

# CULTURAL MATERIALISM, SPLIT INHERITANCE, AND THE EXPANSION OF ANCIENT PERUVIAN EMPIRES

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*Archaeological and ethnohistoric data on the Chimu and Inca empires, two prehistoric Peruvian states that shared a number of organizational features, are used to test the theory of cultural materialism. Materialist explanations of Inca expansionism are evaluated; they are shown to be unconvincing in the Inca case and inapplicable to the Chimu. An alternative model is proposed that emphasizes the role of a particular legal principle, split inheritance. The presence of split inheritance in the two empires is documented. It is argued that in both cases split inheritance originated through manipulation of traditional elements of Andean ideology, was the driving force behind imperial expansion, and generated administrative and economic stresses eventually leading to imperial collapse. This model avoids the flaws of the materialist explanations it is intended to replace, and the theory of cultural materialism is rejected.*

IN HIS LIST OF SEVEN TENETS of the New Archaeology, Bruce Trigger (1978:12-13) awards seventh place to cultural materialism. This ranking strikes me as an accurate assessment of the importance of cultural materialist theory in archaeology today. No one can realistically assert that all archaeologists are cultural materialists, but equally realistically, no one can deny that cultural materialism provides the theoretical framework for much current archaeological research. It does seem fair to say that while cultural materialism is not a universal credo of archaeologists, it is nevertheless one of the most widely held theoretical positions in the field.

There is something disturbing in this situation. To nonmaterialists, and I hope to unbiased observers, it is beginning to seem as if far too many archaeologists are willing to discourse lengthily on arguments, sometimes of quite minor significance, that are ultimately derived from cultural materialism, while leaving unposed the far more important question: Is cultural materialist dogma true? Yet surely one of the most valuable uses of archaeological data is to ask such questions, to test the validity of major theoretical positions like cultural materialism.

What I propose to do here is to use archaeological and ethnohistoric data for just that purpose. I intend to assess cultural materialism by examining two prehistoric Peruvian states, the Chimu and Inca empires. In brief, I will argue that cultural materialism does not provide an adequate explanation for the expansion of these two empires. Instead, the true cause of Chimu and Inca expansionism is to be sought in a series of social, political, economic, and ideological factors that converge in one legal principle, that law of split inheritance.

To achieve these aims I will begin with some necessary background information and then proceed to criticize recent materialist models purporting to explain Inca imperialism. Next, I will present the archaeological and ethnohistoric evidence for split inheritance in the Chimu and Inca empires. I will then offer an alternative model for both the Chimu and Inca expansions that emphasizes the origins and consequences, both short- and long-term, of split inheritance. Finally, I will consider the implications of these arguments for the theory of cultural materialism.

## CULTURAL MATERIALISM: VOICES PRO AND CON

I do not intend to write a detailed history and explication of cultural materialism; that job has already been done in colorfully partisan fashion by one of the theory's staunchest supporters,

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Marvin Harris (1968, 1979). Suffice it to repeat here Harris's (1968:4) dictum that the essence of cultural materialism is the principle of techno-environmental and techno-economic determinism or, as it has been retitled recently (Harris 1979:55-56), the principle of infrastructural determinism. This crucial principle states that ultimate cultural causality is to be found in environment, technology, demography, and the economic adaptations brought forth by their interaction. These material conditions shape sociocultural factors such as social structure, political organization, and ideology.

Even a casual perusal of the literature should be enough to convince the reader that in Harris's own field, sociocultural anthropology, cultural materialists are definitely a minority sect. Structuralists regard cultural materialism as a naïve oversimplification, something akin to a kind of fuzzy-minded functionalism they feel anthropology should have purged itself of decades ago (Leach 1973; Sahlins 1976). Marxist anthropologists, especially those who happen to be structuralists as well, seem to find the theory deeply offensive and decry it as "vulgar materialism" (Friedman 1974; Godelier 1977:42). I. C. Jarvie (1975:264), who is neither a structuralist nor a Marxist and who has harsh words for both schools of thought, dismisses cultural materialism as "long-discredited." Even Robert Carneiro (1974), one of the relatively few avowed cultural materialists in the field (and one of the even fewer contemporary sociocultural anthropologists with strong archaeological interests), has recently expressed some discomfort with the theory.

If cultural materialism occupies an embattled corner of sociocultural anthropology, it has found a much more congenial reception in archaeology. Many of the methodological and theoretical trends of the New Archaeology have been strongly influenced by cultural materialist thought; several recent offshoots such as behavioral archaeology (Schiffer 1976) and ethnoarchaeology (Gould 1978) are cultural materialist research strategies, despite occasional, not very convincing claims of independence from "materialist philosophy" (Gould 1978:6). Some less demure New Archaeologists (e.g., Smith 1976) have taken up the materialist standard stridently and insist that if the profession is to advance, the rest of its practitioners must do likewise. However, other New Archaeologists who are committed to a more truly systemic view of culture have refused to rally 'round the flag. The foremost proponent of archaeological systems theory, Kent Flannery (1972, 1977), has repeatedly maintained that systemic explanations of archaeological phenomena do not necessarily assign priority to material conditions. In fact, Flannery (1972:400) has gone so far as to state that archaeologists "must cease to regard [sociocultural factors such as] art, religion, and ideology as mere 'epiphenomena' without causal significance." Other misgivings about cultural materialism or some of its tenets have been expressed by archaeologists of varying degrees of Oldness or Newness (e.g., Coe 1968:65; Cowgill 1975; Trigger 1978; Yoffee 1979:27). If there is a trend to be discerned here, it seems to be that cultural materialism has been most readily espoused by investigators of relatively simple societies, while prehistorians studying more complex societies have been much more skeptical. To me, as to several others (Trigger 1978:146; Yoffee 1979:27), this situation is hardly coincidental.

In view of all the claims, doubts, and counterclaims, I must agree with Trigger (1978:13) that for those archaeologists who adopt a cultural materialist viewpoint, the theory remains "a matter of faith." Therefore, it seems important to me to test the theory against one of the world's major civilizational traditions, that of ancient Peru. For that reason, among others, a consideration of Chimú and Inca expansionism is a worthwhile exercise.

### THE CHIMU AND INCA EMPIRES

The Chimú and Inca empires represent the late prehistoric culminations of indigenous Andean statecraft. The Chimú Empire flourished from ca. A.D. 1200 to 1470; its capital was the site of Chan Chan in the Moche Valley on the north coast of Peru. At the height of their power, just prior to their being conquered and absorbed by the Inca, the Chimú controlled the northernmost 1,000 km of the Peruvian coast, a desert region interrupted by a series of fertile river valleys (Figure 1).

The Inca achievement is better known and even more impressive. Despite an existence spanning only about a century, the Inca Empire became the largest state ever formed in the native

Americas. Before A.D. 1438, the traditional date for the beginning of imperial expansion, Inca leaders governed only a small, rustic kingdom in the area around their capital, Cuzco, in the southern Peruvian highlands. In 1532, when their empire fell to its Spanish conquerors, the Inca dominated the entire Andean area, coast and highlands, from the southern frontier of Colombia to northwestern Argentina and central Chile (Figure 1).

Data on the Inca Empire include archaeological remains and abundant documentary records; our knowledge of the Chimu is predominantly archaeological, although a few written records dating from the Spanish Colonial era do exist. Information obtained from these sources indicates that the two states shared a number of institutions and organizational features. The parallels most directly relevant to my subsequent arguments are the following.

(1) Although the point may seem almost too basic to mention, both empires grew primarily through military conquest. The course of Inca expansion can be traced in some detail; each succeeding emperor attempted to enlarge the realm (Rowe 1946:203–208). At present the growth of Chimor can only be broadly outlined, but it is clear that expansion occurred in several stages (Kolata 1978:226). It is interesting to note that the expressed goal of Inca imperialism was to spread civilization and the true religion; the Chimu offered their conquered subjects the same rationalization (Rowe 1946:240–241, 1948:41).

(2) Both empires were ruled by dynasties of divine or semi-divine despots who personified their respective states (Vargas Ugarte 1936:231–233; Rowe 1946:202, 257, 1948:28–30; Rostworowski 1961:54–55). Both dynasties attributed their divinity to descent from celestial deities: the Inca dynasty claimed to be descended from the sun, while the Chimu royalty traced their ancestry to two stars (Rowe 1946:257, 1948:47). In each empire, the supreme leader governed through an administrative hierarchy whose members were drawn, whenever possible, from hereditary local nobilities (Rowe 1946:260, 1948:45–46).

(3) Chimu and Inca rulers owned vast amounts of personal property, which they held by divine right. The punishment for theft of an Inca emperor's possession, no matter how small or trivial, was death (Moore 1958:165). The Chimu royalty were even harsher: the father and brothers of a thief, as well as anyone who harbored him, were executed along with the criminal himself (Rowe 1948:49).

(4) The economic organization of the two states was similar. The Inca economy was based on a system of labor taxation supervised by the state's administrative hierarchy. Inca law required taxpayers to contribute a certain amount of labor to the state and its official religion every year. Citizens fulfilling tax obligations cultivated state- and church-owned farmlands, constructed all public works projects, and manned the Inca armies. In return, the state had to feed, shelter, equip, and entertain workers performing these labor services. A similar set of reciprocal obligations existed between taxpayers and the administrators who supervised them: the latter were entitled to a certain amount of the former's yearly labor, but had to support and entertain taxpayers while they undertook such duties (Rowe 1946:265–268, 278–280; Murra 1958; Rostworowski 1962:131).

Similar forms of labor taxation seem to have been a traditional Andean institution. They characterized the Chimu Empire and earlier north coast polities as well (Moseley 1975a:224, 1975c).

(5) Included among the public works carried out through labor taxation were projects designed to reclaim large amounts of marginal land for agricultural use. The most impressive reclamation projects were the hillside terrace systems of the Inca highlands (Rowe 1946:210, Plates 83–84; Murra 1960:395) and the extensive canal irrigation networks of the Chimu (Kosok 1965; Moseley 1977).

#### MATERIALIST EXPLANATIONS OF INCA EXPANSIONISM

Recently both Allison Paulsen (1976) and William Isbell (1978) have presented materialist models that purport to explain the Inca expansion. Neither model is completely developed. (To be fair, each is presented as part of a short essay in which the author tries to deal with a broader

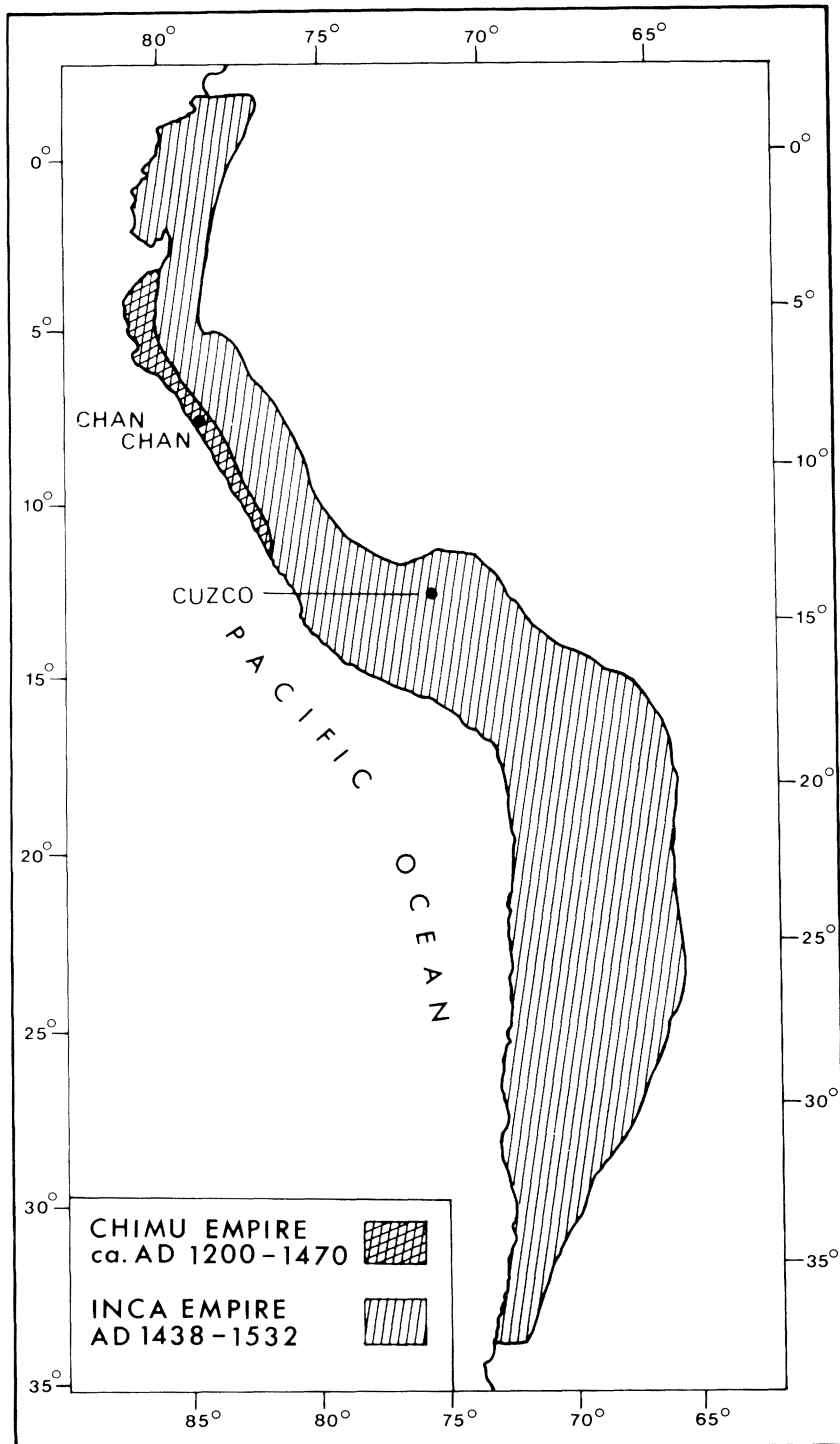


Figure 1. Maximum extents of the Chimu and Inca empires.

issue, not solely with Inca imperialism. Hence it would be unjust to fault Paulsen's and Isbell's explanations for being less than fully elaborated.) However, each model is developed in enough detail to reveal its flaws.

Paulsen's (1976) model is based on archaeological data from the Santa Elena Peninsula of coastal Ecuador. In Paulsen's (1976:128) interpretation of the Santa Elena data the alternating use and abandonment of walk-in wells implies, among other things, a period of relatively humid climatic conditions ca. A.D. 1000–1400 and a relatively dry period ca. 1400–1970. This climatic sequence is then applied to the southern Peruvian highlands by extrapolation, and Paulsen's argument unfolds as follows:

During the wet period A.D. 1000–1400, ameliorating climatic conditions allowed previously marginal lands to be opened to cultivation. Then, in a feedback cycle, increased agricultural land led to population growth, which prompted the reclamation of more marginal land, which in turn promoted further population growth, and so on. With the onset of drier conditions after A.D. 1400 marginal land could no longer be exploited, and the greatly enlarged highland population was subjected to food shortages and other forms of stress. The results were competition for land, endemic warfare, an eventual Inca victory, and the expansion of the Inca Empire in search of land to feed its population. In short, deteriorating climate caused the Inca expansion (Paulsen 1976:129–130).

One can raise several objections to this example of that most enduring of materialist clichés, environmental determinism. First, the evidence cited for a period of reduced rainfall in the Peruvian highlands after A.D. 1400—the abandonment of wells in coastal Ecuador—is less than overwhelming. Wells can dry up for reasons other than decreased precipitation. For example, a lowering of the water table due to tectonic uplift, a phenomenon that is documented for the Peruvian coast (Moseley 1975b:46; Feldman 1977:15), would have had the same effect. The fact is that we still need a good highland climatic sequence derived from independent (nonarchaeological) evidence. Analysis of ice cores from glaciated regions of the Andes is a highly promising method, but it is still in its infancy, and the ice-core sequence presently extends back only to A.D. 1969 (Thompson et al. 1979).

A second problem is chronological. Even if the proposed climatic change did occur, its dating depends on the dating of the wells, which in turn depends on sherds found in earthworks created by cleaning and maintenance of the basins (Paulsen 1976:124). These sherds are analogous to ceramics in mound fill; they can only provide a *terminus post quem* for the abandonment of a well. Therefore, the dating of the onset of the dry period at A.D. 1400 ultimately relies on ceramic and radiocarbon chronologies, and neither of these chronologies is sufficiently fine to allow certainty that the postulated interpluvial started before the Inca expansion, which supposedly began in or around 1438. Obviously, if Paulsen's interpretation is to work, the beginning of drier conditions must predate the Inca expansion. Until that crucial fact can be established—and at the moment it cannot be—Paulsen's hypothesis is automatically questionable.

Third, as an explanation for the Inca expansion the model fails to answer some necessary questions. Those questions have been posed by Cowgill, who rightly insists that if we are to argue that a given cultural change is a response to stress, "we have always to ask, *who* is experiencing the stress, *who* is in a position to do something about it, and *why* might they see it to be in their best interest to do what they do?" (Cowgill 1975:507; emphasis in original).

If we look at the Inca case in terms of Paulsen's model, the answers to the first two questions are: everybody is feeling the stress, but only the Inca leaders are in a position to do something about it (i.e., raise armies and attack their neighbors). However, everything falls apart when we come to the third question. To me, as to Cowgill (1975:517), permanent conquest of territory and people is hardly the ideal solution to the problems of preindustrial societies under stress. Why would the rulers of, to pick figures at random, 50,000 distressed people find it in their best interest to conquer and annex 50,000 more distressed people, thereby ending up with 100,000 hungry subjects instead of 50,000? Why would Inca leaders compound their problems in this manner? Would it not make more sense to engage in a series of smash-and-grab raids in which the victors do not attempt permanent annexation of territory and people, but simply bring home confis-

cated foodstuffs to relieve their subjects' sufferings, while leaving their defeated neighbors to fate? Or, if the leaders of a society truly covet their neighbors' territory under such circumstances, why leave the vanquished to occupy land and consume its produce? It may be less grisly than driving them off or killing them off and allowing some of one's own people to usurp the land, but in a materialist world the latter course would be much more sensible. Seen in the context of Paulsen's scenario, the actions of Inca rulers seem bizarre.

Finally, the model fails to explain why the Chimú Empire, which displayed so many organizational parallels to the Inca Empire, should have begun its expansion during the humid period A.D. 1000-1400. If Paulsen's interpretation is correct, the Chimú should have been fat, happy, and content to stay at home reclaiming marginal land.

Isbell's (1978) explanation of Inca imperialism is somewhat more satisfactory. It is based on an ecological phenomenon that Murra (1972) has termed "verticality": in the Andes different crops grow in different altitudinal zones. From verticality is derived the "vertical archipelago," an economic pattern in which a community exploits the maximum number of ecological zones by maintaining satellite communities at different altitudes. The vertical archipelago is an ancient form of economic exploitation in the Andean highlands and was originally organized by kinship ties. It was adopted and transformed for imperial purposes by the Inca, who extended their dominion into many different ecological zones.

In Isbell's (1978:304-305) argument the key factor is environmental carrying capacity, which he correctly insists cannot be treated as a constant. Instead, it is affected by relatively minor, predictable variations and by more serious perturbations; human populations must develop "energy averaging" strategies to buffer these fluctuations. Such strategies are basically of two types, temporal and spatial. Storage and redistribution are temporal averaging strategies; they allow good harvests to be stretched through time. A society pursuing spatial averaging expands its resource base by encompassing more ecological zones, so that climatic conditions causing poor harvests in some areas will produce good ones in others. According to Isbell (1978:304-306), these energy averaging strategies establish a mean environmental carrying capacity to which population will rise. Perturbations that exceed the capacity of existing averaging strategies lead either to decreased population and simplified sociopolitical organization or to more sophisticated spatial and temporal averaging mechanisms.

In Isbell's model Inca imperialism is the ultimate refinement of energy averaging strategies first seen, in a more primitive form, in the kinship-based vertical archipelago. The empire expanded into different ecological zones, stored its surpluses, and redistributed them. Isbell (1978:307) states flatly that much of the military/administrative machinery "for which the Inca Empire was so famed functioned to average energy production."

Despite some attractive features, this model still has shortcomings as an explanation of Inca expansionism. It does a better job of answering Cowgill's (1975:507) questions than Paulsen's model does, but it fails to fulfill all of Cowgill's criteria. The desire to buffer fluctuations in energy output, thereby keeping themselves and their subjects well fed, might explain why Inca rulers undertook their initial conquests. This interpretation fails, however, to explain why the Inca constantly sought to increase their domain, unless we postulate that rapid and continuous population growth within its borders left the empire always vulnerable to climatic perturbations that overtaxed the mean environmental carrying capacity. Isbell (1978:305-306, 308-309) implies that such a process was indeed at work. Therefore, in order to explain the unrelenting Inca drive for conquest, his model must in the end depend on the assumption that population growth is an automatic tendency of agricultural societies, a notion that Cowgill (1975) has demolished and that Isbell (1978:304-305) himself seems to recognize as fallacious.

The energy averaging hypothesis also fails to resolve the problem of Chimú imperialism. While there were many parallels between the Chimú and Inca empires, their expansions were geographically very dissimilar. The Inca extended their control both horizontally and vertically, over both coast and highlands, while the Chimú confined themselves to lateral movement along the coast. Therefore, it is difficult to see the Chimú expansion as an energy averaging strategy: it was not a question of conquering new and different ecological zones to buffer fluctuations in energy

output, but rather one of grabbing more and more of the same old zones subject to the same old environmental perturbations.

For these reasons I cannot be satisfied with Isbell's model. I would be the last to deny that Inca conquests did serve to cushion the effects of climatic variations. However, it seems to me that Isbell has put himself in the position of a man who, when asked, "What is an automobile engine for?" replies, "An automobile engine is a device that detonates controlled explosions of vaporized gasoline," without first saying simply, "It propels a car." As I hope to show, in describing Andean imperialism as an energy averaging mechanism, Isbell has mistaken method of operation for purpose, means for end.

In summary, the materialist models discussed here do not explain the expansion of late prehistoric Andean empires. Both interpretations fall short in the Inca case, and neither can be applied to the Chimú at all. If we are to derive a model that will account for both the Chimú and the Inca, we must consider the five common characteristics of the two empires described earlier and add a sixth to the list—split inheritance.

#### SPLIT INHERITANCE DEFINED

Split inheritance is a law of bequeathal based on two dichotomies: state office vs. personal property and principal vs. secondary heirs. In a pattern of split inheritance one principal heir receives the state office, along with the attendant rights and duties, of a deceased functionary. The latter's personal possessions and sources of income are granted to his secondary heirs as a corporate group.

#### EVIDENCE FOR SPLIT INHERITANCE IN THE INCA EMPIRE

Although there are indications that, at least in the Inca case, provincial administrators were subject to a form of split inheritance, my main concern here is the foremost expression of the law, its application among the Chimú and Inca royalty. The evidence for royal split inheritance in the Inca Empire is primarily documentary, with some limited archaeological confirmation.

The Spanish chroniclers consistently and emphatically state that the property of an Inca emperor could not be inherited by his successor. Upon the death of an Inca ruler the rights to govern, to wage war, and to impose taxes on the empire passed directly to his principal heir, who became the next head of state. However, the deceased emperor's buildings, servants, chattel, and other possessions continued to be treated as his property and were entrusted to a corporate social group (*panaqa* or royal *ayllu*) containing his other descendants. These secondary heirs did not actually receive ownership of the items named above; they derived their support from the *panaqa*'s own holdings. Instead, they managed their ancestor's property for him, using it to care for his mummy and maintain his cult. In effect, a deceased emperor's *panaqa* treated him as if he were still alive (Pizarro 1844:238–239; Castro and Ortega Morejón 1936:237–239; Moore 1958:93–94; Cieza 1959:188–189, 247; Rostworowski 1960:418, 1962:132–133; Rowe 1967:61, 67–68).

Among the property entrusted to a deceased emperor's *panaqa*, and hence denied to his successor, were his lands. While the total amount of territory owned by any single ruler is unknown, it was obviously large. A ruler's holdings were distributed throughout all the provinces of his empire (Rowe 1967:61), and Colonial documents name entire highland valleys that were the personal property of Inca sovereigns (Rostworowski 1962:134–136).

These royal estates formed part of what are sometimes loosely called the "state-owned lands" of the Inca Empire. (Rostworowski [1962] discusses the various types of land subsumed under this general heading.) To think of royal estates in this manner is seriously misleading, since it implies that an emperor's holdings were state lands in perpetuity. In reality, because of split inheritance such lands were available for the purposes of the empire only while a ruler was alive and serving as head of state (that is, while the empire's purposes were his purposes). After his death his estates were used solely to maintain his mummy and his cult; his lands, the labor needed to farm them, and their produce lay outside the control of succeeding administrations.

The effects of split inheritance were felt throughout the empire, but the principal visible ex-

pression of the law occurred in Cuzco, the Inca capital. Cuzco and its environs were extensively remodelled by Pachakuti, the ruler under whom the Inca expansion began. (The generally accepted dates for Pachakuti's reign are A.D. 1438-1471.) Pachakuti's program for reconstructing the capital and repartitioning the surrounding area was undertaken to make Cuzco's appearance mirror its newly acquired status as the predominant political and religious center of the Andean world. In accordance with the law of split inheritance the "new" Cuzco was planned as a settlement in which each ruler would build one or more palaces to be the seat of his government, the center for control of his wealth, and his posthumous shrine. After his death his residence(s) would be entrusted to his *panaqa*, while his successor would build the next palace(s). Pachakuti supposedly went as far as to provide estates for the rulers who preceded him, a number of whom may have been mythical (Rowe 1963:18, 1967:60-61).

Archaeological support for the documentary accounts of split inheritance is available but limited, for the simple reason that much of Inca Cuzco was destroyed during the Colonial era. The Inca burned their capital during their siege of its Spanish garrison in 1535. The Spaniards subsequently remade Cuzco as a Spanish city, which was itself rebuilt after a devastating earthquake in 1650. Therefore, while the locations of the sequentially constructed palaces of Pachakuti and his successors—Topa Inca (1471-1493), Huayna Capac (1493-1525), and Huascar (1525-1532)—are known, only segments of stone masonry from some of these buildings have survived (Rowe 1944:6, 1967:59, 68-69).

#### EVIDENCE FOR SPLIT INHERITANCE IN THE CHIMU EMPIRE

The evidence for split inheritance among the Chimu royalty consists of archaeological data interpreted through analogy to the Inca case. Since the arguments supporting the presence of split inheritance among the Chimu are lengthy and have been presented in detail elsewhere (Conrad 1981), I will only summarize them here.

The archaeological data are derived from the site of Chan Chan, the Chimu capital. Chan Chan sprawls over some 25 km<sup>2</sup>; at the heart of the city is a civic center covering roughly 6 km<sup>2</sup>. This central core is dominated by the 10 large, rectilinear compounds identified in Figure 2 (Gran Chimu, Bandelier, Uhle, Chayhuac, Tschudi, Rivero, Tello, Laberinto, Velarde, and Squier).

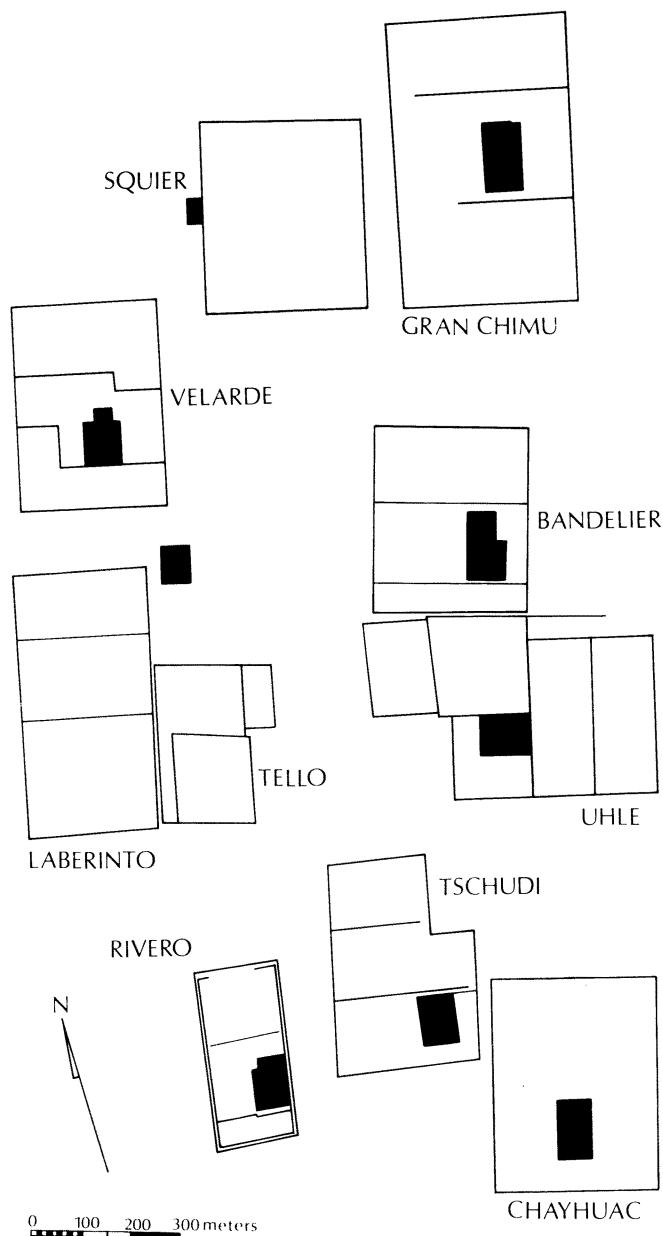
The crux of the argument for split inheritance among the Chimu is the identification and interpretation of nine specialized mortuary structures associated with the major compounds of Chan Chan's civic center. With the exception of Tello, each of these great enclosures contains or is adjacent to a truncated pyramidal mound that is the compound's largest single structural component and, in a general sense, its dominant feature. The nine mounds share a number of distinctive architectural characteristics, and they have been classified together as burial platforms.

A burial platform is defined as an elevated structure specifically designed and built to hold deceased individuals and funerary offerings. Architecturally a burial platform appears as a truncated pyramidal mound containing multiple prepared cells entered from above. Access to the top of the platform, and thence to the cells, is via one or more ramps along one face of the mound. Adjacent to this face is a forecourt that controls entrance to the ramp system. An outer wall surrounds the entire burial platform complex and separates it from its environs.

#### *Burial Platform Characteristics and Contents*

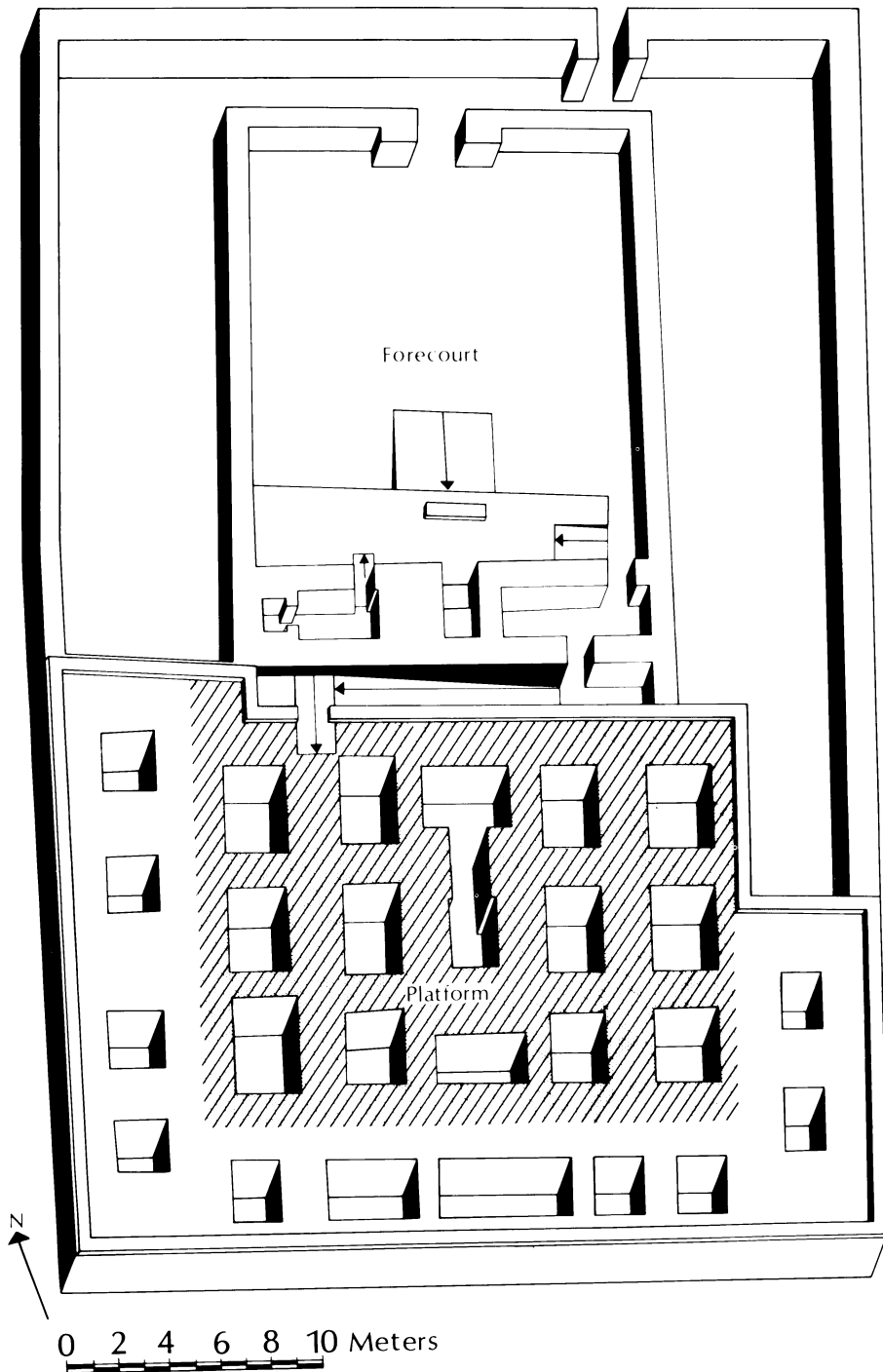
The burial platforms of Chan Chan share a number of features beyond those listed in the definition above. Platforms are characterized by multiple internal cells. The typical arrangement is one of a principal chamber with a floor plan shaped like the letter "T"; surrounding this large cell are smaller, rectangular, secondary chambers. (These mounds are the most heavily looted buildings in the civic center, and treasure-hunters have destroyed the center of most platforms. However, three mounds still display a principal T-shaped chamber. In each case this large cell is situated in the center of the platform.) All platforms are oriented north-south, with their forecourts and access ramps on the north side, and every platform except that of Squier possesses one or more structural additions built sometime after the original construction.





**Figure 2. Greatly simplified plan of central Chan Chan. Major compounds are shown in outline, burial platforms in solid black.**

Figure 3 depicts as an example Huaca Las Avispas, the platform associated with the Laberinto compound. The typical features are present: forecourt and ramp system on the north side; a central, T-shaped principal cell surrounded by smaller, rectangular, secondary cells (13 in the original platform, 24 in total); and a structural addition containing additional chambers. In this case the addition is a U-shaped block surrounding all but the north side of the platform; it fills what had been a corridor between the mound itself and the outer wall of the burial platform com-



**Figure 3.** Isometric projection of the Huaca Las Avispas burial platform complex, Chan Chan. The shaded area represents the original platform itself; note the principal T-shaped cell in the center and the surrounding rectangular secondary cells. A primary-stage structural addition containing only secondary cells extends around all but the north side of the original platform.

plex. None of the cells, either in the original platform or the addition, seem to have been permanently sealed. Perhaps they remained open to the sky; I think it more likely that they were covered with removable hatchlike mats.

Beyond this basic similarity the platforms exhibit variation in a number of characteristics: location (Figure 2), size (the platform shown in Figure 3 is one of the smallest; compare Figure 2), principal construction material (either adobe bricks or *tapia*, a concretelike substance made of mud and gravel), number and type of secondary cells, and structural additions. Detailed discussions of these characteristics and their variations are available elsewhere (Conrad 1981).

The content of the burial platforms has been established through intensive excavation of Huaca Las Avispas (Pozorski 1971) and testing in Gran Chimú, Bandelier, Tschudi, Rivero, Velarde, and Squier. This work revealed that the platforms contain large amounts of human bone and the heaviest concentrations of prestigious artifacts in the city. Fine pottery, fancy textiles, carved wood, metal objects, and *Spondylus* shell (Paulsen 1974) were all encountered in quantity. Furthermore, these objects are merely the remains of what was once a much richer assemblage; the degree of looting and relooting of the platforms is itself mute testimony to the vast numbers of high-status artifacts they once contained.

Further evidence of the special content of the burial platforms is provided by the human skeletal material excavated from Huaca Las Avispas. The remains of at least 93 individuals were recovered. However, while all 25 cells in the original platform and its structural addition were tested, no more than one-quarter of the total volume of their fill was removed. Only one cell, the smallest, was completely cleared. It held 13 complete skeletons stacked like cordwood, along with the partial remains of at least 11 more bodies that had been scattered by looters. To judge from these figures, an estimate of 200–300 burials for the entire platform would be conservative. In every case where age and/or sex could be determined the bones were those of adolescent and young adult females, which hardly seems to be a representative cross-section of the population of Chan Chan (Pozorski 1971:77–104).

#### *Burial Platform Chronology*

A relative chronology for the burial platforms has been established through a seriation of their architectural characteristics (Conrad 1981). Seriation indicates that the platforms were built one at a time in the order shown in Table 1.

Several points raised by Table 1 merit further consideration. Bandelier and Huaca Las Avispas are paired because architectural characteristics determine their placement relative to the other

Table 1. Comparison of Compound and Burial Platform Sequences, Chan Chan.

Compound <sup>a</sup>	(earliest to latest)	Burial Platform
Chayhuac		Chayhuac
Uhle		Uhle
Tello		
Laberinto		
Gran Chimú		Gran Chimú
Squier		
Velarde		Velarde
		Squier?
Bandelier		Bandelier—Laberinto
		Squier?
Tschudi		
		Tschudi—Rivero
Rivero		

<sup>a</sup> After Kolata (1978).

mounds but do not indicate which of these two platforms was built first. The same statement applies to Tschudi and Rivero. Furthermore, the available data do not completely resolve the temporal position of Squier, and two alternatives must be offered. Otherwise, the platforms provide an internally consistent picture of sequential construction. In addition, as I have previously emphasized, the burial platforms are directly associated with the major compounds of the civic center. On the basis of formal variations in adobe bricks and other features, Alan Kolata (1978) has been able to demonstrate that the compounds, like the burial platforms, were built one at a time. Kolata's compound sequence is also presented in Table 1.

As is evident from the table, the compound and burial platform sequences are generally similar, but not identical. The discrepancies involve relatively early compounds; in particular, it seems clear that burial platforms were not added to Laberinto and Squier until well after those enclosures had been built. This evidence argues that while the civic center of Chan Chan was eventually characterized by a repetitive architectural pattern of one compound/one burial platform, the pattern was incompletely developed when the city was founded and only gradually rigidified.

#### *Functional Interpretation of Burial Platforms*

In the past, speculation about the nature and significance of the platforms has produced some widely varying interpretations. Previous investigators do not seem to have realized that these structures should be classified together as one type of building. Instead, individual platforms have been identified as palaces, harems, mausoleums, prisons, granaries, etc. (Tschudi and Rivero 1855:265-266; Hutchinson 1873:vol. II, 137; Squier 1877:142-143, 156-159; Peet 1903:171; Kroeber 1928:15; Holstein 1927:53; Horkheimer 1965:19; Rodríguez Suy Suy 1968:139-141). I am convinced, however, that the archaeological evidence identifies the burial platforms as the mortuary structures of extremely high-status citizens of the Kingdom of Chimor.

In fact, the data argue that the typical Chan Chan burial platform was built to be the mausoleum of a single highly important individual. The disposition of the cells in the platforms—a repetitive pattern of a central principal chamber, presumably T-shaped, surrounded by smaller secondary cells—suggests that each platform was built in honor of one person, who was interred in the main chamber upon his death.

The demise of this person triggered an elaborate funerary ritual whose several stages extended over a considerable period of time. When the body of the principal individual was placed in the main chamber, vast quantities of offertory goods were installed with him and in some or all of the secondary cells. Included among these items were fine pottery, fancy textiles, carved wood, weaving equipment, and metal objects, along with whole and ground *Spondylus* shell.

Ritual human sacrifice must also have been an important aspect of the ceremony. Secondary cells are both formally and locationally subsidiary to principal chambers, and it seems logical to conclude that persons buried in the former were of lesser rank than individuals entombed in the latter. More specifically, human sacrifice provides a satisfactory explanation for the narrow demographic profile seen in the skeletal remains from Huaca Las Avispas: namely, that the bones are those of young women who were killed ritually and then installed in the platform to stress the importance of the individual interred in the main chamber.

After this first phase of the funeral rites had been completed, an interval of time elapsed. Then the person in whose honor the platform had been built was commemorated by repeating elements of the original ceremony. A so-called primary-stage structural addition—a U-shaped block containing further secondary cells (Figure 3)—was erected around three sides of the platform. As part of this second ceremonial phase the new cells in the addition were stacked with further prestige artifacts and human sacrifices. In fact, if the chambers in the addition were not all filled at the same time, the "second" ceremony was itself repeated on several occasions.

The repetition or recelibration of funeral rites suggested here is a well documented Andean tradition that has persisted into modern times (Valcárcel 1946:474; Cieza 1959:312; Rowe 1962:131). Bandelier (1904) reviewed Colonial accounts of such practices and summarized the matter as follows:

Not only was the ancient mode of burial extensively practiced until more than a hundred years after the first arrival of the Spaniards, but the cloth with which all the corpses (ancient and modern) were covered, was periodically renewed, as late as the middle of the seventeenth century . . . food and drink were also replaced from time to time . . . [Bandelier 1904:224, emphasis in original].

Finally, in at least five cases another structural addition was annexed to the platform after the erection of the primary-stage addition. These terminal constructions, which are known as secondary-stage additions, are lesser platforms built near or adjacent to the main mound. Cells in secondary-stage additions tend to be elaborate; at least two of these structures (in Velarde and Tschudi) contain smaller replicas of the principal T-shaped chambers of the original platforms.

The relatively elaborate cells found in secondary-stage structures indicate that the persons buried therein were of high rank, but obviously not the equals of the individuals entombed in the principal chambers of the main platforms. The presence of T-shaped cells in secondary-stage additions argues that the persons for whom such structures were built were somehow affiliated with the individuals for whom the main platforms and primary-stage additions had been erected. In short, the architectural evidence leads me to believe that secondary-stage additions were the burial places of important persons who had a close relationship to the individuals interred in the principal cells of the main platforms.

In general, this reconstructed cycle of use shows that the burial platforms of Chan Chan were the mortuary structures of a few extremely high-ranking citizens of the Chimu Empire. More specifically, I feel that it is possible to identify those individuals as the kings of Chimor.

To confirm this assertion the platforms must meet three criteria. First, there must be a relatively small number of these structures, since Chimor had relatively few kings (Vargas Ugarte 1936:231-233; Rowe 1948:39-40; Rostworowski 1961:54-55; Kosok 1965:73). Second, the platforms must have been built sequentially, as the empire had only one supreme ruler at a time. Third, they must represent the highest-status funerary treatment in the empire because the king held the highest rank in the Chimu state.

The first two conditions have already been satisfied: there are only nine burial platforms in central Chan Chan, and they were built one at a time. Furthermore, archaeological survey in other regions of Chimor has yielded no evidence of more lavish mortuary treatment, either in terms of size and complexity of burial place, amount and quality of grave offerings, or grandeur of attendant funerary rites. The burial platforms were indeed the most prestigious tombs in the empire, and by implication the individuals interred in their principal cells were persons of paramount status in the Kingdom of Chimor. Therefore, the platforms have met all three criteria, and I conclude that they were indeed the burial places of the kings of Chimor.

#### *Functional Interpretation of Major Compounds*

As was the case with the burial platforms, the function of the major compounds of Chan Chan has provoked considerable speculation in the past. The great enclosures have been identified as the residences of clans, craft guilds, the urban elite, etc. (Tschudi and Rivero 1855:265-266; Squier 1877:159-160; Kroeber 1930:80; Schaedel 1951:232; Bennett and Bird 1960:312-314; Horkheimer 1965:19; Kosok 1965:77; Rodríguez Suy Suy 1968:141). However, a more precise delimitation of the function of the compounds is made possible by the identification of the burial platforms as the royal mortuary structures of the Chimu Empire. Since the platforms were built to hold the kings of Chimor after their deaths, it seems most probable that the compounds with which the platforms are associated were designed to house those kings during their lives and were, in short, their palaces. This argument is supported by other lines of archaeological evidence (Day 1973).

Accordingly, it seems that Chan Chan was characterized by a pattern, incompletely developed at first but eventually rigidified, of one king/one palace/one burial platform. The exact date of crystallization is equivocal (Conrad 1981; Kolata 1978); the founding of Chan Chan cannot be precisely dated at present, but the city may have been settled as early as A.D. 850 (Kolata 1978:172) and was well established when the Chimu Empire began its expansion in the thirteenth

century (Moseley 1975a:219). It seems most likely that experimentation with varying architectural expressions of royalty typified the pre-imperial phase of Chimu history, while the pattern of one king/one palace/one burial platform was finalized during the imperial phase.

#### *Analogy to the Inca Case*

I submit that the most satisfactory explanation for the pattern described above is the law of split inheritance as it is known from Inca ethnohistory. That is, Chan Chan possesses certain archaeological features that are expectable consequences of the operation of such a law. (For a more systematic development and assessment of the analogy see Conrad [1981].)

First and foremost of these characteristics is, of course, the sequential construction of palaces and burial platforms that were richly stocked with prestigious goods. This phenomenon clearly suggests that the kings of Chimor did not inherit the property of their predecessors.

Less obvious, perhaps, but equally important is the evidence for the existence of corporate social groups affiliated with dead rulers. In Inca society these corporations continued the veneration of their royal ancestors and held property in trust for them. Primary-stage structural additions, affixed to burial platforms in order to repeat aspects of the original funeral ceremony, indicate that the cults of the Chimu rulers were indeed maintained after their deaths. (Also, there is no evidence that burial platform cells were permanently sealed; perhaps the bodies of dead kings remained accessible and were brought out to take part, and be worshipped, in public ceremonies.) Furthermore, secondary-stage additions, annexed to burial platforms and containing elaborate cells (including smaller replicas of the principal T-shaped chambers of the main platforms), argue that the royal palaces continued to be occupied by important individuals closely affiliated with the dead kings of Chimor. Again, ethnohistoric parallels suggest that these persons were members of *panaqa*-like social groups charged with maintaining the veneration of past Chimu rulers.

I conclude, therefore, that the major compounds of Chan Chan were the palaces of the kings of Chimor. Each ruler built one such structure to house himself, be the seat of his government, and serve as the center for the management of his property. After his death a king was interred in his burial platform, while, in accordance with the law of split inheritance, his palace passed into the care of a corporate social group containing his secondary heirs. Members of this group managed the deceased ruler's estate and maintained his cult; some of these individuals continued to occupy their ancestor's palace and were eventually entombed in the secondary-stage addition to his burial platform. The dead ruler's principal heir became the next king of Chimor and built a new palace and burial platform, repeating the pattern.

#### AN INTEGRATIVE MODEL FOR CHIMU AND INCA EXPANSIONISM

Six phenomena have been identified as common characteristics of the Chimu and Inca empires: militaristic expansion, divine kingship, a divine right to property, labor taxation, large-scale land reclamation projects, and split inheritance. Anyone wishing to develop a model that will account satisfactorily for the expansion of both empires must face the problem of showing how these six factors were integrated in Chimu and Inca society. I will attempt to deal with this question by breaking it down into three related problems: the origins, immediate effects, and long-term consequences of split inheritance.

The model to be presented here relies heavily on Inca ethnohistory. Insofar as I can turn any of the model's aspects into hypotheses and test them against archaeological data, I will. However, there has been simply too little archaeological investigation of Chimu and Inca provinces, where many of the necessary data lie, to permit exhaustive corroboration at present. Nonetheless, just as Inca ethnohistory pointed the way to archaeological confirmation of split inheritance among the Chimu, ethnohistorical data can serve to identify the hypothetical implications of the model that should be tested by future archaeological research.

In brief, I will argue that split inheritance originated through conscious manipulation of traditional elements of Andean ideology. The most immediate and obvious effects of this manipulation were continuous pressures for imperial conquest and/or reclamation of land. While these

pressures drove both empires to their zeniths, the unforeseen long-term consequences of split inheritance were disastrous administrative and economic stresses. Neither Chimu nor Inca society could cope with these consequences forever. In both cases the final result was rapid systemic collapse and the death of empire, ostensibly through conquest from outside, but in reality through inability to bear the burden of split inheritance any longer.

*Origins of Split Inheritance: Manipulation of Traditional Elements of Andean Ideology*

Inca religion, reduced to essentials, was a form of ancestor worship (Zuidema 1973). Indeed, ancestor worship is an ancient and widespread Andean religious tradition; perhaps the best indication of its fundamental position in Andean life is the fact that it survived repeated, vigorous attempts to eradicate it during the Colonial era and has persisted to this day (Arriaga 1920; Mishkin 1946:465; Valcárcel 1946:474). In the Inca Empire ancestor worship occurred on the folk level, in the cult of the ruling dynasty, and in the official state religion. On the folk level the local kin group's ancestors were seen as its protectors, the bodies of the dead were treated as sacred objects, and burial offerings were renewed on a regular basis (Bandelier 1904; Rowe 1946:286, 297–298). In the cult of the ruling dynasty the mummies of past rulers were maintained in state, consulted in times of stress, and brought out to attend important ceremonies, in which they played a vital role (Rowe 1946:259, 308; Cieza 1959:189; Rostwororski 1960:418). Finally, the official state religion, the cult of the sun, was simply the worship of the ruling dynasty's celestial ancestor.

Divine kingship and a ruler's divine right to property are logical tenets of political ideology in a preindustrial state whose religious tradition is one of ancestor worship. Yet the combination of divine kingship and the divine right to property constitutes an inherent conflict. As a demigod, an Inca ruler did not completely forfeit his influence when he died. Although he ceased to be head of state, he retained powers and privileges conferred by his divine status. However, the continuing powers and privileges of a dead king could create problems concerning his wealth; in a sense, a legal conflict between the deceased ruler and his successor over control of the former's property was inherent in Inca culture. Both men could in theory lay claim by divine right to any property they desired; in the case of the possessions of the dead king, who was still an important spiritual presence, their potential claims overlapped. This innate dispute could not be settled on the basis of status, since the two contestants were equals.

Among the Inca the formalized type of split inheritance described previously, along with the imperial phase of Inca history itself, began with the reign of Pachakuti (1438–1471). I contend that it originated because Pachakuti recognized the implicit dispute, made it explicit, and turned it to his own advantage. In essence, I suggest that Pachakuti reasoned, "This conflict exists and must be resolved. It cannot be settled on the basis of status, so I will resolve it on the basis of priority. All property that I accumulate will remain mine because I had it first. My successors must trust to their own abilities, as befits an Inca ruler." In so doing Pachakuti insured that when his turn to be worshipped as an ancestor came around, his cult would be maintained in style. The later creation of estates for his predecessors was a masterful stroke that made his decision seem logical and just, even altruistic, rather than purely selfish. I do not want to seem unduly cynical about Pachakuti, who was a charismatic leader in the true sense of the term and whose motives may well have been mixed, but there was undoubtedly a heavy dose of self-interest in his actions.

This explanation for the birth of Inca split inheritance—Pachakuti's conscious manipulation of traditional ideological elements derived from ancestor worship—recalls Flannery's (1972:415–416) account of the rise of great family estates in nineteenth-century Oaxaca. Flannery attributes this phenomenon to one individual's devious tampering with the widespread Mesoamerican institutions of *mayordomía* and *cargo*; he calls these actions "perversion of a ritual regulatory mechanism." "Perversion" seems much too harsh a word for Pachakuti's deeds, and I prefer the less judgmental term "manipulation," but the general process is the same.

If one asks why Inca split inheritance began under Pachakuti and not under an earlier ruler, there are several possible answers. Pachakuti was evidently a great prober and questioner of his

own culture (Rowe 1946:206–207, 1960); perhaps previous Inca leaders did not recognize the inherent conflict. Alternatively, before Pachakuti there may have been a more limited form of split inheritance later seen among Inca provincial administrators, in which the law applied to prestigious goods and other portable possessions, but not to lands, buildings, etc. (Rowe 1946:261; Moore 1958:97; Conrad 1977:10, Note 18). If so, Pachakuti's innovation was not strictly the formulation of split inheritance, but the extension of the law to cover all royal property.

Furthermore, Pachakuti ascended the throne while the Chimu Empire, which later fell to him and his son Topa Inca, was still the largest, richest, most renowned state in the Andean world. Split inheritance characterized the Chimu Empire, and one may well ask whether Pachakuti independently duplicated the actions of some long-dead Chimu ruler, now anonymous, or whether he simply borrowed the final form of split inheritance wholesale from the Chimu. I cannot answer this question. In fact, I cannot even state with certainty that split inheritance did not predate the Chimu. The time and place of the law's first manifestation can only be resolved by future research on earlier Andean polities. What I do argue is that each time the law appeared, it arose through the process described here.

*Immediate Effects of Split Inheritance: Constant Pressures  
for Imperial Expansion and Reclamation of Land*

One immediate effect of split inheritance should be obvious: it greatly increased the material demands of leadership. By resolving the implicit dispute in favor of the previous ruler, it left a newly enthroned king rich in privileges, but property-poor. Therefore, split inheritance forced an ascending ruler to acquire his own possessions so that he might live in the manner befitting an emperor, strengthen his administration by rewarding his supporters, and insure the maintenance of his cult after his death.

The problem of how the new king could obtain those possessions raises the question of what were the sources of wealth in the Chimu and Inca empires. As I have noted previously, the economic basis of both states was a system of labor taxation. As heads of state, Chimu and Inca rulers had the right to make claims on the labor of taxpayers (more specifically, on the surplus labor time remaining after citizens had satisfied the subsistence needs of their own kin groups). This surplus labor provided most of the goods and services to which imperial leaders were entitled. Referring to the Incas, the chronicler Bernabé Cobo (1890–1895:vol. III, 289) said succinctly: "all [the kings'] wealth consisted in the multitude of vassals which they possessed" (translation and interpolation by John V. Murra [1958:34]).

Hence, in order to accumulate property, rulers needed groups of workers to draw upon, and they had two principal means of obtaining such labor pools. First, a king could impose new taxes on the existing provinces of his empire—all taxes instituted by previous rulers remained in effect. Second, he could conquer new territories, annex them to the empire as provinces, and levy taxes in them. An alternative way of phrasing the matter would be to say that a king could obtain wealth by increasing the tax burden on his existing subjects (demanding more labor time from citizens of existing provinces) or by enlarging the taxable population of his empire (through conquest and/or promoting population growth in established provinces).

However, a Chimu or Inca ruler could not levy taxes at will in his provinces, be they new or old. Andean principles of reciprocity demanded that laborers engaged in fulfilling tax obligations be sustained and entertained by the beneficiary of their work. Therefore, in both empires the king's basic economic need was agricultural land that could be used to support the taxpayers who provided him with tangible wealth. If a ruler brought more subjects under his domain, he needed more land to support them while they worked for him. If he demanded more labor from the taxpayers at hand, he needed more land in order to sustain them for longer periods of time.

Accordingly, split inheritance emerges as the prime mover behind both imperial expansion and reclamation projects. This law left a newly crowned Chimu or Inca ruler without real property of his own; in order to amass property, he had to enlarge the tax revenues from his empire. Yet no matter how a king chose to increase taxes, he faced the fundamental problem of obtaining more



arable land. Expansion and reclamation were the two alternative solutions to that problem. Herein lies the real purpose of Isbell's (1978) energy averaging strategies, which were intended to insure the presence of many well-fed taxpayers with ample surplus labor time that could be tapped by their leaders. But the underlying problems, the needs and desires of individual rulers, were themselves caused by the law of split inheritance.

I do not mean to imply that split inheritance was the only reason for militaristic expansion. Rowe (1946:274) and Bram (1966:65–79) have listed some other motives for Inca conquests: a tradition of Andean warfare responsible for “the feeling that fighting was the natural and proper occupation of any able-bodied man” (Rowe 1946:274); the personal glory and advancement with which distinguished warriors were rewarded; an occasional need to stop outsiders who were provoking provincial rebellions; and at times the desire to keep the army occupied and prevent its generals from engaging in political intrigue. What I do suggest is that as causes of expansion such factors were secondary motives reinforcing the primary pressures generated by split inheritance.

#### *Long-Term Consequences of Split Inheritance: Administrative Stress*

Expansion fueled by split inheritance cut two ways. It built the Chimu and Inca empires in the first place, but it also undermined what it had built by subjecting those states to several kinds of administrative stress. One potential danger is fairly clear: cumulative growth could overextend an empire's lines of communication, leaving its rulers to make crucial policy decisions on the basis of critically incomplete or out-of-date information (Trigger 1978:204–205). It is difficult to judge the exact extent of this problem in the two empires, but even a glance at a map (Figure 1) shows that it must have been more serious in the Inca case. Undoubtedly the difficulties of communication helped to further the cause of ethnically based provincial rebellions, to which the Inca Empire was always prone.

The Inca also illustrate a subtler, but perhaps graver, peril posed by split inheritance—namely, that the law threatened governmental stability by undercutting the emperor's authority. Explanation of this statement requires consideration of the *panaqas*, or royal *ayllus*, the corporate social groups affiliated with the Inca rulers.

*Panaqas* derived their power from their size, political position, and affiliation with the emperors. Upper-class polygyny enabled the royal corporations to grow swiftly. The *panaqas* still had over 500 living members in 1603—that is, after a period of about 75 years in which the Inca nobility had been ravaged by a civil war immediately preceding the Spanish Conquest, the conquest itself, subsequent Inca uprisings, the civil wars of the Spanish colonists, and European diseases (Rowe 1946:257). Undoubtedly, most preconquest *panaqas* were much larger.

Furthermore, whenever possible the highest positions in an Inca emperor's administration were filled by his close male relatives—in other words, by members of the royal *ayllus*. Hence, no matter what the emperor himself might desire, his most important functionaries had a vested interest in maintaining the rights of the *panaqas*.

Complementing these factors was the law of split inheritance, which provided a powerful sanction for the activities of the *panaqas*. The major stated function of these groups was to perpetuate the mummies and cults of past rulers. Ideally, then, the governing emperor's authority could not override the rights of the royal corporations because the latter had been entrusted with their duties—and had been given the powers and privileges needed to carry out those duties—by previous rulers. Members of a *panaqa* could always justify their deeds by claiming to be working on behalf of their ancestor. In fact, given the Inca practice of consulting the mummies of the dead, a *panaqa* could assert credibly that its actions had been directly ordered by a deceased emperor.

In short, split inheritance reinforced the position of the *panaqas* as large, privileged groups enjoying a degree of autonomy unparalleled elsewhere in the despotic Inca state. Friction between the emperor and the royal *ayllus* was a destabilizing force in the Inca government, and at times the enmity of the *panaqas* even threatened the throne (Rostworowski 1960:419).

Archaeological evidence suggests that the kings of Chimor faced a similar difficulty. At least,

the secondary-stage additions to the burial platforms of Chan Chan indicate the presence of *panaqa*-like groups in the Chimu capital. Some members of these groups occupied the palaces of deceased kings, while others lived in the so-called "intermediate architecture" of central Chan Chan (Klymyshyn 1976). The zone of intermediate architecture housed the capital-based echelons of the Chimu administrative hierarchy. This zone, and the amount of intermediate architecture within it, grew through time; its growth was virtually explosive during the last century of the city's occupation (Klymyshyn 1976; Kolata 1978). These archaeological data imply a rapidly increasing upper nobility, who must have posed problems for Chimu rulers.

#### *Long-Term Consequences of Split Inheritance: Economic Stress*

The economic effects of split inheritance were equally deleterious. The law entrusted a ruler's lands and their products to his *panaqa* in perpetuity. Therefore, as each ruler died, his lands were lost to the succeeding administrations of the empire. As the number of former rulers grew, ever greater amounts of prime farmland became tied up in the hands of dead men (Rostworowski 1960:418). In other words, cumulative applications of the law placed increasingly large quantities of land outside the control of the state and beyond the use of its citizens.

Likewise, split inheritance reduced the state's labor resources by making demands upon them. Originally these demands were of two types. First, at times large amounts of labor were invested in bringing new lands under cultivation for the personal use of a ruler (Rostworowski 1962:135-136). Second, a ruler's lands had to be worked on a yearly basis. Needless to say, any labor invested in reclaiming or farming these private holdings was not available to the state for other purposes; as the number of royal estates grew, so did the amount of labor that was lost to the state.

Matters became even worse during later Inca times, when royal estates (and the private lands of the *panaqas*) were no longer worked by regular taxpayers. Instead, cultivation of the lands of rulers (and *panaqas*) was assigned to a class of full-time retainers known as the *yana*. In fact, Rostworowski (1962:133, 1966:32) suggests that the Inca nobility's desire for a completely secure and dependable labor force to work its private holdings was the reason for the creation of the *yanaconate*. A wish to be freed from costly reciprocal obligations to taxpayers may also have made reliance on the *yana* attractive to the nobility.

This replacement of taxpayers by retainers significantly increased the amounts of labor and land withdrawn from the state. Taxpayers farming royal estates would have been lost to the state only temporarily—that is, only during their actual period of service on private lands. Their remaining surplus labor time would have been available to the state for other purposes. In contrast, *yana* represented a permanent loss; they devoted their full time to the service of the nobility and were exempt from normal taxation. Furthermore, *yana* were not sustained by the products of the royal holdings; additional lands were provided for their support. Hence, upon the death of a ruler not only his estates, but also the *yana* who worked them, plus the lands reserved for those retainers, were turned over to the care of his *panaqa*.

These losses of land and labor may have been bearable as long as new conquests brought in fresh supplies of acreage and taxpayers. However, as I have argued, continuing expansion had its own drawbacks. Furthermore, to make the trap even tighter, should the pace of conquest slacken, as it did dramatically during later Inca history, reclamation of land in established provinces would become the principal means of creating royal estates (or other new agricultural tracts). The disadvantage of this solution was that it represented a major commitment to marginal farmland. Taxpayers had to be diverted from other projects to reclaim such land, after which *yana* (or other taxpayers) had to be provided to cultivate it. In late prehistoric times Inca rulers, driven by the law of split inheritance, were forcing their empire to invest heavily in, and become increasingly dependent upon, marginal land. In so doing they were making the empire ever more vulnerable to the short- or long-term climatic deteriorations that figure so heavily in Paulsen's (1976) and Isbell's (1978) models.

The scanty evidence available at present suggests that the Chimu suffered the same economic

consequences of split inheritance. At least, it is clear that during the later part of its history Chimor was highly dependent on marginal land. The Chimu invested massive amounts of labor in the construction of multi-valley canal networks, in one case linking five river valleys into a single irrigation system (Kosok 1965; Moseley 1977, 1978:502). These projects opened vast amounts of previously unfarmable desert to cultivation, but the reclaimed land remained highly sensitive to variations in the highland rainfall and runoff from which the arid coast derives its irrigation water.

#### *Long-Term Consequences of Split Inheritance: Imperial Collapse*

The reign of Huascar (1525–1532), the last independent ruler of the Inca Empire, is notorious for a bitter power struggle between the emperor and his half-brother Atahualpa. Their contest began as a verbal legal dispute and reached its climax in the disastrous Inca civil war. In conducting his campaigns Atahualpa played on disaffected ethnic groups chafing under Inca rule, and the civil war devastated the empire. Then, in one of the supremely ironic moments of history, Atahualpa achieved final victory just in time to be defeated by Francisco Pizarro's 168 Spaniards. Their capture of Atahualpa formalized the end of the Inca Empire as a sovereign polity, but to take this fact at face value as proof of imperial destruction by conquest from outside would be ridiculous. The external conquest was only made possible by the internal events that preceded it.

Those events transpired because the administrative and economic stresses on the Inca Empire became critical during Huascar's reign. When Huascar ascended the throne, the empire was overextended and no longer able to expand. (Even Huascar's father, Huayna Capac, had made relatively few new conquests.) Some marginal land was still available for reclamation (Rostworowski 1962:135–136), but its quantity and quality do not seem to have been enough to suit Huascar. The shortages of land and labor preventing him from amassing the estates befitting an Inca emperor became too much for him to bear. Huascar knew exactly where to put the blame—on split inheritance. The chronicler Pedro Pizarro (1844:240) relates that Huascar, "annoyed one day with these dead [his ancestors], said that he ought to order them all buried and take from them all that they had, and that there should not be dead men but living ones, because [the dead] had all that was best in the country" (translation and interpolations by John H. Rowe [1967:68]).

In a religious tradition of ancestor worship these words were heinously sacrilegious. Politically they were just as bad. Pizarro (1844:240) goes on to report that Huascar's frustrated outburst infuriated the Inca nobility. The *panaqas*, recognizing Huascar's speech as a clear threat to their powers and privileges, openly or covertly threw their support to Atahualpa (Rostworowski 1960:425, 1962:133–134). With this political power base and the military aid of several disgruntled ethnic groups, Atahualpa launched the civil war that not only cost Huascar his life, but ravaged the Inca Empire to the point where a handful of Spanish adventurers could topple it.

I strongly suspect that just as internal economic and administrative stresses ultimately weakened the Inca Empire and left it open to the Spaniards, those same consequences of split inheritance weakened the Chimu Empire and left it open to the Incas. Granted, the Inca conquest of Chimor does not have the same wildly implausible air as the Spanish Conquest of Peru, but it did take place in the 1460s when, on paper at least, Chimor was the better integrated and stronger state. Pachakuti himself did not feel ready for war with the Chimu when he was drawn into it through a bizarre combination of circumstances. His strategy—an offensive thrust across some 800 km of unsubdued highland territory, followed by a descent to the coast to strike at the heart of Chimor—seemed to be a desperate gamble. Yet it succeeded so easily that one cannot help but believe Chimor was already rotting from within (Rowe 1948:42–45).

#### *Summary*

The model presented here can be summarized as follows. The law of split inheritance originated through a ruler's self-interested and goal-oriented, but apparently minor, modifications of

traditional ideological elements. However, those seemingly slight changes had major unforeseen consequences. Split inheritance made necessary constant imperial expansion (and reclamation projects) by forcing each ruler to obtain his own sources of land and labor in order to maintain himself in proper style, strengthen his administration by rewarding his supporters, insure the survival of his cult after his death, and achieve other personal goals. As each ruler succeeded in fulfilling these aims, he enhanced his own power and prestige, but he also helped to define the levels of power and prestige appropriate to leadership, thereby increasing the pressures on subsequent rulers to keep up the pace of growth. Cumulative applications of split inheritance produced administrative and economic stresses that appeared to be relieved, but were actually exacerbated, by further expansion. At first those stresses were felt mainly by the rulers, but as the empire approached its scale limits, they began to affect society more widely. Eventually the stresses could no longer be managed, and the empire started to disintegrate. The final fall was merely hastened by a push from outside.

To rephrase this argument in the language of systems theory, the pre-imperial Chimu and Inca were small polities in a state of dynamic equilibrium. Each cultural system remained that way until a ruler's purposeful manipulation of an ideological regulatory mechanism produced the law of split inheritance. This event shifted the system from a state of dynamic equilibrium to a deviation-amplifying feedback cycle demanding constant growth. The feedback cycle itself generated stresses that gradually affected more and more of the system. Eventually these stresses overtaxed the capacities of the system's control apparatuses, and the system collapsed. In other words, the Chimu and Inca followed the trajectory described by Yoffee (1979) for the Old Babylonian dynasty: they planted the seeds of their own destruction, and then they reaped the fatal harvest.

#### CONCLUSION: IMPLICATIONS FOR CULTURAL MATERIALISM

Clearly, I have been arguing a position antithetical to that of cultural materialism. Superficially, Chimu and Inca expansionism had ideological motives and justifications: conquest was said to be a way of spreading civilization and the true religion. However, in both cases the real motive for expansion was rulers' needs for land and labor. So far we are standing on solid materialist ground, watching an ideological smokescreen mask economic causality. Yet if we ask the deeper question of what created the rulers' economic needs in the first place, the answer—split inheritance—leads us not to environmental or technological factors, but back into the realm of ideology.

Obviously this model can benefit from further refinement, but I submit that even in its present, rough-hewn form, it is superior to the cultural materialist models discussed earlier. Unlike Paulsen's (1976) and Isbell's (1978) explanations, the split inheritance model accounts for both the Chimu and the Inca; the parallels between the two empires are seen as evidence of a shared cultural process. The model does not rely on an inadequately dated (and, in fact, for the Peruvian highlands completely hypothetical) period of climatic deterioration. If climatic change did occur, however, it can be accommodated in the model as a factor that made a problem posed by the existing sociocultural situation—dependence on marginal land—even more dangerous. Likewise, the model does not require the false assumption that population growth is an automatic tendency of agricultural societies. If population increase in established provinces (as opposed to the annexation of new peoples) figures in the process at all, it can be explained as the result of a consciously promulgated imperial policy motivated by a desire to increase the number of taxpayers. Insofar as the split inheritance model is one of cultural change due to stress, it answers the necessary questions posed by Cowgill (1975:507). It tells specifically who was feeling the stress, shows that they were in a position to do something about it, and explains why they did what they did. Finally, it avoids the questionable assumptions that all cultural change is due to stress or that cultures will necessarily develop in response to stress (Cowgill 1975:505, 515-517). The formulation of split inheritance, as in Pachakuti's case, was not a response to stress, but the recognition and seizure of an opportunity. There were subsequent stresses on the Chimu and Inca empires, both of which responded to those pressures for as long as they could, but when the critical point was

reached, neither society moved on to a higher level of integration. Instead, they both collapsed.

The conclusion I draw from all of the foregoing is a rejection of the principle of techno-environmental, techno-economic (infrastructural) determinism. In other words, the theory of cultural materialism provides an inadequate explanation of prehistoric phenomena. The cultural order of ancient civilizations cannot be treated as a mere superstructure without causal power, derived from and shaped by material foundations. I am not trying to deny importance to material conditions—after all, the economic consequences of split inheritance figure rather heavily in my model. I am merely asserting that nonmaterial factors are equally able to play causal roles; they can shape material conditions as readily as the other way around. If an explanation of cultural stability or change is to be satisfying, the relationships between material and nonmaterial factors are something to be demonstrated, not assumed a priori.

Still, it is not surprising that so many archaeologists have been attracted to cultural materialism. As Hawkes (1954) stated a quarter of a century ago, environment, technology, and subsistence economy are relatively easy to infer from archaeological data, while social, political, and religious institutions, along with spiritual life, are considerably more difficult. However, as Tolstoy (1969:554) points out, the belief that predominance in the archaeological record is a direct reflection of primacy in the prehistoric world leads cultural materialists into a trap: "that of considering worthy of attention, in circular fashion, only such material in culture as their approach is equipped to deal with." That is, if one attributes all cultural causality to environment, technology, and subsistence economy, then one will naturally assign them priority as subjects for research. But if one studies only environment, technology, and subsistence economy, those material conditions become simultaneously the only things that have to be explained and the only things in terms of which they can be explained. So, when the time to explain something comes around . . . *voilà!* Cultural materialism triumphs again! Secure in the knowledge that his theoretical biases have been confirmed, the cultural materialist then proceeds to ever more detailed study of material conditions, and so on. The process can repeat itself indefinitely. What it represents, of course, is the perpetuation of "the kind of closed theory that can explain everything, has no chance of being falsified (unless we expand our concepts of relevant data and ask more questions), and hence explains nothing and is not subject to scientific testing" (Cowgill 1975:513).

Frankly, I doubt that this problem can be resolved by ethnoarchaeological or more traditionally archaeological studies of relatively less complicated, small-scale societies. These societies simply leave behind too little imperishable debris, and too much of what they do leave is most directly related to environment, technology, and subsistence economy. However, complex societies leave behind both greater quantities and a wider range of debris (Trigger 1978:146), and research on such polities "ought to be bound by the preoccupations of those examining simpler societies" (Yoffee 1979:27). It is up to those of us studying complex societies, especially ones for which we have both archaeological and documentary data, to lead the way out of the cultural materialist trap.

*Acknowledgments.* The fieldwork on which part of this paper is based was carried out between 1970 and 1972 under the auspices of the Chan Chan-Moche Valley Project (1969–1975), directed by Michael E. Moseley and Carol J. Mackey. The project was sponsored by the Peabody Museum of Harvard University, funded by the National Science Foundation and the National Geographic Society, and authorized by the Republic of Peru under *Resoluciones Supremas* 0203 and 857. I would like to thank all the members of the project for their countless contributions to my education over the years; Barbara Westman and S. Whitney Powell for preparing the illustrations; Arthur A. Demarest for helping me to refine many of the ideas expressed in this paper; and John H. Rowe, as well as an anonymous reviewer, for helpful comments on the original manuscript. None of these individuals should be held accountable for any of the following contained herein: fuzzy thinking, snide remarks, or statements with which they disagree. In all such matters the guilt is mine alone.

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