focused on Cerro Oreja in the valley neck upstream, possibly to protect the key take-off points for irrigation canals; the other was situated 24 km away at Pampa Cruz on the shore, far enough from the Cerro Oreja cluster that the two clusters were probably not part of the same polity. Billman suggested that the Cerro Oreja polity coalesced to resist invading war parties that might have come from the highlands and/or the Virú Valley; he was uncertain about Pampa Cruz's relationship to the Virú-Gallinazo polity, which he acknowledged was the largest and most powerful on the entire north coast before the Moche state (ref. 45, p. 263).

In the Chicama Valley, some 80 km north of Virú, population also became aggregated during the Gallinazo period and some of the inland sites were fortified (45). By contrast, Huaca Prieta was a nonfortified site on a low ridge between the beach and the irrigated floodplain. Here, excavations reported by Bird and Hyslop (53) showed that earlier deposits were overlain by a Gallinazo occupation in Test Pit HP1, which included a facility with a concentration of clay-lined pits and a large jar (figures 13–14 of ref. 53), associated with 571 maize cobs whose kernels had been removed (54). The HP1 facility shows similarities to facilities documented ethnographically and archaeologically for the production of maize beer or chicha (55–57). Although chicha was produced and consumed in a variety of contexts in the ancient Andes, scholars have long recognized the special role of chicha production and consumption in the political economy of Andean states (56, 57). At Huaca Prieta, the proposed chicha production facility was associated with numerous sherds of Gallinazo Negative (53), in quantities that actually rival those excavated in the Virú sites, as reported by Strong and Evans (ref. 58, p. 216). Among the contributors in a recent volume on the Gallinazo period edited by Millaire and Morlion (59), there was widespread agreement that the presence at a given site of Gallinazo Negative pottery is more likely than the other ceramic types of this period to reflect a close relationship between that site and the Virú-Gallinazo polity. In 2008, I arranged for AMS radiocarbon dating of six of the maize cobs associated with the proposed Huaca Prieta chicha-brewing facility and the Gallinazo Negative pottery. The cobs and ceramics are stored at the American Museum of Natural History. The resulting dates spanned much of the Gallinazo period: the 2-Sigma calibrated range for the earliest date (Beta-246472) was 90 B.C.–A.D. 80; for the latest date (Beta-241934) the 2-Sigma range was A.D. 140–380.

A reasonable, although admittedly tentative, hypothesis is that a Virú-Gallinazo outpost was established at Huaca Prieta by the first century B.C., in the early years of the Gallinazo period. The full extent of this occupation is inadequately known and deserves further investigation. Moreover, the Pampa Cruz site on the Moche coast should also be checked for Gallinazo Negative ceramics, which might indicate a Virú-Gallinazo presence at this coastal site, in contrast to the inland Cerro Oreja site that appears to have resisted foreign incursions. It is possible that, as in the Oaxaca case, variable relationships of resistance and affiliation resulted in an asymmetric, nonuniform pattern of territorial growth of the Virú-Gallinazo state.

Egypt

During the Naqada I period (*ca*. 3700–3400 B.C.) the Upper Nile area (Fig. 6) had at least three rival chiefdoms, one of which was at Hierakonpolis (60). In the following Naqada II period (3400–3200 B.C.), Hierakonpolis emerged as an urban center and the capital of a large southern Egyptian state (61). Population grew and became highly aggregated, possibly for political and defensive reasons. The capital saw much construction at this time, including a large cobblestone construction thought to be a palace, a specialized temple complex with a large oval courtyard, and a thick mudbrick town wall. Also dating to this period were several large rectangular mudbrick-lined tombs; one of them, interpreted as belonging to an early king, has painted murals with themes that suggest "warfare and conquest, the beginnings of a state religion, foreign contacts, and a pharaonic type royal regalia" (ref. 61, p. 184).

Concurrent with these developments, Hierakonpolis expanded its political control over much of Upper Egypt (60). This unified territory is marked by the distribution of distinctive Naqada II pottery, which extends from Hierakonpolis northward to Naqada and Abydos, lying some 80 km and 140 km, respectively, from the early state capital (62)—perhaps representing another example of asymmetric territorial growth in the context of primary state formation. Egypt's first state then went on to subjugate the Delta by 3100 B.C., at which point the capital was shifted from Hierakonpolis downstream to Memphis under King Narmer, whose accomplishment was heralded on a famous stone palette that shows the king wearing the crown of Lower Egypt on one side and the crown of Upper Egypt on the other (60, 61). In sum, there can be little doubt that territorial expansion played a central role in the story of primary state formation in ancient Egypt.

Mesopotamia

Mesopotamia's earliest state was the Uruk state, which emerged around 3500 B.C. with its capital at the site of Uruk, an occu-
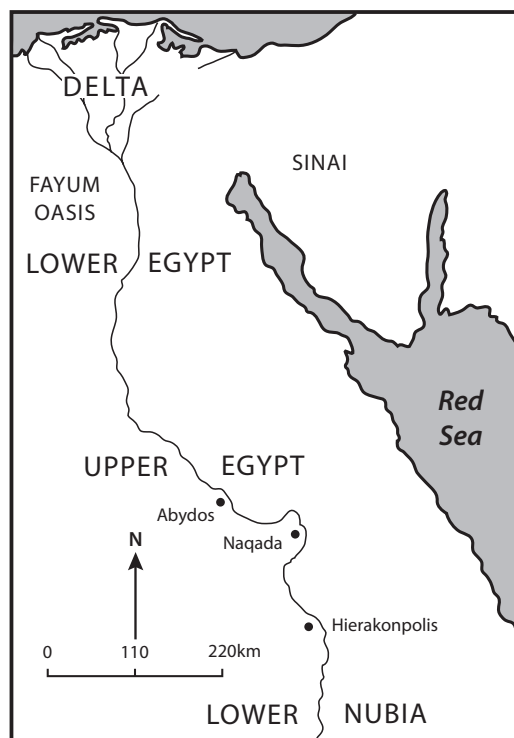

Fig. 6. The Upper Nile, showing Hierakonpolis and other sites; redrawn by J. Steffey from Algaze (figure 4 of ref. 63).
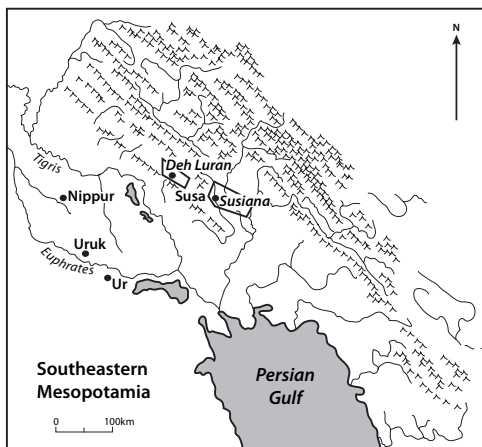
Fig. 7. Southeastern Mesopotamia, showing Uruk, the Susiana Plain, and other sites; redrawn by J. Steffey from Wright (figure 6.1 of ref. 66).

pation of 200 ha with several large temples and administrative buildings (Fig. 7). Algaze (63, 64) has argued cogently that the appearance of a state administration at Uruk was linked to an aggressive strategy of territorial expansion. In his view, an early stage of this expansion involved the annexation of polities in the southwestern Iranian plains east of the Mesopotamian alluvium. One of these plains was Susiana, some 250 km east of the Uruk capital; archaeological research in Susiana has documented the appearance of state organization by the Middle Uruk period (3500–3300 B.C.), evidenced by a four-tier regional settlement hierarchy plus specialized administrative facilities at key sites, all associated with typical Uruk ceramics (65). Public buildings associated with administrative artifacts such as ceramic seals and bullae (counters) were excavated at Susa, the largest Uruk site on the Susiana plain (66). Algaze notes that Uruk outposts were also established even farther afield, well to the north in the Syro-Mesopotamian plains. Some of these outposts were true urban centers with carefully planned residential and administrative sectors, associated with a material culture so identical to that of the Uruk capital that at least some of the inhabitants of the outposts must have been colonists (63). Recent research has been refining the model of Uruk expansion (64, 67), but Algaze's original message remains largely intact: the expansion of political-economic territory to distant regions was an integral part of the process of primary state formation in the Uruk case.

Indus Valley

Around the middle of the third millennium B.C., the Indus Valley (Fig. 8) witnessed a momentous change as a majority of Early Harappan (3200–2600 B.C.) settlements were abandoned and replaced by a network of larger and more numerous Mature Harappan (2500–1900 B.C.) occupations, including the urban centers of Harappa, Mohenjo-daro, and Ganweriwala (68). Mohenjo-daro extends over some 200 ha and shows a high degree of planning, with streets laid out in a grid pattern, residential sectors, workshop areas, and architectural complexes such as the Mound of the Great Bath, containing a diverse assortment of public buildings (69). Harappa covered at least 100 ha and also shows considerable architectural complexity (68, 70).

Possehl (68) characterized the Early Harappan to Mature Harappan transition (2600–2500 B.C.) as a time of disruption; for example, the sites of Kot Diji, Gumla, Amri, and Nausharo all show evidence of extensive burning coinciding with the end of the Early Harappan occupation. Kenoyer (71) recognized a Mature Harappan regional settlement hierarchy of four tiers according to site size, which he argued was consistent with state organization, an assessment supported by recent research (72). It

Fig. 8. Indus Valley, showing Mohenjo-daro, Harappa, and other sites; redrawn by J. Steffey from Algaze (figure 3 of ref. 63).

has long been acknowledged that trade was of central importance to Mature Harappan society. Intraregionally, cities, towns, and villages were linked by exchanges of grain, livestock, and services, monitored through a standardized system of counts and weights. Copper, tin, and lapis lazuli were obtained through long-distance trade, which in some cases involved the establishment of Harappan trading colonies in faraway lands (71). Algaze (63) found it significant that the Mature Harappan polities quickly expanded into the Kutch and Gujarat regions some 400 km southeast of Mohenjo-daro; moreover, he saw an early involvement in distant colonial outposts such as Dabar Kot, Periano Ghundai, Manda, Rupar, and Lothal as directly linked to the needs of growing bureaucracies in the Harappan urban centers. Although a number of research questions about the Indus Valley remain unresolved (68), we cannot ignore the mounting evidence
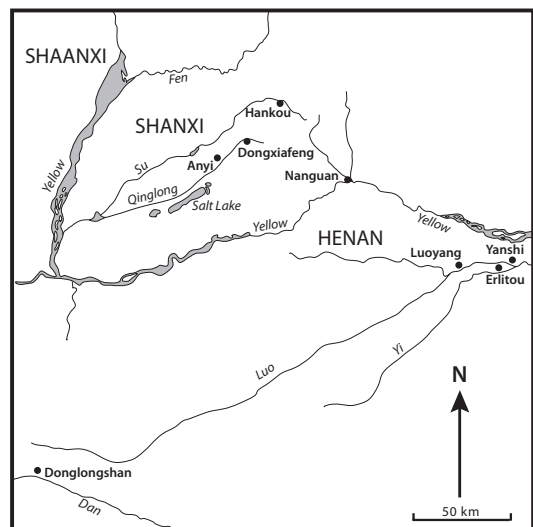

Fig. 9. North China, showing Erlitou and other sites; redrawn by J. Steffey from Liu and Chen (figure 11 of ref. 73).

that the transition from the Early Harappan to Mature Harappan witnessed not only the rise of a primary state but also the rapid political-economic expansion of the Mature Harappan state to territories far from the core.

China

China's first state was mostly likely the Erlitou state (1800–1500 B.C.), whose capital was the 300-ha site of Erlitou (73) in the Yiluo Basin, near the junction of the Yi and Luo Rivers (Fig. 9). The Erlitou regional settlement pattern exhibits centralization, evidenced by a concave rank-size curve, as well as hierarchy, seen in a four-tier distribution of site sizes; by contrast, the preceding Longshan period was a time of competing chiefdoms, with no regional polity exhibiting more than a three-tiered hierarchy of site sizes and the overall pattern of settlement showing a convex rank-size curve (74).

Excavations at Erlitou have documented the growth and development of the site (73). A sizable but still preurban regional center was established in phase I (1900–1800 B.C.). The settlement grew in phase II (1800–1700 B.C.), reaching urban proportions in phase III (1700–1600 B.C.). By the end of phase IV (1600–1500 B.C.), the Erlitou state had gone into decline. There is evidence that an internally differentiated administration appeared at the site in phase III, most notably in the form of what has been called the "palatial zone," where archaeologists found two palaces built on rammed-earth foundations. The larger, Palace no. 1, had a large courtyard and walls with roofed galleries; it covered 1 ha and sat on a rammed-earth and stone foundation more than 3 m thick. Palace no. 2 had a rammed-earth foundation covering 0.1 ha on which sat an enclosed compound consisting of a three-room building, a tomb, and walls with attached galleries. Other impressive constructions in the Erlitou palatial zone may represent specialized temple structures. In addition, archaeologists found areas of specialized craft activities at the site, including a bronze foundry near the palatial zone that was used for casting tools, weapons, and ritual vessels. Also located were workshops dedicated to the production of bone objects and pottery. The estimated population of the Erlitou site during phase III is 18,000–30,000.

Phase III is also when the Erlitou state started a process of territorial expansion (73). Nearly 100 km northwest of Erlitou, centered on Nanguan in the Yuanqu basin of southern Shanxi, archaeologists found 15 sites with material culture showing strong similarities with that of the core area of the Erlitou state. In addition, some 150 km northwest of Erlitou, in the Yuncheng Basin of southern Shanxi, Erlitou material was found at a cluster of seven sites centered on Dongxiafeng. Noting the differences between the Erlitou material culture and that of the preceding Longshan occupation, Liu and Chen (73) argue that these southern Shanxi sites represent colonization by Erlitou people from the core area in Yiluo. A major goal of this colonization was probably to exploit the copper deposits that are native to the Zhongtiao Mountains of southern Shanxi. At both Dongxiafeng and Nanguan, archaeologists found areas of ceramic production and bronze casting, dating to Erlitou phase III. Surrounding the craft production areas were ditches that contained burials with few grave goods, thought to represent low-status craftsmen. Liu and Chen suggest that craft production at these southern Shanxi sites was controlled by the Erlitou state.

Another distant site with Erlitou material culture is Donglongshan, 250 km west-southwest of the Erlitou core area. Donglongshan sits on a terrace overlooking the Dan River, not far from deposits of copper, lead, and tin. Occupation at Donglongshan began in the Longshan period and continued with local styles predominating into the period of Erlitou phases I and II. Then, in Erlitou phase III, the ceramic assemblage at Donglongshan changed abruptly to a style like that of the Erlitou core area in the Yiluo Basin. Liu and Chen (73) note that Donglonghsan lies at the junction of the water route connecting the Yangzi River to the Yellow River Valley; they suggest that the site's strategic location and the proximity of rich ore deposits were important reasons why the Erlitou state appears to have colonized this region in phase III. In sum, the data from China reveal a close correspondence in time between the emergence of a primary state with its capital in the Erlitou core region and the expansion of the Erlitou state into regions 100–250 km from the capital.

Conclusion

The world's six primary states were the products of independent cultural traditions. They have not received equivalent amounts of research attention to date. Nor did my summaries of all six cases have the same degree of detail that I presented for Oaxaca. Nevertheless, a common theme can be discerned: the emergence of each primary state was concurrent with the expansion of its political-economic control to areas that lay well beyond the home region. Although the empirical record will surely be enhanced by continuing and future archaeological research, it is fair to say that the current data are consistent with the territorial-expansion model of primary state formation. The successful annexation of distant areas, those farther than a 1-day round trip from the capital, required the leadership of an expanding polity to develop internal administrative specialization and the concomitant capacity to delegate partial authority to functionaries at distant outposts—in short, it had to bureaucratize—even as the mobilization of new resources through tribute exaction or exchange helped to finance the administrative transformation. All of this allowed for the further delegation of partial authority and a greater capacity for territorial expansion.

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