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# Ideology and Culture Change in Prehistoric Puerto Rico: A View from the Community

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*Many Native American settlements in lowland South America are physical models of the cosmos. Social behavior, relations of power, and activity organization are structured by how the participants interact with and interpret cosmology. Culture change in the Amazon Basin and the West Indies is rooted in increasingly asymmetrical power relationships and control over ideology. In this paper, I explore linkages between the archaeological record at the community level and ideology to discuss culture change in the West Indies. Anthropological theory, ethnohistorical documents, ethnographic observations, and archaeological data all were employed in this analysis.*

## Introduction

The study of culture change has been a dominant focus of research by anthropologists for much of this century. Archaeologists in particular have devoted a great amount of effort in describing and, to a lesser degree, explaining cultural sequences spanning considerable periods of time.

In terms of explanation, discussions quickly proceed to concepts of causality to account for observed changes in the archaeological record. Great debates center around specific causal factors within the natural and social matrix of cultural systems. Such factors in culture change have been variously attributed to ideological, economic, or political considerations (Demarest and Conrad 1992; Earle 1991; Henderson and Netherly 1993; Upham 1990). Proponents of specific formulations marshal evidence to support one of the competing views that either ideology, economics, or politics is paramount in the examination of culture change. In recent years, an increasing number of researchers are recognizing that specific historical circumstances are essential to understand when evaluating one or more cultural trajectories in a region. The spirits of Boas, Steward, and White may be at ease in this era of postprocessualism.

It is becoming clear that culture change cannot be viewed simply as a process of ecological management, but that political factors frequently, if not always, underlie change. Political power and how it is used to control the actions of people and the products of their labor is fundamental in discussing evolutionary trajectories.

I examine a specific historical sequence in Puerto Rico

that is well documented archaeologically and ethnohistorically to span tribal and chiefdom-level societies. I focus in particular on community organization and how this aspect of society reflects changing relations of power. This form of analysis necessarily complements studies of regional settlement distributions.

In studying the layouts of ancient communities, archaeologists are finding that the built environment, in general, often serves to symbolize the structure and organization of the cosmos (Donnan 1985; Fritz 1978; Isbell 1978; Wheatley 1971). All human social systems have a world view, or cosmology, that describes and explains their universe. Within this framework of world view, the settlement may be an integral component of the universe. We see that the village or city is at once a model of the universe and a component of it (Lathrap 1985; Wheatley 1971).

In their interpretations of site structure and settlement organization archaeologists have found that it may be useful, and sometimes necessary, to consider cosmology as an interpretive framework (Flannery and Marcus 1976; Fritz 1978, 1986; Marcus and Flannery 1994; Stahl 1984, 1985). Archaeologists understandably have shied away from such approaches because of the methodological problems in linking archaeological residues to ancient conceptual models. Kent Flannery once said that "most 'hard-nosed' archaeologists are unwilling to touch with a ten-foot pole" such phenomena "as ritual, religion, cosmology, and iconography for which there are no agreed-upon analytical procedures" (Flannery and Marcus 1976: 375). In doing so, world view may be relegated to epiphenomena

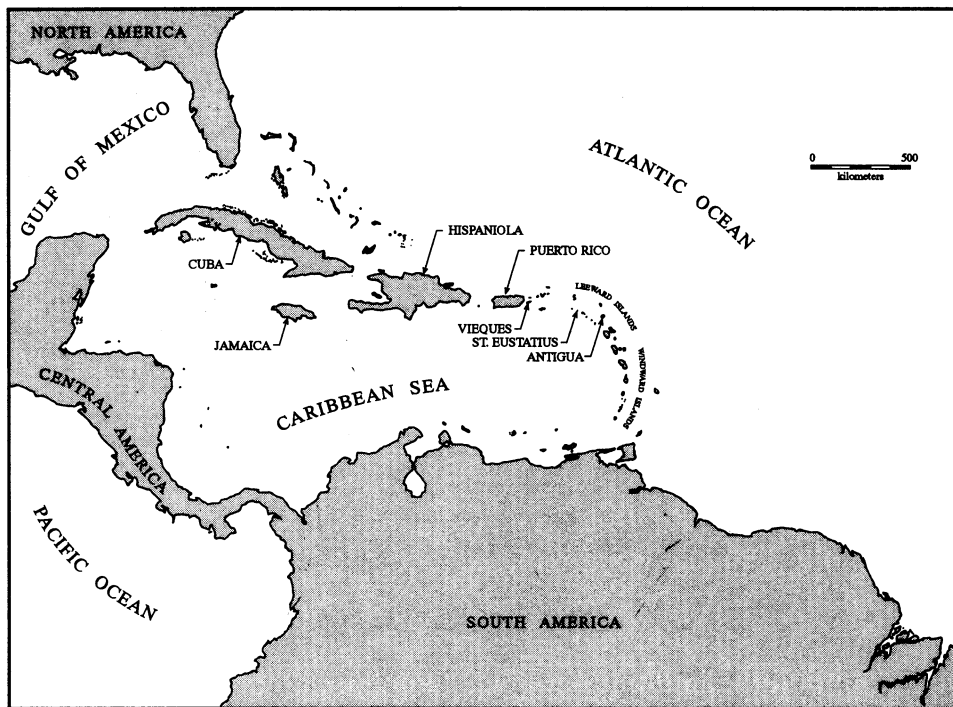


Figure 1. Map of northern South America and the Caribbean basin.

with no great bearing on such “big issues” as adaptation, economic organization, and politics. It is probably not coincidental that this kind of analysis has been most successful where written records or hieroglyphic inscriptions could be consulted to confirm or negate interpretations (Ashmore 1991; Schele and Freidel 1990). When the database consists solely of soil discolorations and scatters of artifacts the methodological challenge is formidable.

In this essay, I present the results of one such study. After a brief introduction to Saladoid archaeology, I discuss the importance of cosmology in lowland South America, and how this is relevant for the West Indies. This is followed by the examination of early ceramic-age sites in the West Indies, where linkages can be demonstrated between settlement and cosmological organization. Finally, there is a discussion of the ideological basis for the development of social complexity in prehistoric Puerto Rico, and how this is represented in the archaeological record.

### Cultural History of the Saladoid Colonists to the West Indies

In 1970, Donald Lathrap published *The Upper Amazon*, in which he presented a major statement on lowland cultural history. He argued that the vast system of waterways connecting various portions of Amazonia was an important natural backdrop for cultural development and change in the region (FIG. 1; Lathrap 1970: 24–25; see also

Lowie 1948: 1). While recognizing that there were ethnic and social distinctions between groups within the Amazon Basin, Lathrap considered the similarities between these groups to be telling evidence of their interconnectedness. He referred to a Tropical Forest Culture “defined in terms of shared cultural elements rather than as a uniform level of cultural development” (Lathrap 1970: 47). He asserted that the basis of this tropical-forest system was economic, specifically the intensification of root-crop agriculture. Many of Lathrap’s students have elaborated upon his model in particular sections of Amazonia. These areas include eastern South America (Brochado 1984), NW Venezuela and NE Colombia (Oliver 1989), and western Ecuador (Stahl 1984; Zeidler 1984).

Recently, scholars have suggested that in addition to economics, cosmology was an important factor in defining this tropical-forest culture (Bierhorst 1988; Goldman 1963: 4; Lathrap, Marcos, and Zeidler 1977; Lévi-Strauss 1983a, 1983b; Reichel-Dolmatoff 1971, 1975; Stahl 1984, 1985). It is likely that both cosmology and economics were aspects of the tropical-forest system shared by lowland societies.

An important aspect for my study concerns Lathrap’s treatment of the Orinocan cultures in the original formulation of his model. He argued that competition for alluvial flats along rivers caused peoples to migrate through the Amazon Basin. Beginning in the central Amazon, groups

moved, through a number of dispersals, to disparate regions of the lowlands and into some sections of the Andes (Lathrap 1970: 74–78). Drainages connecting the Amazon and Orinoco Basins, especially the Río Negro and Casiquiare Canal, facilitated the movement of people and ideas between these two regions (Lathrap 1970: 73–74, 111–112). He argued that “peoples occupied the Lower Orinoco for a long time until pressure from further groups moving down the Orinoco forced them onto the coast of Venezuela and ultimately out into the Antilles, where they became the Taíno encountered by Columbus” (Lathrap 1970: 75). Lathrap clearly envisioned a *series* of dispersals influencing the movements of peoples throughout the region. Therefore, the ceramic-using groups who initially settled the Lower Orinoco were impacted later by another population dispersal. Citing distinct similarities in ceramic vessel shapes and surface decorations, Lathrap suggested that this latter movement of peoples originated in the Upper Amazon Basin, specifically in the montaña region of eastern Peru (Collier 1958; Lathrap 1958, 1970).

In his recent review of the Taínos and their origins, Irving Rouse indicated that, on the basis of linguistic evidence, these people can be traced ultimately to the Middle Amazon Basin (Rouse 1992, 1986: 123–126, fig. 22). He notes, however, that using material cultural evidence, “Caribbean archaeologists . . . have not been able to trace the migration to its beginning in the Amazon Basin because too little is known about the chronology of that region” (Rouse 1986: 127–128). Therefore, at this point, there are no archaeological data for the geographic origins of Saladoid cultures. Lathrap presented a provocative model for population dispersal in Amazonia. As such, the model is important because it established a set of clearly-defined culture historical propositions, or expectations, against which future data may be compared. Thus the model is testable and can be falsified or modified with continued research.

Since 1985 a number of dated carbon and ceramic samples from good cultural contexts in early West Indian deposits suggest an earlier dispersal of Saladoid peoples out of the Orinoco than was previously thought. Recently obtained dates from Martinique (Schvoerer et al. 1985), Montserrat (Petersen and Watters 1991), St. Martin (Haviser 1991), and Puerto Rico (Chanlatte Baik 1976; Narganes Storde 1991; Rodríguez 1989; Rouse and Alegría 1990; Siegel 1989, 1991a, 1991b) indicate that Saladoid groups must have entered the Caribbean islands by at least 400–500 B.C.

Colonization of the West Indies by early ceramic-age groups appears to be part of the larger process described by Lathrap for lowland population movement. That is, competition over scarce, but attractive, main river frontage in

the South American lowlands resulted in large-scale hostilities between groups vying for the land. The losers in these competitive interactions had one of three choices: 1) remaining on the floodplain and becoming subjugated by the winners, 2) moving off the floodplain into the interfluvial regions of the rain forest, and 3) in NE South America the losers of the intergroup hostilities had the added choice of moving into the insular environment of the West Indies.

This brief review of lowland prehistoric population dispersal indicates that the early ceramic-age groups of the West Indies can be considered, in a broad sense, part of the Tropical Forest Culture characterized by Lathrap (1970). In recent years, however, investigators are finding that Lathrap’s assumptions must be treated as hypotheses for testing. For instance, intensification of root-crop horticulture may or may not have been as important as Lathrap argued. Through such careful recovery techniques as flotation and studying the chemistries of human skeletal remains, Roosevelt (1980; van der Merwe, Roosevelt, and Vogel 1981) has found that maize played a larger role in cultural development than was acknowledged by Lathrap. Perhaps the recent studies of lowland cosmology will be more appropriate to view from a pan-Amazonian and West Indian perspective than details of subsistence and technology. These latter concerns may vary considerably depending on local conditions (Siegel 1991a; Watters and Rouse 1989).

### Cosmology and Community Organization in Lowland South America

Studies of community organization in Lowland South America reveal a considerable amount of variation across the region (Butt Colson and Heinen 1983–1984; Gross 1973; Kensinger 1984; Wilbert 1972). Rules of residence, marriage, economic relations, and domestic organization display a multitude of patterns. Among sedentary communities residing in relatively permanent villages (10–15 years), however, there are striking similarities in how space is used and what it means to the inhabitants.

Village communities and houses of such well-documented groups as the Bororo (Crocker 1985), Gê (Maybury-Lewis 1979, 1989; Nimuendajú 1946; Seeger 1981), Makiritare (Wilbert 1972), and Mehinaku (Gregor 1977) favor circular to semi-circular arrangements, with carefully cleared plazas positioned in the settlement centers (FIG. 2). Public ceremonies, dispute adjudication, and discussions of community importance are conducted in these areas. The circular aspect of lowland villages relates to cosmological notions of time, space, and the organization of the cosmos. Anthony Seeger has noted that “cosmological and social concepts are concretely expressed in the spatial plane; each

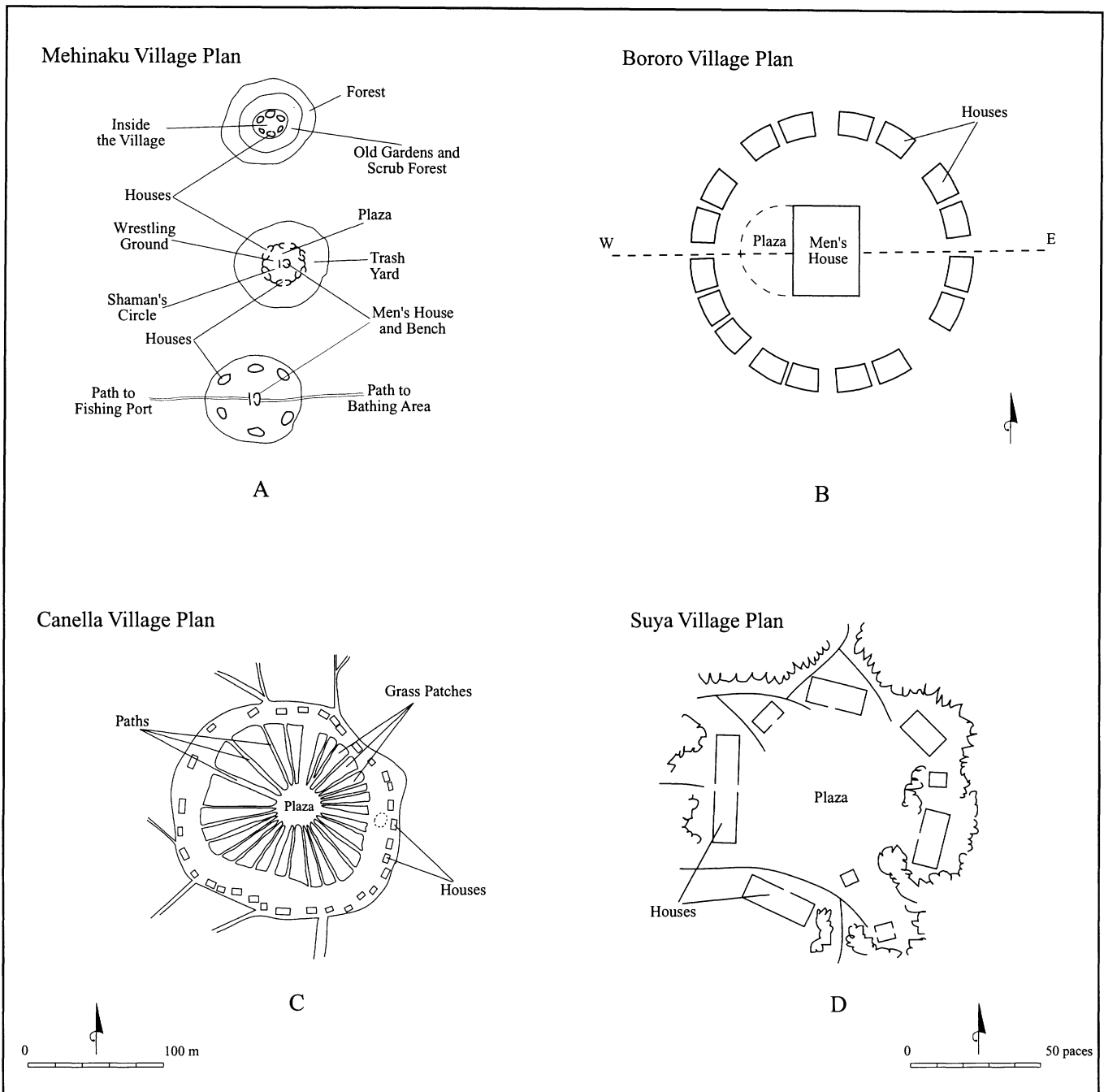


Figure 2. Four Native American communities in lowland South America. Scales and north arrows are indicated only as available. A) Three schematic views of the Mehinaku village, as perceived by the occupants (after Gregor 1977: fig. 9). B) Bororo village plan, showing locations of residences with respect to the central plaza area and the men's house (after Crocker 1985: 31). C) Canella (Gê) village showing the locations of houses and cleared paths leading to the central plaza area (after Nimuendajú 1946: fig. 1). D) Suya (Gê) village plan, showing house locations and the central plaza (after Seeger 1981: fig. 2.2).

village is the center of its own universe” (Seeger 1981: 66), while Wilbert observed that “the communal house represents a miniature of the Makiritare macrocosmos. The roof

is the heavenly vault supported by a major cross-beam—the Milky Way. The central pole is the *axis mundi*, the axis of rotation for the celestial dome” (Wilbert 1972: 138). In

other words, cosmological notions of circularity in time and space are reproduced, on the ground, in the physical layouts of villages and houses.

Fundamental to the concentric model of the universe are concepts of sacred and profane space. Mircea Eliade's (1957) seminal work on the subject provides a clear exposition of these concepts, which is relevant for Amazonia. Eliade uses the term "hierophany" to mean anything that reveals or manifests the sacred (Eliade 1957: 20–21).

The Makiritare's central house post as the axis mundi is a perfect example of a hierophany. This World Tree is an axis, around which eight vertically distinct heavens revolve, in Makiritare cosmology (Wilbert 1972: 138).

Across Amazonia there is a constellation of attributes that characterize the sacred and profane realms of the cosmological landscape. The sacred is characterized by such features as center of house, center of village, men, social life, ritual activity, food consumption during the day, cooked food, and hallucinogenic beverages. This contrasts with the profane, which is represented by house periphery, village periphery, women and children, domestic life, non-ritual activity, food production, and raw food (Crocker 1985: 32–33; Gregor 1977: 50; Guss 1989: 21–26; S. Hugh-Jones 1979: 108; Nimuendajú 1946: 37).

Concentricity in Native American communities is manifested at two obvious scales: the house and the village. There may be a concentric village, the central area of which is sacred, or there may be a round house with a central sacred area, or both. The Bororo (Crocker 1985) and Mehinaku (Gregor 1977) are examples of groups occupying circular villages with central sacred areas. A men's house and plaza occupy the centers of these communities. These are the areas where ceremonial activities and public displays are enacted. Defining the periphery of the central sacred area is a series of houses, or domestic units, representing a ring of profane space.

The axis mundi is an important feature of the sacred center (Eliade 1958: 298–300). As described for the Makiritare center post, this is a structural element in the cosmology connecting the various spheres, or layers, of the cosmos. In terms of Eliade's hierophanies, a variety of things may qualify as the axis mundi. The central house post is one of the most common and direct forms of axis mundi employed in Native American communities (Guss 1989: 21–26; Wilbert 1981: 44–47; Yde 1965). When the Panare Indians of the Guiana Shield leave their longhouse for some period of time, they plant a pole about 2 m high in the center of the camp site, "which symbolizes the center of the world, as does the central pillar of the *charuata* [communal longhouse]" (Dumont 1972: 68).

The axis mundi, as connector between the layers of the

cosmos, provides an access route or vertical "bridge" for the shaman to travel through the universe (Reichel-Dolmatoff 1971; Wilbert 1975). The shaman presides over and directs the numerous rituals and ceremonies performed in the village. He is the intermediary between the group and the spirit world. To assist him in his efforts, the shaman employs a variety of aids, together as a complex, in order to successfully travel through the cosmos, reach his designated goal, and to communicate with the necessary spirits. To enter the spirit world it is necessary for the shaman to attain an altered state of consciousness, which is achieved through ingesting one of a variety of hallucinogenic agents naturally available in the tropical rain forest (Schultes 1972). Well-known hallucinogenic plants used for these purposes include *Banisteriopsis* spp., *Anadenanthera* spp., *Virola* spp., and *Datura* spp. (S. Hugh-Jones 1979; Reichel-Dolmatoff 1971, 1975; Stahl 1984: 57–60). In addition, tobacco "is used to establish a state of meditation" and coca "for divination" (Stahl 1984: 61–62; see also Reichel-Dolmatoff 1975; Wilbert 1987).

The axis mundi can take a variety of forms besides the house post. These include a staff, a tree, a vine serving as a ladder, a ray of sun light, a rainbow, etc. (Reichel-Dolmatoff 1975: 141). In the Mehinaku village described by Gregor, the central plaza is divided into several subareas, which include a public region in front of the men's house, a wrestling ground, and a shaman's circle (Gregor 1977: 50–51). "Finally, the village burial ground is also located on the plaza and is connected, the Mehinaku say, by means of an invisible road to the village in the sky" (Gregor 1977: 51). Gregor does not discuss the concept of axis mundi but shamanism is an important element of Mehinaku rituals. I would suggest that the "invisible road to the village in the sky" perhaps is a manifestation of the axis mundi in this community. In Amazonia, death, burial rites, and interment are strongly associated with rebirth, renewal, and propagation (Coe 1975: 195; Guss 1989: 137–139; C. Hugh-Jones 1979: 107–114; S. Hugh-Jones 1979: 214–226; Jackson 1983: 209). Death is simply one phase in a continuous process. Burial rites and interment are acts that highlight important points of the process (Siegel 1989: 200). The dead become spirits who reside in another realm of the cosmos, periodically visited by the shaman.

It should be clear that cosmology represents an organizing principle for many lowland societies across Amazonia. It is manifested in all aspects of life, including the structure and organization of the community. We have seen that the concentric structure of the village and the houses is a physical model of the universe. It is "the wheel of life" (Crocker 1985). The village, however, is not *only* a model;

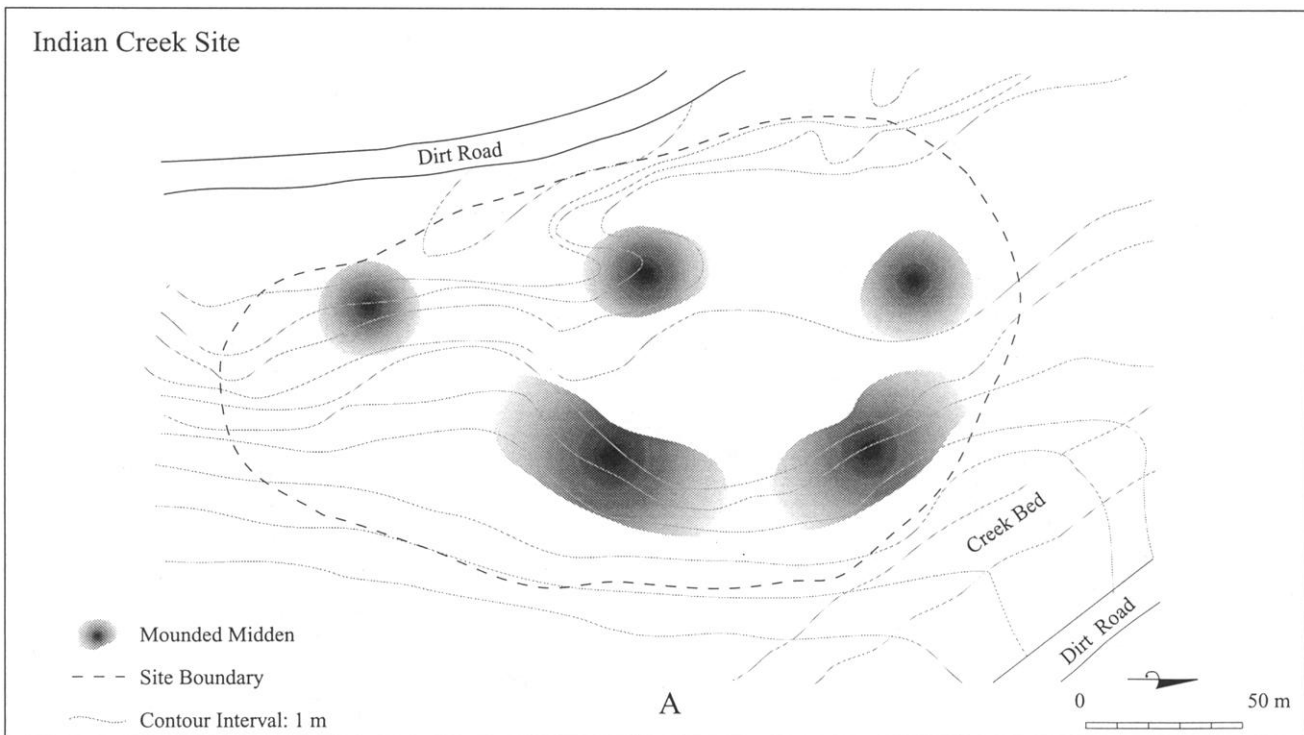


Figure 3. Six West Indian Saladoid sites showing the locations of dense midden deposits. Note the generally concentric configurations of the deposits around the central portions of the sites. A) Indian Creek site, Antigua (after Rouse 1974: fig. 1). B) Golden Rock site, St. Eustatius (after Josselin de Jong 1947: fig. 14 and Versteeg 1989: fig. 3). C) Sorcé site, Vieques (after Chanlatte Baik and Narganes Storde 1983: 127). D) Punta Candelero site, Puerto Rico (after Rodríguez 1991: fig. 5). E) Monserrate site, Puerto Rico (after Rainey 1940: fig. 10). F) Maisabel site, Puerto Rico (after Siegel 1992: fig. 2.12).

it is the cosmos, or one aspect of it. The sacred center, with the axis mundi, articulates the various levels of the cosmos, providing a “bridge” for the cosmological participants to enter the spirit world.

This discussion serves to demonstrate the causal connections between lowland cosmology and village organization. That is, cosmological notions of circularity in time and space are reproduced, on the ground, in the physical layouts of villages and houses. Thus, there is a relationship between lowland cosmology and village organization, and we can examine village organization and from it say something about cosmology.

### Cosmology and Community Organization in the West Indies

The earliest ceramic-age groups in the West Indies, referred to as the Saladoid series, originated in lowland South America (FIG. 1). For reasons that are currently the center of considerable debate, these people began dispersing into the archipelago roughly 2500 years ago (Rouse

1986, 1989, 1992; Siegel 1991a, 1991b). Site sizes and distributions, burials, and artifact assemblages indicate that these colonizing groups were egalitarian horticulturalists. Known Saladoid sites are generally 10–20 ha in area and are widely dispersed over large regions. There is no good evidence for a “centralized political region” (Spencer 1987) during the Saladoid period. Artifact and feature assemblages are not suggestive of a site hierarchy or of a functionally diversified settlement system. To the contrary, the overwhelming impression is one of large, relatively self-contained sedentary communities. For the most part, human burials contain no grave goods and the few that have been excavated with offerings are not very elaborate (Rodríguez 1991; Siegel 1989, 1992). As in any society, however, death is taken seriously, and the Saladoids, in particular, appear to have treated the process and location of interment as a social and ceremonial focal point.

Saladoid villages were highly structured places, based on a concentric model of the universe (Rodríguez 1991;

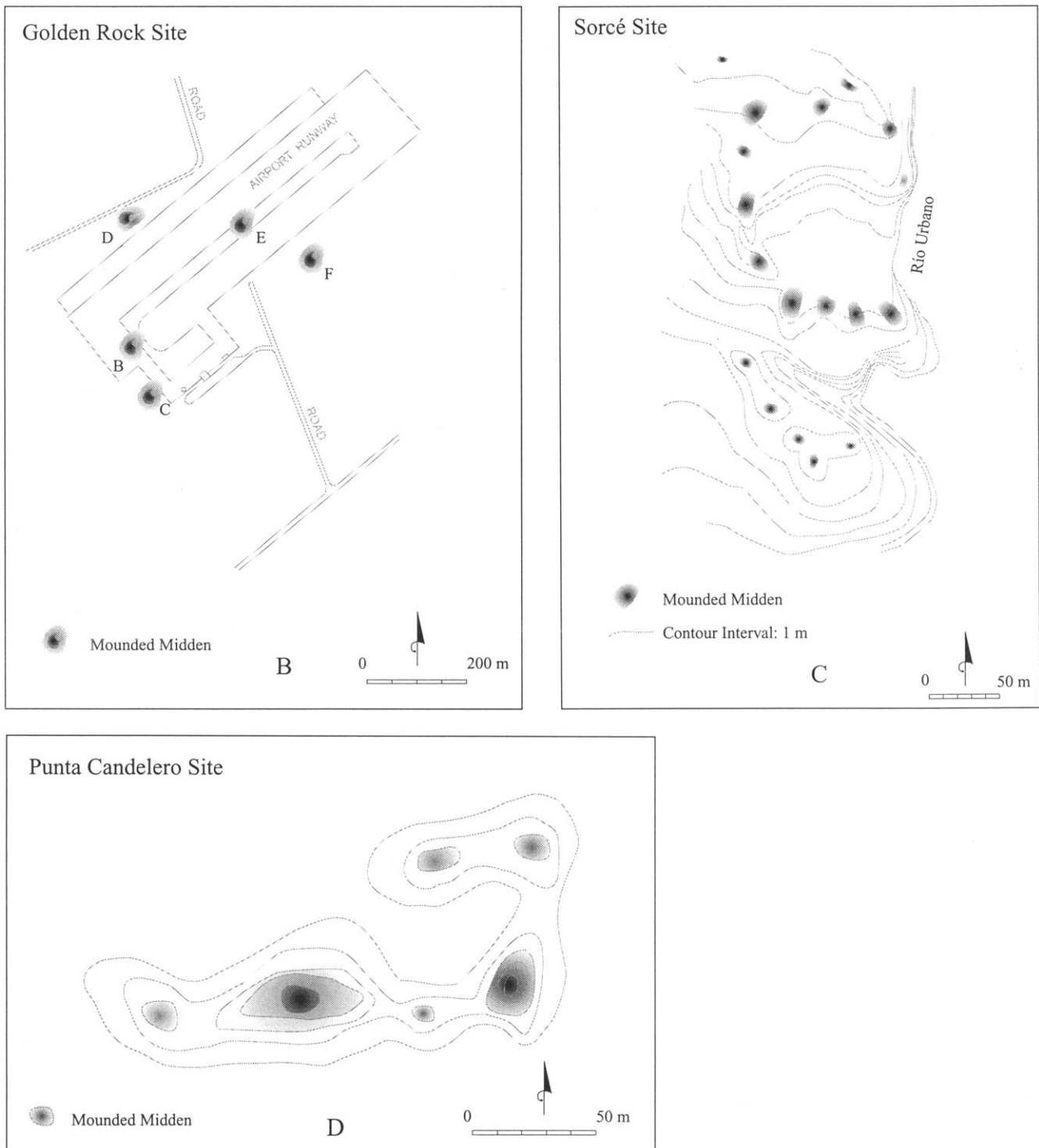


Figure 3. (cont.)

Siegel 1989, 1992). Archaeologically, this is manifested by middens arranged in circular configurations (FIG. 3). Centered among these middens was a large space, carefully cleared of refuse, which represented a portion of the sacred domain.

Archaeological residues of Saladoid sites are similar in overall structure to extant villages of lowland Native American communities in South America, also constructed as physical models of the universe (Chanlatte Baik and Narganes Storde 1983; Josselin de Jong 1947; Rainey



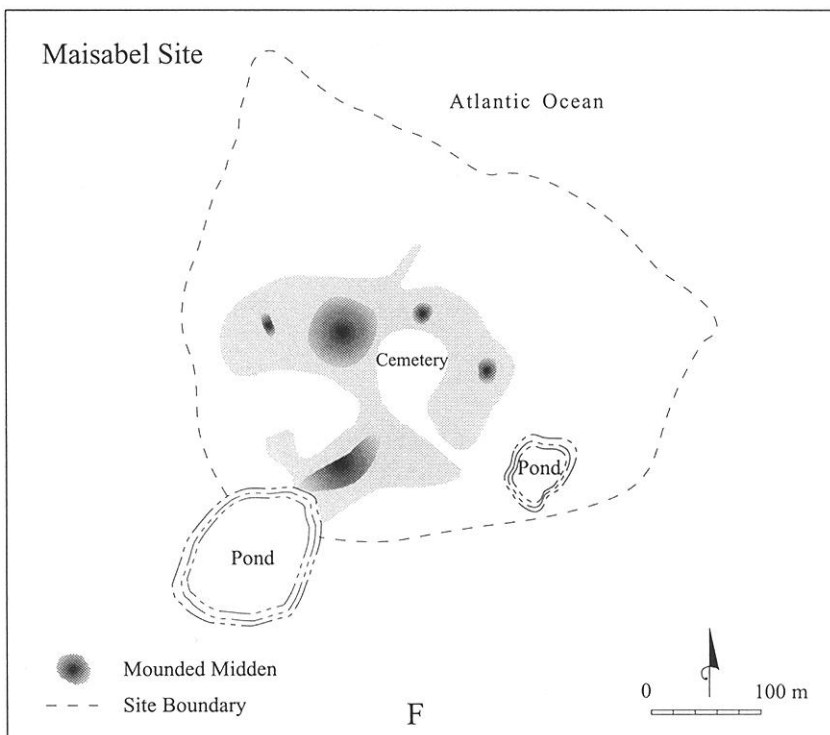
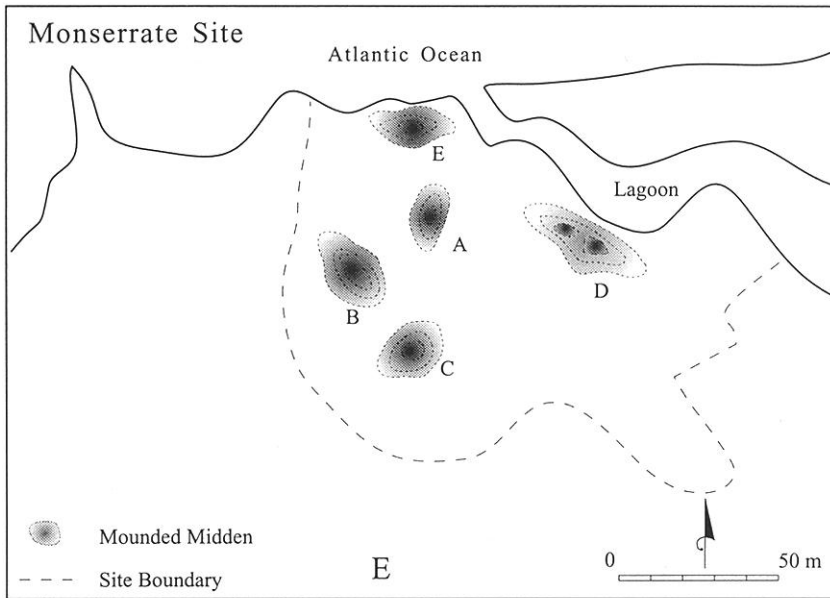


Figure 3. (cont.)

1940; Rodríguez 1991; Rouse 1974; Siegel 1989, 1992; Versteeg 1989; Versteeg and Schinkel 1992). There are four reasons why this is not surprising: 1) in Lowland South America, community organization is tied strongly to cosmology; 2) ethnographic groups in portions of Lowland South America are analogous, structurally and organizationally, to the pre-chieftdom Neolithic groups of the lowlands and the West Indies (Myers 1973; Roosevelt

1987); 3) there are close similarities in the ritual complex and cosmology between ethnographic Lowland South America and the ethnohistorically documented Taínos in Hispaniola and Puerto Rico; and 4) the peopling of the Antilles during the early ceramic period was part of the overall process of Lowland South Amerindian population dispersal noted long ago by Rouse (1964) and Lathrap (1970).

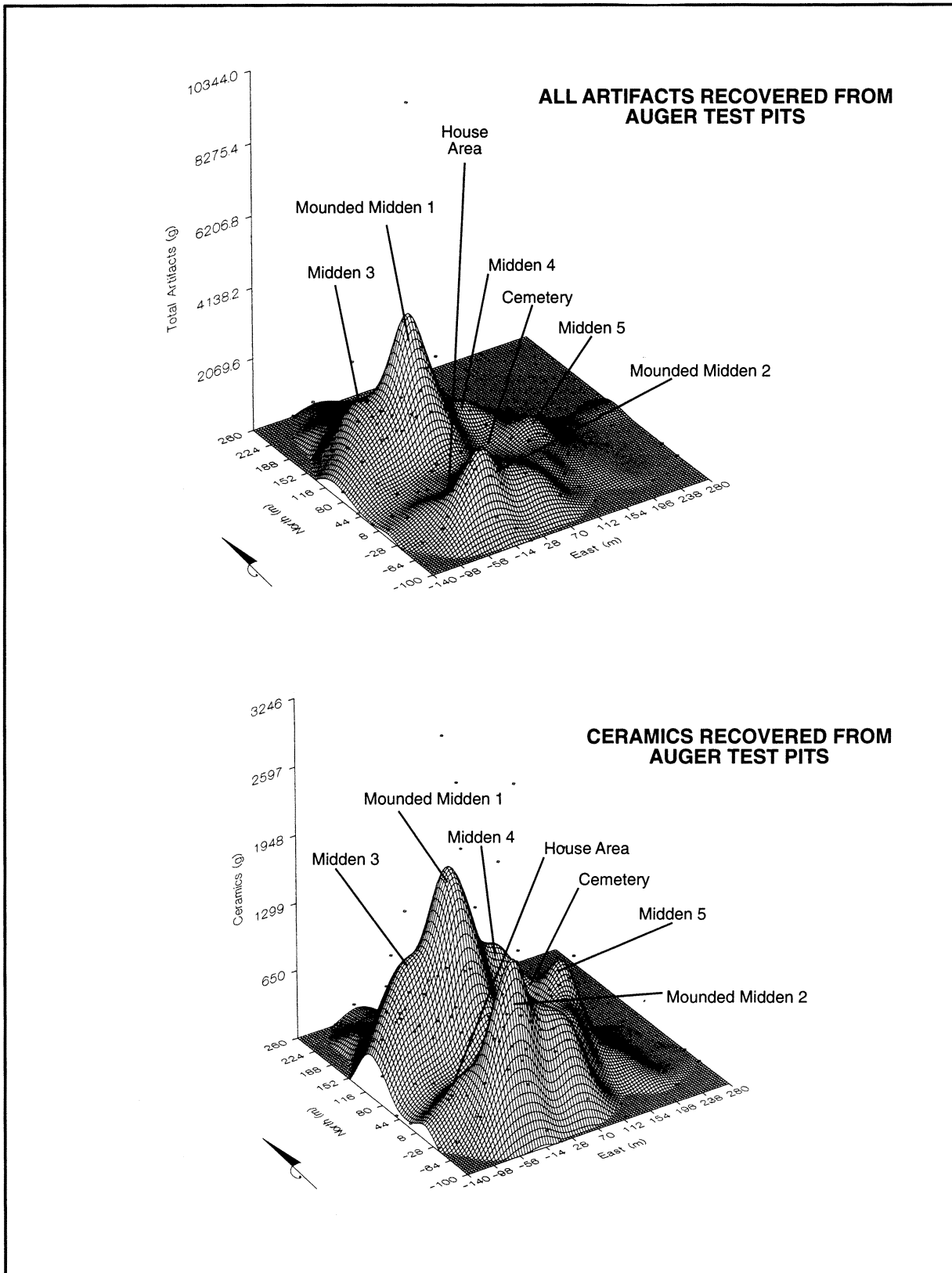


Figure 4. Three-dimensional plots of artifact densities at Maisabel, based upon material retrieved from auger test pits. The top map shows all artifact classes combined and the bottom map shows prehistoric pottery. The z axes represent weights in grams. The circular configuration of dense midden deposits is apparent in both plots. The cemetery is ringed by these middens and a house area is located between Mounded Middens 1 and 2.

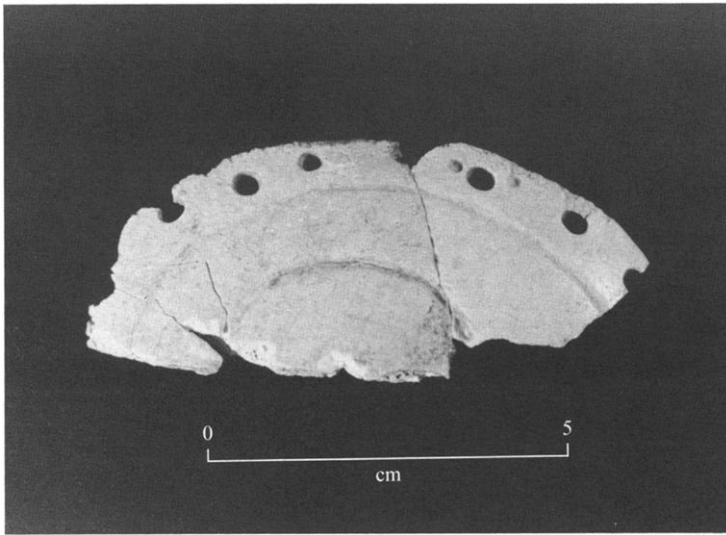
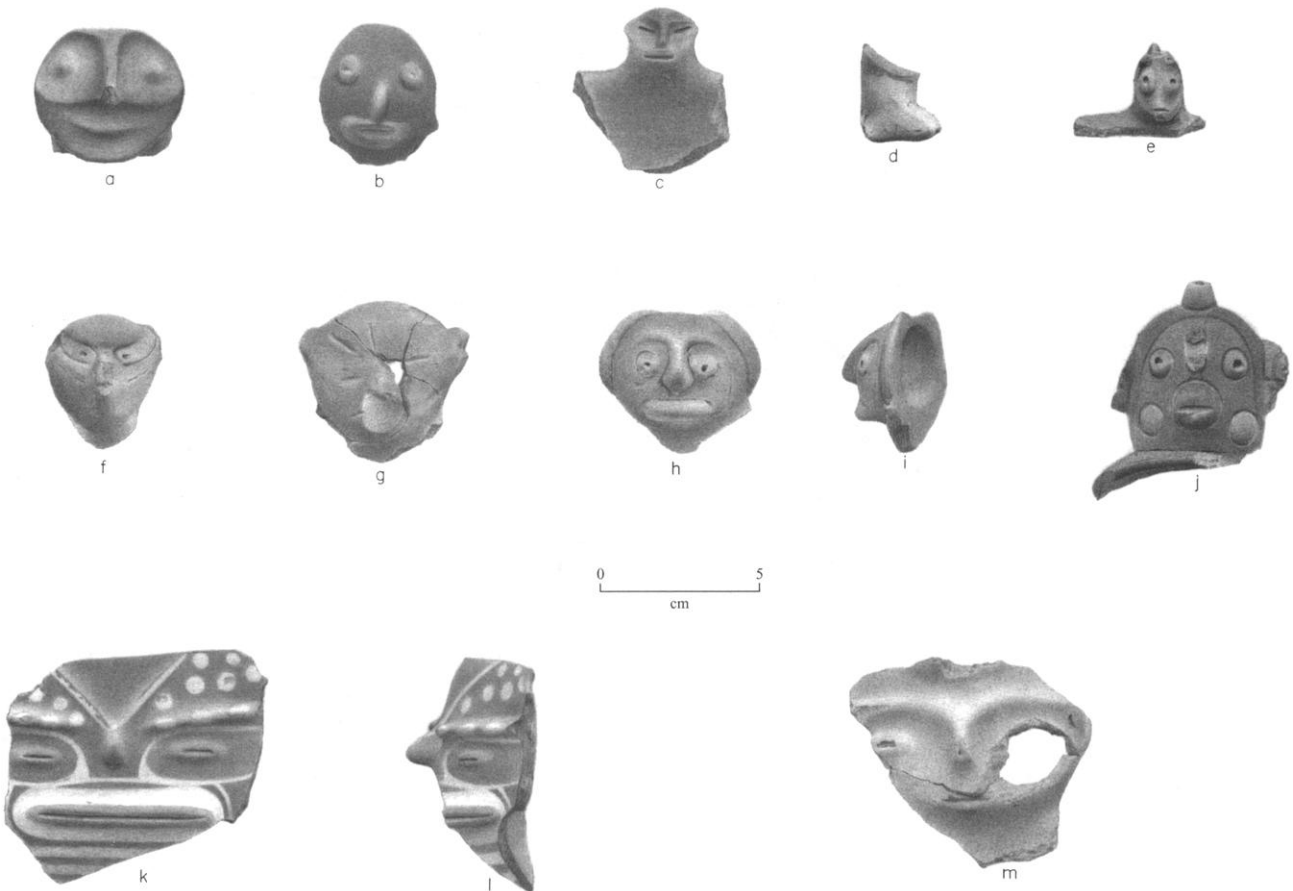


Figure 5. Portion of human cranium carved and perforated into a pectoral or belt ornament. This is very similar to one recovered from a site on the Dominican Republic (Stevens-Arroyo 1988: fig. 9). The incised curvilinear lines have been interpreted by Stevens-Arroyo (1988: 191) to be representations of the rainbow, one of the “bridges” connecting the various spheres of the cosmos. The carved cranium shown here was recovered from Mounded Midden 1 (Maisabel).

Figure 6. Sample of Hacienda Grande ceramic effigies, all recovered from Mounded Midden 1 (Maisabel). (Drawing by Timothy Roberts.)



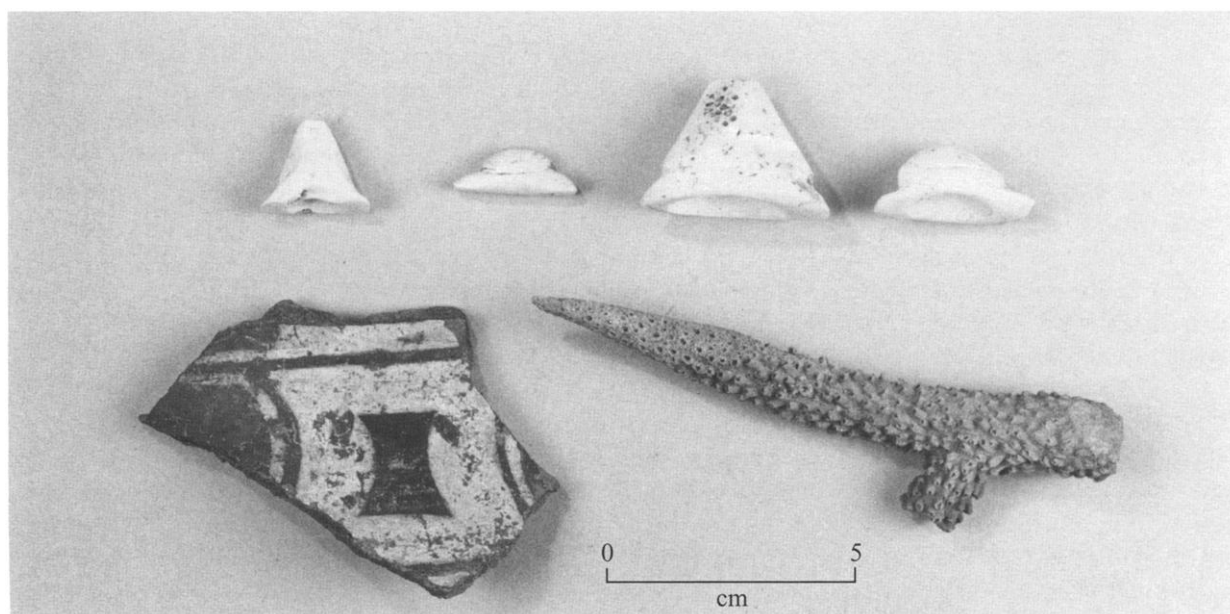


Figure 7. Sample of Hacienda Grande-period artifacts retrieved from Mounded Midden 1 (Maisabel). Top row shows four three-pointers, all carved from shell. Lower left is a white-on-red painted potsherd, showing the characteristic hour-glass motif that appears on Saladoid pottery. An abrader fabricated from Staghorn coral (*Acropora cervicornis*) is shown on the right.

Saladoid sites that have been adequately sampled for information on community organization indicate that the centers of plazas served also as burial grounds (Rodríguez 1991; Siegel 1989, 1992). The Maisabel site in particular, located on the north coast of Puerto Rico, has supplied the most detailed information on ceramic-age community organization (FIG. 4). As noted earlier, the dead were interred with few to no grave offerings. It is striking, however, that mounded middens surrounding the cemeteries contain great quantities of the most elaborate items fabricated by these people. These include finely polished celts and adzes, many of which exhibit no evidence of use; polished-stone and carved shell and bone amulets, pendants, beads, and discs (FIG. 5); ceramic *adornos* and effigy vessels (FIG. 6); and carved or ground three-pointed objects fabricated from shell, stone, bone, and coral (FIG. 7). The last were still being used at Contact, and ethnohistorical documents indicate that these items were physical representations of protector deities and represented clan ancestors (Fewkes 1907; Joyce 1916; Las Casas 1951; Rouse 1948).

The pattern emerging from large-scale excavations of ceramic-age sites is that the mounded middens and central plazas functioned together as arenas for displays of public behavior and important rituals. Judging from the Maisabel data, these ceremonial cores served as integrative mechanisms for over 1000 years. Table 1 shows the temporal distribution of the burials recovered from Maisabel. Eleven

of the burials are Saladoid, four are Saladoid/Ostionoid transitional, and eight are Ostionoid. These data suggest that the cemetery was used by all of the prehistoric groups occupying the site (FIG. 8).

Within the cemetery there is no spatial grouping by time period. Burials of every cultural complex, from Hacienda Grande through Santa Elena, are represented within localized areas of the cemetery (FIGS. 9–10). It is curious that none of the burials encountered appeared to have been disturbed by later burials. This could simply be a result of sampling, but the evidence currently available denotes a sense of knowledge on the part of the settlement occupants of where previous interments were located.

The Maisabel cemetery is approximately 6300 sq m in area. If we consider the recovery rate of 23 burials from 14 2 m × 2 m-square excavation units as representative of the overall burial density in this section of the site, then as many as 2500 burials may be present. This represents 2–3 people per year deposited in the cemetery over 1000 to 1400 years of occupations at Maisabel, resulting in roughly 0.35 individuals per sq m. Other than burials, few features were found in the cemetery—in contrast to other sections of the site where a variety of feature types were identified.

The overall similarity in structure of early ceramic-age sites in the West Indies is compelling evidence that there was a shared world view, which is revealed at least in the

organization of settlements (FIG. 3). The excavations at Maisabel fill in details of this organization (FIG. 4), suggesting that rituals revolving around the veneration of ancestors were of central importance through time (TABLE 2).

Rituals are performative statements about ideology. Underlying these statements, to various degrees of inter-personal or inter-societal visibility, are relations of power and politics (Kertzner 1988). Ideas about how the universe is structured are expressed in sacred texts, myths, cosmologies, and rituals, all of which overlap. All societies have specialists to some extent who interpret these domains of ideology.

In lowland South America it is widely documented, ethnographically and ethnohistorically, that myth, ritual, and cosmology function as an organizing principle for Native American groups (Bierhorst 1988; S. Hugh-Jones 1979; Reichel-Dolmatoff 1971, 1975; Seeger 1981; Stahl 1985; Wilbert 1981, 1987). Among these groups, shamanism is inextricably linked to myths and rituals. It is reasonable to assume that shamanism was equally important during the prehistoric ceramic age in Puerto Rico (Alegría 1986; Arrom 1975; Fernández Méndez 1972; López-Baralt 1985; Pons Alegría 1987; Rouse 1948; Stevens-Arroyo 1988; Wilbert 1987).

The role of shaman in South America is unambiguous. He or she officiates in rituals and insures that myths and cosmology are interpreted and acted on properly. Shamans are frequently ranked in terms of their breadth of knowledge and understanding of esoteric meaning behind myths (Dole 1973; S. Hugh-Jones 1979; Métraux 1948). "In the hands of the shamans, myths are not merely sacred tales or stories, but things with inherent power, and it is upon

these myths that shamanic spells are based" (S. Hugh-Jones 1979: 33). In his analysis of cosmology and ritual among the Barasana Indians of Colombia, Stephen Hugh-Jones presents a set of relations between powerful shamans, large houses or communities, large dance plazas or ceremonial spaces, and great spheres of influence within and across communities (S. Hugh-Jones 1979: 33–38). Among the Tupinamba, Métraux noted that "some shamans rose to political power, exercising unchallenged authority in their communities or even in large districts" (Métraux 1948: 130).

Cosmology is a component of ideology. Cosmos, axis mundi, spirit world, rituals, myths and legends, etc. are presided over, interpreted by, and controlled by the shaman. During Saladoid times, when the egalitarian ethic was clearly the model, substantial material rewards were not a relevant aspect of the system. Differences in social status, other than age and sex, were transitory and limited to brief interludes in the otherwise sameness of social existence. Given the proper set of circumstances, however, it is not difficult to understand how Saladoid cosmological organization can be manipulated. The shaman, as trickster, takes on an additional, hidden role as power broker (Dole 1973).

Barbara Bender's notion of "drift" is relevant in this context:

It is possible for there to be drift between an *ideology* based on an ethos of generosity, of status that has no material rewards, of demands made upon the individual in the name of the community, and *reality* where demands become more onerous and less equally distributed, and power is displayed in terms of marital affiliation or ability to control esoteric knowledge (Bender 1990: 251, emphasis in original).

Table 1. Temporal distribution of burials from the Maisabel cemetery. Those burials for which radiometric assays are available have the laboratory number given; the remainder are dated by associated diagnostic artifacts or by spatial context.

Cultural affiliation	Burial no. (C-14 lab no.)	Total
Saladoid Series		
Hacienda Grande (100 B.C.–A.C. 400)	9*, 14 (AA-6809), 28	3
Cuevas (A.C. 400–600)	1 (AA-6805), 6 (AA-4098), 10 (AA-4100), 15 (AA-4102), 17 (AA-6810), 19A, 19B, 19C*	8
Saladoid/Ostionoid transition	2 (Beta-15886), 5 (AA-4102), 16 (AA-4103), 21 (AA-4107)	4
Ostionoid Series		
Monserate (A.C. 600–900)	3 (AA-4096), 4 (AA-6806), 7 (AA-6807), 22 (AA-6811)	4
Santa Elena (A.C. 900–1200)	11 (AA-6808), 12, 20 (AA-4106)	3
Undifferentiated Ostionoid	13†	1
Total		23

\* The AMS C-14 dates associated with these burials contradicted the styles of ceramic vessels placed with the individuals. Given the high glycine depletion ratios for these dates I have chosen to use the ceramic styles in assigning these graves to cultural complexes.

† Owing to the non-specific style of associated pottery this burial could be assigned only to a cultural series.

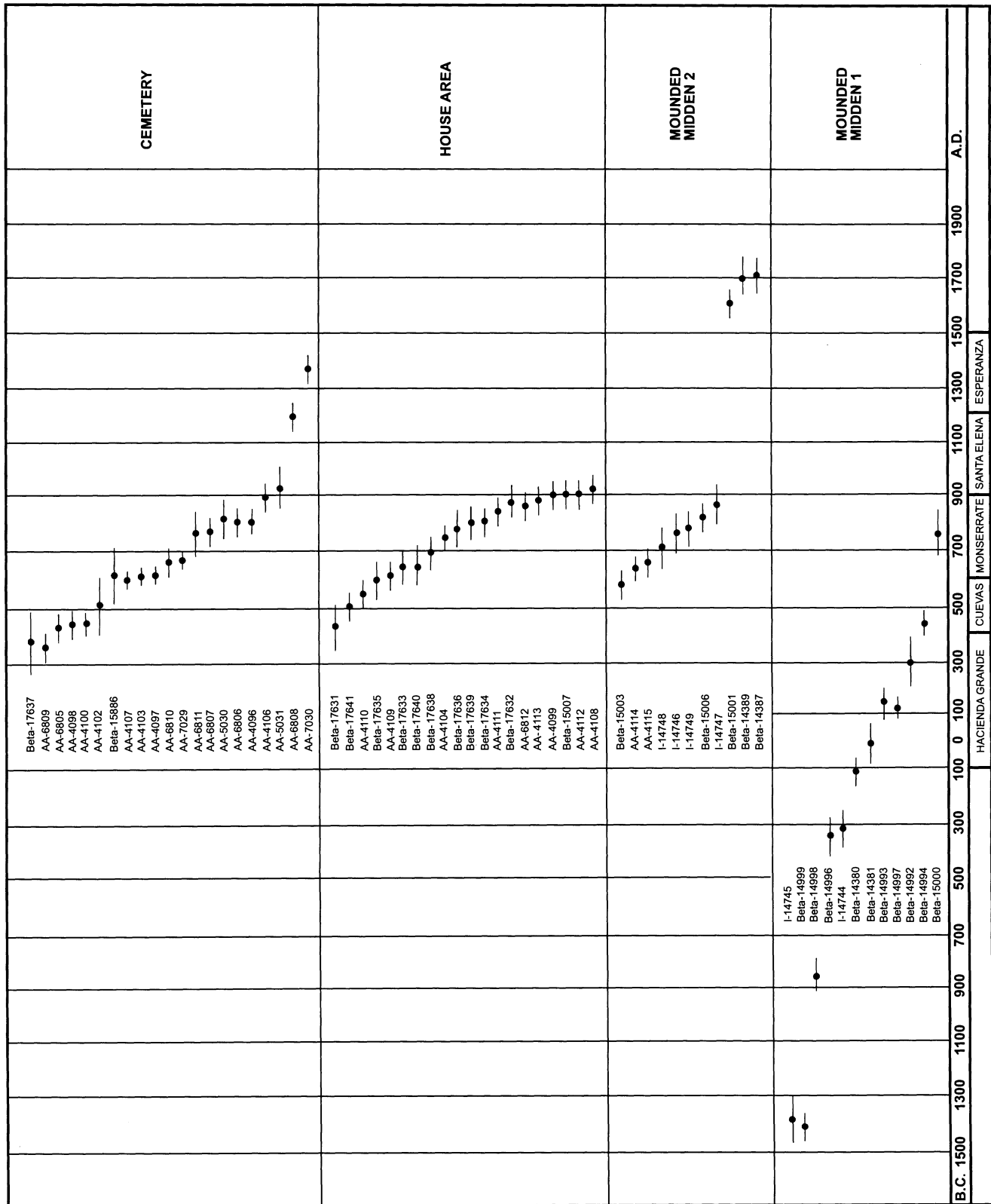


Figure 8. Uncalibrated radiocarbon dates obtained from Maisabel, displayed by site region.



Figure 9. Burial 4 was located in the central burial group of the Maisabel cemetery. It is a male, approximately 45 years of age at death, interred in a flexed-fetal position lying on his right side. A projectile point fashioned from a stingray spine is situated in the center of the rib cage.

Control of esoteric knowledge is important on the part of politically motivated individuals. Cosmic “journeys” by shamans to “far away spiritual realms” are one way that these individuals control a special form of esoteric knowledge (Helms 1988: 47).

Returning to Saladoid village organization we find that the most elaborate artifacts are deposited in mounds surrounding the cemetery (Chanlatte Baik 1979, 1983; Rainey 1940; Rouse 1952a, 1952b; Siegel 1992). It is as if everybody is revered in death. Among funerary cults in general, enormous amounts of sumptuary or “valuable” items are often funneled into burials, thus pulling them out of circulation and thereby maintaining the high value of the objects (Coe 1975: 193). This observation may apply in the Saladoid context, with the proviso that sumptuary items do not go to certain individuals but to the group. Earle has observed that “it is probably not coincidental that the first ceremonial architecture seems to have been for activities creating and reinforcing community bonds rather than stressing differences” (Earle 1989: 86).

### **Ideology and Culture Change in Prehistoric Puerto Rico**

In contrast to the Saladoid pattern, the succeeding Ostionoid settlement system appears to be more functionally diverse (Goodwin and Walker 1975: 93; Ortíz Montañez 1986a, 1986b; Rouse 1952a: 360; Wilson 1989). We now see a range of habitation site sizes, specialized activity camps, and ball court/plaza sites. There is no consensus as to whether the sites containing ball courts or plazas or both were entirely ceremonial or were also places of habitation (Alegría 1983; Rouse 1952a). There is no question, however, that the development of the ball courts and plazas is intimately connected to the ideological sector of society and that the elaboration of these features through time is also correlated with political changes (TABLE 2). The increasing complexity and size of the ball courts/plazas, the amounts and kinds of ritual paraphernalia associated with them, and the apparent development of a ball court site hierarchy through time all suggest a



Figure 10. Burial 22 also was located in the central burial group of the Maisabel cemetery. This is the only clear example of a prepared secondary burial recovered from Maisabel. The major long bones are carefully paired and crossed and positioned over the skull. No ribs, extremities, or vertebrae were placed in the grave.

great interest in highly visible symbols of power and prestige (Siegel 1992: 402–475; Wilson 1990a). These symbols are presented and controlled within the public sphere—that is, in the community and beyond—rather than within the private household-based social segment.

With the initial development of structural ball courts and plazas, rites and ceremonies associated with death and the revering of ancestors seem to have become more formal and elaborate than in the previous period. For instance, in the early Ostionoid ball court complex at Tibes, near the south coast of Puerto Rico, a number of burials were found in the largest ball court (González Colón 1984).

It is important to note that places like Maisabel were still occupied during this period. Not every Ostionoid village

had a ball court or embarked on a landscaping program for their ceremonial areas. At Maisabel, we find instead that the central plaza area was recognized as a sacred space throughout the occupations of the site (TABLE 1, FIG. 8).

Finally, by the late prehistoric and the protohistoric periods, ball courts and plazas were highly developed, with elaborate ceremonies and rituals revolving around them. Burials were no longer placed within enclosures but within mounds (Fewkes 1907; Las Casas 1951; Oviedo 1950).<sup>1</sup> This is a complete inversion of the Saladoid pattern.

Ethnohistorical documents indicate that ceremonies and rituals associated with the ball courts centered on the veneration of ancestors (Fewkes 1902, 1907; Joyce 1916; Las Casas 1951; Oviedo 1950). Further, these rituals were orchestrated and controlled by *caciques* (chiefs) (Fewkes 1902: 508; Joyce 1916: 205). By controlling rites and ceremonies dedicated to ancestors, the chiefs became intermediaries between the ancestors (who are now deities) and the rest of society. They were power brokers in control of such valuable commodities as myths and rituals. These were not just *any* ancestors, but those of the chiefs (Oviedo 1950: 131). Thus, there was a genealogical association between chiefs, apotheosized ancestors, and the spirit world. The chiefly lineages had a vested interest in maintaining this perception.

At the time of Spanish contact, power relations and authority had been narrowed to specific lineages within Classic Taíno society. Power and authority were monopolized by caciques and their retinue through carefully planned marriages and control over esoteric knowledge (Wilson 1990b). Inequality was both institutionalized and kin-based and was legitimized by ideology. Temples were built, into which only the cacique and his priests were allowed access (Bourne 1906; Colón 1947). Within these buildings special *cahoba* rituals were enacted in order to commune with the caciques' ancestors. The ideological “performance” becomes physically and psychically inaccessible to those outside of the building.

Specific classes of artifacts associated with these rituals reveal a temporal continuity in the rituals from the early ceramic age to Contact, and spatial continuity from South America to Hispaniola (Alegria 1983, 1986; Arrom 1974, 1975; Fernández Méndez 1972; Gómez Acevedo and

1. Burials are frequently found in Saladoid mounded middens surrounding the central plaza. These middens, however, are not burial mounds. They represent the gradual layering of cultural material over a long period of time, rather than short-term earth-moving projects. The middens contain the most elaborate items fabricated during the early ceramic-age, including, at Maisabel, the only archaeologically documented specimen of *guanín*, a gold-copper alloy artifact, recovered in the West Indies (Siegel and Severin 1993).



Table 2. Characteristics of community and ideological organization as they relate to hypothesized levels of sociocultural integration and to mortuary practices during the prehistoric ceramic age in Puerto Rico.

<i>Social organization</i>	<i>Community organization</i>	<i>Ideological organization</i>	<i>Disposal of the dead</i>	<i>Cultural complex</i>
Tribe/complex tribe	Village-oriented, central plaza ringed by communal houses	Ancestor worship; egalitarian ethic	Community based; central plaza area	Hacienda Grande, Cuevas
Complex tribe/simple chiefdom	Small village-large village-ball court	Ancestor worship; incipient ascriptive social inequality	Community based; ball courts	Monserate, Santa Elena
Simple chiefdom/complex chiefdom	Polity-based, village hierarchy	Ancestor worship with ideology of domination	Clan-based; mounds; socially partitioned spatially and by grave goods	Esperanza, Capá, Boca Chica

Ballesteros Baibrois 1978; López-Baralt 1985; Stevens-Arroyo 1988; Wilbert 1987). Intrasite spatial analysis reveals a remarkable coherence in village organization spanning hundreds of years, several major cultural complexes, and tribal to chiefdom-level sociopolitical organizations. Examining village organization indicates that cosmology was the cohesive element, spatially and temporally (TABLE 2). Communities were organized on a concentric plan, with their central areas reserved for the sacred.

It is safe to assume that ancestor worship was a major integrative institution during the prehistoric ceramic age of Puerto Rico. Like Native American communities in South America, the central portions of villages functioned as world trees, connecting the various spheres of the cosmos. It is within this domain of cosmology and ideology where social and political changes were legitimized.

Ethnohistorical documents reveal a considerable amount of competition and political maneuvering among Taíno chiefdoms. Chiefly lineages appear to have been funded through hierarchies of systematic tribute relations (Moscoso 1981). Although a discussion of Taíno tribute flow is beyond the scope of this paper, it is important to recognize that labor and resources were mustered by nobility at specific settlements within their own polities. These settlements had at least one ball court or plaza and the tribute exchange process seems to have revolved around the veneration of chiefly ancestors (Alegría 1983; Wilson 1990a).

### Summary and Conclusions

Concepts of sacred time and sacred space permeate every aspect of Native American life. Human growth and development, kinship relations, seasonal changes, plant and animal propagation, birth, death, etc. are imbued with meanings that are both metaphorical and didactic. Rites of passage, ancestral genealogical associations, myths, cere-

monial activities, and specific aspects of the natural and cultural landscape serve as mechanisms and cues to identify the sacred.

The initial ceramic-age occupants of the West Indies structured their communities with these concepts in mind. The central portions of their settlements, made sacred by a cemetery, clearly functioned as an arena for public ceremony. The centralized cemetery takes on the role of axis mundi. The dead become spirits and, with time, sacred ancestors.

The development and complexity of ceremonial space in prehistoric Puerto Rico is a process which began in the Saladoid period. This process, spanning some 14 centuries, reflects the consolidation of power into increasingly more narrow social segments.

There is an interplay between the effects of self-serving power brokers, like shamans, priests, and chiefs; culture change; and the development of complex society. Effective control by power brokers over increasingly larger spatial (territorial) domains results in a powerful "ideology of domination" (Moscoso 1981). The chief's grip on power is contingent on his or her ability to monopolize control over critical resources. Wilson's (1990a, 1990b) study of the carefully calculated Taíno elite intermarriages emphasizes the importance of maintaining and further consolidating power. The elaborate tributary relations observed at Contact among the Taíno Indians are a product of this control. Myth, ritual, and cosmology, as a complex, constitute this ideology.

In this West Indian example we see the evolution of power relations revolving around changing conceptions of ideology. During early Saladoid times, ideology was based on an egalitarian ethic. At Contact, the ethic had shifted to one of domination. At the heart of these two extremes is the same cosmological structure, evidenced in the use of specific artifact classes and by the internal organization of

communities. The use of this cosmology was intensified through time, as politically motivated leaders exploited its manipulative aspects.

The history of culture in the West Indies indicates that ideology was a model, an interpretive framework, and, in general, an organizational device, around which people related to each other and to the cosmos. I am not suggesting that ideology be viewed as a prime mover in culture change. To the contrary, demography, economic and social organization, technology, and ideology are intimately linked. The challenge for studies in the future is to explore the linkages between these domains of specific cultures and how they are represented in the archaeological record.

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Alegría, Ricardo E.

1983 *Ball Courts and Ceremonial Plazas in the West Indies.* Yale University Publications in Anthropology 79. New Haven: Yale University.

1986 *Apuntes en torno a la mitología de los indios Taínos de las*

*Antillas.* San Juan: Centro de Estudios Avanzados de Puerto Rico y el Caribe.

Arrom, José Juan

1974 *Fray Ramón Pané: "relación acerca de los antigüedades de los indios."* México: Siglo veintiuno.

1975 *Mitología y artes prehispánicas de las antillas.* México: Siglo veintiuno.

Ashmore, Wendy

1991 "Site-planning Principles and Concepts of Directionality Among the Ancient Maya," *Latin American Antiquity* 2: 199–226.

Bender, Barbara

1990 "The Dynamics of Nonhierarchical Societies," in Steadman Upham, ed., *The Evolution of Political Systems: Sociopolitics in Small-scale Sedentary Societies.* Cambridge: Cambridge University Press, 247–263.

Bierhorst, John

1988 *The Mythology of South America.* New York: William Morrow.

Bourne, Edward Gaylord

1906 "Columbus, Ramon Pane and the Beginnings of American Anthropology," *Proceedings of the American Anthropological Society* (n.s.) 17: 310–348.

Brochado, José J. P.

1984 *An Ecological Model of the Spread of Pottery and Agriculture into Eastern South America.* Ph.D. dissertation, University of Illinois at Urbana-Champaign. Ann Arbor: University Microfilms.

Butt Colson, Audrey, and H. Dieter Heinen, eds.

1983–1984 "Themes in Political Organization: The Caribs and their Neighbors," *Antropológica* 59–62. Caracas: Fundación La Salle, Instituto Caribe de Antropología y Sociología.

Chanlatte Baik, Luís A.

1976 *Cultura igneri: Investigaciones en Guayanilla, Puerto Rico, Tecla II, Parte I.* Investigaciones 5. Santo Domingo: Museo del Hombre Dominicano y Fundación García Arévalo.

1979 "Excavaciones arqueológicas en Vieques," *Revista del Museo de Antropología, Historia y Arte de la Universidad de Puerto Rico* 1(1): 55–59.

1983 "Sorcé-Vieques: Climax cultural del Igneri y su participación en los procesos socioculturales antillanos," *Proceedings of the International Congress for the Study of the Pre-Columbian Cultures of the Lesser Antilles* 9: 73–95. Montréal.

Chanlatte Baik, Luís A., and Yvonne M. Narganes Storde

1983 *Vieques-Puerto Rico: asiento de una nueva cultura aborigen antillana.* Santo Domingo: privately printed.

Coe, Michael D.

1975 "Death and the Afterlife in Pre-Columbian America: Closing Remarks," in Elizabeth P. Benson, ed., *Death and the Afterlife in Pre-Columbian America.* Washington, D.C.: Dumbarton Oaks Research Library and Collections, 191–196.

Collier, Donald

1958 "Comment," in Raymond H. Thompson, ed., *Migrations*

- in *New World Culture History. Social Science Bulletin* 27. Tucson: University of Arizona Press, 17–19.
- Colón, Hernando  
1947 *Vida del almirante don Cristobal Colón escrita por su hijo don Hernando*. México: Fondo de Cultura Económica.
- Crocker, Jon C.  
1985 *Vital Souls: Bororo Cosmology, Natural Symbolism, and Shamanism*. Tucson: The University of Arizona Press.
- Demarest, Arthur A., and Geoffrey W. Conrad, eds.  
1992 *Ideology and Pre-Columbian Civilizations*. Santa Fe: School of American Research Press.
- Dole, Gertrude E.  
1973 "Shamanism and Political Control Among the Kuikuru," in Daniel R. Gross, ed., *Peoples and Cultures of Native South America: An Anthropological Reader*. Garden City: Doubleday/The Natural History Press, 294–307.
- Donnan, Christopher B., ed.  
1985 *Early Ceremonial Architecture in the Andes*. Washington, D.C.: Dumbarton Oaks Research Library and Collections.
- Dumont, Jean-Paul  
1972 *Under the Rainbow: Nature and Supernature among the Panare Indians*. Austin: University of Texas Press.
- Earle, Timothy K.  
1989 "The Evolution of Chiefdoms," *Current Anthropology* 30: 84–88.  
1991 *Chiefdoms: Power, Economy, and Ideology*. Cambridge: Cambridge University Press.
- Eliade, Mircea  
1957 *The Sacred and the Profane: The Nature of Religion*. Translated by Willard R. Trask. New York: Harcourt, Brace & World.  
1958 *Patterns in Comparative Religion*. Translated by Rosemary Sheed. New York: New American Library.
- Fernández Méndez, Eugenio  
1972 *Art and Mythology of the Taino Indians of the Greater West Indies*. San Juan: Ediciones "El Cemi."
- Fewkes, Jesse Walter  
1902 "Prehistoric Porto Rico," *Proceedings of the American Association for the Advancement of Science* 51: 487–512.  
1907 *The Aborigines of Porto Rico and Neighboring Islands. Bulletin No. 25. Bureau of American Ethnology, Smithsonian Institution, 1903–1904*. Washington, D.C: Smithsonian Institution.
- Flannery, Kent V., and Joyce Marcus  
1976 "Formative Oaxaca and the Zapotec Cosmos," *American Scientist* 64: 374–383.
- Fritz, John M.  
1978 "Paleopsychology Today: Ideational Systems and Human Adaptation in Prehistory," in Charles L. Redman, Mary Jane Berman, Edward V. Curtin, William T. Langhorne Jr., Nina M. Versaggi, and Jeffery C. Wanser, eds., *Social Archeology: Beyond Subsistence and Dating*. New York: Academic Press, 37–59.
- 1986 "Vijayanagara: Authority and Meaning of a South Indian Imperial Capital," *American Anthropologist* 88: 44–55.
- Goldman, Irving  
1963 *The Cubeo: Indians of the Northwest Amazon. Illinois Studies in Anthropology* 2. Urbana: The University of Illinois Press.
- Gómez Acevedo, Labor, and Manuel Ballesteros Baibrois  
1978 *Culturas indígenas de Puerto Rico*. Río Piedras: Editorial Cultural.
- González Colón, Juan  
1984 "Tibes: un centro ceremonial indígena," unpublished M.A. thesis, Centro de Estudios Avanzados de Puerto Rico y el Caribe, San Juan, Puerto Rico.
- Goodwin, R. Christopher, and Jeffery B. Walker  
1975 *Villa Taina de Boqueron: The Excavation of an Early Taino Site in Puerto Rico*. San Juan: Interamerican University Press.
- Gregor, Thomas  
1977 *Mehinaku: The Drama of Daily Life in a Brazilian Indian Village*. Chicago: The University of Chicago Press.
- Gross, Daniel R., ed.  
1973 *Peoples and Cultures of Native South America: An Anthropological Reader*. Garden City: Doubleday/The Natural History Press.
- Guss, David M.  
1989 *To Weave and Sing: Art, Symbol, and Narrative in the South American Rain Forest*. Berkeley: University of California Press.
- Haviser, Jay B.  
1991 "Preliminary Results from Test Excavations at the Hope Estate Site (SM-026), St. Martin," *Proceedings of the International Association for Caribbean Archaeology* 13: 647–666. Curaçao, Netherlands Antilles.
- Helms, Mary W.  
1988 *Ulysses' Sail: An Ethnographic Odyssey of Power, Knowledge, and Geographical Distance*. Princeton: Princeton University Press.
- Henderson, John S., and Patricia J. Netherly  
1993 *Configurations of Power: Holistic Anthropology in Theory and Practice*. Ithaca: Cornell University Press.
- Hugh-Jones, Christine  
1979 *From the Milk River: Spatial and Temporal Processes in Northwest Amazonia. Cambridge Studies in Social Anthropology* 26. Cambridge: Cambridge University Press.
- Hugh-Jones, Stephen  
1979 *The Palm and the Pleiades: Initiation and Cosmology in Northwest Amazonia. Cambridge Studies in Social Anthropology* 24. Cambridge: Cambridge University Press.
- Isbell, William H.  
1978 "Cosmological Order Expressed in Prehistoric Ceremonial Centers," *Actes du Congrès International des Américanistes* 42: 269–297. Paris.
- Jackson, Jean E.  
1983 *The Fish People: Linguistic Exogamy and Tukanoan Identity in Northwest Amazonia. Cambridge Studies in Social*

- Anthropology* 39. Cambridge: Cambridge University Press.
- Josselin de Jong, J. P. B. de  
 1947 *Archeological Material from Saba and St. Eustatius, Lesser Antilles. Mededelingen van het Rijksmuseum voor Volkenkunde, Leiden* 1. Leiden: E. J. Brill.
- Joyce, Thomas A.  
 1916 *Central American and West Indian Archaeology Being an Introduction to the Archaeology of the States of Nicaragua, Costa Rica, Panama and the West Indies*. Freeport: Books for Libraries Press.
- Kensinger, Kenneth M., ed.  
 1984 *Marriage Practices in Lowland South America. Illinois Studies in Anthropology* 14. Urbana: University of Illinois Press.
- Kertzer, David I.  
 1988 *Ritual, Politics, and Power*. New Haven: Yale University Press.
- Las Casas, Bartolomé de  
 1951 *Historia de las Indias*, 3 vols. México: Fondo de Cultura Económica.
- Lathrap, Donald W.  
 1958 "The Cultural Sequence at Yarinacocha, Eastern Peru," *American Antiquity* 23: 379–388.  
 1970 *The Upper Amazon*. London: Thames and Hudson.  
 1985 "Jaws: The Control of Power in the Early Nuclear American Ceremonial Center," in Christopher B. Donnan, ed., *Early Ceremonial Architecture in the Andes*. Washington, D.C.: Dumbarton Oaks Research Library and Collections, 241–267.
- Lathrap, Donald W., Jorge G. Marcos, and James Zeidler  
 1977 "Real Alto: An Ancient Ceremonial Center," *Archaeology* 30(1): 2–13.
- Lévi-Strauss, Claude  
 1983a *The Raw and the Cooked: Introduction to a Science of Mythology, Volume One*. Translated by John and Doreen Weightman. Chicago: The University of Chicago Press.  
 1983b *From Honey to Ashes: Introduction to a Science of Mythology, Volume Two*. Translated by John and Doreen Weightman. Chicago: The University of Chicago Press.
- López-Baralt, Mercedes  
 1985 *El mito taíno: Levi-Strauss en las antillas*. Río Piedras: Ediciones Huracán.
- Lowie, Robert H.  
 1948 "The Tropical Forests: An Introduction," in Julian H. Steward, ed., *The Tropical Forest Tribes. Handbook of South American Indians*, Vol. 3. Bulletin 143. *Bureau of American Ethnology, Smithsonian Institution*. Washington, D.C.: Smithsonian Institution, 1–56.
- Marcus, Joyce, and Kent V. Flannery  
 1994 "Ancient Zapotec Ritual and Religion: An Application of the Direct Historical Approach," in Colin Renfrew and Ezra B. W. Zubrow, eds., *The Ancient Mind: Elements of Cognitive Archaeology*. Cambridge: Cambridge University Press, 55–74.
- Maybury-Lewis, David  
 1979 *Dialectical Societies: The Gê and Bororo of Central Brazil*. Cambridge: Harvard University Press.  
 1989 "Social Theory and Social Practice: Binary Systems in Central Brazil," in David Maybury-Lewis and Uri Almagor, eds., *The Attraction of Opposites: Thought and Society in the Dualistic Mode*. Ann Arbor: University of Michigan Press, 97–116.
- Métraux, Alfred  
 1948 "The Tupinamba," in Julian H. Steward, ed., *The Tropical Forest Tribes. Handbook of South American Indians*, Vol. 3. Bulletin 143. *Bureau of American Ethnology, Smithsonian Institution*. Washington, D.C.: Smithsonian Institution, 95–133.
- Moscoco, Francisco  
 1981 *The Development of Tribal Society in the Caribbean*. Ph.D. dissertation, State University of New York at Binghamton. Ann Arbor: University Microfilms.
- Myers, Thomas P.  
 1973 "Toward the Reconstruction of Prehistoric Community Patterns in the Amazon Basin," in Donald W. Lathrap and Jody Douglas, eds., *Variation in Anthropology: Essays in Honor of John C. McGregor*. Urbana: Illinois Archaeological Survey, 233–259.
- Narganes Storde, Yvonne M.  
 1991 "Secuencia cronológica de dos sitios arqueológicos de Puerto Rico (Sorcé, Vieques y Tecla, Guayanilla)," *Proceedings of the International Association for Caribbean Archaeology* 12: 628–646. Curaçao, Netherlands Antilles.
- Nimuendajú, Curt  
 1946 *The Eastern Timbira. University of California Publications in American Archaeology and Ethnology* Vol. 41. Translated by Robert H. Lowie. Berkeley: University of California Press.
- Oliver, José R.  
 1989 *The Archaeological, Linguistic and Ethnohistorical Evidence for the Expansion of Arawakan into Northwestern Venezuela and Northeastern Colombia*. Ph.D. dissertation, University of Illinois at Urbana-Champaign. Ann Arbor: University Microfilms.
- Ortiz Montañez, Hernán  
 1986a *Inventario de sitios precolombienses en Dorado*. Report to USDI National Park Service. San Juan: State Historic Preservation Office.  
 1986b *Estudio investigativo sobre el reconocimiento arqueológico del litoral norte de la costa de Dorado y la documentación de diez localidades arqueológicas adicionales en el municipio de Dorado*. Report to USDI National Park Service. San Juan: State Historic Preservation Office.
- Oviedo, Gonzalo Fernández de  
 1950 *Sumario de la natural historia de las Indias*. México: Fondo de Cultura Económica.
- Petersen, James B., and David R. Watters  
 1991 "Archaeological Testing at the Early Saladoid Trants Site, Montserrat, West Indies," *Proceedings of the International Association for Caribbean Archaeology* 14: 286–305. Barbados.

- Pons Alegría, Mela  
1987 "El impulso mágico y el arte aborigen antillano," *La Revista del Centro de Estudios Avanzados de Puerto Rico y el Caribe* 4: 89–96.
- Rainey, Froelich G.  
1940 *Porto Rican Archaeology. Scientific Survey of Porto Rico and the Virgin Islands*, Vol. 18, Part 1. New York: The New York Academy of Sciences.
- Reichel-Dolmatoff, Gerardo  
1971 *Amazonian Cosmos: The Sexual and Religious Symbolism of the Tukano Indians*. Chicago: The University of Chicago Press.  
1975 *The Shaman and the Jaguar: A Study of Narcotic Drugs among the Indians of Colombia*. Philadelphia: Temple University Press.
- Rodríguez, Miguel  
1989 "The Zoned Incised Crosshatch (ZIC) Ware of Early Pre-Columbian Ceramic Age Sites in Puerto Rico and Vieques Island," in Peter E. Siegel, ed., *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*. BAR International Series 506. Oxford: B.A.R., 249–266.  
1991 "Arqueología de Punta Candelero, Puerto Rico," *Proceedings of the International Association for Caribbean Archaeology* 13: 605–627. Curaçao, Netherlands Antilles.
- Roosevelt, Anna C.  
1980 *Parmana: Prehistoric Maize and Manioc Subsistence along the Amazon and Orinoco*. New York: Academic Press.  
1987 "Chiefdoms in the Amazon and Orinoco," in Robert D. Drennan and Carlos A. Uribe, eds., *Chiefdoms in the Americas*. Lanham: University Press of America, 153–185.
- Rouse, Irving  
1948 "The Arawak," in Julian H. Steward, ed., *The Circum-Caribbean Tribes. Handbook of South American Indians*, Vol. 4. Bulletin 143. Bureau of American Ethnology, Smithsonian Institution. Washington, D.C.: Smithsonian Institution, 507–546.  
1952a *Porto Rican Prehistory: Introduction; Excavations in the West and North. Scientific Survey of Porto Rico and the Virgin Islands*, Vol. 18, Part 3. New York: The New York Academy of Sciences.  
1952b *Porto Rican Prehistory: Excavations in the Interior, South, and East; Chronological Implications. Scientific Survey of Porto Rico and the Virgin Islands*, Vol. 18, Part 4. New York: The New York Academy of Sciences.  
1964 "Prehistory of the West Indies," *Science* 144: 499–513.  
1974 "The Indian Creek Excavations," *Proceedings of the International Congress for the Study of Pre-Columbian Cultures of the Lesser Antilles* 5: 166–176. Antigua.  
1986 *Migrations in Prehistory: Inferring Population Movement from Cultural Remains*. New Haven: Yale University Press.  
1989 "Peoples and Cultures of the Saladoid Frontier in the Greater Antilles," in Peter E. Siegel, ed., *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*. BAR International Series 506. Oxford: B.A.R., 383–403.
- 1992 *The Tainos: Rise and Decline of the People Who Greeted Columbus*. New Haven: Yale University Press.
- Rouse, Irving, and Ricardo E. Alegría  
1990 *Excavations at María de la Cruz and Hacienda Grande Village Site, Loiza, Puerto Rico*. Yale University Publications in Anthropology 80. New Haven: Yale University.
- Schele, Linda, and David A. Freidel  
1990 *A Forest of Kings: The Untold Story of the Ancient Maya*. New York: William Morrow.
- Schultes, Richard Evans  
1972 "An Overview of Hallucinogens in the Western Hemisphere," in Peter T. Furst, ed., *Flesh of the Gods: The Ritual Use of Hallucinogens*. New York: Praeger, 3–54.
- Schwoerer, M., P. Guibert, F. Bechtel, M. Mattioni, and J. Evin  
1985 "Des hommes en Martinique vingt siècles avant Christophe Colomb?" *Proceedings of the International Congress for the Study of the Pre-Columbian Cultures of the Lesser Antilles* 10: 369–397. Montréal.
- Seeger, Anthony  
1981 *Nature and Society in Central Brazil: The Suyá Indians of Mato Grosso*. Cambridge: Harvard University Press.
- Siegel, Peter E.  
1989 "Site Structure, Demography, and Social Complexity in the Early Ceramic Age of the Caribbean," in Peter E. Siegel, ed., *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*. BAR International Series 506. Oxford: B.A.R., 193–245.  
1991a "Migration Research in Saladoid Archaeology: A Review," *The Florida Anthropologist* 44: 79–91.  
1991b "On the Antillean Connection as a Potential Corridor for Cultigens into Eastern North America," *Current Anthropology* 32: 332–334.  
1992 *Ideology, Power, and Social Complexity in Prehistoric Puerto Rico*. Ph.D. dissertation, State University of New York at Binghamton. Ann Arbor: University Microfilms.
- Siegel, Peter E., and Kenneth P. Severin  
1993 "The First Documented Prehistoric Gold-Copper Alloy Artefact from the West Indies," *Journal of Archaeological Science* 20: 67–79.
- Spencer, Charles E.  
1987 "Rethinking the Chiefdom," in Robert D. Drennan and Carlos A. Uribe, eds., *Chiefdoms in the Americas*. Lanham: University Press of America, 369–390.
- Stahl, Peter W.  
1984 *Tropical Forest Cosmology: The Cultural Context of the Early Valdivia Occupations at Loma Alta*. Ph.D. dissertation, University of Illinois at Urbana-Champaign. Ann Arbor: University Microfilms.  
1985 "Native American Cosmology in Archaeological Interpretation: Tropical Forest Cosmology and the Early Valdivia Phase at Loma Alta," in Marc Thompson, Maria Teresa Garcia, and Francois J. Kense, eds., *Status, Structure and Stratification: Current Archaeological Reconstructions*. *Proceedings of the 16th Annual Chacmoool Conference, Ar-*

- archaeological Association of the University of Calgary. Calgary, 31–37.
- Stevens-Arroyo, Antonio M.  
1988 *Cave of the Jaguar: The Mythological World of the Tainos*. Albuquerque: University of New Mexico Press.
- Upham, Steadman, ed.  
1990 *The Evolution of Political Systems: Sociopolitics in Small-scale Sedentary Societies*. Cambridge: Cambridge University Press.
- van der Merwe, Nikolaas J., Anna C. Roosevelt, and J. C. Vogel  
1981 "Isotopic Evidence for Prehistoric Subsistence Change at Parmana, Venezuela," *Nature* 292: 536–538.
- Versteeg, Aad H.  
1989 "The Internal Organization of a Pioneer Settlement in the Lesser Antilles: The Saladoid Golden Rock Site on St. Eustatius, Netherlands Antilles," in Peter E. Siegel, ed., *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*. BAR International Series 506. Oxford: B.A.R., 171–192.
- Versteeg, Aad H., and Kees Schinkel, eds.  
1992 *The Archaeology of St. Eustatius: The Golden Rock Site. Publication of the Foundation for Scientific Research in the Caribbean Region* 131. Amsterdam: Foundation for Scientific Research in the Caribbean Region.
- Watters, David R., and Irving Rouse  
1989 "Environmental Diversity and Maritime Adaptations in the Caribbean Area," in Peter E. Siegel, ed., *Early Ceramic Population Lifeways and Adaptive Strategies in the Caribbean*. BAR International Series 506. Oxford: B.A.R., 129–144.
- Wheatley, Paul  
1971 *The Pivot of the Four Quarters*. Chicago: Aldine Press.
- Wilbert, Johannes  
1972 *Survivors of Eldorado: Four Indian Cultures of South America*. New York: Praeger.  
1975 "Eschatology in a Participatory Universe: Destinies of the Soul among the Warao Indians of Venezuela," in Elizabeth P. Benson, ed., *Death and the Afterlife in Pre-Columbian America*. Washington, D.C.: Dumbarton Oaks Research Library and Collections, 163–189.  
1981 "Warao Cosmology and Yekuana Roundhouse Symbolism," *Journal of Latin American Lore* 7(1): 37–72.  
1987 *Tobacco and Shamanism in South America*. New Haven: Yale University Press.
- Wilson, Samuel M.  
1989 "The Prehistoric Settlement Pattern of Nevis, West Indies," *Journal of Field Archaeology* 16: 427–450.  
1990a *Hispaniola: Caribbean Chiefdoms in the Age of Columbus*. Tuscaloosa: The University of Alabama Press.  
1990b "Taino Elite Integration and Societal Complexity on Hispaniola," *Proceedings of the International Association for Caribbean Archaeology* 11: 517–521. San Juan, Puerto Rico.
- Yde, Jens  
1965 *Material Culture of the Waiwái*. Nationalmuseets Skrifter, Etnografisk Række X. Copenhagen: The National Museum of Copenhagen.
- Zeidler, James A.  
1984 *Social Space in Valdivia Society: Community Patterning and Domestic Structure at Real Alto, 3000–2000 B.C.* Ph.D. dissertation, University of Illinois at Urbana-Champaign. Ann Arbor: University Microfilms.