

Early State Formation on the North Coast of Peru

A Critique of the City-State Model

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Given the focus of this volume on the city-state as a postulated universal type of early civilization, it is appropriate to begin this paper with the assertion that most anthropological archaeologists interested in sociocultural evolution and the rise of complex societies can be divided into four more or less mutually exclusive terminological camps. The first camp, of least relevance here but important to mention nonetheless, includes a few scholars who might be called the “typological nihilists.” In reacting to the variable meanings assigned to “chiefdom” and “state” and what they see as the “essentialist” nature of the whole slate of evolutionary-ecological stage terms, they make it their business to criticize the use of all such terminology but offer us no scheme of their own (e.g., Leonard and Jones 1987; see also Bawden’s 1989 critique of the papers in J. Haas et al. 1987). We might say that since they don’t know what a *state* is they prefer not to use the term, nor would they want to append the adjectival term *city* since no one can agree on what that means either.

The second camp consists of the “evolutionary-ecologists” themselves who, following Morgan, White, and Steward, see the theoretical utility of some sort of stage/level terminology in cross-cultural studies of human societies (e.g., Fried 1967; Flannery 1972; Johnson and Earle 1987; Sanders and Price 1967; Schreiber 1992; Service 1962, 1975; Wright and Johnson 1975; Wright 1978). In general, most members of this camp seem disinclined to divide the state into subtypes, although some replace such terms as *bands* with *family level foragers* and see “simple” and “complex” chiefdoms as two stages, or levels of integration, in the development of societal complexity (cf. Johnson and Earle 1987). This group, of which I count myself a member (e.g., Wilson 1981, 1988), thinks it knows what a state is, but is unwilling to tack on adjectival terms such as *city*, and prefers to talk about the “first-order sites,” or “primary centers,” that arise as a feature of such polities.

The third camp, which represents a variation of the evolutionary-ecological camp, might be termed the “multistage state typologists,” in that its adherents look at the evolution of states around the world and see a profusion of distinctive stages that must be classified. Examples of this approach include the papers in Claessen and Skalknik (1978), where early states are classed as “inchoate,” “typical,” and “transitional”; and those in Friedman and Rowlands (1978), where, using an even more elaborate scheme, early states are classed as “asiatic,” “dualistic,” “territo-

rial," and "city," some or all of which exhibit varying degrees of "centrifugalism" or "centripetalism" as they develop. In a sense, the members of this group not only know what a state is, but are loathe to leave the matter simply there in their drive to classify its apparent variable forms in exquisite detail.

The fourth camp, possibly in reaction to typological excesses, postulates the existence of different types of states, but limits the number of types to two. These "modified state typologists," as represented, for example, by Trigger in his recent study of early civilizations (1993), look around the preindustrial world and see only two kinds of states: city-states and territorial states. Since the focus of this volume is the city-state and Trigger is quite specific about what he sees as the principal features of the "city-state" in contrast to the "territorial state," it is useful to outline his definitions of the two types. These will not only provide models against which the data from the Peruvian north coast can be compared and contrasted, but, in light of what these data suggest about the inapplicability of the city-state model itself in this case, will also provide grounds for a plea to utilize the universal heuristics advocated by the second camp mentioned above.

At the appropriate point I will also provide a brief rationale for my choice of data from the Central Andes (i.e., "Why the Santa and Casma Valleys, and not Wari, Chimu, and Inca?"), in part as a rejoinder. One of the discussants in the symposium that preceded this volume postulated that these later, more spectacular Andean cultures might be more relevant here than the earlier complex societies of the north coast.

Theoretical Considerations

Trigger's city-state and territorial state models

In constructing his dual model of ancient states, it is interesting that Trigger takes as his fundamental criterion in choosing examples of city and territorial states the need for detailed written documentation. This automatically limits him to two kinds of cases: first, ancient states that developed literacy at the time of their formation (Sumer, the Maya, Egypt, and the Shang); and, second, more recent states that were described by their literate conquerors (the Aztecs, the Yorubas, and the Incas). It excludes those ancient, or pristine, states which, although at least as complex as their literate counterparts, if not more so, did not develop writing. Perhaps the best example of such a state from the Central Andes is the Moche, an extensive multi-

valley polity recently made more notable by the finding at Sipán, in the Lambayeque Valley, of the richest royal tombs ever excavated in the Americas (cf. Alva and Donnan 1993; see also Benson 1972; Donnan 1973; Proulx 1973; Strong and Evans 1952; Willey 1953; Wilson 1988).

City-states, as defined by Trigger, include Sumer, the Aztecs, the Maya, and the Yorubas. They are characterized by the following features: (1) small territories covering only a few hundreds of square kilometers; (2) capital cities that contain the great majority of the total population, or as much as 80 percent of the state's inhabitants in the case of ancient Sumer; (3) a threefold hierarchy of site types, including the capital, smaller centers, and villages and hamlets; (4) the presence in the city of considerable numbers of farmers who live there for protection; (5) the frequent presence of a defensive wall around the city, due to continual war with other nearby city-state polities; (6) a highly developed economy that includes advanced craft production and technology, as well as 10 to 20 percent of the population as nonfood producers; (7) intensive farming, but small surpluses; from which it follows that city-states have (8) smaller populations; (9) smaller monumental architecture; and (10) less political unity than territorial states.

Trigger's examples of territorial states include ancient Egypt, the Inca, and the Shang. Compared to city-states, they are characterized by (1) huge territories; (2) national capitals which, although as large as "substantial city-states," must be seen as small in relation to the vast bulk of the population in rural areas; (3) the same threefold hierarchy, including the capital, administrative centers, and villages and dispersed homesteads; (4) the presence in the capital of only the ruling class, administrators, craft specialists, and retainers, with the rest of the population, including farmers, located in the rural areas; (5) no defensive wall around the capital (but, presumably, forts on the state peripheries); (6) a less developed economy since crafts in the capital served only the elite, whereas farmers were relatively more self-sufficient; (7) less intensive farming, but large surpluses; from which it follows that territorial states had (8) larger populations; (9) larger monumental architecture; and (10) greater political unity than city-states.

Aside from the criticism of the requirement that written sources be available to describe the component features of the states chosen as examples, I will make the following four points as a general theoretical critique of Trigger's models.

First of all, he does not take sufficiently into account the environmental contexts in which states arose and how this might affect their nature (e.g., some are located in lacustrine contexts, some along a single major river system, some in highland valleys, some are environmentally circumscribed, and some are not).

Second, his models fail to account for the kinds of subsistence adaptations that characterize each state in its environmental setting and how this might affect the form they took (here I am thinking of the Central Mexican Symbiotic region, Inca terracing and verticality; and coastal Peruvian canal irrigation and its extent and implications for the size of local sociopolitical units, to mention only three cases; cf. Murra [1975], Sanders and Price [1968], and Wilson [1987, 1988]).

Third, Trigger postulates that if a city-state and a territorial state ever came into direct conflict the city-state would emerge victorious because of its relative technological superiority, in spite of the far greater demographic and political clout of the territorial state. Although his argument is based on examples that include the inability of Egypt to conquer Southwest Asian city-states and the conquest by Greek city-states of the Persian Empire, I find it illogical as an *a priori* working principle when approaching archaeological data sets on complex societies.

Fourth, I am uncomfortable with the fact that his examples represent both pristine developments that occurred at the beginning of a long sequence of continual state formation/reformation (e.g., Egypt, Sumer, the Maya) and later states that represent the culmination of developments in statecraft many centuries, if not several millennia, after the initial rise of sociopolitical complexity (the Aztecs, the Yorubas, and the Incas).

For example, one could postulate that larger-scale territorial states might be expected to occur later in sequences and smaller-scale ("city") states to occur earlier. This certainly can be argued for Egypt, where pristine state formation occurred first at the basin, or *nome*, level in late predynastic times well prior to the unification of Upper and Lower Egypt by about 3100 B.C. (Trigger et al. 1983). As I will discuss in greater detail below, it can be argued as well for the Peruvian north coast where pristine state formation seems to have occurred at the local valley level by at least 350 B.C. (if not by 1500 B.C.; cf. Pozorski and Pozorski 1987, 1994) some centuries prior to the rise of the multivalley Moche state in the first centuries A.D. (cf.

Alva and Donnan 1993; Benson 1972; Proulx 1973; Willey 1953; Wilson 1988). One might also take issue with Trigger's assertion that the Aztecs represent a "city-state" *per se*, since the Aztec *state* as commonly referred to consisted of a Triple Alliance of city-states that extended its control over one of the largest territories ever conquered by a prehispanic Mesoamerican group (cf. Collier et al. 1982; Sanders et al. 1979).

A universalist approach to state origins and development

In this section I would like not only to outline briefly a few general systemic features of states that are important for archaeologists who work with nonliterate and literate complex polities around the world, but also to present an updated version of a systems model I have been developing over the past several years that attempts to take into account as many features as possible that are crucial for societal adaptations in general and state formation in particular.

With regard to the first point, I am aware that I am reinventing at least a part of a very well-worn, if not well-tested, wheel, but I think it important to do this as a reminder that it is the *systemic* features common to all states, or any other kind of society, that should be of more interest in the cross-cultural perspective advocated by Steward. In this approach the unique local features of societies are of lesser concern, although admittedly they often provide some of the main points of interest for scholars who would append the kinds of adjectival terms mentioned in the introduction to this paper. However, given the vast literature on states, and at least my general agreement with Trigger's argument about the features that characterize them, there is no need to provide a definition of a state polity here.

It is critical that if we view a state—any kind of state—as a system, then, as I have argued elsewhere (Wilson 1989), it is necessary to adopt a methodology that includes some sort of settlement-pattern approach, comprehensive or otherwise, in order to have at hand as complete a sample as possible of all the kinds of settlements that constituted its postulated hierarchical organization. Anyone who has read Wright and Johnson's (1975) classic paper on the origins of the state in the Near East will find this aspect of my argument unsurprising, although it still seems necessary to assert to some of our colleagues who would construct "states" out of excavations at single sites in the earliest part of sequences, without having any

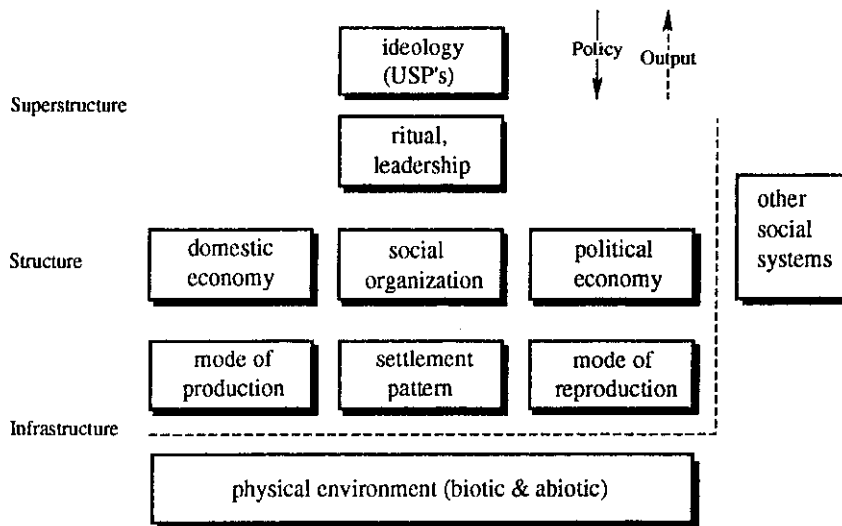


Figure 13.1. A systems-hierarchical model of societal systems.

data whatsoever on the rest of the (rural) sites in the system. In other words, following Wright and Johnson, a convincing demonstration of the presence of a chiefdom or state in a given area includes having access to settlement data that permit the identification of the number of levels of site size and function in the system, since chiefdoms classically are characterized by two levels, and states by three or more—among several other criteria such as relative territorial extent, number of sites, estimated population, size and nature of the principal center, scale of monumental architecture, and the type of subsistence system.

When we look at ancient states as systems, as opposed to types (i.e., city, territorial, Asiatic, or whatever), then it becomes important that we label the centers of these polities as such, namely *centers*, which arise in large part as a function of the adaptive need for overarching coordination of increasingly complex features both internal and external to the system in question (I speak here to some degree as an unrepentant consensual theorist, at least for the data from the Peruvian north coast). I shall return to this point in the section on the north coast data, but will confine the discussion for now to the theoretical perspective that underlies this sort of argument.

Figure 13.1 shows an updated version of a generalized systems model that I have been developing over the past several years in teaching courses on human ecology and sociocultural evolution, having applied it in arguments about the interconnectedness of variables at all systemic levels, from the ideological to the material, in dealing with a wide variety of recent and ancient societies around the world—including, in Africa, the BamButi, the Bantu, the Ik/Teuso, the !Kung, and ancient Egypt; in North America, the

Ihalmiut, potlatching groups of the Northwest Coast, and ancient Chaco; in Polynesia, ancient Easter Island; in New Guinea, the Tsembaga Maring; in Middle America, the Aztecs; and, in South America, the Ona, the Yahgan, the Yanomamo, the Jivaro, the Tukanoan Desana, the Kogi/Tairona, and theoretical arguments about the rise of complex society in the Central Peruvian Andes. As discussed elsewhere (Wilson 1992), I have derived most of the features of the model from the theoretical arguments of Steward (1955, 1977), Rappaport (1968, 1971, 1979), Flannery (1972), and Harris (1977, 1979).

The model's two principal characteristics are that it (1) breaks a society down into its most important features through the hierarchical ordering of a basic set of discrete component variables; and (2) attempts to make sense of the overall societal system in terms of assertions about the causal relationships among these variables. I will go so far as to risk the wrath of my postmodernist colleagues and assert that what one is doing in this sort of analysis is making a society "intelligible," first, by identifying all potential critical variables and, second, by asserting, if not demonstrating, causal relationships among selected sets of these variables (I am well aware of the epistemological difficulties represented by this argument, but do not see the "hardcore" philosophers getting much beyond philosophy per se in telling us to how to proceed here; e.g., see R. Gould 1992).

The model is *hierarchical* in that it asserts that the principal variables characteristic of all societies are ordered as follows: At the base of the system is the physical environment whose characteristics are important in defining at least some of the central features of the society in question. Above this, at the level

of infrastructure, are the mode of production (subsistence), the settlement pattern, and the mode of reproduction (demography), which are intimately related at the local level to the physical environment as well as to each other, and provide further defining characteristics for higher-order levels in the system. Above this is the structure, including the domestic economy, social organization, and the political economy, which not only are derived from the infrastructural base but are equally important (or causal) in regulating and defining variables at the lower-order level. The superstructure consists of the highest-order variables that regulate, maintain, and define a society; it includes both concrete behavioral aspects (e.g., ritual and leadership) at a lower level and abstract mental aspects (ideology, cosmology, ultimate sacred postulates) at a higher level. Here, it is important to note that social organization is shown centrally positioned immediately below ritual/leadership, since, like the behavioral superstructural level, it may be considered not only as derived from lower-order levels but critically important in regulating them. Finally, the model also asserts that societies must be understood both in light of their local physical environment and their social environment (other local/regional social systems) as well.

The model is *systemic* in that it asserts that the nature and form of a society derive from the often highly complex (if not often counterintuitive) relationships that exist among multiple variables, although no "causal arrows" are shown on the basic model in Figure 13.1, since their number, direction, and positioning are considered empirical questions related to the kinds of arguments made about a particular set of data from a given society. Following Flannery (1972), the model asserts that there is a general two-way causal relationship between abstract superstructure and concrete infrastructure (Flannery calls bottom-up influences "output" and top-down ones "policy"). Thus, although Harris's (1979) contribution is clear in my inclusion of four of his societal variables (mode of production, mode of reproduction, domestic economy, and political economy), the model does not follow his premise that all causation is bottom-up, from the infrastructure to higher levels.

Although a claim for universality is made for the model—in other words, for its efficacy in dealing both with ethnographic and archaeological data sets—I make no claim that the model necessarily explains societal reality. Rather, I have found that its principal application is in the *description* of complex,

multivariate arguments, often of a highly theoretical nature, made by researchers about a particular society (e.g., Harris's and Chagnon's competing arguments about Yanomamo "reality"; cf. Chagnon 1968, 1977, 1983, 1992; Harris 1977; see also Wilson 1992).

The systems-hierarchical model is derived from logico-positivist principles, that is, from a point of view that places essentially no stock in the current idealist, if not nihilistic and antiscientific, tendencies of a postmodernist, interpretivist anthropology (e.g., see Marcus and Fischer 1986). Nevertheless, though one might agree, as I do, with many of Harris's scathing attacks on various idealist positions (e.g., 1979), this does not mean that one has to buy his brand of infrastructural determinism either. Indeed, the most convincing evidence of the causal importance of both ideology and infrastructure is to be found in the reading of ethnographic studies, not in archaeological ones. Ironically, however, in spite of the disinclination of many archaeologists to read the ethnographic literature, it is the archaeologists who have followed Harris's version of materialism more than the socio-cultural anthropologists (cf. Schiffer 1983), not least because it is rather more difficult to dig up an "ultimate sacred postulate" (relegated by Harris to the status of a trivial dependent variable) than it is a "utilitarian secular pot." This does not mean that as archaeologists we should not be interested in reconstructing higher-order variables and some of the possible reasons for their nature and presence in ancient systems, a point I will return to below.

Given its strong descriptive focus, the model is intended to reproduce graphically and parsimoniously the complexities of arguments that often are book-length in their extent. I thus reject as superficial, if not naive, any critique that the model consists merely of "labels in little black boxes" (for a detailed discussion of the myriad variables that make up each of the principal subsystems that he, at least, views as important, see Harris 1979). Indeed, I have found that, no matter what its length is, any systemic textual argument that makes basic sense can easily be represented and *critiqued* once its elements are laid out in accordance with the model. For example, excessively materialistic or idealistic arguments can be exposed in detail to show their failure to invoke plausible correlated cause at the other levels in a system.

A final observation is that the model is not panglossian; that is, it does not invoke the functionalist notion that "all things work for the best in the best of all possible worlds." Thus, as Flannery's classic paper

on the evolution of complexity makes clear (1972), societies not only can exhibit dynamic equilibrium over the long term (an example from South America were the Ona and Yahgan of Tierra del Fuego, who existed in stable, enduring adaptations for some 10,000 years until recent European intervention in the area), but can also exhibit both system-building stages as they grow and system-destroying pathologies as they die out. This relative volatility may well be both the blessing and the curse associated with those areas where complex societies developed.

Space does not permit further discussion of the model's features and implications here, but the model helps resolve such classic issues as (1) idealist versus materialist accounts of social reality—both are necessary and challenge the researcher to demonstrate how the two realms interrelate functionally; (2) internal

versus external arguments about cause in local systems—both are important, although the precise mix must be considered an empirical question for research; and (3) quantification versus qualification in the ecological study of societies—we can quantify the material world, but, in a very real sense, find it more appropriate to qualify the abstract mental one.

The Santa and Casma Valley Cases

I have chosen to focus on the Santa and Casma Valleys rather than the better-known Central Andean cultures such as the Wari (Middle Horizon, ca. A.D. 650–1100), the Chimú (Late Intermediate period, ca. A.D. 1100–1475), or the Inca (Late Horizon period, pre-A.D. 1475–1532) for two reasons (Fig. 13.2). First, the north coast south of the Moche Valley has been

THE CASMA AND SANTA VALLEY SEQUENCES
IN RELATION TO
CENTRAL ANDEAN CHRONOLOGY AND CULTURES

Figure 13.2. The Casma and Santa Valley sequences in relation to central Andean chronology and cultures.

Absolute Chronology	Casma Valley Period	Santa Valley Period	Central Andean Period	Major Culture
1532	Manchán	Late Tambo Real	Late Horizon	Inca
1475		Early Tambo Real	Late Intermediate	Chimú
1100	Casma	Late Tanguche	Late Middle Horizon Early	Wari
700	Choloque	Early Tanguche	Late	Moche
	Nivín	Guadalupito	Early Intermediate	
A.D.	Cachipampa	Late Suchimancillo	Beginning	Gallinazo
		Early	Late	
B.C.	Patazca	Vinzos	Early Horizon	Chavín
350	Palíka	Cayhuamarca	Beginning	
1000	Moxeke	?	Initial	
1800	Huaynuná	Las Salinas	Preceramic	

the locus of my research. Second, and more importantly, following Trigger's definitions of city- and territorial states, Wari, Chimu, and the Inca are examples of territorial states (see also Kolata, this volume). They not only extended over many thousands of square kilometers but included great numbers of sites, apart from the main centers, where the overwhelming majority of the population of the state resided.

Based on archaeological and ethnohistoric research to date, population estimates for the Inca, Chimu, and Wari states are as follows: (1) for the Inca, greater Cuzco's population is estimated at 100,000, the empire's population at 14,000,000, and the territorial extent at 1,750,000 square kilometers (cf. Hyslop 1990); (2) for the Chimu, Chan Chan's population is estimated at 25,000, the state's population at 500,000, and the territorial extent at 75,000 square kilometers (cf. Moseley and Day 1977; Schaedel 1972); and (3) for the Wari, the population of Wari site is estimated at 30,000 (cf. Isbell and McEwan 1991; Moseley 1992), and, assuming densities of 8 persons per square kilometer, as in the case of the Inca, over some 250,000 square kilometers, the population of the state was about 2,000,000. Thus, the people residing in the primary centers were a mere 0.007 percent (Cuzco), 0.060 percent (Chan Chan), and 0.0015 percent (Wari), respectively, of the population of each state. With capitals containing far less than 1 percent of the each state's total population and vast territories that covered many tens of thousands of square kilometers, the Inca, the Chimu, and the Wari hardly qualify as city-states (see also Kolata, this volume). One therefore has to search earlier in the archaeological record in order to find such a society, if indeed city-states ever existed in the Central Andes.

Research Setting and Methods

As mentioned above, my research on Peruvian north coast state origins has involved comprehensive settlement-pattern studies (Fig. 13.3) of the following areas: the Santa Valley Project, 1979–1980, a survey of more than 750 square kilometers of the coastal sector of the valley (Wilson 1983, 1987, 1988, 1989); the Moche-Casma Road-Settlement Project, 1986–1987, a survey of all extant roads and roadside sites linking valleys across the five deserts lying between the Moche and Casma Valleys, over an area of some 3200 square kilometers (publications are in preparation); and the Casma Valley Project, 1989–1995,

a comprehensive study of all sites in a nine-period sequence from the late Preceramic (pre-1800 B.C.) through the end of the Late Horizon period (A.D. 1532), in a valley characterized by some of the earliest societal complexity in the Americas (e.g., Pozorski and Pozorski 1994). Since the nature of the Peruvian coastal environment and the research methods utilized in the above projects have been outlined in extensive detail (Wilson 1988), I will confine the discussion of these two aspects of the work to a brief overview.

With regard to the environment, no better area for the long-term preservation of even the most ancient archaeological remains exists anywhere else in the world. On the "modern" desert surface adjacent to the narrow valley floors we find sites of all periods dating back some 3,700 years and beyond, to the late Preceramic. With essentially no rainfall, there is little or no coverage of any of these remains from geological processes, except for isolated, discrete barchan dunes formed as sand blows inland off the beaches. With very little land available in these narrow, highly circumscribed valleys, I postulate that the strong tendency throughout the sequence was to locate settlements on the nonirrigable desert slopes and *pampas* that lie adjacent to the valley floors, rather than in the midst of the cultivable floors themselves (Wilson 1988). Moreover, we have found multicomponent sites all along the north and south desert margins, indicating that cultural stratification, or "tell" formation, is not a problem. In short, we are able to retrieve a sample of ancient sites far closer to a 100-percent ideal than anywhere else in the world. If this is so, then Peru is unique in its appropriateness for locating most or nearly all of the sites in ancient subsistence-settlement systems, and thus for testing theories about the origins and development of complex societal systems.

As a general example of the kind of preservation we find, it is possible to visit nearly any habitation site of a given prehistoric period and discover on the surface either (1) the excellently preserved remains of each low-walled stone dwelling that existed on the site (including main doors, rooms, stone storage pits, and doorways into rooms); or (2) the fairly well-preserved remains of organic *quincha*, or wattle-and-daub, dwellings (including wall "stubs" sticking up about 10 cm above the surface and the cordage used to lace them together). Both kinds of sites include well-preserved remains of maize cobs, cordage, shellfish, cotton seeds, cotton fibers, textiles, wooden im-

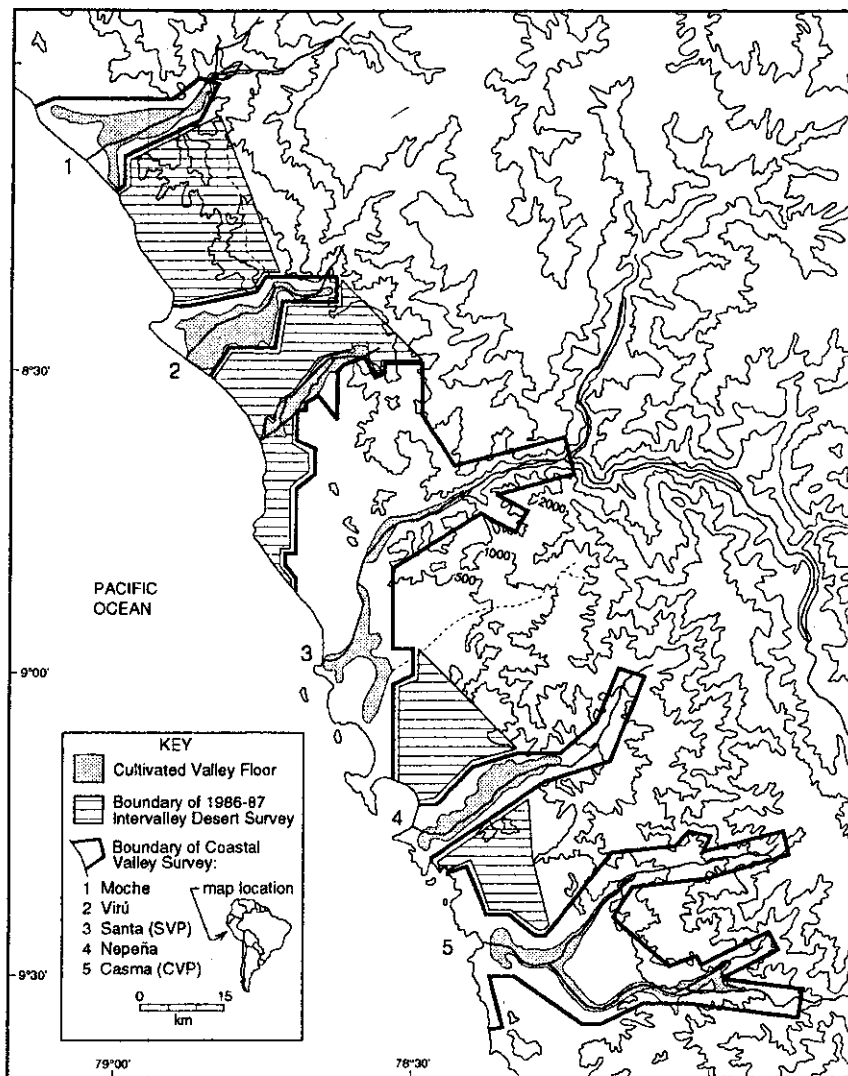


Figure 13.3. Map of the Peruvian north coast, showing the projects and valleys mentioned in the text.

plements, charcoal, and potsherds dating back at least to the earliest centuries A.D.

Thus, in making population estimates for each period in a sequence, we either can count the exact number of discrete dwellings that existed on a stone-walled habitation site or at least estimate with some accuracy the density of *quincha* structures that existed at the second type of site. Compared to other areas of the world, then, we can achieve both accurate estimates of site size in hectares and numbers/densities of habitation structures to produce, in turn, relatively accurate estimates of the numbers of people who constituted each cultural system (such estimates are of course based on the assumption of the contemporaneity of all sites in a system whose principal pottery diagnostics are the same from site to site).

As was done in the well-known settlement surveys in the Basin of Mexico that were used as a basis to devise methods appropriate for the Peruvian coastal context (Parsons et al. 1982; Sanders et al. 1979), we survey all possible areas of a valley where ancient sites

could be located, including the valley floor and the desert margins. We mark in detail all remains and associated pottery and other period diagnostics on large-scale (ca. 1:10,000) vertical aerial photographs. Each large, complex site is mapped using transit and stadia, compass and tape, or airphoto enlargements. In addition, at the end of the project we produce drawings of a large sample (ca. 60 percent, in the case of Santa) of the ceramic diagnostics that have been collected during the fieldwork. These are used for site-to-site comparisons and for comparison with materials published in the north coast literature, not only to refine chronology but to test hypotheses about intersite socioeconomic relations in the different kinds of systems (usually chiefdoms or states) that appear in the record.

The Santa Valley

In several publications I have presented the principal data and theoretical conclusions of the Santa Valley

Project, including arguments against Carneiro's internecine-coercive theory of state origins (cf. Wilson 1983, 1987, 1988; see also Carneiro 1970). Here I will confine the discussion, first, to several general features of the settlement pattern of the Late Suchimancillo period (ca. A.D. 200–400), as an example of the role of centers in the emerging complexity of the pre-state sequence; and, second, to the presentation of a systems argument about how these centers might have originated and functioned in the local and regional north coast contexts. Although it is my opinion that the subsistence-settlement system of the Late Suchimancillo period represents a chiefdom level of sociopolitical integration, it will also be instructive to examine it briefly in light of Trigger's city-state model.

As shown in Figure 13.4, the Late Suchimancillo period exemplifies the strong upvalley focus of all the pre-state settlement systems in the Santa Valley sequence. Like the preceding systems, it also features a

pronounced clustering of settlements with sites more or less continuously distributed throughout each cluster. Yet, the construction and widespread distribution of fortresses indicates that conflict was also a continual feature of the system—in other words, it is unlikely that people would have gone to the considerable trouble of building an extensive series of stone fortresses had war been a sporadic event rather than a process. The question thus arises as to what sort of warfare could have been occurring.

The first would be a highly localized kind of war, involving rampant conflict among all sites (i.e., the kind of internecine warfare we know to be characteristic of some village societies in the Amazon; e.g., Chagnon 1992; Harner 1972). Aside from being egregiously maladaptive in the coastal Peruvian setting, this can be ruled out for two reasons: (1) sites are located much too close to each other for warfare between these settlements to have been a long-term

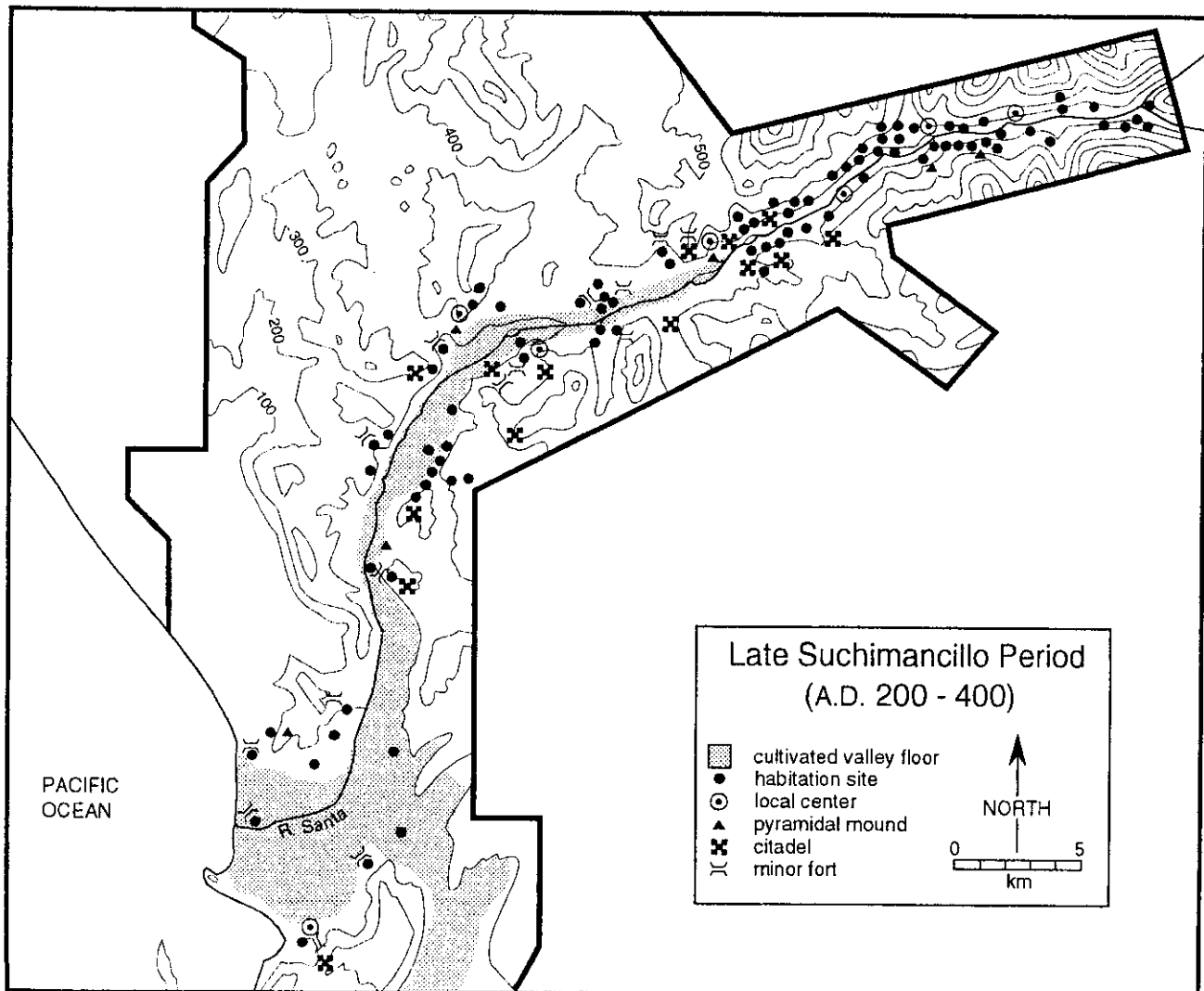


Figure 13.4. Settlement-pattern map of the Late Suchimancillo period (ca. A.D. 200–400), Santa Valley Project.

processual feature, and (2) the presence of canal irrigation networks and the consequent difficulty, if not impossibility, of building and maintaining separate canals further rules out such localized conflict.

The second possible kind of warfare would involve conflict between clusters, but this can be ruled out as well, again for two reasons: (1) the population sizes of the clusters are substantially different from one another, that is, the necessary balance of demographic power to sustain war as a longer-term process would not have existed; and (2) there is almost no land in the uppermost valley. Yet some 18,000 people apparently lived in this uppermost cluster. Surrounded by absolute desert to the north, south, and east, they must have had access to land in the downvalley area—which argues against sustained between-cluster warfare in the Late Suchimancillo system. The remaining possibility—war with other areas outside the valley—is therefore the kind that was indeed occurring here (somehow all this does not seem plausible to Carneiro and his supporters, but that is an issue I shall not delve into here; cf. Roscoe and Graber 1988).

Given the strong similarities between the pottery assemblages of Santa and those of valleys to the north, as well as the general lack of such similarities between Santa and valleys (especially Casma) to the south, I have argued for socioeconomic relations, or trade, with the northern valleys (such as Viru) and conflict with the southern valleys (Casma). In light of such differing relations, it is likely that at least part of the local ideology involved the promotion and maintenance of cooperative relations locally and with the people of the valleys to the north, as well as hostility toward those in valleys to the south. (Ceramic similarities between Santa and the Nepeña Valley during the late Early Horizon suggest possible socioeconomic ties at this time with the valley to the immediate south, so the situation is complex.)

In light of critical features of (1) the physical environment—circumscribed, with the cultivable valley floor increasingly narrow inland toward the Andes; (2) the subsistence infrastructure—canal-based agriculture; (3) the settlement pattern—with most sites located upvalley probably for defensive reasons; and (4) the political system—warfare, and the corresponding need to regulate defense and access to land and food—a likely scenario emerges for the origins and functioning of centers. They originated in the context of managing and coordinating both structural and infrastructural complexities (including redistribution of land and food since the majority of

people lived upvalley as a defensive measure), construction and maintenance of forts, and organization for defense against attack.

In view of the absence of any single large center, as well as the widespread distribution of smaller local centers of roughly equal sizes, I argue that none of the pre-state systems, including Late Suchimancillo, is a clear candidate for a state level of integration. Such a level would require at least three tiers of site size and political function (Wright and Johnson 1975), but the settlement-pattern data suggest that only two such tiers are present in this and earlier systems in pre-state Santa. We can therefore rule out Late Suchimancillo period as a candidate for Trigger's version of a city-state.

Figure 13.5 summarizes the principal elements of the above argument in a systems-hierarchical model. The ceremonial-civic centers, or the local centers mentioned above, are viewed as having originated in a context that involved mutual feedback among several lower-order causal variables at the structural and infrastructural levels. Nevertheless, the ultimate "cause" of the adaptive characteristics of the local pre-state Santa Valley system was political, not infrastructural, in nature—namely, war, in the form of the continual threat of attack or actual raiding against the valley, if not both. But, in actuality, the matter of ultimate causation does not end here, at least once we examine the possible reason for the attacks from outside (which could have been either nearby Andean groups or neighboring coastal valleys, although I think it more likely to have been the latter at this early stage in the Central Andean sequence).

Comparison of the variable river regimes of north coast valleys (ONERN 1972a, 1972b, 1973), shows that the Santa is the only first-class stream in the area (i.e., it runs at high levels year-round due to continual snowmelt in the adjacent cordillera). Other nearby valleys to the north and south are either second-class (seasonal runoff) or third-class (ephemeral runoff). One of these valleys is Casma, where, in spite of the clear evidence we have for precocious complexity (see below), the regime is that of a second-class river. With different river regimes, rising populations in most areas, and the possibility of unpredictable nutritional pressures, we thus have in place the elements in some other nearby valley (e.g., Casma) of infrastructural pressures leading to the attacks on Santa as an adaptive solution. Yet, like Santa, the people of such a valley also were faced with choices of a mental, or super-structural, nature: that is, whether to limit/regulate

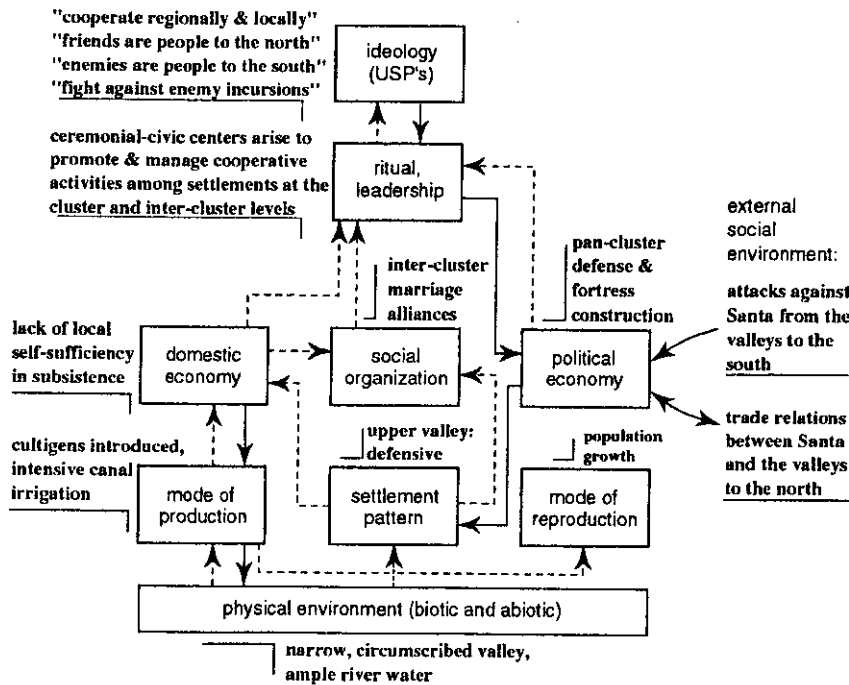


Figure 13.5. A systems-hierarchical model of the pre-state system of the Santa Valley.

population locally (perhaps in light of the constraints of early irrigation technology) or, alternatively, to solve their problem by attempting to conquer the people living to the north. Although one could argue that it was the river regimes, subsistence, and population—all at the infrastructural level—that ultimately were the driving forces in these early systems, it is difficult to imagine how such cultural variables as subsistence and population were not equally a function of higher-order policy decisions and choice at the superstructural level.

In sum, taking a systems perspective it is possible to argue that centers in this area of the north coast arose in a dynamic situation characterized by multiple, interrelated factors at the infrastructural, structural, and superstructural levels, probably as a means of ensuring definitive higher-order control and management over the increasingly complex features of developing agriculturally based societies. Certainly, it does not seem plausible to assign ultimate "cause," as Harris's cultural materialist view would have it, to the infrastructural level of these early subsistence-settlement systems (for a view similar to that of Harris, see Carneiro 1970, 1992). In any case, I will end this section by noting that although the elements of the above argument may seem rather facily derived in a few paragraphs, it has taken several grants, some years of study across desert terrain, and not a little analysis to be able to "play" with such scenarios about the rise of complexity in this north coast setting.

The Casma Valley

As mentioned earlier, we are still carrying out the Casma Valley study so a more definitive resolution of the questions raised by the work in Santa awaits completion of the ceramic analysis in 1997 and the final analysis of the settlement patterns shortly thereafter. With this caveat in mind, I will deal here with two of the more important early periods from the Casma sequence, specifically to address the issues raised by Trigger's model of a city-state. These include the Moxeke, or Initial, period (ca. 1800–1000 B.C.) and the Patazca, or later Early Horizon, period (ca. 350 B.C.–0 A.D./B.C.). The earlier of the two periods recently has become well known in the popular press because of the pioneering excavations of Shelia and Thomas Pozorski (1987, 1994) at the Pampa de la Llama-Moxeke site (see Fig. 13.6, which shows a plan view prepared by our project). Their work and ours demonstrate that the vast majority of the architectural remains here, including Huaca A, date to the Initial period (ca. 1800–900 B.C.), which is surprisingly early for a center in the Americas with such an "urban" appearance. Indeed, according to a *New York Times* article (Stevens 1989), this site represents the earliest appearance of a "city" and "monumental architecture" anywhere in North and South America, thus making Casma exceedingly relevant to the central focus of this paper.

Based on their work at Pampa de la Llama-Moxeke and at the nearby site of Taukachi-Konkán, located

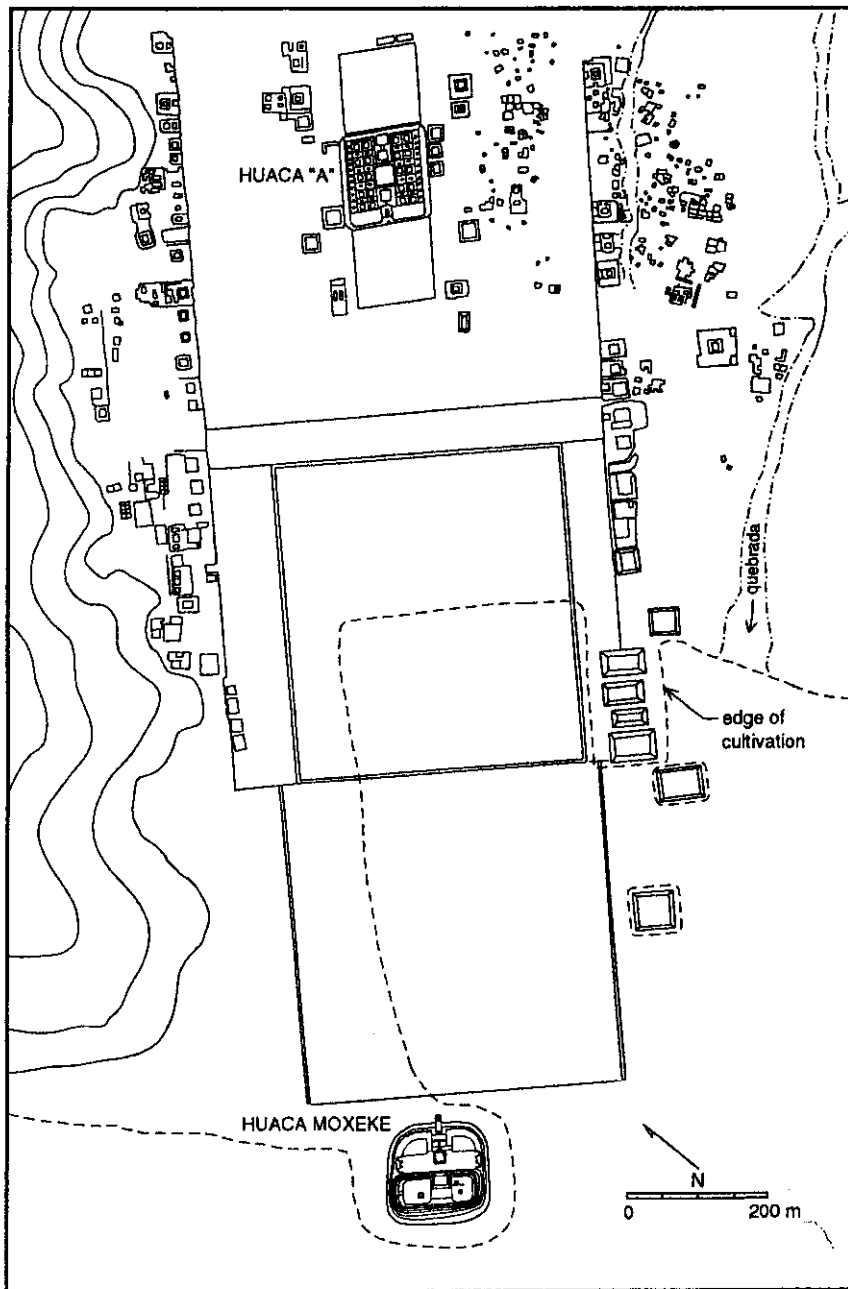


Figure 13.6. Plan view of the main site area at Pampa de la Llama-Moxeke, Casma Valley Project.

in the Sechín branch of the valley, the Pozorskis argue that “true civilization” arose in the Casma Valley far earlier than anyone would ever have suspected for the Central Andes (1994). Although surprised to find that the residential areas of the site are small in relation to the uninhabited public areas, they view Pampa de la Llama-Moxeke as a “bustling center that housed about 2,500 people within an area of two km².” Given the presence of food items and “luxury” goods in the chambers of Huaca A, they argue that the city had coercive control over the surrounding rural populace, although farmers apparently lived in the center as well. From this perspective the Moxeke system almost comes out sounding like the first major empire

in the Andes; for example, “We uncovered evidence that access to [Huaca A] was so carefully restricted and monitored that the associated bureaucratic system boggles the mind” (Pozorski and Pozorski 1994:69).

Our project’s surface work at Pampa de la Llama confirms the Pozorskis’ assertions about the early date of the site (indeed, our knowledge of Initial period pottery is the result of their publications from work in the 1980s at early Casma Valley sites). However, the total area covered by surface architecture and related Initial period pottery is 111.8 hectares, in other words, 1.1 square kilometers, and not 200 hectares, or 2 square kilometers, as they assert (note that

the rectangular area encompassed within our plan view is about 1.3 km²). They are correct nevertheless in the argument that the residential areas are small in relation to public space (compensating polar planimeter measurements on our detailed map of the site indicate a total of only 20 hectares of residential structures, and my preliminary population estimate for the entire site is 2,000 persons, or 500 persons fewer than their estimate).

However, to date our broader focus on the system-wide settlement pattern of this period does not provide evidence supporting their assertion of a “civilization,” at least in the sense of a *state*. As shown in the Moxeke settlement map (Fig. 13.7), which is a preliminary view based on our five-season project, fifty-four other habitation sites exist in the Casma and Sechin branches of the valley, most of them roughly 1 hectare or less in size. With a total inhabited area of 185 hectares, and assuming 100 persons per hectare based on the density of dwellings, I estimate the Moxeke period population in both branches of the valley to have been about 18,500 persons. Thus, our research indicates that nearly 90 percent of the Moxeke population resided well outside the main center. Indeed, it is interesting that all of the rural sites are located well up both branches from the Pampa de la

Llama site—rather far from the central site to have been “coercively” controlled by it.

Recalling Trigger’s definition of a city-state, the Moxeke period thus hardly seems to fit the requirements. Given the huge areas covered by open space, plazas, and ceremonial mounds, I would argue that even the assertion that Pampa de la Llama is a “city” is open to question. Moreover, it has no defensive wall around it. The only evidence for conflict—one of Trigger’s criteria for a “territorial state”—lies out in the rural hinterland in the form of nine hilltop/ridgetop forts that were found to have Moxeke period pottery diagnostics associated with them. It is impossible to deny that the site is formally laid out and impressive in its extent, but I would prefer not to see Pampa de la Llama as a “city” compared, for example, to the Chimú site of Chan Chan that covers a huge area of 16 square kilometers and includes thousands of dwellings and nine royal compounds.

At the pan-valley level, the Moxeke period system can be seen as characterized to some degree by a three-level hierarchy of site size and function—with Pampa de la Llama-Moxeke being the largest and most intensively occupied site, an additional seven sites of smaller size at the “second-tier” level, and a larger number of even smaller “third-tier” habitation

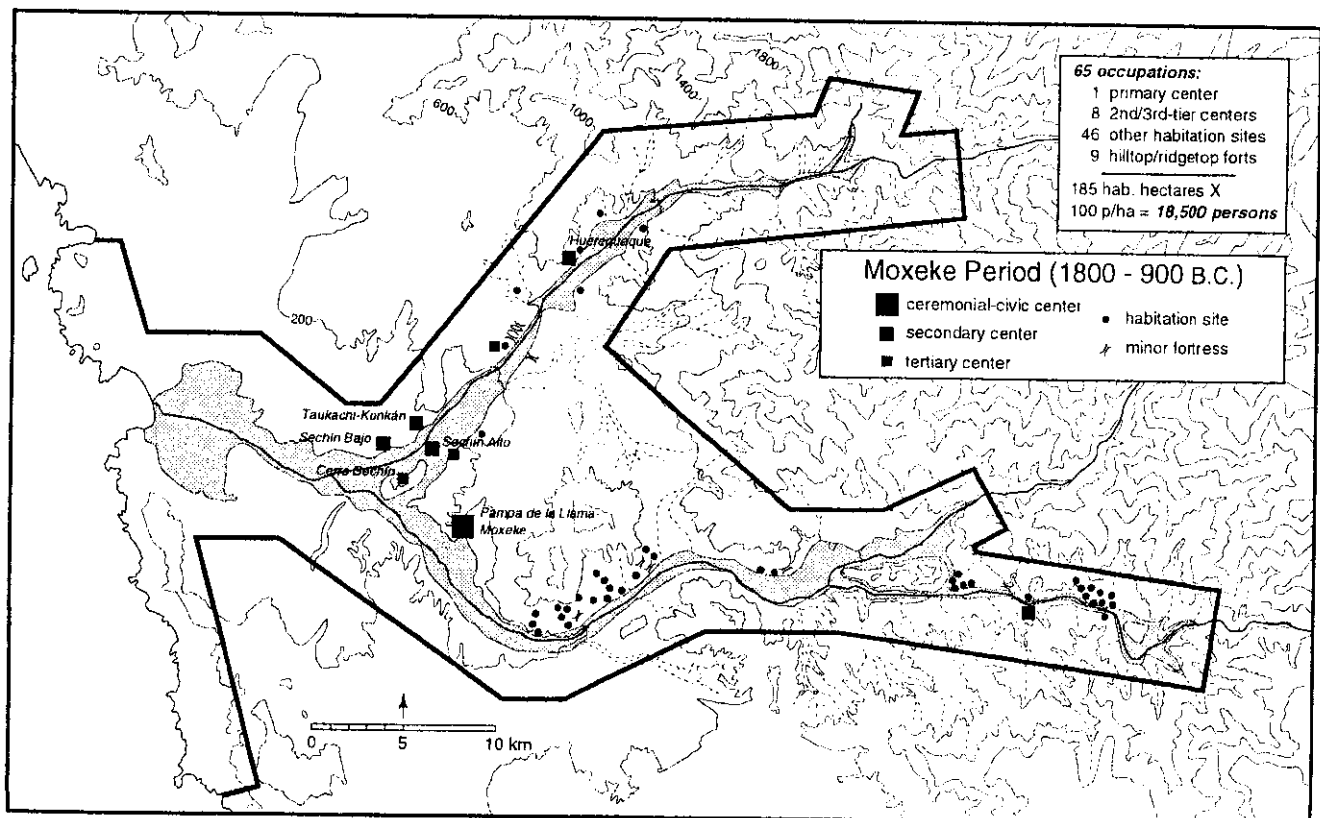


Figure 13.7. Settlement-pattern map of the Moxeke period (ca. 1800–1000 B.C.), Casma Valley Project.

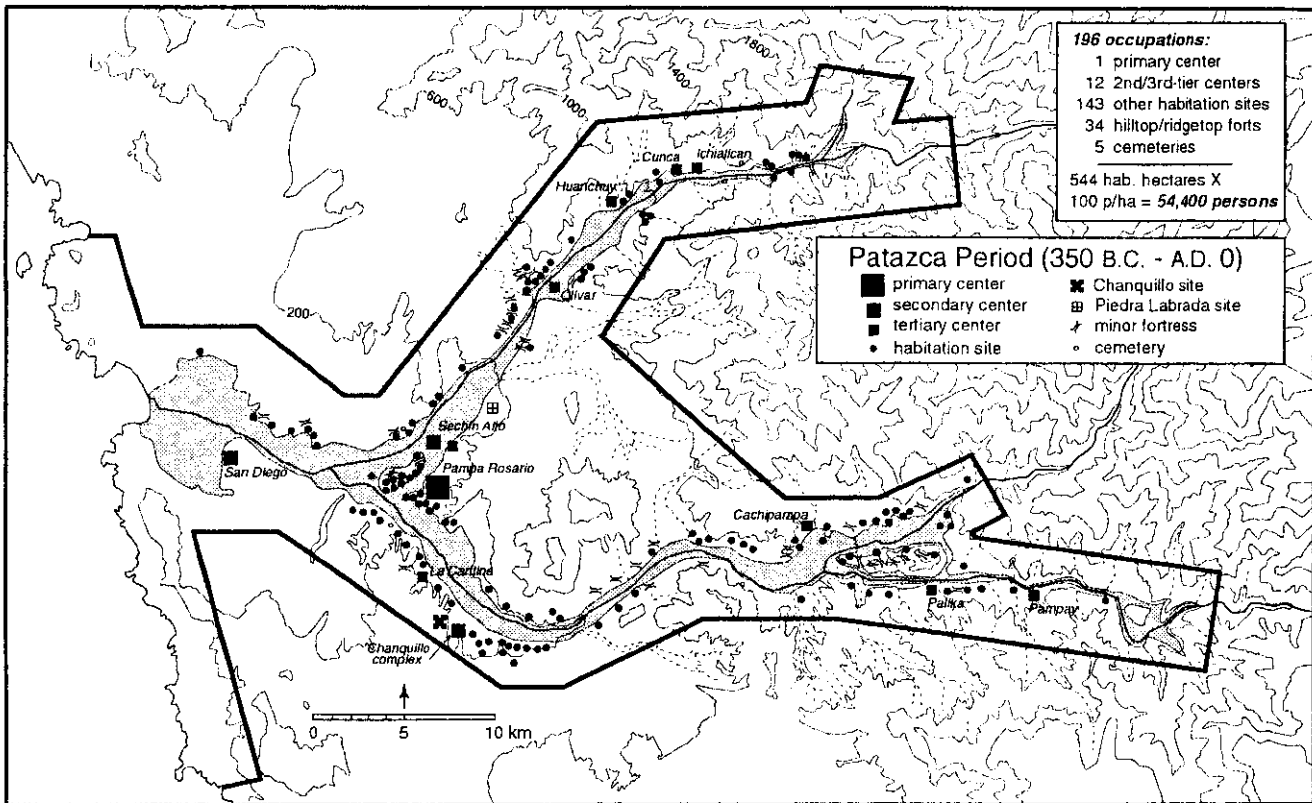


Figure 13.8. Settlement-pattern map of the Patazca period (ca. 350 B.C.–1 B.C./A.D.), Casma Valley Project.

sites scattered in several clusters in the hinterland. However, at least three features of the settlement pattern suggest that Moxeke period does not represent a system complex enough to qualify it as a state.

First, the apparently ample supply of valley bottomland associated with each of the principal site groupings suggests that each could have been self-sufficient in terms of subsistence productivity.

Second, assuming such self-sufficiency, the widespread distribution of fortresses suggests that warfare could have been occurring at the intercluster level. Indeed, to complicate this hypothetical scenario further, it is possible that the population groupings in the two branches alternated between pan-valley integration at a chiefdom level (at which point the main center was built and supported by hinterland sites) and *disintegration* to local egalitarian, or village-level, societies—a highly possible dynamic scenario for the long time period between 1800 and 900 B.C.

Third, although an additional five ceremonial-civic centers of varying size are located in the mouth of the Sechín branch, to the northwest of the Pampa de la Llama-Moxeke site, each was probably far less extensive than the principal center. But all of them—including Taukachi-Konkán, Sechín Bajo, Sechín Alto, and Cerro Sechín—also have occupations dating to

one or more later periods in the sequence, and probably reached their maximum size and architectural monumentality in these later periods. For example, although the finger-marked conical adobe bricks on the interior of the main pyramidal mound at Sechín Alto indicate a probable Initial period beginning for this mound, we found almost no Moxeke sherds on its surface as opposed to the nearly universal presence of Patazca period sherds.

In light of our research to date in the valley, a far better candidate for pristine state formation on the north Peruvian coast is the Patazca period system itself (Fig. 13.8). Compared to the 65 total sites of the preceding period, we have found 196 sites dating to the Patazca period in the area shown on the settlement map. Sites are much more continuously distributed in this system (suggesting far greater integration), and there appears to be a well-developed hierarchy of site size and function consisting of four principal tiers—with the site of Pampa Rosario (located near the confluence of the Sechín and Casma branches) at the apex of the system, five evenly distributed local centers below it (again suggesting substantial systemic integration), a number of sites at the third level, and a large number of rural sites at the lowest political level. In addition, numbers of for-

tresses were constructed and used, including the impressive fortress of Chanquillo (due south of the Pampa Rosario site on the map, along the south margin of the Casma branch).

Compared to any pre-state system of the Santa Valley, Patazca is far more complex, and, with a preliminary population estimate of some 55,000 people, it is far more populous than the system of any period in the Santa sequence. It is worth noting that the Pampa Rosario site covers 44 hectares, with a preliminary population estimate of less than 2,000 persons, so it constitutes a mere 4 percent of the total population and the city-state model thus does not apply here either.

Final Comments

In light of the data presented in this paper for the earliest and latest periods in the Central Andean sequence, the Moche state of the Early Intermediate period is the only remaining possible candidate for a city-state on the north coast. We can rather quickly eliminate it as a candidate, however. The primary center of the Moche state, the site of Huaca del Sol, covers a relatively small area of some 2 square kilometers (Moseley 1992). Thus, in all likelihood the vast bulk of the state's population resided in the rural hinterland. Considering the large area of the north coast occupied by this multivalley polity (Fig. 13.9), then, like its later counterparts in the Central Andes, Moche was a territorial state.

The Central Andes appears to be characterized by slowly developing differences of *scale*; complex societies that arose, first, at the local valley level in somewhat variable forms (at least in light of the data presented here) and, later, at the regional and interregional levels. At the local level it seems that a multiplicity of societal and environmental variables were mutually interrelated and causal in the rise of sociopolitical complexity, as people coped with the problems that came about because of their very success (as measured either by sheer population growth or the increasing size of polities) in adapting to one of the most challenging environments on earth. Short of arguing that these early polities developed spectacular centers simply because it was their aesthetically and technologically driven genius to do so, it seems more likely that Andean primary sites are the physical manifestation of the systemic need, in areas capable of agricultural intensification, to develop political and ideological *centrality* as the principal means of inte-

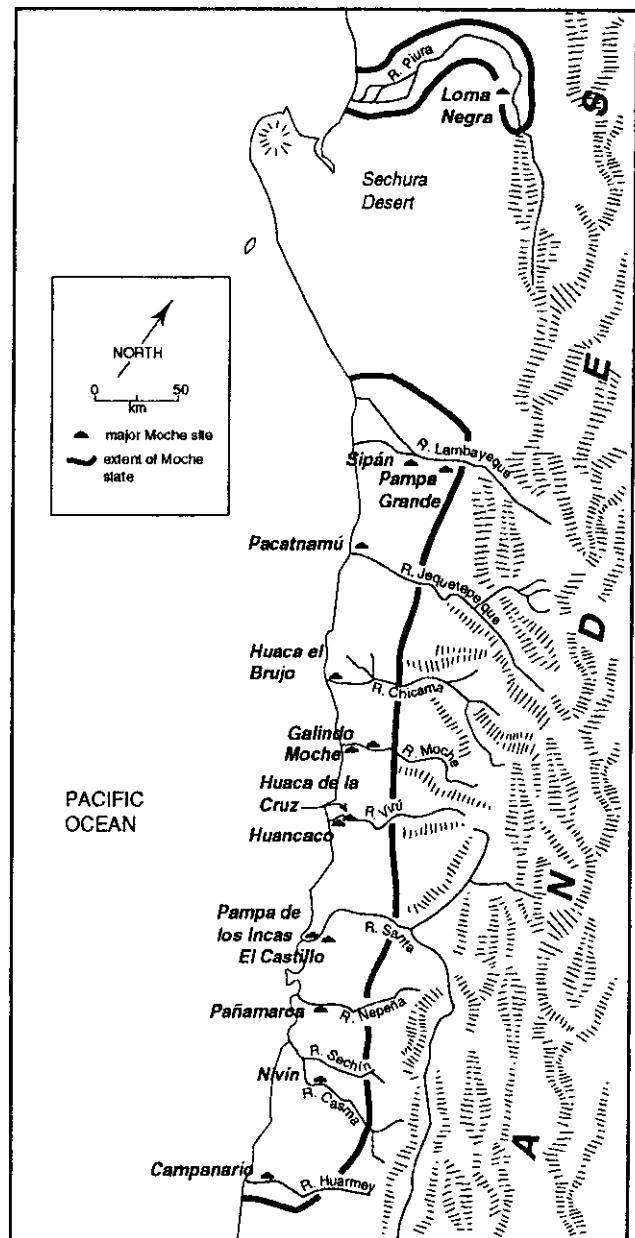


Figure 13.9. Map of the multivalley Moche state (ca. A.D. 400-650).

gration in solving adaptive problems. This, among many other things, obviously would have entailed the concomitant societal creation of powerful elites whose inherited higher-status positions became the linchpin of emerging complexity.

As I hope is clear from the arguments of this paper, we probably need to keep some of the basic stage/level terminology proposed by our principal theoretical forebears, the evolutionary-ecologists: namely, "bands, villages, chiefdoms, and states" as *stage heuristics* for dealing temporally with changes in human societal systems as a function of adaptation to population growth and subsistence intensification in a general

sense; and the same types *qua* “levels of sociopolitical integration” for their utility as *level heuristics* in dealing spatially and temporally with human adaptation to the limitations and possibilities of differing physical environments. On the other hand, I do not think most other terms—especially the adjectival ones modifying the state—have such universal application. In a significant vernacular sense, these other terms are the muddy bath water we’d like to throw out and the noun terms are the theoretical baby we’d like to keep.

I am uncertain why some researchers are driven to propose universality for such polities as city-states. If the Central Andes is at all important as one of the six areas of the world where pristine states arose, then the city-state as a type, at least as defined by Trigger, is unworkable as a useful universal heuristic. If, on the other hand, it is applicable to some other societies—for example, Sumer, the Maya and the Aztecs—then, instead of trying to find it everywhere else, perhaps we should try to find out why city-state organization appears where it does. One way to do this, I propose, is by looking at some of the factors I have attempted to demonstrate as critical in the systems-hierarchical model—especially including (1) critical aspects of the local physical environment, (2) the nature of the subsistence system, (3) population size and the distribution of settlements, (4) higher-ordered

management of the local system, (5) the highest-order ideological phenomena that sustain it, as well as (6) the consideration of the larger regional political context made up of other nearby social groups coping with their own local problems. This is the last thing the “modified,” or “two-type typologists” seem inclined to do, however.

Surely, if Steward was at all correct in his theoretical assertions, then there is an intimate connection between all these variables and the differing complexity that characterizes societies at the continental and worldwide levels. The theoretical trend represented by the “multistage” and “two-type typologists,” on the other hand, seems to me to run directly counter to such plausible and workable models as those proposed by Steward and his intellectual descendants. But if I am incorrect in my critique of the city-state model discussed in this paper, then going along with the trend this sort of theorizing represents, I would like to propose the following competitive models as the principal kinds of states found around the ancient world: the “pyramid state” (Egypt, the Maya, and the Aztecs) and the “platform state” (Moxeke, Moche, and Chimú). Otherwise, our only recourse will be to throw out the stage/level baby with the muddy bath water and become typological nihilists. If so, then it really will turn out that the *state* was just a state of mind.