

Some Political Processes of Ranked Societies

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This article explores the emergence of inequality in two regions of Mesoamerica: the Soconusco and Valley of Oaxaca. Dichotomous models that propose a continuum of political strategy (i.e., Leach 1954; Renfrew 1974; Spencer 1993; Blanton et al. 1996) are used to examine the different processes evident in the comparison of settlement, mortuary, and architectural data between these two regions. The elite in Early and Middle Formative Soconusco appear to integrate society with a comparatively external oriented and exclusionary strategy whereas in the Valley of Oaxaca Early and Middle Formative elites employed a more group-oriented, internally focused, and corporate strategy. Environment richness and proximity of competing communities may account for the primary, and perhaps unintentional, emergence of inequality in the Soconusco around 1400 B.C.E. In the Valley of Oaxaca inequality emerged as many as 250 years later in a less circumscribed area. Such environmental, political, and chronological factors may be responsible for some of the differences in integrative strategies evident in the two regions. © 2000 Academic Press

Key Words: cultural evolution; rank society; political evolution; Formative Mesoamerica.

INTRODUCTION

In this article I use settlement, mortuary, and architectural data to examine the development of political inequality in Mesoamerica. Many archaeologists have identified the emergence of self-perpetuating hierarchical human relations as one of the most fundamental evolutionary changes to have occurred in human history (Earle 1991a; Price and Feinman 1995; Arnold 1996). The evolutionary processes involved in the development of political inequality and rank society (Fried 1967) are explored in this article by comparing two regional archaeological sequences in Formative Mesoamerica: that of the Soconusco and the Valley of Oaxaca (Figs. 1 and 2 and Table 1).

The past 50 years of evolutionary analysis have demonstrated that archaeologists, with their diachronic data, are in an advantageous position to document evolutionary processes over long expanses of

time (Drennan 1991a; Rambo 1991; Spencer 1997). In fact, since the 1970s, many cultural anthropologists have abandoned evolutionary theory for structural and symbolic paradigms (see Ortner 1984). The abandonment of an evolutionary paradigm by many cultural anthropologists may be due, at least in part, to the inappropriateness of the temporal scale of their data for exploring long-term patterns of change. Ethnographic observation usually encompasses a few years, occasionally a decade, and, with the help of ethnohistoric documents, a century or two. Such a limited temporal scale contrasts with archaeological data that accesses patterns brought into focus by millennia of human history.

Archaeological data also document forms of cultural organization and evolutionary processes that have not persisted into the 20th century. Archaeologically documented phenomena such as emergent complexity (Arnold 1996)

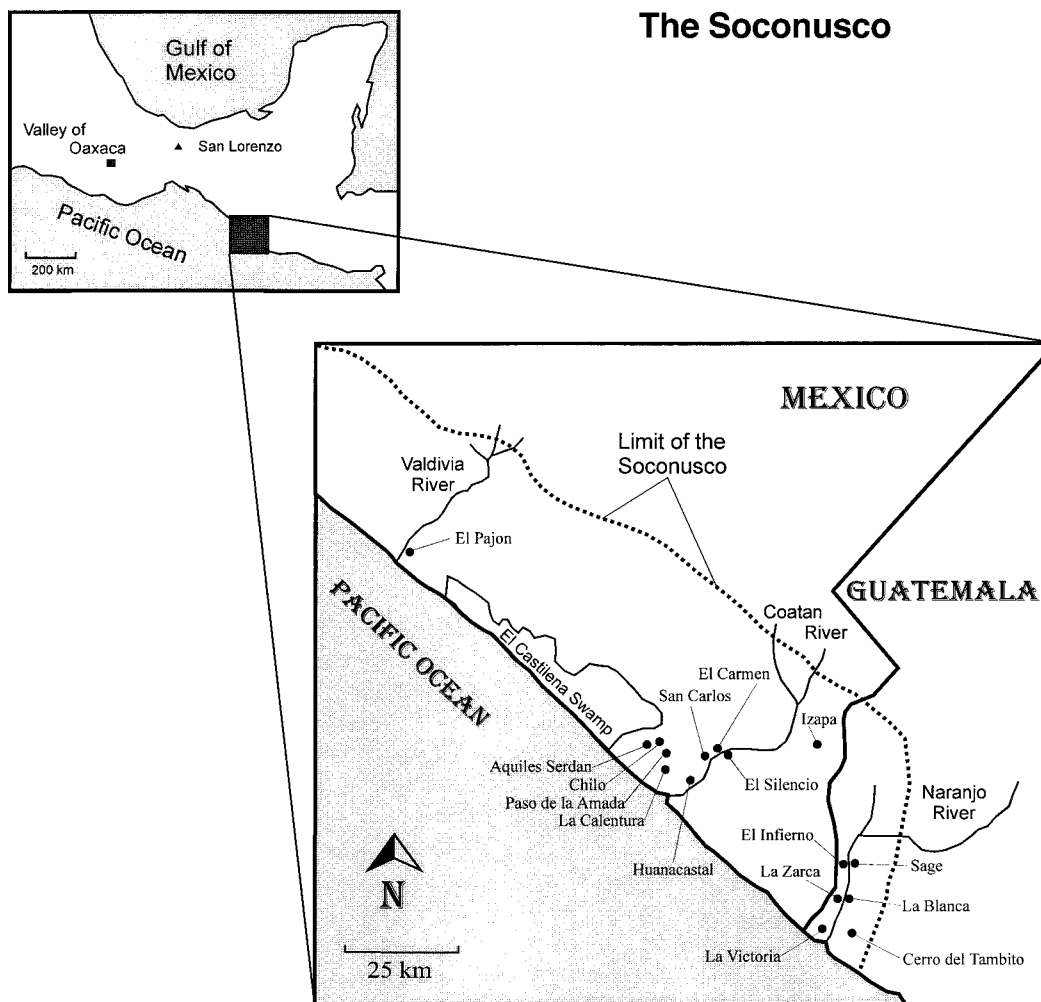


FIG. 1. Map of the Soconusco showing the location of sites mentioned in the text (after Clark 1994:45).

lack ethnographic analogs. In fact, some ethnographically documented egalitarian societies were once ranked (Hayden and Gargett 1990), and well-known foragers such as the !Kung were once agriculturalists (Wilmsen 1989). The present “devolution” of these societies is best understood as the latest stage in their evolutionary trajectories, and many of the similarities evident between such cultures may actually be the result of coexisting with postindustrial states (Fried 1975; Wolf 1982:18–19; Schrire

1984:18). It is therefore not surprising that evolutionary models, derived from ethnographic accounts, have not been satisfactory in exploring the full diversity of human history (Paynter 1989). Archaeological investigation provides not only a diachronic perspective, but a richer range of cultural organization and process (see O’Shea 1996:8–9 and Trigger 1998:163 for similar arguments). The appropriateness of archaeological materials to evolutionary investigation is neither an original nor surprising observa-

The Valley of Oaxaca

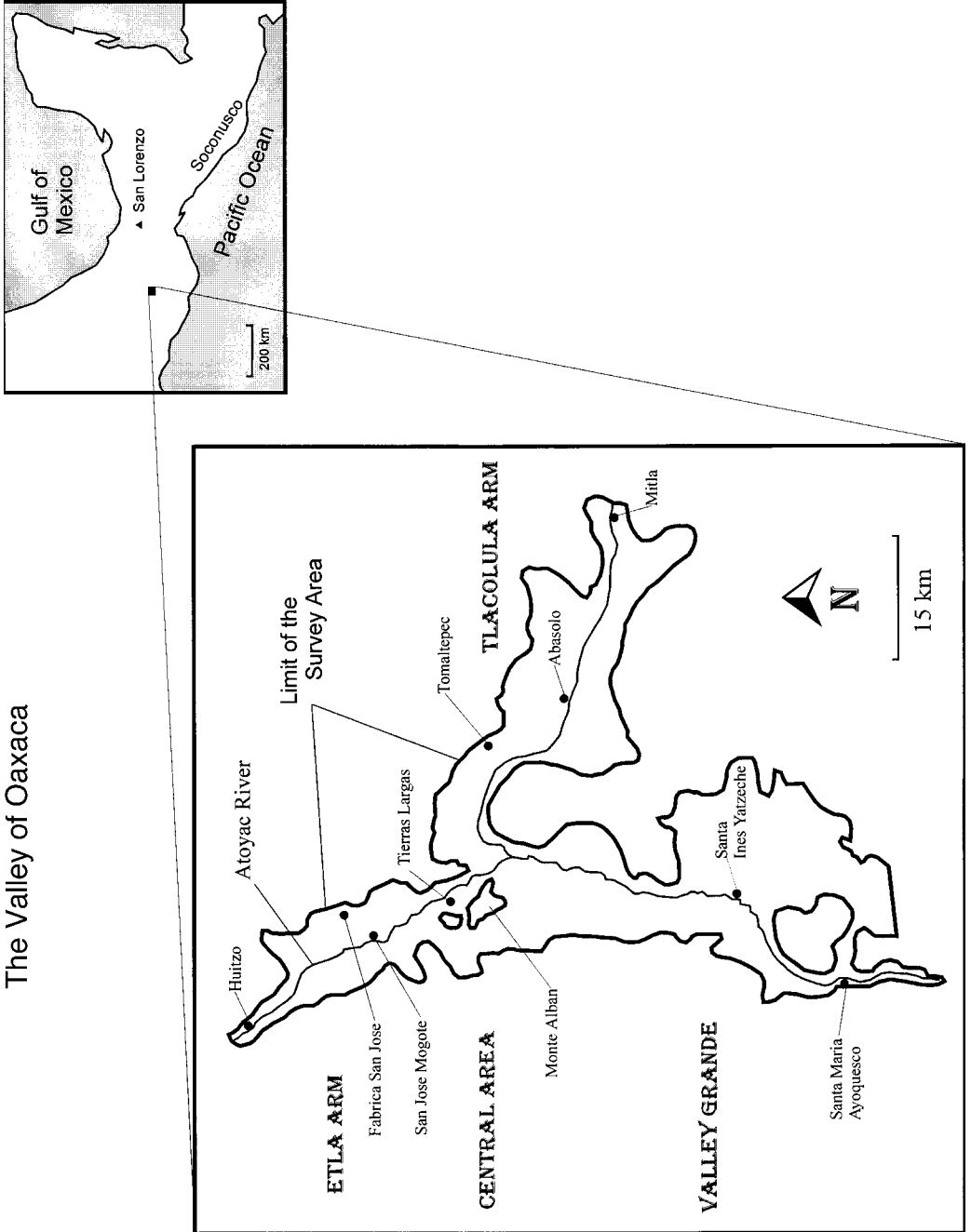


FIG. 2. Map of the Valley of Oaxaca survey area showing the location of sites mentioned in the text (after Blanton et al. 1993:51).

TABLE 1
Early and Middle Formative Ceramic Phases in the Soconusco (Blake et al. 1995) and
Valley of Oaxaca (Blanton et al. 1993)

Periods	Radiocarbon years B.C.E.	Soconusco	Oaxaca
Middle formative	650	Conchas	Guadalupe
	750		
	850		
Late Early Formative	900	Jocotal	San Jose
	1000	Cuadros	
	1100	Cherla	
Early Early Formative	1250	Ocos	Tierras Largas
	1400	Locona	
	1550	Barra	

tion (e.g., Flannery 1972:404; Plog 1974: 5–11).

Recent evolutionary studies have demonstrated that indices of complexity can change at different rates (McGuire 1983; O'Shea and Barker 1996), and societies can "skip" levels of complexity (Yoffee 1993; Liu 1996) or cycle between them (Anderson 1994, 1996). The basic premise of such studies is that cultures change over time and that such change may exhibit regularities when multiple trajectories are compared. Such is the case when cultures are historically related (e.g., Blanton et al. 1993; Drennan 1996) and also when they are not (e.g., Trigger 1993; Earle 1997). Asserting that there are developmental regularities is not a polemic stance but a hypothesis which requires documentation. The most fundamental issue faced by anthropological archaeologists interested in cultural evolution is to determine the best way to document societies when and if they change and to explore the possible regularity of such changes in order to identify evolutionary processes. If cultures do not evolve in a directional

manner, as critics have stated, then how do they evolve? What are some of the underlying processes that explain such change?

I begin this article by discussing the concepts of factional competition and peer polity interaction. Then, I evaluate a number of models that characterize society in terms of the manner in which social integration is maintained (Leach 1954; Blanton et al. 1996; Blanton 1998) and, by extension, the strategies that elite factions within a given society employ to consolidate power in rank societies (Flannery 1968; Renfrew 1974; Spencer 1993). Next, I explore these models using Early and Middle Formative settlement, burial, and architectural data from the Soconusco and Valley of Oaxaca. The results of this examination suggest that the political volatility of Formative Soconuscan society may reflect a higher degree of local competition, whereas the greater political cohesion of Oaxacan society allowed for longer lasting political organization. These organizational tendencies had a profound effect on the evolutionary trajec-

tories evident in each region. In the Soco-nusco, this resulted in the precocious development of political complexity and in the Valley of Oaxaca it led to a more stable political environment. This essay ends with an evaluation of the historical relationship affecting changes observed in the two regions which may account for the political strategies employed by the elite in each region.

SOME POLITICAL PROCESSES OF RANKED SOCIETIES

The political maneuvering that typifies rank society has received much attention recently under the rubric of factional competition (Brumfiel 1992; Spencer 1993; Brumfiel and Fox 1994). Brumfiel (1994:3) defines the process of factional competition as "... structurally similar groups... [that]... compete for advantage within a larger social unit such as a kin group, ethnic group, village or chiefdom... [and]... this internal competition provides the dynamic for political development." In the following discussion I use the concept of faction loosely as encompassing any group with shared interests that has the ability to act cohesively. A faction can be based on class, ethnicity, or lineage membership as well as on gender, age grades, business cartels, secret societies, and so on. As used here, factions *can* be based on any of these aspects of an individual's identity; although they tend to be based on social and economic factors that are redirected for political ends. Class, ethnicity, and kinship are likely to be among the most efficient and commonly employed sources of faction building in small-scale societies (see Yoffee 1995:303). While factions may not always be easily identified archaeologically (especially when factional memberships cross-cut each other), the concept is useful in a heuristic sense to conceptualize political pro-

cesses of allegiance and opposition that are not based on simple or mutually exclusive groups of people within a given society.

Factional competition occurs at many scales of society, and each scale of interaction is dynamically integrated with those above and below it. In a discussion of chiefdoms, Timothy Earle (1991b) differentiates four scales of analysis: house, community, polity, and region; and incorporates the concept of factional competition into his scales of analysis. He describes

the household and community as semi-autonomous units that may exist in competition with each other and in opposition to the overarching polity. Thus the centralization of the chiefdom should always be seen as a fragile, negotiated institution that is held together by an economic interdependence, a justifying ideology, and a concentration of force. (Earle 1991b:13)

The relationship of faction building and interfactional negotiation at a given scale and between scales may provide some of the impetus of cultural evolution (see examples in Brumfiel and Fox 1994). In addition, this perspective deessentializes the concept of political authority by acknowledging its negotiated nature. In rank societies, rather than wield uncontested power, leaders must "shore up" supporting factions and mediate between the leaders own interests, his/her factions' interests, and those of competing factions.

The concept of peer polity interaction (Renfrew and Cherry 1986) provides a useful analog for the mechanisms of factional competition and describes Earle's fourth scale of analysis discussed above. A polity is defined as an autonomous political entity not subject to the jurisdiction of a higher power where "... change is seen to emerge from the assemblage of interacting polities" (Renfrew 1986:6). If we recall Earle's (1991b:13) conceptualization of the household and community as "semi-autonomous" units then the logic of peer

polity interaction is equally relevant at a local level. The model of peer polity interaction places the locus of cultural change at the regional scale but the concept functions equally well for any scale of intergroup competition. The concepts of peer polity interaction and factional competition both focus attention on the relationship between factionalism internal to a community or polity and relations between them. Peer polity interaction and factional competition are similar insofar as both processes are based on negotiated power relationships between structurally similar groups. The larger the scale of competition, the more complex the interaction will tend to be due to the increased number of political relationships that must be coordinated. Accounting for both inter- and intragroup competition encourages the analyst to explain evolutionary patterns as a process because it is the interaction between the various scales of analysis (i.e., household, community, polity, and region) that is studied. Such a perspective avoids the description of a single scale of organization in isolation and provides a dynamic framework of analysis.

Models of Political Process

If factions are the basic political unit within a given society then *how* do they compete? A number of archeological theoreticians have focused attention on the strategies employed to mediate between factions within a society (Renfrew 1974; Spencer 1982, 1993; Drennan 1991b; Blanton et al. 1996). In such models, factions are not assumed to always be antagonistic and divisive for a society. Instead, they are the *potential fissures* along which society may divide. In this section, I review ethnographic examples from Brazil (Spencer 1993) and Burma (Leach 1954; Flannery 1968) to explore the dynamics of factionalism as well as internal and external

sources of political authority (*sensu* Sahlins 1963:292–294). I relate this discussion to recent attempts to characterize Mesoamerican society as oscillating between exclusionary and corporate modes of integration (Blanton et al. 1996).

Spencer (1993:43–44) provides two ethnographic examples of societies in Brazil that are integrated in very different ways. Among the Mekranoti-Kayapo, political leaders (called *benjadjwyr*) cultivate trade relationships with extralocal groups to procure exotic goods that they can then distribute to potential followers in exchange for their allegiance. This strategy is unstable because a number of *benjadjwyr* compete with each other to build their faction and so a single leader's influence rarely incorporates all members of his village nor does it extend to neighboring villages. As a result, followers can easily shift their allegiance to whichever *benjadjwyr* provides the best incentives. As Spencer (1993:43) observes, among the Mekranoti-Kayapo, the external dimension of power is somewhat developed but there are not internal reinforcing institutions such as lineal descent or marriage ties. This is because even the most powerful *benjadjwyr* cannot control access to the extralocal groups and so, in theory, anyone able to trade with external groups can become a *benjadjwyr*. However, in practice, the network of privileged external relationships are passed from a *benjadjwyr* to his children (Werner 1981) and so there is an ascribed tendency to this achieved status.

In contrast, the Akwe-Shavante political leaders (called *he'a*) extend their influence by cultivating relationships with members of nearby villages. This is accomplished largely through age-set ties where age cohorts organize most ceremonial activity (Maybury-Lewis 1974:147). The expanded factional base of a *he'a* provides allies when he is challenged by an aspiring leader within his own village. Exotic items

are not used for status competition and as a result external relationships are not cultivated. However, the Akwe-Shavante system is less stable, as an established *he'a* is expected to act impartially and settle disputes, whereas an aspiring leader can stir up interfactional rivalry and then assist one side in exchange for future support. As a result, the political dominance of an individual *he'a* does not last long because aspiring leaders can provide immediate support to his faction members. However, due to their age-set connection *he'a* are usually able to position their children in political leadership roles (Maybury-Lewis 1974:190). These Brazilian examples indicate that in small-scale societies Earle's (1991b) distinction between community, polity, and region can be fluid and the relationship between scales helps to explain the processes at each scale.

Over 30 years ago, Flannery (1968) presented a now-classic model for Early Formative Gulf Coast–Oaxaca interaction (but see Flannery and Marcus 1994:389). Flannery (1968) employed two ethnographic examples for his model: interaction between the Tlingit and Athabascan of northern Canada and Alaska and the Shan and Kachin of Burma. Based on these ethnographic accounts, Flannery proposed that external relations were used to bolster internal, elite status differentiation in both regions. For example, external relations might include exchange of marriage partners or ritual visits that involved the trade of exotic goods. This extraregional interaction was beneficial to the elite in both areas. The Gulf Coast Olmec elite would receive a supply of precious exotic goods which could be used to “reinforce commitments to the Olmec social and religious systems” (Flannery 1968: 81). For their part, the Oaxaca elite “emulate the religion, symbolism, dress, and behavior of the Olmec elite insofar as it would enhance their own status among

their own people” (Flannery 1968:79–80). Flannery's model emphasizes the relationship between different scales of analysis as well as the negotiated nature of political authority within each region.

Below, I discuss Edmund Leach's (1954) often-cited work in the highland Burmese village of Haplang as an additional example of the interaction between internal and external dimensions of political authority. When Leach was in Burma during the Second World War, Burmese society was divided between the Shan living in lowland valleys and the Kachin living in the surrounding hills. The Shan had long been organized as stable, feudal states supported by wet-rice agriculture that regularly produced a surplus. The Kachin had a less stable political organization and practiced slash-and-burn agriculture that could not entirely meet their nutritional needs. As a result, the Kachin turned to raiding, levying tolls on passing caravans, and forging alliances with Shan princes. Over many years the Shan and Kachin had developed a symbiotic relationship and Leach (1954:6) warns that it is “methodologically unsound to treat different varieties of political systems which we now find in the area as independent types; they should clearly be thought of as part of a larger total system.”

In political matters the Kachin had two contradictory ideal modes of political organization, the Shan system of government which resembled the feudal hierarchy of their lowland brethren and the *gumlao* system, which was egalitarian. Leach (1954:9) states:

Briefly my argument is that in terms of political organization Kachin communities oscillate between two polar types—*gumlao* ‘democracy’ on the one hand, Shan ‘autocracy’ on the other. The majority of actual Kachin communities are neither *gumlao* nor Shan in type, they are organised according to a system described in this book as *gumsa*, which is, in effect, a kind of compromise between *gumlao* and Shan ideals.

The *gumsa* community of Haplang, where Leach conducted his research in 1939 and 1940, was composed of 500 people in nine villages. According to tradition it should have had one aristocratic lineage, whose chief was the headman of one village and the headmen of the other villages would be his tenants with land rights due to historic precedent (Leach 1954:68). In reality, four of the nine headmen could claim aristocratic status and three of them actually did. In addition, the British colonial government recognized yet another man (with no traditional authority) as the chief. To make matters more complicated, the real power struggle within the community was between two factions; the first was one of the three headmen who traced aristocratic heritage. The other was a non-aristocratic headman who manipulated an aristocratic headman as a puppet leader.

Within this factionalized political environment the *gumlao* and Shan ideals were pragmatically manipulated to achieve political gain. The oscillation of the *gumsa* system between Shan and *gumlao* ideals reflect the shifting balance of internal and external sources of support in Kachin society. The *gumsa* chief needs kin backing and the support of a community to gain power but external economic support from a Shan prince to maintain it. However, as a chief's status increases his relatives are likely to get jealous and initiate a *gumlao* revolution. In fact, "... the *gumlao* revolutionary leader is in no sense an aberration from the Kachin norm. As a character he is just the same kind of person as the chief against whom he revolts, an ambitious seeker after power who treats economic facts with greater respect than ritual theories..." (Leach 1954:263). As British colonial rule had decreased lowland Shan power, many Kachin chiefs received less backing and as a result *gumlao* revolts had increased in frequency. The inherent irony in a Kachin *gumsa* community is that to be a complete autocrat (and thus reach

the Shan end of the political spectrum) would require repudiation of kin ties which are the basis of power. However, to be completely egalitarian (and thus reaching the *gumlao* end of the political spectrum) all lineages would have to be equal. Such an arrangement is equally untenable because the *mayu-dama* relationship imbedded in the Kachin language, and required for all marriages, involves unequal status relations. Therefore, either end of the political continuum are hypothetical and would be impossible in practice. It is therefore the oscillation between the two ends of the spectrum that provide a framework for political analysis. The Kachin case provides an example of the dynamic balancing act required between internal and external facets of political relations.

In a similar vein, Blanton et al. (1996; also see Feinman 1995; Blanton 1998) have recently defined exclusionary and corporate strategies of political organization. An exclusionary strategy is based on a monopoly of external social and trade relations used to establish prestige locally among a small "exclusive" segment of society. A corporate strategy on the other hand, shares power among different sectors of society which integrates local factions and allows more cohesive polities to emerge. The strength of this model is that it identifies organizational strategies that transcend levels of cultural complexity and thus can address universal political processes. However, as Blanton et al. (1996:2) acknowledge, the exclusionary/corporate model is useful insofar as it is understood in the heuristic manner that it was formulated. No political system will actually be completely exclusionary or entirely corporate and there will be a constant dynamic between the two strategies, which are likely linked (Feinman 1995:264). This is equally true for Spencer's (1993) Internal-External model as well as Flannery's (1968) and Leach's

(1954) *Gumsa-Gumlao* model. Rather than mutually exclusive processes, these explanatory models must be viewed as relative descriptions and one society can only be said to be closer to one end of the spectrum when compared to another.

In under six pages, Blanton et al. (1996: 8–13) compare their model to over 3000 years of Mesoamerica's history. In very broad strokes, they (Blanton et al. 1996:8, 12–13) characterize Early and Middle Formative Mesoamerica as adhering to an exclusionary strategy of political integration. However, the discussion of this period when political inequality first emerged is limited due to the extensive temporal scope of the article. As a result, there is much room to explore the Early and Middle Formative societies in a more fine-grained and regional manner. In fact, Feinman (1995:267–268) characterizes Early and Middle Formative society in the Valleys of Oaxaca and Mexico as following a predominantly corporate strategy.

Many of the models discussed above ultimately return to Renfrew's (1974) distinction between "group-oriented" and "individualizing" chiefdoms. As with the more recent incarnations, Renfrew (1974: 76–82) provided material evidence for his distinction between the two types of chiefdoms from architectural and burial patterns as well as the distribution of these features across the landscape. The group-oriented chiefdoms from Neolithic Malta (Renfrew 1974:75–77), Formative Valley of Oaxaca and Basin of Mexico (Drennan 1991b:283; Feinman 1995:267–268), and Ethnohistoric Hawaii (Earle 1997:210) all possess group-unifying public architecture and nondifferentiated burials. In contrast, the individualizing chiefdoms from 1st-millennium B.C.E. Celtic chieftains, Minoan-Mycenaean Greece (Renfrew 1974:79–82), Alto Magdalena, Central Panama (Drennan 1991b:283), and the Early Bronze Age Thy region of Denmark (Earle 1997:209) all possess a limited num-

ber of burials with many exotic prestige goods and residential architecture that emphasize individuals (and their supporting factions).

Regardless of how one classifies a given society, a problem with all of the dichotomous models mentioned above is that they are each functional. They describe how political systems function but do not actually account for why or how such political strategies originate. However, when Feinman (1995) discusses exclusionary and corporate strategies specifically in relation to the emergence of inequality, he provides a solution when he states that "... viable explanations of change must ultimately unravel the interplay between human strategies and socio-environmental opportunities and stresses. They also must recognize the historical nature of these social transitions" (Feinman 1995:262, emphasis mine). I return to the importance of incorporating historic associations into evolutionary analysis in the final sections of this article.

ARCHAEOLOGICAL PATTERNS IN FORMATIVE SOCONUSCO AND OAXACA

In this section, I examine the Barra through Conchas phases in the Soconusco and the Tierras Largas through Guadalupe phases in the Valley of Oaxaca (Table 1). Previous research from the two regions is first summarized. Then, employing as much quantitative data as has been published, I compare settlement, burial, and architectural evidence to document change through time in each region. Quantitative comparisons allow patterns to be consistently compared between regions and are favored where such data exist.

Previous Research

The Soconusco is part of the fertile Pacific coastal plain that straddles the mod-

ern border of Mexico and Guatemala (Fig. 1). Work on the Mexican side of the border began in the 1950s and 1960s (Green and Lowe 1967; Lowe 1975; Ceja 1985). In 1985, John Clark and Michael Blake began the "Mazatan Early Formative Project" in order to examine the emergence of inequality in the region (Blake 1991; Blake, Chisholm et al. 1992, Blake, Clark et al. 1992; Clark et al. 1994, Clark 1991, 1994, Clark and Blake 1994). The Guatemalan side of the Soconusco was first investigated by Edwin Shook in the 1940s (1947) and later studied by Michael Coe and Kent Flannery (1967; Coe 1961). More recently excavations by Michael Love (1989, 1991, 1993) have focused on the Middle Formative site of La Blanca and settlement along the Naranjo River. For a chronological overview and phase by phase description of these periods see Blake et al. (1995).

The Valley of Oaxaca is a broad riverine highland valley in southern Mexico (Fig. 2). The excavation of Formative period sites began with the "Prehistory and Human Ecology of the Valley of Oaxaca Project" led by Kent Flannery (1976). The bulk of work has been carried out by a number of graduate students produced by the Universities of Michigan and Arizona (Winter 1972; Drennan 1976; Whalen 1981; Blanton et al. 1982; Kowalewski et al. 1989). Synthetic discussions of the time periods discussed here are included in Flannery and Marcus (1983:41-74) and Marcus and Flannery (1996:chapters 7-9). A complete chronology is provided by Drennan (1983:363-370) and a detailed description of Early Formative Oaxacan ceramics is presented by Flannery and Marcus (1994).

Settlement Patterns

Theory and Expectations

Conventional wisdom among archaeologists interpreting settlement data states

that a multitiered system indicates political inequality (e.g., Steponaitis 1978:420; Spencer 1982:5; Feinman and Neitzel 1984:76; Wright 1984:43; Creamer and Haas 1985:742; Earle 1991b:3; Hayden 1995:63). Egalitarian subsistence farmers are expected to be evenly spaced across the landscape in small villages (close to exploitable resources) forming a single level of settlement. The existence of an additional tier of settlement, above that of the village, is indicative of a coordinating stratum of society that performs nonsubsistence roles (i.e., craft and political specialists) and depends, at least in part, on the labor of others to sustain it. This qualitative approach describes archaeological cultures as possessing different numbers of settlement tiers but does not allow differences to be documented between settlement systems with the same number of tiers. To quantify settlement hierarchy I employ a methodology used by Brumfiel (1976) and Peebles (1978) and elaborated on by Steponaitis (1981, 1986) to measure political differences in population size. The model assumes that the size of a community is determined by the number of its inhabitants, which is proportional to the amount of food available. In turn, the quantity of food available is dependent on the productivity of a site's catchment area and the flow of tribute into or out of the community. Therefore, according to this model: $\text{community size} = \text{land available} \times \text{the productivity of such land} \pm \text{tribute}$.

With single-tiered settlement patterns, community size and catchment productivity are expected to correspond in a positive, linear manner and therefore the greater the food supply, the more people can be supported at a particular site (Steponaitis 1981:324). This relationship between site size and catchment productivity is expected when there is no inter-community political coordination and each community simply pursues its own subsistence needs. Steponaitis (1981:325-

326) demonstrates that this correlation is true even if tribute flow operates within a community as would be the case in a "big-man" society where a leader could accumulate wealth for competitive feasting. Such ritual exchange generally rotates through several communities and would not be expected to affect the size of any individual settlement involved in such intercommunity activity (Sahlins 1963). If, however, a constant and unequal flow of resources does occur, then asymmetrical political relations will cause the emergence of a second settlement tier.

In a two-tiered settlement system, village size is a function of catchment productivity and tribute paid, whereas the size of a local center is a function of its catchment productivity and tribute received from dependent villages (Steponaitis 1981:326). Therefore, in the two-tiered scenario, the larger size of local centers is attributed to a number of people being provisioned by the influx of tribute from surrounding villages (Steponaitis 1981:328, 1984:145-147; cf. Hirth 1984:136-137). The flow of tribute is inferred from the concentration of larger populations found in local centers. Therefore, a two-tiered settlement pattern indicates political power being exercised and its emergence is equated with the development of the most simple chiefdoms.

Material and Methods

Data for the following analysis is taken from Early Formative settlement components in a 50-km², 100% survey block in the Mazatan zone of the Soconusco region of southern Mexico (Clark et al. 1994:98-106) and from the 100% survey of the 2200-km² floor of the Valley of Oaxaca (Kowalewski et al. 1989:524-525). Additional data from outside the 50 km² in the Mazatan zone are included in order to present a more complete assessment of the avail-

able data (Clark et al. 1987, 1990). I also discuss Early and Middle Formative sites from a 200-km² survey block in the La Blanca-Ocos zone on the Guatemalan side of the Soconusco (Love 1989, 1991). This last source of settlement data was not recorded as site size in hectares and so quantitative comparisons are not possible.

To apply the model, population (measured as the size of each site) was recorded on the *x* axis and plotted against its catchment productivity (defined below) recorded on the *y* axis (Fig. 3). Expressed mathematically: site size = catchment productivity ± tribute, where catchment productivity = catchment area × the productivity of land.

The crux of this model is that when a site's catchment productivity is controlled for, the relative quantity of tribute flow can be measured as the difference between the regression line of a region's villages and the position of local centers above this line. The relative quantity of tribute received by these centers is thus used as a proxy measure of political power as it reflects control over resources. In a one-tiered system, the *y* intercept of the regression line produced when villages are plotted is expected to be zero, as a total lack of catchment productivity could support no people (Steponaitis 1984:143, 1985:897). In a two-tiered settlement system, the *y* intercept of the lower tier would be zero or lower and a negative number reflects the flow of tribute out of the community. Conversely, the *y* intercept produced by the regression line of the second tier is expected to be above zero because even when there are no resources, the flow of tribute into these centers could sustain some people. The flow of tribute can be estimated and settlement systems can thus be compared both in terms of their structure (i.e., number of tiers) and the relative quantity of political power exercised (distance of local centers above the village level).

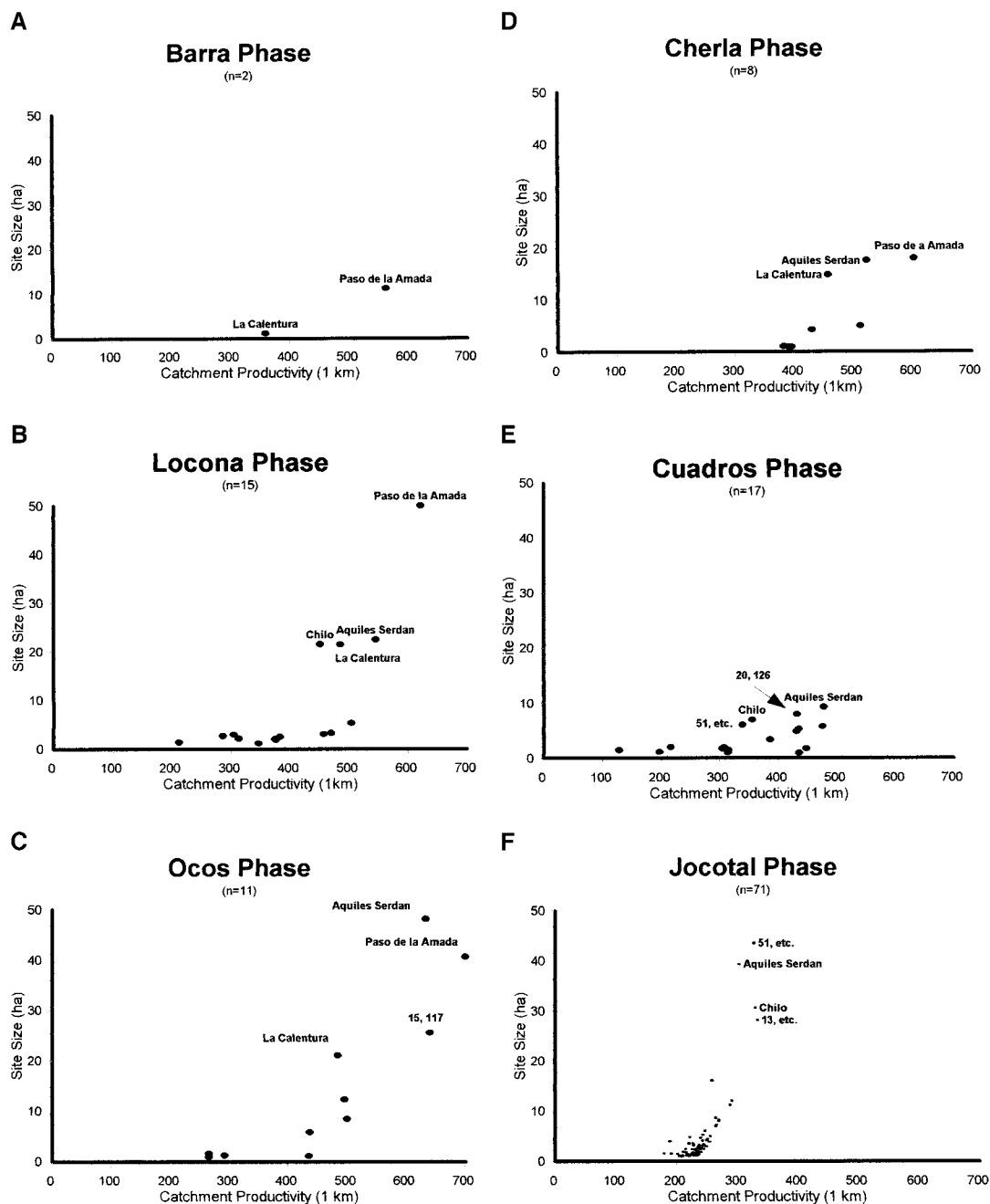


FIG. 3. Early Formative settlement patterns from the Mazatan survey zone of the Soconusco and Early and Middle Formative settlement patterns from the Valley of Oaxaca. Sites from the second tier and those referred to in the text are named.

Site size was measured in hectares. Survey components were combined to produce sites in keeping with decisions made

by the respective investigators. In the Valley of Oaxaca, as many as nine components were combined to form the dis-

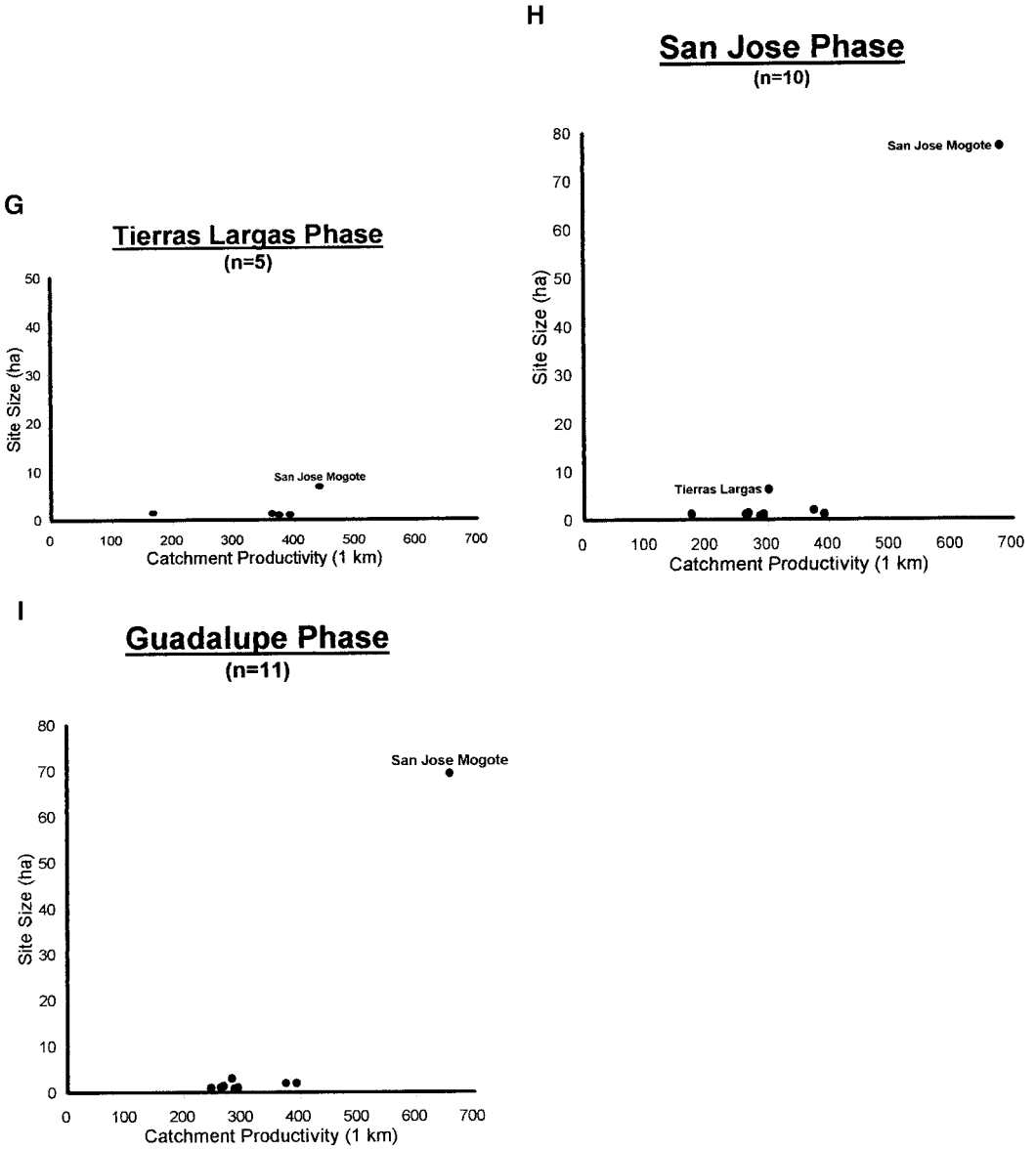


FIG. 3—Continued

persed center of San Jose Mogote (Kowalewski et al. 1989:61). In the Soconusco, small survey components were combined when they occurred in proximity to large sites and fell within their catchment area or when a number of small components occurred close to each other (see Rosenswig 1998:59–62 for com-

ponent combinations and site sizes). All sites smaller than 1 ha were excluded from the following analysis because such small settlements would not require large catchment areas to sustain their population—such an assumption was also made by Steponaitis (1981:337), who excluded sites under 2 ha.

Catchment area was defined as a 1-km radius around each site based on Chisholm's (1968:131) ethnographic observation that cultivating within such a distance is optimal. The selection of a 1-km catchment radius is further supported by Steponaitis' (1981:335) demonstration that the size of catchment radii does not proportionately affect catchment productivity results, as it is only the relative productivity of land that is modeled (see Steponaitis 1984:144). The methodology used to calculate the size of site catchments is the same as that employed by Steponaitis (1981:335–336) except that catchment area is measured from the center of a site, not its edge (Finsten et al. 1983:124–126; Hirth 1984:136). Such a change in methodology is appropriate when site size is relatively small (Peebles 1978; Steponaitis 1978, 1983:131). The other exception to the application of this method of calculating site catchment area is the Jocotal phase in the Soconusco, where sites were so densely packed that to divide overlapping catchment areas was not possible and instead all catchment areas were halved.

Land productivity was modeled as a constant by Steponaitis (1981:334–335) and productivity was measured as all the land within a site's catchment radius that could be cultivated. However, following Finsten et al. (1983:126–128) and Steponaitis (1983:132), I incorporate land productivity into my calculations and employ Kowalewski's (1982:339–354) three classes of land quality for the Valley of Oaxaca. Clark (1994:215) employs a similar classification system for the major biotic communities of the Soconusco and so comparisons between the regions are relatively direct. Both studies use the maize cultivation potential of land to approximate productivity more generally. In the Soconusco, Chahuite and Riparian zones are considered class I land, Tropical Deciduous Forest is class II, and Palmar and Savanna are class III (Clark 1994:60). When calculating

the quantity of land, a simple correction was used to determine the contribution of each land type based on Clark's (1994:215) estimates of annual crop potential. Class I land can produce three corn crops yearly and is counted as 133% of actual land, class II land can produce two crops and contributes 100%, while only one crop a year is feasibly produced on class III land and thus it contributes 50% of its actual area. These proportions are similar to Kowalewski's (1982:151) land productivity estimates and the same correction percentages are therefore also used for the Valley of Oaxaca. Within each catchment area the quantity of land types was estimated to the nearest 10th percentile and catchment areas were adjusted, based on land productivity, to produce an adjusted catchment value (Rosenswig 1998:59–62). For example, if a catchment area contained 1000 ha of land and 10% of it was class I land, 50% class II land, and 40% class III land, then class I land is adjusted to 133 ha, class II land to 500 ha, and class III land to 200 ha. In this example, the catchment area was 1000 ha but due to the land productivity the adjusted catchment value would be 833 ha.

A concern when employing settlement data from surface survey projects is the underrepresentation of deeply buried sites and the fact that surface shards from such sites may not give a representative picture of the extent of these sites. This is undoubtedly a problem in both regions. However, for the sake of this comparative analysis earlier period settlement from both regions are assumed to be equally underrepresented. Another assumption of this study is that population density was the same at each site and that all sites were occupied for the same proportion of each ceramic phase. These simplifying assumptions are required to allow the extent of surface shard scatters to represent population (Kowalewski et al. 1989).

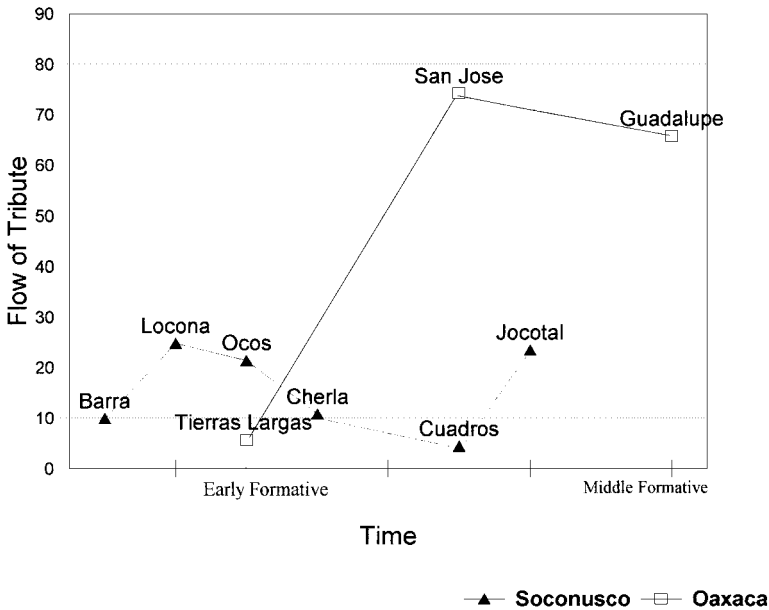


FIG. 4. The relative flow of tribute in Soconusco and Valley of Oaxaca survey zones.

Results

The results of this analysis are presented as a series of nine graphs in Figs. 3A–3I that document the number of tiers of settlement in the Early and Middle Formative Soconusco and Valley of Oaxaca. Then, Fig. 4 summarizes the relative quantity of tribute flow through time in these regions. Overall, there appears to have been a two-tiered settlement pattern from both regions in most phases represented in Fig. 3. However, variation in the quantity of tribute flow reveals important temporal and regional patterns. In the Mazatan region, the results suggest a number of polities experienced cycles of fluctuating political power over time, whereas the in Valley of Oaxaca a single center emerged at the beginning of the Formative period and persisted for a 1000 years. While Barra and Tierras Largas settlement systems are quite similar, the two regions diverge in the subsequent Locona and San Jose phases.

Mazatan zone of the Soconusco. In the Mazatan zone of the Soconusco during the Barra phase, the site of Paso de la Amada was more than eight times the size of the next largest settlement (Fig. 3A). Besides the two sites represented on the graph there are approximately a dozen other sites smaller than 0.5 ha excluded from the analysis and while these sites were significant during this phase they were nonetheless excluded from Fig. 3A so that the results are consistent with subsequent periods. During the Locona phase, Paso de la Amada represents a possible exception to the two-tiered pattern, as it was twice as far from the regression line produced by villages as other local centers (Fig. 3B). Clark (1994:199) states that while the size of Paso de la Amada during the Locona phase

could be interpreted as evidence of a three-tiered settlement hierarchy... there do not appear to be any qualitative indicators of differences from the other large village sites (and their full size remains to be determined), [and] a more conservative interpretation is that... all large

villages [are] at the same level in the settlement system.

Four sites in the survey zone [and possibly three others nearby (Clark 1994:201)] were larger than 20 ha and had platform mounds up to 3 m high, whereas none of the small sites in the region had platform architecture and all of these villages were only a few hectares in size. If Paso de la Amada was at the head of a three-tiered settlement hierarchy, its power was fleeting and its dominant political position was short lived.

A two-tiered settlement pattern describes the following Ocos phase and Aquiles Serdan exceeded Paso de la Amada in terms of size (Fig. 3C). Fewer sites larger than 1 ha existed than during the Locona phase but the total population was similar, with more people consolidated in the sites that persisted from earlier times (Clark 1994:106). There were many relatively large second-tier villages during this phase which may reflect the shifting fortunes of various communities and a high degree of intercommunity competition during this 150-year period. A significant difference from Locona times was the rise in fortune of the site of Aquiles Serdan, which surpassed Paso de la Amada in size despite its lower catchment productivity. During the Cherla phase (Fig. 3D) there were again fewer sites but a more clearly defined, two-tiered settlement hierarchy returned at a lower order of magnitude than the Ocos period. Ocos phase obsidian from three different sources were differentially distributed between these local centers and homogeneously distributed within each center and neighboring villages (Clark and Salcedo 1989). Such obsidian distribution indicates that a number of self-contained networks were focused around local centers and provides an additional, and independent, measure of political activity in the region.

The most dramatic change in settlement patterns occurred during the Cuadros phase (Fig. 3E) when there appears to be a single settlement tier in the survey zone. The largest sites possessed little power relative to earlier phases (Fig. 4) and were only marginally larger than second-tier sites. The site of Paso de la Amada and La Calentura (two original local centers) ceased to exist as centers during this phase. However, during the Cuadros phase more sites were larger than 1 ha than ever before. This is because the center of power shifted out of the survey zone to the site of El Carmen, occupied throughout much of the Early and Middle Formative along a 500-m stretch of the Coatan River (Clark et al. 1987:20–23).

During the Jocotal phase (Fig. 3F) another dramatic change occurred in the survey zone: A clear two-tiered settlement system was reestablished in the survey zone with four local centers of the same magnitude as those found during the Locona and Ocos phases. However, the total number of sites larger than 1 ha increased five times beyond those of any previous period with 71 such sites recovered in the 50-km² survey zone. The large site of El Silencio, located across the river from El Carmen and occupied predominantly in the Jocotal phase, suggests there may be a third tier of settlement in the region (Clark et al. 1990). In the following Middle Formative Conchas phase, population in the Mazatan zone was much reduced (Blake et al. 1995:181) but there was a large site, complete with a 20-m high mound at Huanacastal (Clark et al. 1987).

La Blanca-Ocos zone of the Soconusco. As stated from the outset, the La Blanca-Ocos settlement data cannot be compared quantitatively but are illuminating for a qualitative comparison with the Valley of Oaxaca. The La Blanca-Ocos zone of the Soconusco was less densely populated than Mazatan with only three sites larger than 1 ha in the Ocos phase (La Victoria,

La Blanca, and Sage) and only two such sites in the Cuadros/Jocotal phase (Sage and Salinas La Blanca) but none larger than 3 ha (Fig. 1). There were no centers in the Early Formative and a single-tiered settlement organization existed in this zone despite the fact that it shared the same ceramic sequence as the Mazatan zone 25 km up the coast (Love 1989, 1991).

This one-tiered settlement system changed quite dramatically during the Middle Formative when three tiers of settlement are documented (Love 1991:38). The paramount center of La Blanca extended over an area of 100 ha with a central mound over 25 m high and at least 43 residential mounds. There were two second-order sites in this area: La Zarca and El Infierno; each with large public architecture. The third tier consisted of five multiple household settlements. It was not until the Middle Formative that settlement ranking emerged in this zone (Love 1991:60).

The Valley of Oaxaca. In the Valley of Oaxaca during the Tierras Largas phase, the site of San Jose Mogote was a little more than four times the size of the next largest site (Fig. 3G) and this difference is minimal when compared with subsequent phases. A dramatic change occurred during the San Jose phase (Fig. 3H) when San Jose Mogote reached almost 80 ha in extent and this large center persisted into the Guadalupe phase (Fig. 3I) when San Jose Mogote was just under 70 ha in size. During both of these periods, all other sites were less than a 1/10th the size of San Jose Mogote. Rather than having an actual first tier, the San Jose and Guadalupe phase settlement patterns were characterized by the single large site of San Jose Mogote and then all other sites in the valley (Kowalewski et al. 1989:66). However, the site of Tierras Largas is the only site (other than San Jose Mogote) during these three phases larger than 3 ha. Tierras Largas reached 6.3 ha, which is almost

the same size as San Jose Mogote during the Tierras Largas phase (6.8 ha). The Tierras Largas site was situated at an agriculturally marginal location with no class I land within its 1-km catchment radius and its unexpectedly large size (given its poor catchment productivity) may be due to its strategic location on the Atoyac River between the Etla arm and the rest of the valley (Fig. 2). During the San Jose phase, when San Jose Mogote was experiencing its population explosion, Tierras Largas increased to four times its previous size.

Tribute Flow in the Soconusco and Valley of Oaxaca

The structure of settlement (i.e., number of tiers) has been discussed in the Soconusco and Valley of Oaxaca but not the relative quantity of tribute flow. To determine tribute flow I have adapted the method used by Steponaitis (1981:Fig. 3, and see the discussion in Steponaitis 1984: 145–147) and simplified it for a two-tiered settlement system (see Ackerly and Young 1984 and Steponaitis 1985:898–901). The regression line produced by villages was calculated for each of the nine phases documented in Fig. 3 (slope and y intercept of villages is recorded on Table 2). The distance above this line was calculated for each center. The average tribute level of all centers was calculated for each phase (Table 2—first two columns) and it is these numbers that are plotted in Fig. 4. As there was a single second-tier site for the Barra phase in the Soconusco and all three Oaxacan phases, the largest sites and the average of all sites is the same. Thus, for comparative purposes the largest site's size, from each Soconusco phase, is also included in Table 2. The results in Fig. 4 comparatively summarize the relative quantity of tribute extracted through time in the two regions and show the detail lost

TABLE 2

Quantity of Tribute Extracted at Local Centers as Well as the Slope and y Intercept of Villages by Phase in the Soconusco and Valley of Oaxaca

Region and phase	Average of centers' tribute	Largest centers' tribute	Slope of villages	y Intercept of villages' slopes
Soconusco				
Barra	10	10	0	1.3
Locona	24.82	45.04	0.0092	-0.7
Ocos	21.48	35.14	0.0341	-8.5
Cherla	10.84	11.75	0.0333	-11.6
Cuadros	4.45	5.45	0.0091	-0.5
Jocotal	23.42	31.17	0.0951	-19.1
Valley of Oaxaca				
Tierras Largas	5.79	5.79	-0.0018	1.8
San Jose	74.12	74.12	0.0029	0.9
Guadalupe	65.57	65.57	0.0063	-0.4

by only examining settlement patterns qualitatively as the number of tiers.

In the Soconusco, there appears to be a fluctuating pattern to the quantity of tribute flow in the survey zone. A considerable increase is evident from the Barra to Locona phases which then decreases from the Ocos to Cherla periods. The flow of tribute within the survey zone reached a minimal level during the Cuadros phase (Fig. 4) despite an overall increase in the number of sites (Fig. 3E). In the Jocotal period, tribute flow increased rapidly and it is during this phase that the y intercept of villages was its lowest (Table 2), suggesting that the greatest amount of tribute was being extracted from villages. It is significant that the center of political power moved outside the survey zone during Cuadros. If the territorial unit of analysis encompassed the entire political unit, Cuadros phase tribute levels would likely be at least as high as earlier phases and Jocotal phase tribute would be higher still. However, these late Early Formative patterns remain to be documented through future survey.

Obsidian patterns again elucidate polit-

ical process as the "... amount of obsidian coming into the zone increased steadily from Barra to Cherla times" then "... during the Cuadros and Jocotal phases the amount of incoming obsidian appears to have decreased dramatically, to less than 20% of the former amount" (Clark et al. 1989:278). The initial increases in obsidian distribution levels may be explained if obsidian were being used competitively between factions. The subsequent, dramatic drop in consumption level beginning in the Cuadros phase emphasizes the political rather than economic role of obsidian in the region. The previous level of distribution may reflect the "cost" of maintaining power for the Locona, Ocos, and Cherla elite. The amount of tribute flow in the Soconusco must have increased during the Middle Formative with the emergence of the polity centered at La Blanca but, as previously noted, exact figures are not available for Conchas values and so this phase is not included in Fig. 4.

In the Valley of Oaxaca, tribute extracted by San Jose Mogote increased between the Tierras Largas and the San Jose

phase (to a degree unparalleled in the Early Formative Soconusco) and then declined slightly in Guadalupe times. However, during each of these phases, the stress on villages was minor (Table 2) and so the flow of tribute to San Jose Mogote may have had little effect on the sites in the rest of the valley. This would have facilitated the integration of villages into a political alliance with few deleterious economic repercussions. Beginning in San Jose times, the distribution of obsidian in the Valley of Oaxaca suggests a regionally integrative pattern. San Jose Mogote had different proportions of obsidian sources in various residential wards and the proportions corresponded to other sites in the valley (Marcus 1989:175–187). Parry (1983: 80–81 in Marcus 1989) found that San Jose Mogote Area C, Abasolo, and Tomaltepec all had similar proportions of raw material types. Marcus (1989:176–177) posits that “. . . each area or ward was occupied by a different descent group . . . [and that the] . . . wards at San Jose Mogote may be linked to neighboring hamlets through belief in a common apical ancestor.” Area C was linked to Tomaltepec and Abasolo with “fire-serpent” imagery on their ceramics and Area B was linked to Huitzo and Tierras Largas with “were-jaguar” imagery on their ceramics (Marcus 1989: 175–176). If economic activities such as the distribution of obsidian was associated with different lineages and such lineages dominated particular communities but were all represented at San Jose Mogote this could have provided the social and economic mechanism that would reinforce political cohesion between the center and periphery of power in the Valley of Oaxaca.

Summary of Settlement Data

Based on the settlement data presented, the Barra phase from the Soconusco and the Tierras Largas phase from the Valley

of Oaxaca resemble each other as a single center is slightly larger than surrounding villages. Political complexity, as measured by the flow of tribute, is ambiguous during these initial ceramic phases. During the following Early Formative phases, the settlement trajectories of these two regions diverged quite dramatically, yet both clearly indicate the establishment of unequal political relations. In the Valley of Oaxaca, the unchallenged position of San Jose Mogote persisted through the Guadalupe times (Figs. 3H and 3I). In the Soconusco, a significant reorganization occurred during the Locona phase, and a hierarchical settlement system developed (Fig. 3B). However, at least four local centers (and perhaps as many as seven) emerged together in close proximity to each other.

The demographic disruption, and disappearance of settlement hierarchy in the Soconusco survey zone during the Cuadros phase, and the rapid (i.e., 50-year) reemergence of a hierarchy and increase in population during the Jocotal phase may be explained by the inhabitants of the survey zone being incorporated into a polity centered at El Carmen and El Silencio on the Coatan River. A similar explanation has been proposed based on evidence of an Olmec ceramic style and monolithic stone sculptures (Clark and Blake 1989; Blake et al. 1995). The placement of all Cuadros and Jocotal phase sites encountered by Coe and Flannery (1967:87) in the La Blanca-Ocos region on waterways further suggests a changing settlement strategy (perhaps resulting from increasing regular long-distance interaction along these waterways). The end of the Early Formative was when Mesoamerica's first ceramic horizon emerged which suggests increased inter-regional contact (Sharer and Grove 1989). In the Valley of Oaxaca, the quantity of tribute flow increased hundreds of years

later than in the Soconusco but once the transition did take place, at the end of the Early Formative, a much higher quantity of tribute made its way to San Jose Mogote while in the Soconusco tribute levels were fluctuating (Fig. 4).

Although a larger regional survey is needed for the entire Soconusco region, there is sufficient evidence to conclude that the political landscape was much more volatile than indicated in the Valley of Oaxaca during this time. While part of the apparent political volatility in the Soconusco may be a methodological function of a more refined chronology (Rosenwig 1999), settlement patterns are still very different when compared to the Valley of Oaxaca. The fortunes of Soconuscan centers shifted significantly from one century to the next and the locus of power migrated around the coastal plain. The developing Soconusco settlement system, with many equally sized, closely spaced, and short-lived political centers, is consistent with a high degree of peer polity interaction (Renfrew and Cherry 1986) and the use of exotic obsidian exchange (Clark et al. 1989) is consistent with expectations of an external basis of political authority (Spencer 1993) that may have relied on a network strategy of integration (Blanton et al. 1996). The Oaxacan settlement trajectory, on the other hand, represents a stable and long-lasting (yet highly unequal) political organization with the vast majority of tribute flowing into San Jose Mogote. In addition, the elite in San Jose Mogote would have faced little competition originating from within the valley. Based on the distribution of obsidian (from different sources) and ceramics (with two types of imagery) between wards of San Jose Mogote and outlying communities, a corporate form of political integration is suggested (as Feinman 1995: 268 also observes) with an internal basis of political authority (Spencer 1993).

Mortuary Patterns

Theory and Expectations

Cross-cultural studies indicate that there is a correlation between an individual's status in life and their treatment in death (Saxe 1970; Binford 1971; also see Brown 1995). Based on role theory (Goodenough 1965), an individual is said to possess many social personae such as father, teacher, and chief. Leaders are expected to possess a larger number of social personae than an average member of the same society due to the greater number of social roles they possess and functions they serve in community matters (Tainter 1978: 331–332). In this section, I roughly estimate the number of social personae expressed at death as the number of mortuary symbols recovered with an interment. In order to try and establish a comparative baseline in this study, I do not attempt to understand what a jade bead found in an individual's mouth, red pigment covering a body, or two ceramic vessels around the interred's feet meant to a specific group of people (for a similar approach see O'Shea 1996:15). Instead, I simply assume that each type of grave inclusion had a different meaning and record the quantity of such social messages. To further nuance this approach, each type of grave inclusion is also recorded as being recovered from one of four positions around the body. I assume that material culture is employed purposefully and symbolically to communicate social information (Wobst 1977). Mortuary ritual is a purposeful and public stage in the life cycle of an individual and the inclusion of grave offerings, as well as their placement, is not a random or haphazard occurrence (O'Shea 1984:35–36). Mortuary ritual is necessarily preformed by the living and may thus be used by a faction to express differences or similarity with other segments of society.

Differential numbers of social messages ascribed to certain individuals in death is interpreted as mortuary complexity and two or more distinct levels of social messages (when a burial population is examined) would indicate some form of social differentiation operating in a culture. However, continuous or similar numbers of social messages expressed within a burial population *may not* be indicative of a lack of social differentiation. Feinman and Neitzel (1984:76) observe that

some leaders receive special funerary treatments of a sort that would not be visible in the prehistoric record. At death their bodies were hung from trees... burned, and/or eaten... Thus although leaders are generally differentiated during life by their dress and at death by their mortuary treatment, the absence of evidence of these differences in the archaeological record is not necessarily sufficient to conclude that social distinctions are not present.

Material and Method

The following analysis employs a data set of 196 Early and Middle Formative interments from the Soconusco ($n = 58$) and the Valley of Oaxaca ($n = 138$) regions (Appendices 1 and 2). A diversity analysis is employed to approximate the number of social personae that are evident from each mortuary event. This type of analysis has been productively employed by mortuary analysts to quantify information expressed by those who bury the dead (see Cannon 1989; Sempowski 1992; Howell and Kintigh 1996). In order to calculate the diversity scores used in the following analysis the presence or absence of each artifact type recovered (e.g., jade bead, ceramic vessel, shell pendant, etc.) was tabulated regardless of its quantity. So, for example, if five or six jade beads were recovered around the neck of an individual a score of "1" was recorded. However, an artifact type was counted more than once when it was recovered from multiple locations around a body. The four loca-

tions were as follows: at the head, the body, the legs, and in the mouth. As a result, any artifact type could contribute a maximum of four points toward the diversity score. This approach results in the remains of a necklace or a pair of earrings counting only one time regardless of the number of pieces the archaeologist finds them in.

As well as grave goods, the presence of a tomb or stones covering a burial, evidence of pigment employed at the mortuary event, or secondary burials placed in association with a primary interment each contributed a point to the diversity score. In addition, the presence of cranial deformation contributed a point to diversity scores, not because this was part of the interment ritual but because it is the expression of a social message in life and it is ultimately the number social personae that I am trying to estimate. Cranial deformation would have been performed early in life and contributed to a public form of discourse throughout the individual's life.

There are a number of potential problems with this approach: (1) not all messages are expressed in a manner that is preserved archaeologically (e.g., singing or dancing) and this could underrepresent the quantity of documented messages, (2) a single social personae can be expressed by many symbols and this could potentially inflate the apparent number of social roles being symbolized, and (3) nonpersonae signifying grave inclusions (i.e., related to the manner of death or idiosyncratic preferences of an individual) may further inflate status symbolizing diversity. An additional problem relates to the size and representativeness of the burial populations. Some of the burial populations analyzed are small and consist of as few as eight individuals. In addition, the regional nature of this database and the fact that burials are grouped relative to ceramic phases, which last up to 300 years,

results in burial populations with no necessary temporal or spatial association. As a result, the data are presented using simple descriptive statistics and the preliminary nature of the results is emphasized.

This quantitative assessment does not incorporate a range of possible qualitative indicators of rank or "badges of authority" (Braun 1979). Flannery and Marcus (1990: 31; Marcus and Flannery 1996:99–100) argue that the seated position of burials in the Valley of Oaxaca is an indicator of high status and hereditary inequality during the San Jose phase. Clark (1991) suggests that mirrors may have been linked to elite status and Carlson (1981:130) postulates "... an Olmec or Early Formative origin for a pan-Mesoamerican mirror-cult tradition of royal lineage power." While not sensitive to such factors, diversity analysis is amenable to consistent comparisons between time periods and regions, and so it provides the sort of common baseline necessary to undertake a comparative analysis of mortuary patterns.

Quantitative Results

Seven graphs (Fig. 5) summarize the diversity profiles of burial data. These graphs show three patterns: no burial offerings, a continuous yet limited number of different diversity scores, and, finally, a discontinuous pattern of burial diversity. All periods in both regions have at least 75% of burials with a diversity score of 0 or 1. In the majority of time periods there are a number of burials forming a continuous distribution up to a diversity score of 5.

In the Soconusco, the Locona, Ocos, and Cherla burials exhibited a continuous distribution of diversity scores. The only two burials from the Soconusco with a diversity score above 0 after the Cherla phase were Middle Formative burials from El Pajon (Pailles 1980:92–106) and Huana-castal (Clark et al. 1987:23–24). Neither of

these two interments had any grave inclusions and both receive diversity scores of 1 due to frontal occipital cranial flattening. This means that in the Soconusco, none of the burials discussed in this article from between 1000 and 650 B.C.E. contain grave goods. Although perhaps the result of small samples, it is also possible that during these periods burials were being treated in a different manner than in earlier times. If the number of Middle Formative burials is not proportionately underrepresented, then this pattern may signify a shift to mortuary ritual that does not leave archaeological remains as Feinman and Neitzel suggest in the quote above. Such a change in mortuary ritual would correspond with the demographic and political changes evident in the Cuadros phase and it would follow that changes in mortuary ritual may have accompanied the political transition occurring at this time. However, due to the sample size this interpretation must remain conjectural until more work is done.

In the Valley of Oaxaca, the Tierras Largas burial record exhibited a limited amount of diversity which appear to increase during the San Jose phase. From the Middle Formative Guadalupe phase burial record, there is a hint that two distinct levels of social status, encoded in mortuary ritual, may have emerged. The mortuary pattern from the Guadalupe phase is the only example (from the cases examined here) that suggests ranking of burial diversity. Overall, burial diversity in the Valley of Oaxaca gradually, yet progressively, increased. However, sample size may be responsible for low Tierras Largas period diversity.

Discussion and Qualitative Assessment

The following discussion describes some of the burials from each phase that produced the highest diversity scores. In the Soconusco, a child with a mirror head-

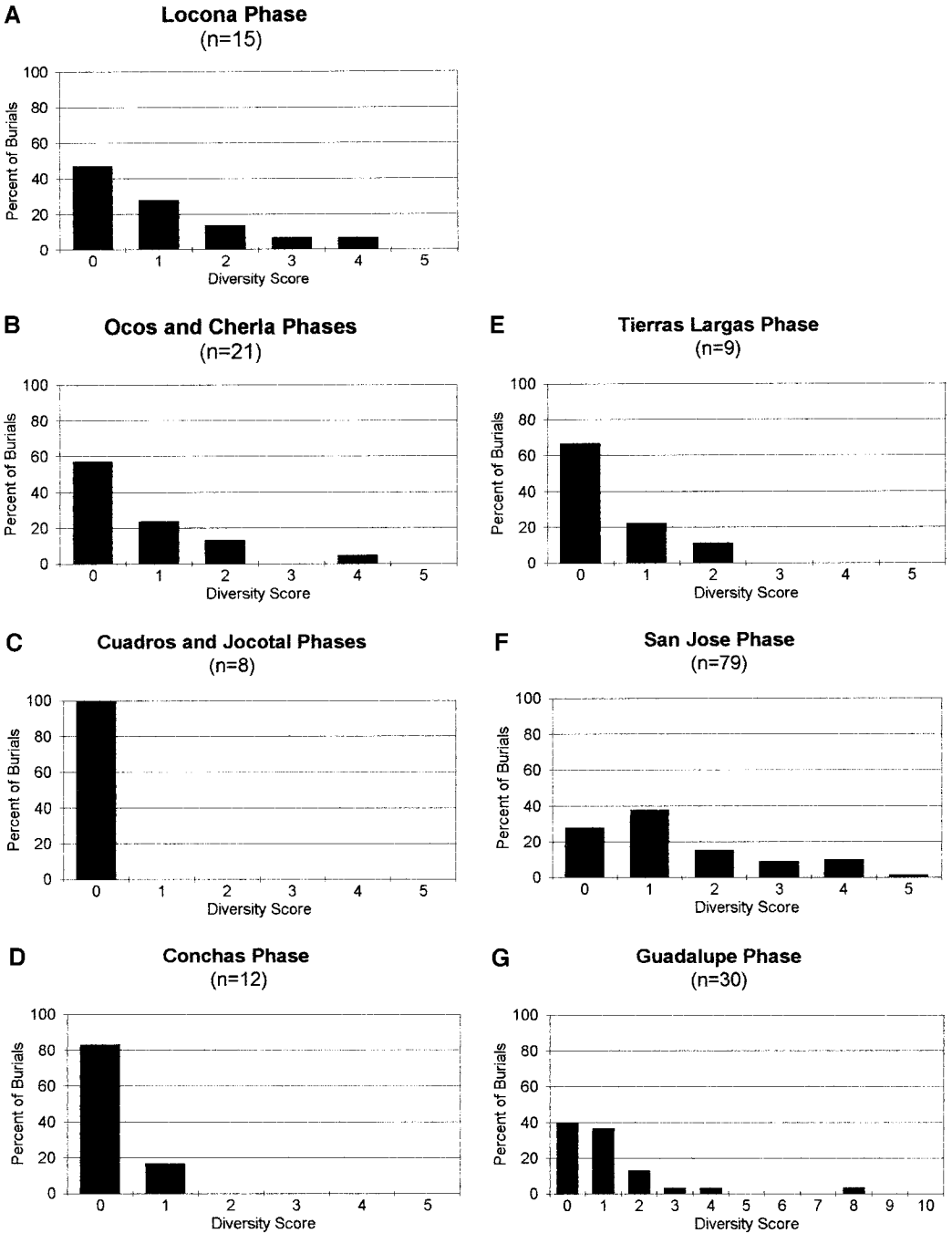


FIG. 5. Relative percentage of diversity scores for Early and Middle Formative burials in the Soconusco (A-D) and the Valley of Oaxaca (E-G).

dress, a piece of greenstone behind its head, and covered in red pigment (Clark 1991) and an adult male with two ceramic

vessels with stone pebbles in one and a mortar and stone cobbles around the body (Clark 1994:402) produced diversity scores

of 3 and 4 respectively. Both interments date to the Locona phase and were recovered at the Chilo site. A female burial from the Cherla phase at Paso de la Amada was found with a mirror on each side of her head, a stone bowl and cobble at her chest, and a greenstone bead at her face—producing a diversity score of 4. As already noted, later period burials are not amenable to this form of analysis and such a change may signify evolving social practices, possibly curation above ground, which would have been more public and therefore potentially a more competitive form of display (e.g., Goldman 1970).

In the Valley of Oaxaca, a Tierras Largas phase, female burial (no. 19) was encountered at the Tierras Largas site with a diversity score of 2, as she was interred with a mano and a metate (Winter 1972:325) and a male (no. 29) was buried at San Jose Mogote in a seated position with a ceramic vessel and thus produced a diversity score of 1. Of the San Jose phase burials with the highest diversity scores, five interments were found at Tomaltepec and four more at San Jose Mogote. Of these nine high-diversity burials four were female, three were male, and one was a child. One of the San Jose phase burials (no. 11) was a male from Tomaltepec with a diversity score of 5 and was found in a seated position with two ceramic vessels and a greenstone celt at his feet, another vessel at his head, with 15 greenstone beads near his neck and 1 in his mouth (Whalen 1981:147). From the Guadalupe phase, the two highest diversity burials were both women. At Tomaltepec, burial no. 68 had a ceramic vessel at her head, a chert point at her chest, and a greenstone bead in her mouth and one at her chest (Whalen 1981:152). The only burial with a higher diversity score was an old woman from Fabrica San Jose (no. 39) with a score of 8; she was interred with a vessel at her feet, two at her chest, and one at her head; 47 round and six tabular greenstone beads

in her mouth; a brown stone bead and greenstone pendant were recovered from her mouth; and there was evidence of red pigment covering part of her body (Drennan 1976:248).

The highest diversity scores are attributed to the same individuals that possessed proposed high-status indicators (e.g., interment in a seated position, with red pigment, or mirrors) or those with the greatest number of grave goods (e.g., Burial no. 39 at Fabrica San Jose interred with 59 individual objects or Burial no. 11 at Tomaltepec with 20 objects). This correspondence between high diversity counts and other possible gauges of social status suggests that the preceding analysis at least roughly reflects social differences due to the convergence of various indicators of inequality. An advantage of employing diversity scores in this case is that they are easily presented for visual comparison between phases and across regions.

Summary of Mortuary Data

All of the Early Formative mortuary patterns in both regions suggest that burials were not used to blatantly express social differentiation. Some differences are evident but the only hint of clear differentiation was the relatively lavish Guadalupe phase Burial no. 39 from Fabrica San Jose. The results of this mortuary analysis suggest a corporate (Blanton et al. 1996) or group-oriented (Renfrew 1974) strategy was employed at the beginning of the Early Formative periods in both the Soconusco and Valley of Oaxaca. However, in Cuadros times in the Soconusco and Guadalupe times in the Valley of Oaxaca, changes to the mortuary programs occurred. In the Soconusco, no Cuadros, Jocolal, or Conchas phase burials were accompanied by grave goods. In the Valley of Oaxaca burial differentiation seems to

have been present by the Middle Formative Guadalupe phase.

The Oaxacan burial patterns indicate a continuous increase in social differentiation. However, it is difficult to interpret the total lack of grave goods recovered with Cuadros, Jocotal, and Conchas burials. If mortuary ritual moved above ground, then this may have provided new sources of competitive display. Goldman describes Polynesian mortuary ritual where "... funeral feasts went on for a lunar month, during which time the royal corpse was presented at each of the different districts..." (1970:529) and "... flourishes of speech, song, and gesture, were carried over into the rites of mourning, which added the specifics of wailing, self-laceration, and ritualized violence" (1970:531). As O'Shea (1996:4) cautions, "... there is no necessary reason either that any culture must express social differences through its program of mortuary disposal or that such differentiation, if present, should be expressed in a form that is recognizable to archaeological inquiry." If an above-ground burial strategy began during Cuadros times (or one that relied on burying perishable materials), there could have been considerable differentiation between such burials and those that were not buried or put into the ground without accoutrements. Alternatively, in the Soconusco burial ritualism may not have been the media of status expression or it is of course also possible that no social differentiation existed. However, interpretations based on negative evidence will have to be interpreted contextually along with other lines of data.

Two things are evident from the preceding discussion. First, based on available evidence, archaeologically detectable changes to each region's burial program (i.e., lack of grave goods or differentiation in their numbers) occurred earlier in the Soconusco (1000 B.C.E.) than in the Valley of Oaxaca (850 B.C.E.). Second, all such

changes in mortuary programs occurred centuries later than political inequality emerged in either region: 1400 B.C.E. in the Soconusco (Clark and Blake 1994) and 1150 B.C.E. in the Valley of Oaxaca (Marcus and Flannery 1996:93). Therefore, changes in the mortuary program must have reinforced rather than contributed to the emergence of inequality in both regions as is evident when the timing of changes in Figs. 5 and 3 are compared (the possible significance of this is discussed below).

Architectural Patterns

Theory and Method

Feinman and Neitzel (1984:75) identify the "... most frequently reported means of differentiating leaders is by the size, construction and location of their houses." The use of households as status markers has been explored by archaeologists studying emergent complexity (Blake 1991; Blanton 1995) and such behavior is born out by ethnographic accounts (Goldman 1970:181; Cordy 1981:73-76). In addition, certain egalitarian societies employ social leveling mechanisms that prevent the domestic expression of social differentiation (Wilk 1983). Therefore, the presence of differential household elaboration and the expenditure of different quantities of energy in domestic architectural construction appear to correspond with the social ethos of a culture (Trigger 1990). An increase in the differentiation between households is one of many types of material culture capable of expressing social relations (Wobst 1977). However, unlike burials, as permanent fixtures on the social and political landscape, domestic architecture continuously reinforces differences between those who live in large elaborate residences and those who do not. Blake (1985:51-52) emphasizes the so-

TABLE 3

Calculation of Person Days of Labor Needed to Build Structures in the Soconusco and Valley of Oaxaca based on Abrams' (1989:70) Estimate of 2.6 Person-Days of Labor for the Procurement of Earth for Construction Fill

Site	Structure	Phase	Total volume of fill	Person/days of work	Days of work for 20 people	Weeks of work for 20 people
Paso de la Amada	Md. 7	Locona	2333	897	44.9	6.4
Paso de la Amada	Md. 6	max. Locona	1167	1147	22.5	3.2
Paso de la Amada	Md. 6	Max. Ocos	2434	2579	46.8	6.7
San Carlos	Md. 1	max. Locona	2983	449	57.4	8.2
San Carlos	Md. 1	max. Ocos	6705	936	129	18.4
La Blanca	Md. 1	Conchas	140 000	53 846	2692.3	384.6
La Zarca		Conchas	10 667	4103	205.2	29.3
El Infierno		Conchas	14 400	5538	276.9	39.6
San Jose Mogote	Str. 6 platform	Tierras Largas	26	10	0.5	0.07
San Jose Mogote	Str. 1	San Jose	450	173	8.65	1.2
San Jose Mogote	Str. 2	San Jose	180	69	3.45	0.5
Tomaltepec	Str. 11	San Jose	32	12	0.6	0.09
Tomaltepec	Str. 12	Guadalupe	120	46	2.3	0.3
Huitzo	Platform 4	Guadalupe	450	173	8.6	1.2
Huitzo	Str. 3	Guadalupe	172	66	3.3	0.5

cial significance of residential differentiation:

the house communicates to the household their own social worth and place within the broader society, and it communicates this same information to other households. As a status symbol the house is a statement of the relationship between the household members *as a group* and other similar groups. (emphasis in original)

The type of regional, quantitative comparisons presented in this article for settlement and burial evidence are difficult to obtain for architectural data due to the number of detailed excavations that would be required from all of the structures in many communities and from each time period in a given region. This type of data is not yet extensive enough in either region to undertake such a comparison. However, in this section architectural evidence is discussed as systematically as the data permits. Residences are compared in terms of their size and form, which reflect both the expenditure of la-

bor required in construction and the degree to which certain segments of the population were differentiated from others. Public architecture is also presented and compared between the two regions so that a complete assessment of architectural evolution can be presented and residential architecture can be discussed relative to nonresidential buildings. All relevant architectural data discussed in this section are presented elsewhere (Rosenswig 1998: 68–69) and summarized here in terms of the approximate amount of labor required to build them (Table 3).

Architectural Trajectories

The Soconusco. Limited Barra phase architectural remains have been encountered at the sites of Paso de la Amada and San Carlos and consist of simple clay floors defined by postholes measuring as much as 6 × 4 m (Clark 1994:313–314). They are similar to the only known Ar-

chaic architecture which consisted of 11 postholes defining 8×4 m of floor space from Tlacuachero (Voorhies et al. 1991:30). The data from both phases are insufficient to evaluate residential differentiation. However, beginning in the following Locona phase, residential differentiation exists in the Soconusco and large elite residences were built on raised platforms along side modest residences at Paso de la Amada, La Calentura, and San Carlos (Blake 1991; Clark 1994:304–373; Lesure 1997).

Detailed evidence of differential residence construction has been documented at Paso de la Amada. Six successive floors were built at one elite residence (Mound 6) during the Locona phase; all floors were between 11×5 m and 22×10 m and were built on platforms that reached a cumulative height of 2.8 m (Blake 1991; Blake et al. 1993, n.d.). The remains of these successive elite residences consisted of packed clay floors, with postholes, trash pits, and the occasional burial under a floor. During the same period, three other elite residences at Paso de la Amada were built on smaller platforms (Mounds 4, 13, and 32) and as many as 40 nonelite residential mounds were small and had no platforms built at all (Lesure 1997). The best preserved of these nonelite residences had floor space of 5×3 m (Lesure 1995:99). Therefore, not only were there two tiers of residences (platform versus nonplatform) but the size and elaboration of platforms were also variable. Platform residences have been documented at Mounds 4, 13, 32, and 6 but Mound 6 was the only one of these four elite residential platform that was rebuilt and enlarged into the following Ocos phase (Lesure 1997:Fig. 5). In addition, a ball court was built and augmented at least once during the Locona phase; it was kept clean of artifacts and reached a total size of almost 80 m long and 40 m wide (Hill 1996; Hill et al. 1998).

During the Ocos phase, Mound 6 was

“... the highest mound at the site, and the largest building atop it was probably the locus of most or all of the organizational activities previously replicated in different areas of the site...” (Lesure 1997:232). It was during this phase that Aquiles Serdan may have surpassed Paso de la Amada in the relative quantity of tribute it received (Fig. 3B) and the elite at San Carlos may have challenged Paso by competitively enlarging their residence (see next paragraph). The consolidation of authority at the largest household (Mound 6) at Paso during the Ocos phase could have been an attempt by the elite family of lineage living within to more effectively deal with challenges from other factions within the community and from the elite in neighboring centers. During the Cherla phase, Mound 6 was abandoned while residential platforms were enlarged at Mounds 1 and 12 (Lesure 1997:233). This community reorganization corresponds with a significant reduction in the relative quantity of tribute that Paso de la Amada received during the Cherla phase (Fig. 4) and so competition and/or conflict within the community and the abandonment of Mound 6 (after being occupied as an elite residence for as many as 300 years) may be associated with the loss of power at a regional scale. This correlation suggests that factional competition at the local level may have had direct and adverse repercussions at the regional level. Such an interpretation is suggestive of the failure of an exclusionary (Blanton et al. 1996) strategy of integration that depended on external sources of authority (Spencer 1993) when competing with rival factions within a polity.

The only detailed, intersite architectural data is from a comparison made by Clark (1994:345–349) when he examines the largest households at Paso de la Amada (Mound 6) and San Carlos (Mound 1) during the Locona and Ocos phases. San Carlos is one of the local centers (alluded to

previously) that falls outside the 50-km² survey zone and so was not discussed in the settlement section. Clark compares a dozen distinct rebuilding episodes of these mounds during the Locona and Ocos phases and concludes that construction at the two elite residences appear to have paralleled each other (Clark 1994:349). In fact, there was such temporal correspondence between the building sequences of these large residences "... that the occupants of both mounds were fully aware of each others' activities and countered or matched any building activity of the other household" (Clark 1994:349). If the dominant elite faction at Paso de la Amada was competing with their counterparts at San Carlos and at the same time contending with other high-status households at home, it is not surprising that the polity fell from regional prominence by the Cherla phase.

During the Cuadros phase, Paso de la Amada was basically abandoned and, as we have seen, there was virtually no flow of tribute evident within the 50-km² survey zone (although there was likely tribute leaving the area), obsidian distribution was a fifth of previous levels (Clark et al. 1989:278), and, as discussed in the previous section, burial patterns changed (see Fig. 5). The Cuadros and subsequent Jocotal phases are crucial in understanding the cultural evolution of the region but unfortunately little recently reported work in the Mazatan region has specifically targeted these periods for investigation. The site of El Carmen was an important locale during Cuadros times with multiple mounds a number of meters high (Clark et al. 1987:21–23). The site of El Silencio has two large mounds and their Jocotal components are each 3 to 4 m high and 100 m long (Clark et al. 1990:106). As I have already mentioned, large sites were constructed on the Coatan River during the late Early Formative and such loca-

tions would have facilitated riverine travel and thus extraregional interaction.

In his 200-km² survey zone in the La Blanca-Ocos zone of the Soconusco, Love (1991) reports no architectural differentiation for the entire Early Formative period. The architectural innovation in the Middle Formative is not domestic but the large size of nondomestic architectural constructions such as the huge Mound 1 that would have towered 25 m over the site of La Blanca (Love 1991:57). Nearby sites of La Zarca and El Infierno had nondomestic mounds reaching heights of 20 and 18 m respectively during the Conchas phase. These three mounds represent an enormous investment of labor and an increase of several orders of magnitude over the ball court or elite residences; in fact, I estimate (based on Abrams 1989:70) that it may have taken 20 people almost 2700 days work (or, for example, 900 people 2 months) to procure the earth needed to construct Mound 1 at La Blanca (Table 4). No Early Formative remains have been found at La Blanca in primary context and the site was abandoned after the Middle Formative—as a result, all of the architecture is securely dated to the Conchas period (Love 1989:110). In the Mazatan zone, the site of Huanacastal had a mound approximately 20 m in height that has been destroyed and turned into road fill. The Middle Formative component of this mound was substantial but it was not possible to ascertain exact dimensions (Clark et al. 1987:23).

At the paramount center of La Blanca three low mounds near Mound 1 have been tested (Suboperation 25, 26, and 27) and each produced evidence of a domestic use with floors, postholes, and trash pits as well as human remains (Love 1989:116–167). Suboperation 25, a mound 3.5 m high, was the largest Conchas-phase residential construction excavated to date with a living surface of at least 15 × 7 m and at least one distinct episode of plat-

TABLE 4
Summary of Data from the Soconusco and Valley of Oaxaca Examined in this Article

Time period	Data class	Soconusco	Valley of Oaxaca
Middle Formative		Conchas	Guadalupe
	Settlement	Center of power shifts again, three tiers and public architecture at top two tiers	Two tiers, large site of San Jose Mogote and all other sites in the valley
	Mortuary	Absence of grave goods continues, evidence of cranial deformation	First hint of stratified diversity scores at Fabrica San Jose
	Domestic architecture	Differentiation with multiple large platforms and many small residues	Minimal differentiation; Tomaltepec elite residence replaced by public building
	Public architecture	Monumental La Blanca 25 m high, and 120 × 140 m at base	Multiple forms, modest size, similar building technique across the valley
Late Early Formative		Cuadros, Jocotal	San Jose
	Settlement	Center of power shifts to riverine sites; three-tier settlement emerges in Jocotal	Two tiers, large site of San Jose Mogote and all other sites in the valley
	Mortuary	Change in pattern, all interments recovered with no grave goods, but sample size is small	Diversity score up to 5; evidence of cranial deformation; a few "badges of authority"
	Domestic architecture	Lack of data, presumably the same as before and after	Only clear example of differentiation at Tomaltepec
	Public architecture	Large, low mounds representing major labor investment	New forms all involve modest labor expenditure
	Obsidian	20% of previous distribution level	Distribution networks integrate San Jose Mogote with other sites
Early Early Formative		Barra, Locona, Ocos, Cherla	Espiridion, Tierras Largas
	Settlement	Two tiers (and possibly three initially) emerge during the Locona phase with as many as seven centers	Minimal differentiation compared to later times, but San Jose Mogote is larger
	Mortuary	Diversity scores up to 4; a few "badges of authority"	Diversity score up to 2; sample size is small
	Domestic architecture	Differentiation beginning in Locona phase with multiple large platforms and many small residences	No evidence of differentiation
	Public architecture	Ballcourt built during Locona phase	Small shrine in Tierras Largas phase
	Obsidian	Distribution networks between centers and nearby villages, used for political competition	

form augmentation consisting of 40 cm of fill (Love 1989:118). This elite platform residence was similar in size and composition to those documented in the Early Formative Mazatan (Rosenswig 1998:68). Besides the three excavated elite residences, at least 40 (and as many as 80) other households existed at the site, most

of which had no platform construction and are defined by low mounds less than 1 m in height (Love 1989:105). Domestic architecture was thus similar from Locona through Conchas times with a few large elite residences and many small houses. Therefore, status differences were emphasized in the Soconusco through residential

differentiation for centuries at each of the successive centers of political power.

The Valley of Oaxaca. Traces of domestic architecture from the pre-Tierras Largas, Espiridion phase have been documented in Area C at San Jose Mogote by a living surface and a series of postholes (defining floor space at least 4 m long) designated House 20 (Flannery and Marcus 1994:103–106). The earliest well-documented architecture dates to the Tierras Largas phase and was found at San Jose Mogote in a series of at least three successive rebuildings of a rectangular, one-room building swept clear of artifacts and interpreted as a shrine. The most complete was the final rebuilding recorded as Structure 6, a 5.4×4.4 -m one-room, whitewashed structure on a platform 8×8 m wide, 8 m long, and 40 cm high (Flannery and Marcus 1994:128–129). Domestic architectural remains from this phase are scant but household LTL-1 from the Tierras Largas site is 6×4 m with numerous postholes and trash pits (Winter 1972:31). The beginning of the Formative is very poorly understood architecturally and the cursory glimpse that does exist suggests domestic and ritual structures are of similar size, the one example of the latter being whitewashed and raised on a small platform.

Households at San Jose Mogote during the San Jose phase have been interpreted as forming a continuum in social status from elite to nonelite (Marcus and Flannery 1996:103). For example, House 13 in Area A was a simple dwelling 5×3 m in size. House 2 in Area C was the same size but whitewashed and contained a higher frequency of deer bone and exotic artifacts. House 16-17 in Area B was also whitewashed and had one room attached to a lean-to shed containing artifacts similar to House 2 but with higher quantities of jade. Better quality houses are thus defined by being whitewashed and by the artifacts found in them. Therefore, houses

would not have been significantly differentiated in their size or form and the unequal levels of wealth (measured by exotic and high labor investment artifacts) contained within these residences did not correspond to overt architectural symbols of social ranking. This is consistent with a group-oriented chiefdom (Renfrew 1974) that depended on a corporate strategy of integration (Blanton et al. 1996) and could have cultivated internal sources of political authority (Spencer 1993).

Rectangular whitewashed shrines such as Structure 7 in Area C (a lime-plastered building at least 3×4 m in size) continued to be built at San Jose Mogote in the early San Jose period. Structure 16, a second type of public building, was constructed during this period, a 2.85-m wide structure built on a 1-m platform (Flannery and Marcus 1994:362–363). In the latter part of the San Jose phase, earth was brought in and covered over Structure 16 (as well as nearby residential structures C1–C4). Atop this artificial mound Structures 1 and 2 were built—each approximately 18 m wide and together measuring over 20 m long (Flannery and Marcus 1994:367). Structure 1 was built in three episodes; the first raised the structure 1.5 m and the second and third each increased the platform 0.5 m for a final height of 2.5 m. Structure 2 was 9–11 m east of this and comprised a 1-m mound with two narrow stairways in it as well as two zoomorphic stone carvings.

Another form of public architecture was the Terminal San Jose/Early Guadalupe-phase mound designated Structure 8 at San Jose Mogote. Structure 8 was built by creating a 1-m-wide pile of stones, built up in at least four episodes to a height of 70 cm and "... capped with a thick floor of adobe clay. The area between the retaining walls had been filled with hundreds of basket loads of earth. A few postholes were all that remained of the

building that had once stood on the platform" (Flannery and Marcus 1976:212).

In the Tlacolula arm of the Valley of Oaxaca, the site of Tomaltepec had high- and low-status houses from the beginning of the San Jose phase. High-status Structure 11 was 4×8 m and raised 1 m on a platform and is contrasted with low-status House 4, measuring 4.9×2.2 m (Whalen 1981:43–45). Both of these houses were associated with domestic refuse and storage pits and in addition to size differences, status was inferred by different frequencies of nonlocal chert, shell ornaments, mica, obsidian, and high deer consumption (Whalen 1981:59–60). It is significant that Structure 11 and House 4 represent the only residential differentiation of size and form (i.e., the house twice as large on a 1-m platform) that has been documented from the Early or Middle Formative in the Valley of Oaxaca and it was not at the heart of political power at San Jose Mogote. A large public building designated Structure 12 was built on top of Structure 11 and augmented this elite residence by 2 m. Structure 12 is dated by Burials no. 47 and 68, which were interred just below the floor and contained Guadalupe ceramics (Whalen 1981:64–67, 136, 152). The fact that a public building replaced a large elite household may elucidate the integrative strategy employed at the community, as social differentiation is superseded by a less exclusionary symbol of power (*sensu* Abrams 1989:62 in relation to architecture specifically and Blanton et al. 1996 more generally).

Based on survey data, the site of Huitzo (located at the north end of the Etla arm) was a mere fraction the size of San Jose Mogote in the Early and Middle Formative and yet architectural evidence suggests this site was more than a simple agricultural hamlet. Huitzo was estimated as measuring 2.7 ha during the Early Formative by Flannery and Marcus (1983:60) but Kowalewski et al. (1989:524–525) only

found 0.8 ha of this site during their survey. Either way, "At least for the Guadalupe phase, architectural patterns are not exactly congruent with the settlement size hierarchy" (Kowalewski et al. 1989:66). Platform 4 at Huitzo employed a similar construction method as Structure 8 at San Jose Mogote and stood 2 m high and 15 m wide (Flannery and Marcus 1976:212). Structure 3 was built atop this platform, was 1.3 m high and 11.5 m wide (Marcus and Flannery 1996:113), and may have been connected to two or three other such public buildings arranged around a courtyard (Flannery and Marcus 1976:213). In addition to the nondomestic architecture at Huitzo, there were three Guadalupe-phase houses (1, 3, and 6) that have been interpreted as high-status residences due to their proximity to Structure 3 (Flannery and Marcus 1983:62). Again, as at Tomaltepec and San Jose Mogote, public architecture is more elaborate than households and residential status differences are not defined by the size or form of a house. In this case it is inferred from the proximity to public architecture, while at San Jose Mogote, and the other sites discussed above, elevated status is based on different proportions of artifact types.

Finally, the small, salt-producing settlement of Fabrica San Jose had higher and lower status households during the Guadalupe phase, based on the quantity of exotic goods and an elaborate burial (Drennan and Flannery 1983:67). Burial no. 39, the woman with a diversity score of 8, was found next to floor H14 and the high status of this house is inferred by the status of this associated burial and not its impressive size of elaborate form (Drennan 1976:90). If this was a member of the Fabrica San Jose elite, sent from San Jose Mogote (as Marcus and Flannery 1996:113–115 suggest), her high status was not reflected by the house she lived in and this suggests a group-oriented (Renfrew

1974) or corporate (Blanton et al. 1996) strategy of political integration.

Summary of Architectural Data

In the Soconusco, changing size of elite residential architecture within communities corresponds closely with political differences within the region (inferred from the settlement data). Beginning in the Locom phase, large elite residences were built, augmented, and abandoned depending on the political fortunes of their inhabitants. Therefore, residential platform construction may both symbolically and physically reflect the fortunes of powerful factions within the polity. This residential differentiation is consistent with an exclusionary strategy (Blanton et al. 1996) or an individualizing chiefdom (Renfrew 1974) as long as the "individual" is taken to be a faction rather than only the figurehead, or chief, that represents a supporting faction.

Based on the evidence currently available, Middle Formative construction activity in the Soconusco was less focused on elite residences and relatively more energy was expended in the construction of public architecture, which attained a monumental level. However, both elite residences and nonresidential architecture required a large labor output. If we assume that the Middle Formative elite sponsored the construction of nonresidential mounds, then both residential and nonresidential architecture attest to the power of the elite at regional centers. This is consistent with an exclusionary strategy that emphasized external relations and could also be called an Individualizing Chiefdom (again, as discussed for the Early Formative, if individual factions are being emphasized). Following such an interpretation, specific elite factions (i.e., households/lineages) would have been emphasized and differentiated through the conspicuous consumption of labor ex-

pended in a manner that persists over time on the social landscape. However, these symbols would have only persisted as long as a given village was occupied. Shifting political centers would have necessitated new architectural projects that redesigned the social and political landscape every century or so and would have consumed large quantities of labor.

In the Valley of Oaxaca, residential differences were not emphasized and households were similar in size (Table 3) and form, which suggests that hierarchy was not emphasized by this form of material culture. Social distance was not created by elevating elite houses above those of their neighbors. Instead, differences in the quantity and quality of exotic goods were hidden within certain households (which have been interpreted as elite) almost as if to deemphasize economic differentiation. Throughout the entire Early and Middle Formative periods, all residences were small and "...even the most elaborate Rosario phase residences so far discovered could have been built by the members of one family" (Flannery and Marcus 1983:60). Such an architectural strategy represents a striking example of a corporate mode of integration (as Feinman 1995 argues) or a group-oriented (Renfrew 1974) form of political organization, as it deemphasized interpersonal differences.

Public architecture reinforced these strategies in the Oaxacan Middle Formative, for while more energy was expended on public architecture it was a mere fraction of that expended in the Soconusco (Table 3). Structures 1 and 2 at San Jose Mogote are interpreted as being organized in a unifying manner, as two zoomorphic sculptures on Structure 2 may represent the were-jaguar and fire-serpent lineages who inhabited the site (Marcus 1989). If different social groups were represented at this public building it could have helped to symbolically unify potentially adversarial factions within the

community. In addition, residences are interpreted as being elite based solely on associated artifacts, burials, and proximity to public architecture and have little to distinguish them from nonelite residences in appearance. Thus, while economic differences exist, the outward expression of social differentiation was minimal. Modest signs of social differentiation in both burials and architecture would have helped to create internal cohesion and bolstered internal sources of political authority (Spencer 1993).

Table 3 shows the different levels of labor investment in architectural activity between the Soconusco and the Valley of Oaxaca. Such differences demonstrate that the consumption of labor in architectural construction is significantly more conspicuous in the former region and would have consumed a much larger proportion of the "chiefly domestic product" (*sensu* Drennan 1991b:283). While the figures in Table 3 may underestimate the labor involved for masonry in Oaxaca, they do reflect the overall size of buildings and how imposing they would be in the two regions. One thing is clear: the conspicuous consumption of labor for non-functional aspects of architectural construction (Trigger 1990) during Early and Middle Formative periods in the Soconusco reflects a political strategy that expended quantities of labor unparalleled in the contemporary Valley of Oaxaca.

I draw the reader's attention to differing interpretations of Mound 6 at Paso de la Amada that are relevant to the previous discussion. Blake (1991; Blake et al., n.d.), Clark (1994:304–373), and Lesure (1997) interpret the numerous large Early Formative structures that they have excavated at Paso de la Amada as elite residences. However, Marcus and Flannery (1996:90–91) contest the interpretation of the Locona-period occupation of Mound 6 as an elite residence and instead interpret it as a "men's house." I favor the former

interpretation, as unequal political relations are demonstrated at a regional scale in the Soconusco beginning in Locona times based on settlement data (Fig. 3). Therefore, the real issue is not *if* but *how* the Soconusco elite symbolically expressed their political power. However, this disagreement need not detract from the point I am attempting to make. If the reader substitutes the functionally neutral term "large platform" for "elite residence" I believe the interpretations are no less plausible.

A COMPARISON OF POLITICAL PROCESSES IN THE SOCONUSCO AND VALLEY OF OAXACA

Studying political process by examining differing aspects of leadership strategy and social integration has been proposed by Leach (1954), Sahlins (1963), and Renfrew (1974). The approach was first employed in Mesoamerican archaeology by Flannery (1968) and more recently Spencer (1982, 1993) and Blanton et al. (1996) have expanded its application. This article employs such theoretical models to compare Early and Middle Formative societies from the Soconusco and Valley of Oaxaca. This is done by comparing three classes of data from each region using the same summary techniques to produce comparable results. Table 4 provides a chronologically ordered summary of the data presented in this article.

In all but the Barra and Tierras Largas phases, the Formative societies of Oaxaca and the Soconusco were politically ranked based on settlement data. Therefore, the differences discussed in this article are not due to their "level of complexity" but instead appear to be the result of political systems that employed different integrative strategies. As I have argued, a Oaxacan polity was centered at San Jose Mogote and the elite in this community appear to have employed a predomi-

nantly corporate strategy of integration that depended on internal sources of authority when compared to the elite in various Soconuscan polities. The latter exhibited a greater degree of political factionalism within each of the closely packed polities and greater competition between the elites in neighboring centers. This competition appears to be responsible for a relatively more exclusionary strategy with political authority embedded in the relations between polities.

In the Soconusco, settlement hierarchy clearly emerged by Locona times (Fig. 3B) and the population was clustered around as many as seven centers. The most powerful of these centers shifted often as political fortunes waxed and waned and as the quantity of tribute that flowed within the region fluctuated (Fig. 4). Large residences were built on raised platforms at political centers from Locona times onward and required hundreds of person/days to construct (Table 3). Such structures may have functioned as the symbolic focus of political authority within the community, as they accentuated status differences between those that lived in large residences and those that did not. Elite residences and burials with higher diversity scores and "badges of authority" have to date only been found at centers that received tribute according to the result in Fig. 3. Each early Early Formative Soconuscan polity distributed obsidian to villages within a few-kilometers radius. The dramatic replacement of obsidian distribution in Cuadros times by a new media of status expression (i.e., Olmec styles and imagery) may attest to the political rather than economic function of such material. During the late Early Formative the center of political power shifted to the Coatan River and a three-tiered settlement system was established by Jocotal times. During the Middle Formative, truly monumental architecture was constructed in the Soconusco at La Blanca; this was yet

another political center that emerged a number of kilometers south of the Mazatan survey zone on the Naranjo River.

During the San Jose and Guadalupe phases, the dominant position of San Jose Mogote in the Valley of Oaxaca settlement system was uncontested. However, at no time in the Early or Middle Formative did the elite build large residences. In fact, elites in this region seem to have employed residential architecture to deemphasize economic differences. If such a comparative lack of elite status expression was the cause or the result of San Jose Mogote's power is not clear, but it would have been a savvy strategy to avoid conflict and maintain stability. Ceremonial architecture, as well as burials with higher diversity scores, were found at sites of all sizes and may have also functioned to integrate the valley as even small villages participated in valleywide ceremonies. Furthermore, similar obsidian distribution patterns between wards of San Jose Mogote and outlying villages demonstrates economic ties (possibly mirroring kinship affiliation) that linked this political center with all parts of the valley. Integrative obsidian distribution patterns are first detected during the San Jose phase when San Jose Mogote emerged as the dominant center in the valley.

In both regions, evidence of burial hierarchy is ambiguous during the initial emergence of complexity and does not show stratified levels of elaboration despite political and economic evidence of hierarchy during Early Formative times. While there are certain individuals in both regions who may have had salient badges of authority, clear social stratification had not emerged (or at least was not expressed using archaeologically preserved remains) until late in the evolutionary sequence examined here. This pattern raises an important question for the study of emergent inequality. Why was burial differentiation not emphasized in either Early

Formative society when other classes of data indicate hierarchy? A pattern of settlement and architectural hierarchy (political?) preceding burial differentiation (social?) is also reported by Renfrew (1973, 1974) in Neolithic Wessex and by Creamer and Haas (1985) in Central America. This suggests that during the emergence of inequality, the institutionalization of personalized status may take longer to develop than faction-based status. A similar observation was made in reference to Egyptian architecture by Abrams (1989:60), who suggests "... that social inequality was very high relative to social differentiation." Such a cross-cultural pattern (documented in at least Europe, Africa, Central America, and Mesoamerica) is based solely on archaeological observation and merits further investigation. This may mean that the Saxe-Binford program of mortuary analysis is not useful to study the processes of emerging inequality in many areas of the world because by the time it works, the transition is long over and inequality is firmly entrenched.

POLITICAL AND ENVIRONMENTAL LANDSCAPES: EXPLAINING THE TWO TRAJECTORIES

One explanation for the different political strategies evident in the Soconusco and the Valley of Oaxaca may lie in the contrasting characteristics of their political and environmental landscapes. If we compare the two areas at an interregional scale quite different patterns are evident. In the Soconusco, polities operated in a lush environment and a number of polities were clustered together but people in other regions were quite a distance away. Therefore, there would have been intensive interaction among neighboring villagers, who could easily change allegiances between any of the up to seven political centers that surrounded them. As a result, the Soconuscan elite would have

had to work hard to maintain support, as there was always another potential patron nearby. In contrast, the Valley of Oaxaca was relatively arid and during the Early and Middle Formative settlement patterns demonstrate a single polity existed in the valley—however, there were numerous other political units nearby (e.g., Spencer 1982; Zeitlan 1993:85). Oaxacan villages were further apart and villagers had relatively fewer close neighbors when compared to the Soconuscan villagers. Additionally, as there was only one dominant political center in the valley; if villagers were not content with the political system centered on San Jose Mogote, then their only choice would have been to leave.

The inhabitants of the first Early Formative polities in the Soconusco would have been able to produce a larger agricultural surplus and support a higher population density with relatively little political organization (Clark and Blake 1994:18–19). In addition, as most animal protein consumed during this period came from species available in nearby swamps (e.g., Blake, Chisholm et al. 1992), all subsistence needs would have been met without moving more than a few kilometers from any of the Early Formative villages. Thus, as with their Archaic-period predecessors (Voorhies et al. 1991), all nutritional needs could have been acquired following a collector strategy (*sensu* Binford 1980) and mobility would have been minimal. So, while all subsistence needs could have been met at a very local level, neighbors outside of the Soconusco would have been far less accessible when compared to Oaxaca. However, within the region, neighboring villages were clustered together far more than can be explained by resource exploitation alone. A dearth of frequently accessible groups of people in other regions might not have been significant at the beginning of the Early Formative when a system of simple, competing ranked societies could have developed in

relative political isolation (though exchanges of prestige goods occurred with people further afield). However, when the scale of *political* interaction did increase at the end of the Early Formative, integrative strategies established during Barra through Ocos times (1550 to 1100 B.C.E.) would have influenced how the Soconusco interacted in a new world order, i.e., the pan-Mesoamerican Olmec Horizon (Lee 1989).

In the Valley of Oaxaca, early sedentary life supported relatively fewer people in proximity to each other (Kowalewski et al. 1989). However, groups of people in neighboring valleys were only a short distance away. Interregional contact could have been frequent especially if the inhabitants of the Valley of Oaxaca were hunting in the forested mountain ranges that linked one valley to the next in a manner not dissimilar to their forager (as opposed to collector) ancestors (as Marcus and Flannery 1996:52 suggest). Therefore, extravalley interaction may have been well developed before political hierarchy emerged. So, while political complexity emerged later in the Valley of Oaxaca than in the Soconusco, political strategies could have been relatively more dependent on interaction with other groups and less on intensifying production from the local environment. Such differences in the political and environmental landscapes of the two regions may also explain why aspects of the precocious Olmec culture were differentially incorporated into the two regions (see Clark 1997:224–229). In the Soconusco, Olmec “foreignness” may have been more exotic and prestigious and thus adopted in a more encompassing manner, further spurring on the highly competitive political environment. In the Valley of Oaxaca, aspects of “Olmec imagery” may have been incorporated as one among numerous foreign sources of prestige goods (Marcus 1989; Marcus and Flannery 1996:119–120, 138).

Hierarchical political organization in the Soconusco appears to have emerged early when compared to Oaxaca. However, no single Soconuscan polity lasted longer than a few generations and the continuous emergence of new political centers across the region may have taken a political toll on Soconuscan society. Such fluctuating political control would also have diminished the legitimacy of any single chief or faction. Unlike the Valley of Oaxaca, where San Jose Mogote was the Formative political center of the valley since time immemorial, competing Soconuscan political factions in the Early and Middle Formative could have harkened back to past centers of power, of which there were many.

DISCUSSION

The discussion above does not account for the historical relationship between the two regions. In fact, the scenario related above implicitly assumes that each cultural sequence unfolded independently of the other. A discussion of who influenced whom or to what degree this occurred (i.e., see Sharer and Grove 1989) is beyond the scope of this article. However, if the reader will grant the rather uncontroversial assertion that most sedentary Early Formative Mesoamerican societies were aware of each other, then a problem with the ahistorical scenario presented in the last section is that it fails to account for the sequence of emergent inequality in the two regions. The Barra and Tierras Largas phases were not contemporaneous and neither were the Locona and San Jose periods, when inequality is first evident (see Table 4). In fact, the Locona phase began 250 years (and ended 100 years) before the commencement of the San Jose phase. Clark and Blake (1994) argue that inequality emerged at the beginning of the Early Formative in the Soconusco as the unin-

tended consequence of competition between aggrandizers. Inequality did not emerge in the Valley of Oaxaca until the late Early Formative and at this time the transition seems to have occurred with no question as to the locale of political power. Furthermore, the emergence of inequality in the Valley of Oaxaca was accomplished in a manner that does not appear to have required elite groups to distribute obsidian or construct impressive residences as they did in the Soconusco. Recall Feinman's (1995:262) contention that "... viable explanations of change ... must recognize the historical nature of these social transitions." The Soconusco and Valley of Oaxaca certainly represent two very different environmental settings and the elite in the two regions appear to have employed different integrative strategies. However, if the emergence of inequality in the Soconusco represents a primary occurrence of ranking and the Oaxacan example a secondary occurrence of such political organization, then this may help to account for *why* the initial forms of integration differed.

While the degree to which the Soconusco elite employed an exclusionary strategy and the Oaxacan elite depended on a more corporate mode of integration undoubtedly changed over time, it appears that the basic organizational tendencies continued into the following centuries. In the Late Formative, the center of power changed again in the Soconusco, and Izapa emerged as the new political capital of the region (Lowe et al. 1982; and see Diehl and Coe 1995:24). In Oaxaca, the Late Formative center of power moved to Monte Alban but this capital was apparently founded as part of a strategy to provide more internal cohesion in the valley (Blanton et al. 1993:69-72; Marcus and Flannery 1996:139-143). Such a unifying and organized move may have actually been in response to increasing

levels of internal discord evident in the Rosario phase (Marcus and Flannery 1996:121-129). In fact, the increase in Rosario period factional competition may be responsible for the first truly monumental investment in public architecture in the valley—4½ centuries after political inequality emerged (Flannery and Marcus 1983:75-77).

A comparison of Oaxacan and Soconusco Early and Middle Formative trajectories highlights the fact that a polity's organizational strategy may provide more insight into explaining cultural processes than an evolutionary typology that measures the degree of cultural complexity. The interpretive advantage of examining culture in terms of the models discussed in this article (i.e., Leach 1954; Sahllins 1963; Renfrew 1974; Spencer 1993; Blanton et al. 1996) is that these are evolutionary structuring principles that can be used to compare societies at the "same stage" or between "different stages" of an evolution typology. As Drennan (1991b:284) notes, "... there are a number of important ways that chiefdoms differ from each other, aside from being more or less developed." Or as Nelson (1995:599) puts it, "... an appropriate question to ask about the two polities at hand is not only "How complex were they?" but also "How were they complex?" All of the societies examined in this study would be classified as intermediate by Feinman and Neitzel (1984), and except for those of the Barra and Tierras Largas time periods, they would be called chiefdoms by others (e.g., Service 1975). It is now a quarter-century since Peebles and Kus (1977; also see Renfrew 1973) began identifying ranked societies in the archaeological record. As the title of this essay alludes to, it is now more elucidating to explore the integrative processes of such societies than to define them according to evolutionary typologies.

APPENDIX 1

Burial Data from the Soconusco Used to Calculate Diversity Scores

Site	Burial no.	Phase	Diversity	Sex	Age	Reference
Paso de la Amada	1	Locona	0	m	a	Clark (1994:402)
Paso de la Amada	4	Locona	1	f	a	Clark (1994:402)
Paso de la Amada	Md.6#3	Locona	1	?	I	Clark (1994:402)
Chilo	1	Locona	1	f	a	Clark (1994:402)
Chilo	2	Locona	4	m	a	Clark (1994:402)
Chilo	3	Locona	0	m	a	Clark (1994:403)
Chilo	4	Locona	0	?	a	Clark (1994:403)
Chilo	5	Locona	2	?	a	Clark (1994:403)
Chilo	6	Locona	0	?	c	Clark (1994:403)
Vivero	1	Locona	3	f	c	Clark (1994:403)
Paso de la Amada	5	Locona	2	?	a	Clark et al. (1994:71)
Paso de la Amada	6	Locona	1	?	a	Clark et al. (1994:72)
Paso de la Amada	7	Locona	0	?	a	Clark et al. (1994:73)
Paso de la Amada	9	Locona	0	?	c	Clark et al. (1994:75)
Paso de la Amada	Pz. G#1	Locona	0	f	a	excavated in 1995
Aquiles Serdan	Pit 3, l.3	Ocos	0	?	a	Clark et al. (1987)
Paso de la Amada	Md.6#1	Ocos	2	f	a	Blake et al. (1993:13)
Paso de la Amada	Md.6#2	Ocos	0	?	l	Blake et al. (1993:14)
Paso de la Amada	3	Ocos	0	?	?	Ceja (1985:26)
Paso de la Amada	11a	Ocos	0	?	a	Lesure (1995:103)
Paso de la Amada	11b	Ocos	0	?	a	Lesure (1995:103)
Paso de la Amada	12	Ocos	0	?	l	Lesure (1995:103)
Paso de la Amada	Pz.B#3	Ocos	0	f	?	Excavated in 1995 by John Clark
Paso de la Amada	Pz.C#1	Ocos	1	m	a	Excavated in 1995 by John Clark
Paso de la Amada	Pz.A#1	Ocos/Cherla	1	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz. O#1	Ocos/Cherla	0	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.R#1	Ocos/Cherla	0	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.T#1	Ocos/Cherla	0	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.X#1	Ocos/Cherla	0	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.B#1	Cherla	4	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.B#2	Cherla	2	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.C#2	Cherla	2	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.C#3	Cherla	0	—	—	Excavated in 1995 by John Clark
Paso de la Amada	Pz.D#1	Cherla	1	—	—	Excavated in 1995 by John Clark
Aquiles Serdan	Tr.1K, l. 18	Cherla	1	f	a	Blake et al. (1992:87)
Paso de la Amada	8	Cherla	1	?	a	Clark et al. (1994:74)
Sandoval	1	Early Formative	0	?	l	Clark et al. (1987:61)
Paso de la Amada	2	Early Formative	0	?	?	Ceja (1985:26, 29)
Villo	1	Cuadros	0	?	?	Clark et al. (1987:54)
Salinas la Blanca	Cut 1, level22	Cuadros	0	?	l	Coe and Flannery (1967:74)
Salinas la Blanca	Cut 1, level24	Cuadros	0	?	a	Coe and Flannery (1967:74)
Aquiles Serdan	Pit1al. 5	Cuadros	0	?	?	Blake et al. (1992:87)
El Veral	4	Cuadros/Jocotal	0	?	c	Clark et al. (1994:78)
El Veral	1	Jocotal	0	?	a	Clark et al. (1994:76)
El Veral	2	Jocotal	?	?	?	Clark et al. (1994:77)
El Veral	3	Jocotal	0	?	a	Clark et al. (1994:77)
Hanacastal	1	Conchas	1	m	a	Clark et al. (1987:23-24)

APPENDIX 1—*Continued*

Site	Burial no.	Phase	Diversity	Sex	Age	Reference
Pajon	1	Conchas	1	m	c	Pailles (1980:24, 92–106)
La Victoria	1	Conchas	0	?	a	Coe (1961:25, 145)
La Victoria	2	Conchas	0	?	a	Coe (1961:25, 145)
La Victoria	3	Conchas	0	f	a	Coe (1961: 25–26, 145)
La Victoria	5	Conchas	0	?	a	Coe (1961:146)
La Victoria	6	Conchas	0	m	a	Coe (1961:146)
Naranjo	op.26	Conchas	0	?	?	Love (1989)
Naranjo	op.26	Conchas	0	?	?	Love (1989)
Naranjo	op.26	Conchas	0	?	?	Love (1989)
Naranjo	op.27	Conchas	0	?	?	Love (1989)
Naranjo	op.27	Conchas	0	?	?	Love (1989)

APPENDIX 2

Burial Data from the Valey of Oaxaca Used to Calculate Diversity Scores

Site	Burial no.	Phase	Diversity	Sex	Age	Reference
Tierras Largas	TL-34	TL	0	m	a	Winter (1972:325)
San Jose Mogote	SMJ-8	TL	0	f?	c	Winter (1972:322)
Tierras Largas	TL-38	TL	0	f	a	Winter (1972:326)
Tierras Largas	TL-35	TL	0	f	a	Winter (1972:326)
Tierras Largas	TL-19	TL	2	f	a	Winter (1972:325)
Tierras Largas	TL-13	TL	0	f	a	Winter (1972:325)
Tierras Largas	TL-29	TL	0	m	a	Winter (1972:325)
Tierras Largas	TL-37	TL	1	f	a	Winter (1972:325)
San Jose Mogote	29	TL	1	m	a	Marcus and Flannery (1996:85)
Tomaltepec	58	SJ	?	m	a	Whalen (1981:149)
Tomaltepec	57	SJ	1	f	a	Whalen (1981:149)
Tomaltepec	44-4	SJ	?	m	a	Whalen (1981:149)
Tomaltepec	45	SJ	3	m?	a	Whalen (1981:149)
Tomaltepec	49	SJ	1	m	a	Whalen (1981:149)
Tomaltepec	52	SJ	0	?	a	Whalen (1981:149)
Tomaltepec	51	SJ	1	m?	a	Whalen (1981:149)
Tomaltepec	50	SJ	0	?	a	Whalen (1981:149)
Tomaltepec	55	SJ	1	?	c	Whalen (1981:149)
Tomaltepec	54	SJ	1	f?	a	Whalen (1981:149)
Tomaltepec	53	SJ	1	?	c	Whalen (1981:149)
Tomaltepec	44-3	SJ	0	f	a	Whalen (1981:149)
Tomaltepec	33	SJ	0	f	a	Whalen (1981:148)
Tomaltepec	32	SJ	?	?	c	Whalen (1981:148)
Tomaltepec	35	SJ	3	f	a	Whalen (1981:148)
Tomaltepec	34	SJ	0	m	a	Whalen (1981:148)
Tomaltepec	31	SJ	?	f	a	Whalen (1981:148)
Tomaltepec	24-2	SJ	2	m	a	Whalen (1981:147)
Tomaltepec	24-1	SJ	2	f	a	Whalen (1981:147)
Tomaltepec	30	SJ	?	f?	a	Whalen (1981:148)
Tomaltepec	29	SJ	?	m?	a	Whalen (1981:147)
Tomaltepec	43	SJ	1	?	c	Whalen (1981:149)
Tomaltepec	42	SJ	4	f?	a	Whalen (1981:148)

APPENDIX 2—*Continued*

Site	Burial no.	Phase	Diversity	Sex	Age	Reference
San Jose Mogote	SJM-tomb3	SJ	4	m	a	Winter (1972:324)
San Jose Mogote	SJM-12	SJ	1	?	i	Winter (1972:324)
Tierras Largas	TL-40	SJ	0	f?	a	Winter (1972:327)
San Jose Mogote	SJM-11	SJ	0	f	c	Winter (1972:324)
Tomaltepec	12	SJ	?	m?	a	Whalen (1981:147)
Tomaltepec	16	SJ	?	m?	a	Whalen (1981:147)
Tomaltepec	17	SJ	?	f?	a	Whalen (1981:147)
Tomaltepec	11-1	SJ	5	m	a	Whalen (1981:147)
Tomaltepec	9	SJ	0	f	a	Whalen (1981:147)
Tomaltepec	8	SJ	0	m	a	Whalen (1981:147)
Tomaltepec	6	SJ	0	m	a	Whalen (1981:147)
San Jose Mogote	17	SJ	4	f	a	Marcus and Flannery (1996:98)
San Jose Mogote	18	SJ	4	f	a	Marcus and Flannery (1996:104)
San Jose Mogote	1	SJ	1	f	c	Marcus and Flannery (1996:106)
Abasolo	A-1	SJ	3	?	i	Winter (1972:320)
Tomaltepec	20-1	SJ	4	m	a	Whalen (1981:147)
Tomaltepec	18	SJ	1	f	a	Whalen (1981:147)
Tomaltepec	47	G	2	f	c	Whalen (1981:152)
Huitzo	H-2	G	0	f	a	Winter (1972:322)
Huitzo	H-1	G	0	m	a	Winter (1972:322)
Tomaltepec	68	G	4	f	a	Whalen (1981:152)
Tomaltepec	59	G	2	f	a	Whalen (1981:152)
Tomaltepec	56	G	2	m	a	Whalen (1981:152)
Fabrica San Jose	20I	G	1	?	c	Drennan (1976:247)
Fabrica San Jose	20II	G	1	?	c	Drennan (1976:247)
Fabrica San Jose	22I	G	3	?	c	Drennan (1976:248)
Fabrica San Jose	6	G	0	?	a	Drennan (1976:247)
Fabrica San Jose	8	G	1	?	a	Drennan (1976:247)
Fabrica San Jose	9	G	0	?	i	Drennan (1976:247)
Fabrica San Jose	28	G	?	?	a	Drennan (1976:248)
Fabrica San Jose	39	G	8	f	a	Drennan (1976:248)
Fabrica San Jose	42	G	0	m	a	Drennan (1976:248)
Fabrica San Jose	22II	G	1	?	c	Drennan (1976:248)
Fabrica San Jose	24	G	2	?	c	Drennan (1976:248)
Fabrica San Jose	25	G	1	f	a	Drennan (1976:248)
Fabrica San Jose	3II	G	1	m	a	Drennan (1976:247)
Tierras Largas	TL-24	G	1	f	a	Winter (1972:327)
Tierras Largas	TL-36I	G	0	m	a	Winter (1972:328)
Tierras Largas	TL-36II	G	0	f	a	Winter (1972:328)
Tierras Largas	TL-18I	G	1	f	a	Winter (1972:327)
Tierras Largas	TL-18II	G	0	m	a	Winter (1972:327)
Tierras Largas	TL-22	G	0	f?	a	Winter (1972:327)
Tomaltepec	44-2	SJ	0	m	a	Whalen (1981:149)
Tomaltepec	44-1	SJ	?	m	a	Whalen (1981:149)
Tomaltepec	41	SJ	1	f	a	Whalen (1981:148)
Tomaltepec	38	SJ	1	?	a	Whalen (1981:148)
Tomaltepec	37	SJ	2	?	c	Whalen (1981:148)
Tomaltepec	40	SJ	2	m	a	Whalen (1981:148)
Tomaltepec	39	SJ	s	m?	a	Whalen (1981:148)
Tomaltepec	60	SJ	1	f	a	Whalen (1981:149)
Tomaltepec	80-1	SJ	4	f	a	Whalen (1981:151)
Tomaltepec	82	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	84	SJ	1	f?	a	Whalen (1981:151)

APPENDIX 2—Continued

Site	Burial no.	Phase	Diversity	Sex	Age	Reference
Tomaltepec	79-5	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	79-1	SJ	4	m	a	Whalen (1981:150)
Tomaltepec	79-3	SJ	?	?	c	Whalen (1981:151)
Tomaltepec	79-4	SJ	1	m?	a	Whalen (1981:151)
Tomaltepec	85	SJ	2	?	c	Whalen (1981:151)
Tomaltepec	90	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	91	SJ	1	?	a	Whalen (1981:152)
Tomaltepec	92	SJ	?	?	a	Whalen (1981:152)
Tomaltepec	89	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	86	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	87	SJ	1	?	a	Whalen (1981:151)
Tomaltepec	88	SJ	0	m	a	Whalen (1981:151)
Tomaltepec	65	SJ	0	f?	a	Whalen (1981:150)
Tomaltepec	66	SJ	?	?	a	Whalen (1981:150)
Tomaltepec	67	SJ	1	?	a	Whalen (1981:150)
Tomaltepec	64	SJ	1	f	a	Whalen (1981:150)
Tomaltepec	61	SJ	0	f	a	Whalen (1981:150)
Tomaltepec	62	SJ	0	m	a	Whalen (1981:150)
Tomaltepec	63	SJ	1	?	a	Whalen (1981:150)
Tomaltepec	69	SJ	1	?	a	Whalen (1981:150)
Tomaltepec	76	SJ	3	m	a	Whalen (1981:150)
Tomaltepec	77	SJ	0	?	i	Whalen (1981:150)
Tomaltepec	78	SJ	0	f?	a	Whalen (1981:150)
Tomaltepec	75	SJ	0	m?	a	Whalen (1981:150)
Tomaltepec	70-1	SJ	?	f	a	Whalen (1981:150)
Tomaltepec	70-2	SJ	?	?	c	Whalen (1981:150)
Tomaltepec	74	SJ	1	f	a	Whalen (1981:150)
Tomaltepec	21	SJ	2	f	a	Whalen (1981:147)
San Jose Mogote	SJM-4	SJ	0	?	c	Winter (1972:323)
San Jose Mogote	SJM-5	SJ	1	m	a	Winter (1972:323)
San Jose Mogote	SJM-7	SJ	1	m	a	Winter (1972:324)
San Jose Mogote	SJM-6	SJ	3	?	c	Winter (1972:323)
San Jose Mogote	SJM-11	SJ	3	?	i	Winter (1972:323)
Abasolo	A-3	SJ	0	m	a	Winter (1972:321)
Abasolo	A-2	SJ	2	?	i	Winter (1972:321)
San Jose Mogote	SJM-10	SJ	4	?	i	Winter (1972:323)
Abasolo	A-4	SJ	2	?	i	Winter (1972:321)
San Jose Mogote	SJM-9	SJ	1	?	i	Winter (1972:324)
Tierras Largas	TL-42	SJ	0	m	a	Winter (1972:326)
Tierras Largas	TL-20	SJ	2	m	a	Winter (1972:326)
San Jose Mogote	SJM-2	SJ	0	?	c	Winter (1972:324)
Tierras Largas	TL-4	SJ	2	f	a	Winter (1972:326)
Tierras Largas	TL-11	SJ	2	m	a	Winter (1972:327)
Tierras Largas	TI-46III	G	1	?	i	Winter (1972:328)
Fabrica San Jose	1	G	0	f?	a	Drennan (1976:247)
Fabrica San Jose	3I	G	0	m	a	Drennan (1976:247)
Tierras Largas	TL-36III	G	0	?	c	Winter (1972:328)
Tierras Largas	TL-46I	G	1	m	a	Winter (1972:328)
Tierras Largas	TL-46II	G	1	f	a	Winter (1972:328)

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