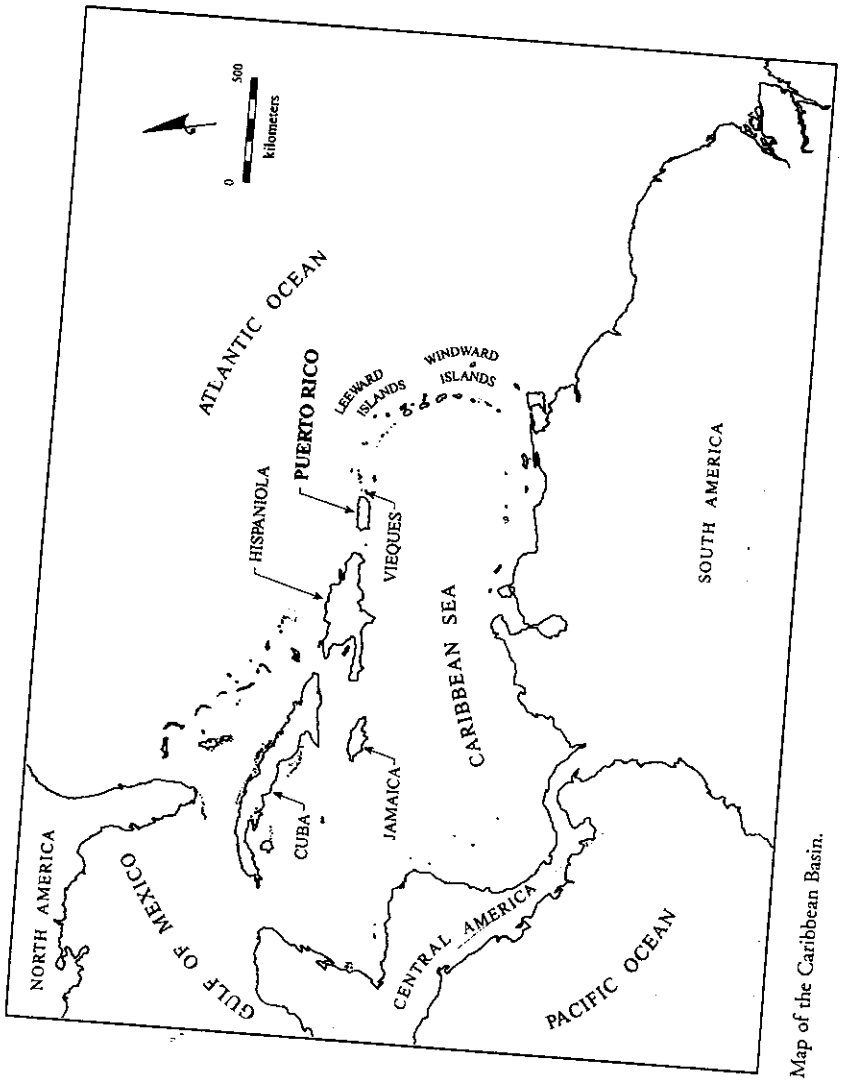

Map of the Caribbean Basin.

ANCIENT BORINQUEN

Archaeology and Ethnohistory of Native Puerto Rico

Edited by Peter E. Siegel

The University of Alabama Press
Tuscaloosa

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my discussion of shamanism and hallucinogens in relation to petroglyphs and the numinous objects designated as "*cemí*" by the Taíno.

9. Speaking about Hispaniola, Las Casas noted: "they had a plaza commonly placed before the house of the señor [lord], swept clean, three times longer than wide, framed by *lomillos* of a palm or two in height . . . " (Las Casas 1929 [3]:570, Chapter CCIV).

10. Oviedo's original Spanish text is: "Y en esta isla, a lo que he podido entender, solo sus cantares, que ellos llaman *areytos*, es su libro ó memorial que de gente en gente queda de los padres á los hijos, y de los presentes á los venideros . . . " It translates as follows: "And in this Island, as far as I could understand, only their chants, which they call *areítos*, function as their book or memorial that from people to people remains, from parents to children, and from the present to the future [generations]" (Oviedo 1944 [1]:232, Part 1, Book 5, Chapter 1, emphasis in original).

8

Rivers of Stone, Rivers within Stone

Rock Art in Ancient Puerto Rico

Peter G. Roe

Puerto Rico, the easternmost of the Greater Antilles (Figure 8.1), is a large island characterized by a complex geology, including a spectacular interior karst topography honeycombed with caves and sinkholes, as well as huge boulder-strewn rivers winding from the mountainous center to the coasts. It thus has all the requisite raw materials for rock art, or *arte rupestre* as it is called in Spanish. Indeed, it appears in two media here: pictographs (González Colón 1988), or rock paintings (Figure 8.2), and petroglyphs (Alvarado Zayas 1999), carvings in stone executed by incision and excision, producing shallow relief images (Figure 8.3). The parent raw materials range from hard grano-diorites to limestone and eolinitic sandstone. While the earliest arrivals, "Mesoindian" Archaic Indians circa 4000 B.C., worked in portable stone, there is no evidence they produced rock art. It was the horticultural and ceramic-using Amerindians, ultimately from South America via the stepping stones of the Lesser Antilles, who were the first to capitalize on these abundant lithic resources and produce a voluminous and aesthetically impressive lithographic legacy.

Yet the first of these new arrivals, the Huecan Saladoid populations, followed closely by their "cousins," the more numerous and ultimately more successful Cedrosan Saladoids, appear not to have recognized the rock-art possibilities of their new insular home. From their arrival at roughly 400 or more B.C. and, in the form of the descendants of the Cedrosans, enduring until approximately A.D. 600 (Rouse 1992:Figure 14), theirs was a material culture of "personal presentation" (Roe 1989a). Typical of lowland tribes today, this artifactual assemblage results from an "aesthetic of the pristine."

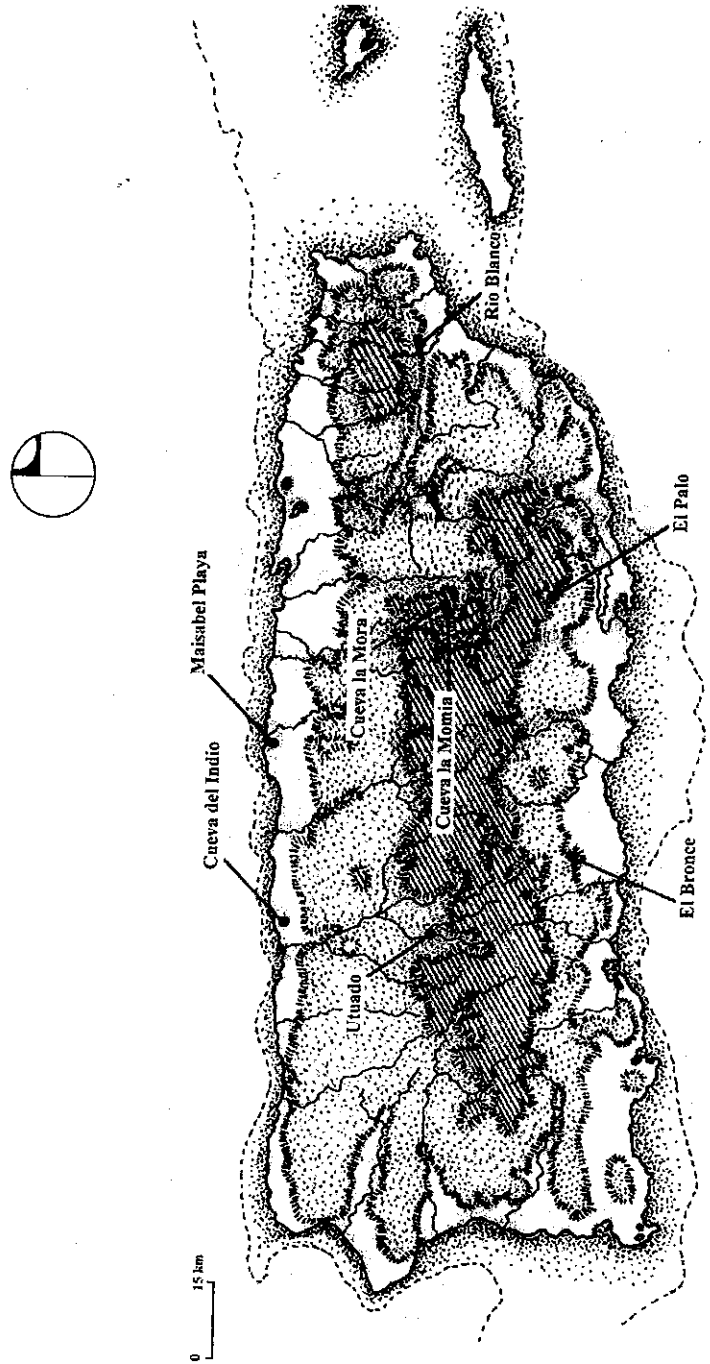

Figure 8.1. A map of Puerto Rico situating the rock art sites discussed in the text (drawn by the author).

Figure 8.2. A close-up of northern ledge pictographs from Chamber 2, Cueva de Mora, Comerío, including the head of a wrapped ancestor and an owl's face (photo from 1998, taken by the author, see Figure 8.19).

Brand new and unique objects are created both for internal consumption and to offer honored guests at feasts. The Saladoids emphasized small, portable, and exquisitely worked objects in multimedia: carving in semiprecious and other decorative stones, work in shell and mother-of-pearl, as well as modeled, incised and, in the Cedrosan phases like Hacienda Grande, white-on-red and true polychrome pottery with effigy and kinetic features (Figure 8.4a). In the latter style these surface decoration modes were combined with vessel shapes characterized by complex silhouettes (pots bristling with labial flanges, *adornos,* or decorative lugs, carinations, and annular bases). All of these jewel-like artifacts were designed to be observed close-up as corporeal art or handled as service ware. Many of these objects, as elements of what Polly Wiessner (1983) has called "assertive style," would have presented an image of the skill and taste of their owners as unique and cultivated persons, and the respect they were required to show their guests.

The "anatropic" (invertible) and rotational imagery (Figure 8.4b) of early Cedrosan Saladoid art conveyed a uniquely South and Antillean Amerindian style of graphic and plastic devices. They indirectly argue for a dualistic animistic worldview based upon the ritual use of hallucinogenic drugs for shamanic curing/bewitching (Roe 2000b, 2000c). That intricate and natu-

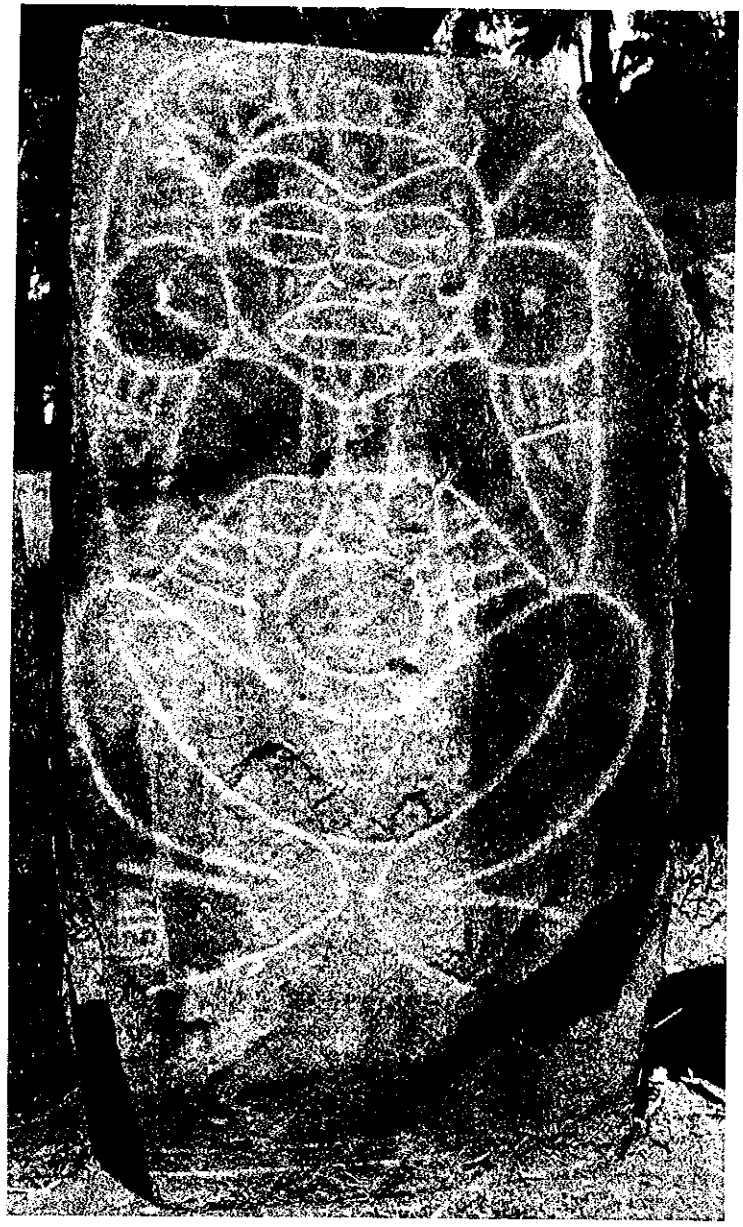

Figure 8.3. A ball park petroglyph, the famous "Diosa de Caguana," attributed to the Earth Goddess, Attabeira, a Taíno version of the Frog Lady (photographed in 1978 by the author).

rally modeled cosmology, together with its florid associated mythology, was to endure, albeit with modification, through the middle pre-Taíno pottery styles (Figure 8.4c, e–g), their Taíno descendant's ceramics (Figure 8.4h–i), and its unfortunate encounters with Europeans in 1492 and 1493 (Roe 1997a, 1999). Taíno cosmology continued to survive beyond the initial shock of encounter in certain "hybrid" transculturative artifacts (Roe 1997b) until the cultural extinction of the Taíno by approximately A.D. 1550 (see Anderson-Córdova, this volume).

By the time of the Elenan/Ostionan Ostionoid transformation a gradual (A.D. 600–1200) but dramatic demographic increase took place, resulting in the penetration of the island's interior. This "explosion" of sites derived from a successful adaptation to an insular environment, with a concomitant "complexification" of social structure and organization. To judge from the appearance of the first monumental architectural features like early ball parks such as Tibes (González Colón 1984; Figure 8.5, Phase A: 6), and a size increase for even humble pots, local social evolution was beginning to generate "complex tribes" or "incipient chiefdoms." Ironically, social augmentation was combined with a paradoxical simplification of material culture, in everything from three-pointers to serving bowls (Roe 1995b). Such giant bowls underwent a technical and aesthetic "devolution," losing both skill and surface decoration modes (asymmetry and generally sloppy execution in the former and, in the latter, first the reduction of bi- and polychrome to monochromatic paint and then, ultimately, to ill-prepared plain surfaces). This may have been symptomatic of a changing locus of art (Roe 1995b:Figures 2–6) from small personal items to megalithic expressions of long-distance-visible, and rigidly "frontal" artifacts. I hypothesize that rock art emerged in this more "human-centric" cultural milieu, where artisan's and patron's attention alike shifted from the "lateral view" (shape-shifting were-animal spirits) evocative of the earlier egalitarian society, toward a "vertical view" of more powerful humans above one's station and in control of one's life. Such a change in perspective is a *stigmata* of an emergent rank society (Figure 8.5, Phase B: 12, 13); objects function as so many "billboards" of emergent "public power." Certainly, as Cornelius Dubelaar (1985) pointed out for the Caribbean as a whole, most of the portrayals are anthropomorphic. This is precisely what one would predict for human-centric societies. The scale of public gatherings had apparently increased, as had site density, hierarchy, interdependence (Roe 2000d), and spacing. These factors hint at egalitarian redistribution replacing reciprocity, and the consequent emergence of prominent authority figures using feasting, trade, and marital alliance to build little regional interaction networks. By the time of the demonstrably complex Taíno chiefdom (A.D. 1350–1500), fur-

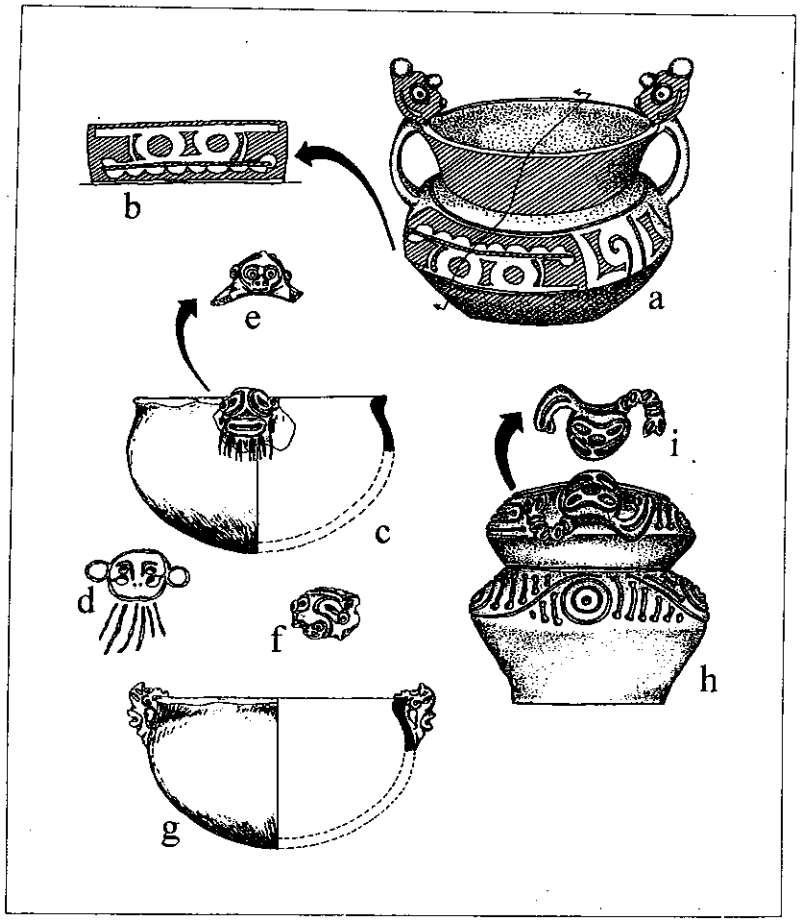

Figure 8.4. Anatropic (reversible) imagery in Puerto Rican prehistoric pottery, together with a "cross-media isomorphism" with petroglyphic art (all reconstructions and drawings by the author). (a.) A Cedrosan Saladoid (Hacienda Grande phase) unrestricted bowl with adorno-topped vertical "D"-shaped strap handles and white-on-red positive-negative painting, from the University of Puerto Rico, Río Piedras, collection, left-side reconstructed (adapted from Roe 1989b). (b.) The anatropic "Saladoid Being" vertically reflected from the shoulder band. (c, e–g.) A restricted Elenan Ostionoid bowl with the modified "D"-shaped adorno handle with a "rayed face," now unpainted, Jardines de Loiza site. The adorno face, when vertically reflected, yields another visage in "double-vision." (d.) An Elenan Ostionoid petroglyph, Barrio Cibuco site (drawn from Rodríguez Miranda 1999), of a similar "rayed face" with circular ear plugs to the ceramic adorno face in "c." (h and i.) A classic Taíno (Chican Ostionoid) biglobular restricted bowl with an anatropic crab appliqué adorno (from the García Arévalo collection, Santo Domingo, adapted from Roe 1999).

ther increases occurred in scale and workmanship throughout all material cultural media. This may have reflected a shift from "village specialist" producers, still partially engaged in the subsistence quest, to full-time, or nearly so, occupational specialists in a two-tier ranked society of nobles and commoners.

One of the mediums reflective of these trends was a now nearly mass-produced, yet also more highly decorated (although exclusively by plastic means such as appliqué and modeling) pottery tradition (Roe 1999). This second "apogee" of ceramics shared surface decoration modes (incision) with specific motifs in similarly incised petroglyphs (compare Figure 8.4c to 8.4d). Such "cross-media isomorphisms" (Roe 1993) highlighted the importance of art in conveying key cultural messages (widespread myths in actual friezes), while at the same time glorifying the "public power" of the *cacical* élite.

We can see this not only in the increased size of the rock art and associated ball parks (huge complexes like Caguana in the western highlands [Oliver 1992b, 1998, this volume]), but also in the complexity of their internal organization and pictorial detail. Specifically, one sees a shift from generic human visages to the accoutrements of dress and corporeal art (Figure 8.5, Phase C: 14–16).[1] The ancillary items of dress (crowns, necklaces, etc.) that assume increasingly complex forms within this seriation appear to be reflective of augmenting social stratification and the imposition of sumptuary codes, with a major shift occurring in late Elenan/Ostionan Ostionoid times (Figure 8.5), and reaching an unmistakable apogee in the plethora of depicted ear spools, crowns, pectorals, belts, and seats of Classic Taíno paraphernalia, as well as added representational corporeal details such as navels, elaborate eye-types, and noses.

In the face of this evident cultural transformation in sociocultural integration (from tribe to chiefdom), I argue for both innovation and conservatism within the belief system (mythology and cosmology). While still reflective to the end of its lowland South American heritage from whence it derived two millennia earlier, one can trace local innovations in animal symbols and, perhaps, ethnoastronomy (Eichholz 2001; Robiou Lamarche 1988). Evidence for this assertion will be found in both the pictographic and petroglyphic assemblages from all over the island that my collaborators and I have recorded and documented in the field and laboratory.

But was this transformation sui generis or the product of outside influences? Diffusionism is still alive and well in the Greater Antilles due to the appearance of both ball parks and yokes in Mesoamerica and on the islands (Alegría 1983). While some contact is probable (Alegría 1986a), the iconography and symbolism of the rock art argue strongly against direct diffusion

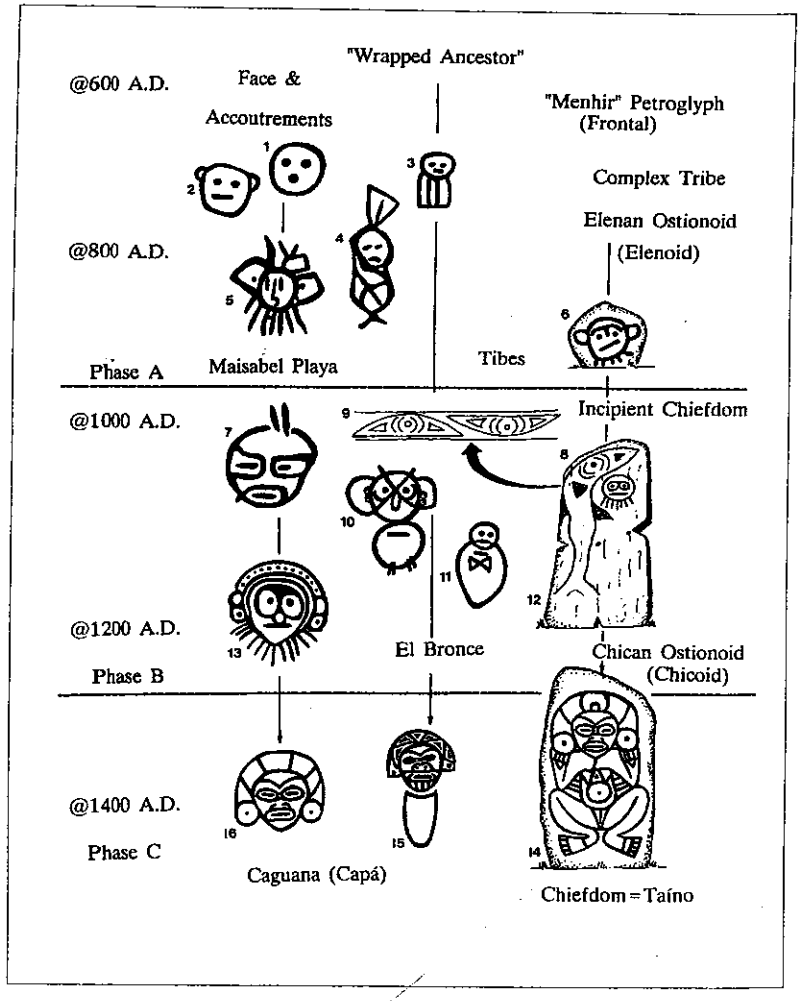

Figure 8.5. A proposed three-phase seriation of Puerto Rican petroglyphs, emphasizing anthropomorphic images (modified from Roe et al. 1999b:Figure 2)

from Mesoamerica (along with the purported borrowing of the ball park and ball game phenomena). It points, instead, to the retention and elaboration of cultural traits and institutions from the ancestral jungles of Guiana-Amazonia. There, detailed similarities in characters, episodes, and mythemes argue for continuity and parallel evolution (see also Alegría 1978; López-Baralt 1977).

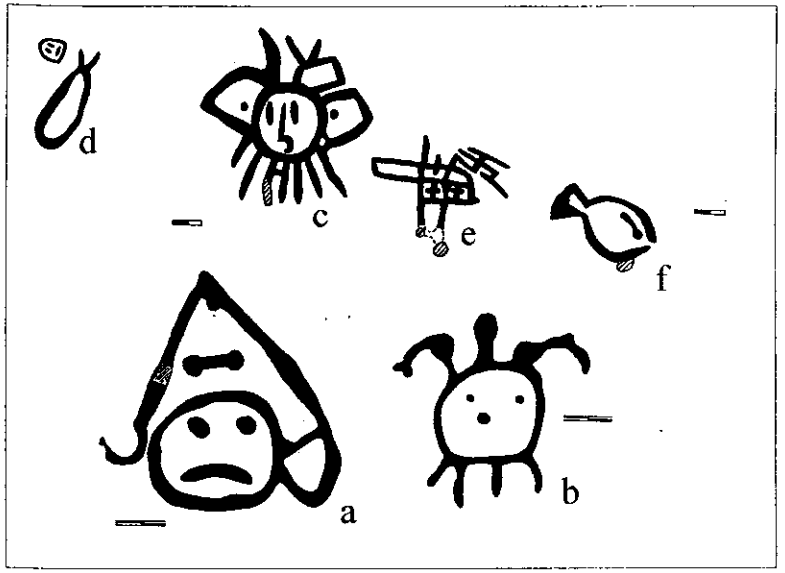

Figure 8.6. A selection of beach rock petroglyphs from the site of Maisabel Playa of possible Elenan Ostionoid cultural affiliation. (a.) A-20, a probable "three-pointer" (adapted from Roe 1991a:Figure 11a), scale = 10 cm. (b.) A-23, a possible hawksbill sea turtle with an internal "simple face" (Roe 1991a:Figure 11d), scale = 10 cm. (c–f.) A-9–13, a petroglyphic "frieze" perhaps illustrating the South Amerindian myth of the "Sun's Fish Trap" (adapted from Roe 1993:Figure 9), scales = 10 cm.

These parallels are evident in many of the texts I have recorded from native informants in their respective languages from both sides of the Amazon Basin, specifically from the Panoan Shipibo of the Peruvian *montaña* to the southeast (Roe 1982), and the Cariban Waiwai of Guyana and Brazil to the northeast (Roe 1985b, 1989b), as well as the entire corpus of comparable recorded modern oral traditions of ethnography in the lowlands (Guss 1989; Kensinger 1995), and the early written ethnohistorical accounts of Fray Ramón Pané (1974, 1992, 1999) and other chroniclers (Griswold 1997a, 1997b, 1997c, 1997d). These same mythemes are present in specific "friezes" of rock art throughout the rock-art sequence, while also revealing the replacement of Amazonian faunal symbols by local insular life forms (mythic substitution), which I have also documented in ethno- and archaeoastronomy (Roe 1983a). Tellingly, most of the insular fauna is aquatic: sea turtles (Figure 8.6b), seals, dolphins, fish (Figure 8.6d, f), and sharks. This is but the natural expression of cultural creativity as people first spread out into, and latter adapted to, a

Figure 8.7. River boulder petroglyphs, Río Caguitas (photo courtesy of Miguel Rodríguez).

distinct and distant environment characterized by an abundance of oceanic protein and a paucity of terrestrial sources (save for inoffensive land crabs and small *anolis* lizards).

I argue too that the two media of this regional rock art, pictographs and petroglyphs, are mutually related, synchronic cultural alternatives rather than diachronic predecessor/descendant forms as was the prior common wisdom. I show how the differentiation and placement of these two media, as well as the iconography and symbolism of the images executed therein, fulfilled a cosmological function, instantiating the structure and connections of a multilevel worldview, cognate with immeasurably more ancient lowland South Amerindian cosmologies (Roe 1982).

Specifically, I document the discovery of a new subtype of petroglyph that completes the hoary triadic classification first recognized by Fewkes (1903) near the turn of the century: Ball Park (Figure 8.3), River (Figure 8.7), and Cave (Figure 8.8) Petroglyphs. The completing venue is "Beach Petroglyph" executed in the lithified sands and dunes of the coast and its semilunar embayments (Figure 8.9). Lastly, and perhaps most challengingly, I take a cue from Oliver's (1998) pioneering study of the symbolic connotations of ball park design at Caguana and unite all four kinds of petroglyphs (and within them the functionally distinct pictographs) as segmental parts of a single

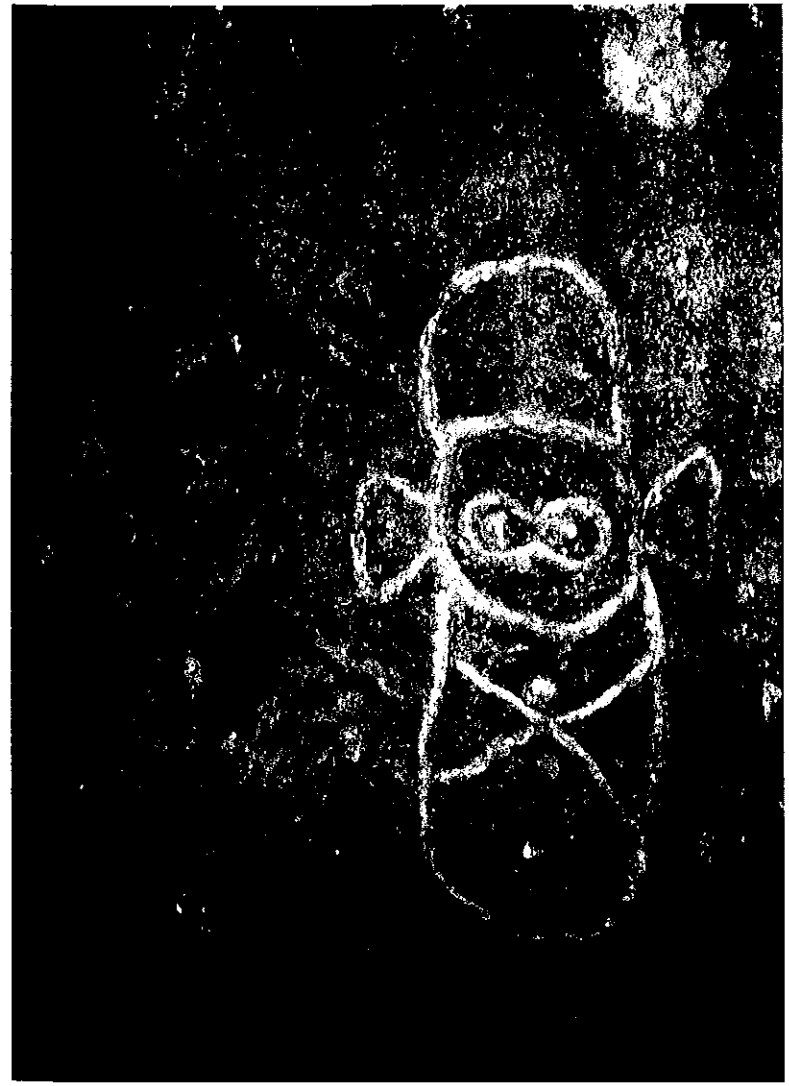

Figure 8.8. A cave petroglyph of a "wrapped ancestor," first chamber, Cueva del Indio, Arecibo (photo taken in 1987 by the author).

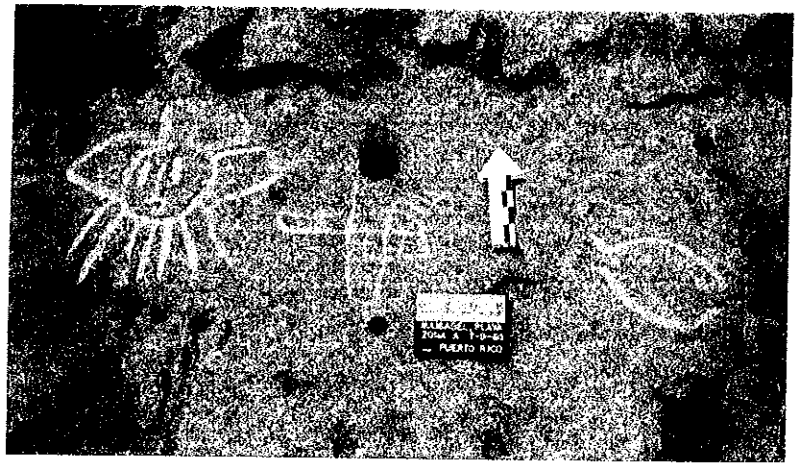

Figure 8.9. Group A beach rock petroglyphs from Maisabel Playa of a possible solar image, a fish trap, and a fish. White highlighting done with bread flour to prevent damage to the glyphs (photo taken in 1985 by the author). Scale 15 cm on board, 20 cm on north arrow.

cosmological transformational system. That is, the four subtypes of petroglyphs are merely "way stations" in the journeys of the souls of ancestral figures from their cave portals from/to the dark subaquatic underworld, via the flowing rivers and giant boulders they rest upon in their downward journeys, thence to the broad ball park "sacred lakes" of the highland basins and coastal plain, and ultimately to their "ports" of departure toward the Island of the Dead in the west on the beach rock near where rivers flow into the Caribbean Sea. Along the way they are accompanied by nocturnal/crepuscular birds (owls) and mammals (bats), avatars of the Death Spirits, the dangerous yet seductive *opía* that plagued the night. The *opía* were but malignant "twins" of the beneficent celestially oriented ancestors. The ancestors were also associated with aquatic creatures (fish and turtles) of the "water gyre" they are floating upon. The celestial connection for the chthonic ancestors in their invisible canoes was the same flowing water that courses through the underground caves during the day and the equally cold and dark night sky. As the cosmos turns itself "inside-out" during the diurnal/nocturnal cycle, what was beneath one's feet during the day flows in that foaming river of "fishy" souls, the Milky Way, above one's head at night. The water-gyre flows back upon itself within a triple-tiered universe as these same waters, and the dead carried on its surface, "upwell" from the pools of the caves and *cenotes* in the mountainous interior of the island to start their cycle all over again.

The diurnal/nocturnal, dry/rainy seasons' periodicities thus replay endlessly within this stacked set of platter/domed worlds that others (Siegel 1997:Figure 1; Stevens-Arroyo 1988:Figure 8) and I (Roe 1982:Figure 3) have argued for from evidence as diverse as the ethnohistoric oral tradition and archaeological site structure and process (Siegel 1992). Ideas matter in a systemic view of culture, as do subsistence and the social order. Nowhere do ideas and other dimensions crystallize better than in rock art. As we shall see, it is both curiously "immobile," yet "dynamic," in its structure and function.

Cultural Wholes: Why Study Ancient Puerto Rican Rock Art?

In contrast to the often fragmentary and disturbed nature of archaeological remains, rock art is usually found in situ and intact. Thus it preserves both its original spatial context (Dubelaar 1985) and the cultural "intent," however veiled, of its original makers. Rather than their normal fragmentary fare, rock art thus forces archaeologists to deal with cultural wholes, things that often survive as they were originally executed. Yet that integrity and immobility is sometimes compromised by both the ravages of preservational bias and overt acts of cultural vandalism, especially in the overpopulated insular Caribbean world. The more durable petroglyphs erode, first obscuring and then erasing key identifiable motifs, or whole representations. Sometimes, well-meaning efforts to make them accessible to a visiting public result in their virtual effacement!

Due to this unfortunate combination of factors, rock art has not received the attention it deserves. Matters are made worse by the well-known difficulty of associating it with other classes of artifactual and ecofactual evidence, from which dating and cultural associations are derived. Thus, *arte rupestre* seems to float in time, disconnected from culture, despite its composition of cultural wholes (intended affective statements) rich in stylistic and semantic meaning. I address this issue through a newly proposed seriation, and thus argue for a reintegration of rock-art data into archaeological reconstructions (Figure 8.5). We cannot continue to treat it as a marginal realm of inquiry, sprinkling disconnected images through the literature. Instead, we must attempt to use it as another line of evidence to help understand the past cultures of Puerto Rico. This chapter initiates such an attempt on a series of levels ranging from subsistence to society, art style, and religion.

Not all of the difficulties lie with the medium itself. The materialist orientation of many modern archaeologists has led them to avoid the affective intricacies of art in general (Anderson 1989), and rock art in particular. Since materialism values numerical analysis, and rock art has often eluded quanti-

fication (but see Hayward et al. 2001), pictographs and petroglyphs tend not to be regarded as fit subjects for "scientific" study. Because of that abdication, many amateurs have rushed to fill the void, some competent and cautious, others rash and sloppy, reading all sorts of bizarre notions into the "ultimate Rorschach test" that is rock art. Petroglyphs may be regarded as almost a form of pictographic writing, attributing, without much support, precise 1:1 meanings to motifs in petroglyph arrays, and thereby constructing imaginary messages in the process (Blasini 1985). Such views have cast a shadow of inauthenticity over this whole genre, repulsing serious students whose efforts might help to correct the mislabeling and poor documentation (e.g., "swaddled infants," inappropriately taken from North Amerindian ethnography, for wrapped ancestral figures, "bearded faces" for resolutely depilated Amerindian visages adorned with necklaces and breastplates, etc.).

Despite these problems, *arte rupestre* remains an object of great fascination in modern Antillean culture, and a major prop of ethnic identity in Puerto Rico, the Dominican Republic, and Cuba. It is a constant source of inspiration for modern *artesanos* (artisans, folk artists) in every medium from leather belts to jewelry, painting, and sculpture. Naturally, many of the ancient images are modified as artists take liberties with them to create modern designs. Unfortunately, these modified images, a new transculturative art dubbed "neotaíno" by the prominent Dominican scholar Bernardo Vega (1987), then float in the popular literature as accurate representations of the aboriginal rock art. The process comes full circle when moderns peck new petroglyphs, usually "simple faces," into cave walls where they can be mistaken for ancient images. Part of the imperative for scientific documentation of rock art then becomes a correction of the artistically distorted images by showing accurately their prehistoric models, and distinguishing new from ancient cave carvings.

Carefully recorded, much can be deduced from ancient pictographs and petroglyphs, particularly in the Greater Antilles. We are exceptionally fortunate to be able to utilize direct historical and ethnographic analogy to early ethnohistoric documents such as the small yet precocious volume of Fray Ramón Pané (1974, 1992, 1999), a veritable "Rosetta Stone" of mythic information recorded from Taíno informants before their culture's extinction. In addition, we have abundant comparative mythic data from the better-documented modern lowland ethnography of South Amerindians, from whence the ancestors of the ethnohistoric Taíno came. The combination of both datasets allows the analyst to propose much more detailed iconographic and symbolic decodings of the ancient rock art than would otherwise be possible. Yet, as always, such inferences must be congruent with the data derived from the close visual inspection and analytic "deconstructive" analysis of the actual monuments themselves, as captured with multiple complementary documentary techniques.

Long Known, Little Studied: A Brief History of Puerto Rican Rock-Art Research

The first order of the day is the careful documentation of rock art in its full spatial context, using mutually reinforcing, multimedia techniques. Fortunately, while early studies often were characterized by deplorable freehand versions of Puerto Rican petroglyphs (Bullen 1973; Olsen 1973, 1974; Pinart 1890, 1979), recent advances in the documentation of Greater Antillean rock art have occurred, both in the voluminous "gray literature" of compliance reports (e.g., Ortíz Montañez 1986; Robinson 1985b) and in academic efforts.

The first modern reports on Puerto Rican petroglyphs date to the "father" of the island's prehistory and founder of the Institute of Culture, Ricardo E. Alegría (1941, 1979a), and his protégé, Ovidio Dávila Dávila (1977, 1985a), as well as the pioneering work of Alegría's long-time collaborator, himself the architect of much of Caribbean and northern South Amerindian prehistory's space/time matrix, Irving "Ben" Rouse (1949). A number of Alegría's followers, like Carlos Ayes Suárez (1985a, 1985b, 1986a, 1986b, 1986c, 1986d, 1987; Ayes Suárez and Otero López 1986), Angel Betancourt (1983), and Roberto Martínez Torres (1981, 1988, 1994a, 1994b) began documenting the numerous local assemblages. Unfortunately, their efforts were published in small regional journals of limited circulation (Collazo 1983). Various members of the private La Fundación Arqueológica, Antropológica e Histórica de Puerto Rico have published notes on isolated finds in their newsletter, the *Boletín Informativo,* published during the 1970s (Sued Badillo 1972), but their piecemeal nature has contributed little to a comprehensive study of the island's rock-art riches, and in any case, remains totally inaccessible to researchers outside the island. While valuable, this work was not pursued on a systematic basis, nor were the monuments themselves adequately interpreted.

Therefore, one of my first interests when I began doing archaeology on the island in 1978 was to investigate rock art, a genre unavailable to me in my previous research on lowland South American archaeology. In recent years, my students and others have made the documentation of rock art more careful and systematic (Alvarado Zayas 1999; Delgado Esquilín 1999b; Díaz González 1990; Dubelaar et al. 1999; Hayward et al. 2001; Hayward and Cinquino 2001; Medina Carrillo 1994; Ortíz Montañez 1986; Rivera Meléndez 1996; Rivera Fontán and Silva Pagán 1997; Rivera Meléndez and Ortíz 1995; Rodríguez Alvaréz 1991; Rodríguez Miranda 1999; Walker 1983).

In addition to his work on the menhir petroglyphs and associated ball courts of Caguana, Oliver (1992b, 1998; Oliver et al. 1999) has begun to survey the surrounding area and record additional pieces of rock art that might yield center/periphery stylistic contrasts. Dávila has continued to document the abundant rock art of Mona Island to the west of Puerto Rico (Delgado Esquilín 1999a), but these long-initiated studies have yet to be published.

Drawing It Right: Methodology in Puerto Rican Rock-Art Studies

Most early studies, including the notoriously inept (but thematically precocious) study of the French traveler Alphonse L. Pinart (1890; Alegría 1979a), were based solely on freehand sketches, usually without scale, and were thus prone to misrepresentation (see the highly variable results of my experiment of asking multiple students to draw the same petroglyph, cf. Roe 1993:Figure 2) or outright fantasy. Yet, despite the virtual unintelligibility of Pinart's renderings, Rivera Meléndez (1995) has been able to locate them and provide modern drawings. Indeed, there is still a place for well-made scale drawings made directly from the specimens, particularly to show the relationships between distinct assemblages of petroglyphs within the same site.

The advent of photography has, of course, made documentation easier. I have found that taking photos at night with floods (actually, a detached videocam light), casting illumination at an angle, helps to provide more informative images of even open-air petroglyphs than can be obtained during the day with its diffused or direct light.

Some investigators have also used infrared photography on pictographs, at times to good effect, but none of these images have, so far, been published. Fortunately, recent advances in software for image manipulation and enhancement, such as Adobe Photoshop, Corel Photo House, among others, can dramatically improve photos taken in low-light cave conditions. By changing contrast and producing negative, enhanced images, the computer yields details and isolates features missed by the naked eye. Of course, any photos that have been enhanced should be labeled as such in their presentation. Videotaping with a digital camcorder not only provides a continuous visualization of the spatial context, but the tapes can later be viewed in conjunction with still 35-mm photos (both prints and slides) and rubbings/tracings, to produce final renderings.

A significant advance in graphic documentation was Monica Frassetto's (1960) study of the Cueva del Indio site, located along the north-central coast

of Puerto Rico. This spectacular cavern, formed in ancient eolinitic dunes by wave solution, has a great profusion of wrapped figures (Figure 8.8) and more abstract motifs, many connected together in densely packed meandering patterns. She applied the effective (when the parent rock is fairly smooth) technique of roller printing. Large sheets of paper were appended to the walls and then a block-printing roller with ink was rolled over the images, turning the negative cavities and incisions into white and the raised areas into black depictions. This provided accurate 1:1 positive/negative images that are easily transferred into pen-and-ink renderings. Her technique represented a real advance in field methods and interpretation. She argued that periodic retouching of the incised figures was conducted, perhaps as part of cultic practices, evidenced by the extreme depth and width of their component incisions.

By the time I began work in Puerto Rico in 1978, field investigators had added rubbings, either with charcoal on stretched paper or cotton, or the simple, but effective technique of rubbing carbon paper over sheets pegged on top of the incisions. This produced the same sort of 1:1 negative image of the original petroglyph as roller printing, and, again, was most effective on smooth rock surfaces. Yet every crack and irregularity was frequently introduced into the image using this technique, generating considerable noise in the final product. Moreover, if the rock surfaces are irregular, rubbings are virtually unworkable. Even with all but the best surfaces, rubbings are often undecipherable when viewed alone.

In 1986, I pioneered a new technique on the island while at work on the beach rock petroglyphs at Maisabel Playa. To supplement previously mentioned methods, I used heavy-gauge clear plastic. I laid it over both petroglyphs and pictographs, affixing the plastic to the rock, cutting darts where needed to compensate for surface irregularities. The rock art was traced using permanent markers. Clear lines were contrast-coded in black, fugitive sections in hatchures, with depressions and other features coded. Field observations were recorded directly on the plastic. These 1:1 drawings, often connected by clear sheets if spaces existed between images, were simply rolled up and taken back to the lab to be copied on tracing velum with rapidograph. In doing so, the clear plastic drawings could be laid over rubbings to compare methods and add, or correct, details. The images were photographically reduced and the resultant figures redrawn with rapidograph and published. This technique, now common on the island, even compensates for extreme surface irregularities and the high relief that defeat rubbings, provided that the artist keeps his/her eye and hand at 90 degrees over the incised or painted line of the ancient artwork, to prevent parallax errors.

The next technique José Rivera Meléndez and I tried in 1993, sought to

combine the surface detail in rubbings with the capture of line in clear plastic tracings. We documented a petroglyphic assemblage incised on a huge river boulder at the El Palo site (Figure 8.12), located in the southeastern highlands near Pueblito Carmen, Guayama. We painted the entire face of the rock with multiple coats of liquid latex modeling compound, allowing appropriate drying time in between. The resulting rubbery sheet is easily transported with no danger of damage. Such latex peels capture every detail of the surface, including the faintest of incised lines, and are invaluable in reconstructing petroglyphs. Later, the peel can serve as a negative master to pour positive plaster casts, thus recreating the entire rock face.

This battery of recording techniques can wrest from the weathered stone the maximum cultural information and aid in the production of accurate drawings. While interpretations may be disputed, the analyst should leave behind a corpus of detailed and accurate field documentation, which is not open to question. That documentation should also include accurate planimetric and topographic maps of the environs of the rock art to provide a spatial context.

Taking the Images Apart: Componential and Statistical Analysis of Rock Art

Using the documentary methods mentioned above, one then produces an inventory of rock-art sites. The Puerto Rico State Historic Preservation Office and the Instituto de Cultura Puertorriqueña are attempting to generate just such an island-wide inventory. After recording this contextual and dimensional data one may try to decipher the formal code of the rock art, itself no easy task. I have found it useful to decompose the images into recurrent, hence arguably meaningful, design elements and the design motifs they form (Figure 8.12), as well as to postulate a number of design rules (Figure 8.13, Roe 1991a:34) that generate meaningful statements (appropriate design layouts), such as a frieze or an association of glyphs.

This analysis first involves culturally problematic etic categories such as geometric vs. representational motifs. Oliver (1998, this volume) has shown that some geometric motifs, such as the "I" under the male menhir petroglyph at Caguana (Roe 1993:Figure 4), actually denotes an artifact, the male's stool or *duho*. The challenge is to decode representational meaning from such geometric designs (Roe 2000c). To initiate study, I compiled a catalog of human body components (wrapped and unwrapped). The images were reduced to their componential subcategories (Figure 8.12a), including diadems, head shape, eyes, ear and ear plugs, noses, mouths, torsos and torso finials,

Figure 8.10. Stalagmite petroglyphs from Cueva de la Momia, Comerío. (a.) A drawing by the author of the stalactite and stalagmite, the latter with petroglyphs (all from 1:1 clear plastic tracings), height of block 1.45 m, width 49 cm at top, 1.17 m at bottom. (b.) The main early Taíno (ca. A.D. 1300) crowned visage of a "wrapped ancestral" figure, utilizing "naturefact transformation" from the stalagmite projection to give a three-dimensional effect. (c.) The "bat" below this figure, both distorted in 2-D as the tracings are laid out flat. (d.) The undistorted appearance of the original 3-D images, scale 5 cm (all from Roe et al. 1999b:Figure 14). (e.) A probable "neotaíno" modern simple face. (f.) Three probable later Elenan Ostionoid (ca. A.D. 800–1100) petroglyphs, the bracket indicating a 37 cm gap, scale 5 cm (Roe et al. 1999b:Figure 12).

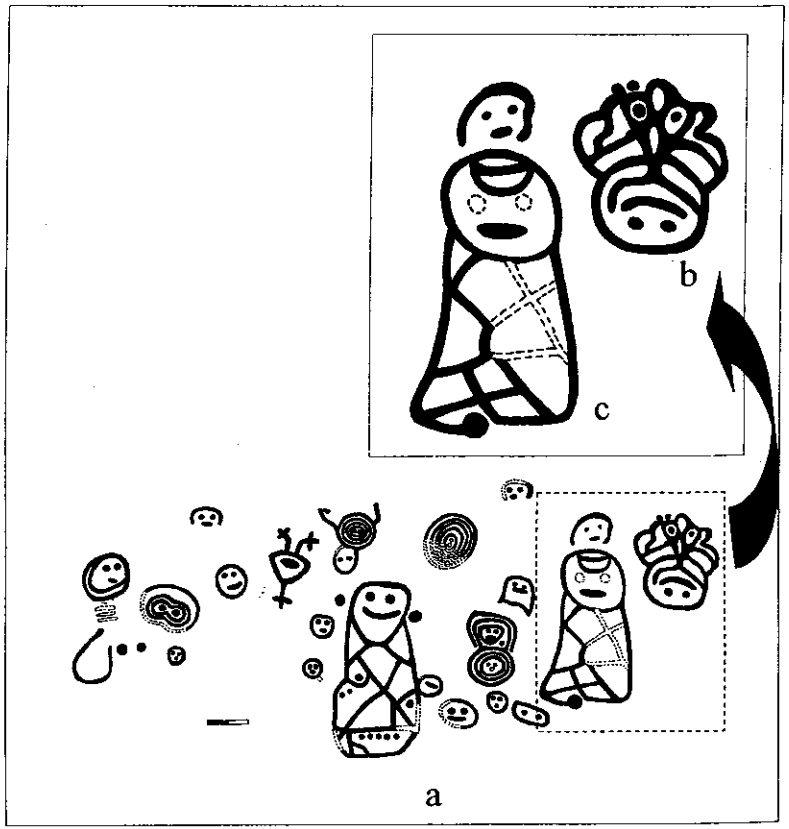

Figure 8.11. The petroglyphic assemblage from the Pueblito Carmen river boulder (from a clear plastic 1:1 tracing). (a.) The assortment of 21 spiral motifs, simple faces, and "wrapped ancestral" figures, scale 20 cm (adapted from Roe and Rivera Meléndez 1999:Figure 4). (b.) An enlargement of 21, the "inverted" wrapped figure, apparently drawn by leaning over the top of the huge boulder. (c.) An enlargement of 20, a "right-side-up" wrapped figure, together with 19, an "alter ego" simple face.

arms, legs, and such. Each subcategory was further divided into appropriate elements, such as crowned, scalloped, and plumed. Categories, subcategories, and elements were based on a literature review and the results of my field studies (Roe 1991a:Figures 17–31). This catalog serves as a device to identify consistent patterns (e.g., kind of crown associated with kind of head shape), and to help in delineating stylistic provinces and/or temporal periods. Further, the analysis can assist in distinguishing modern "neotaíno" recreations

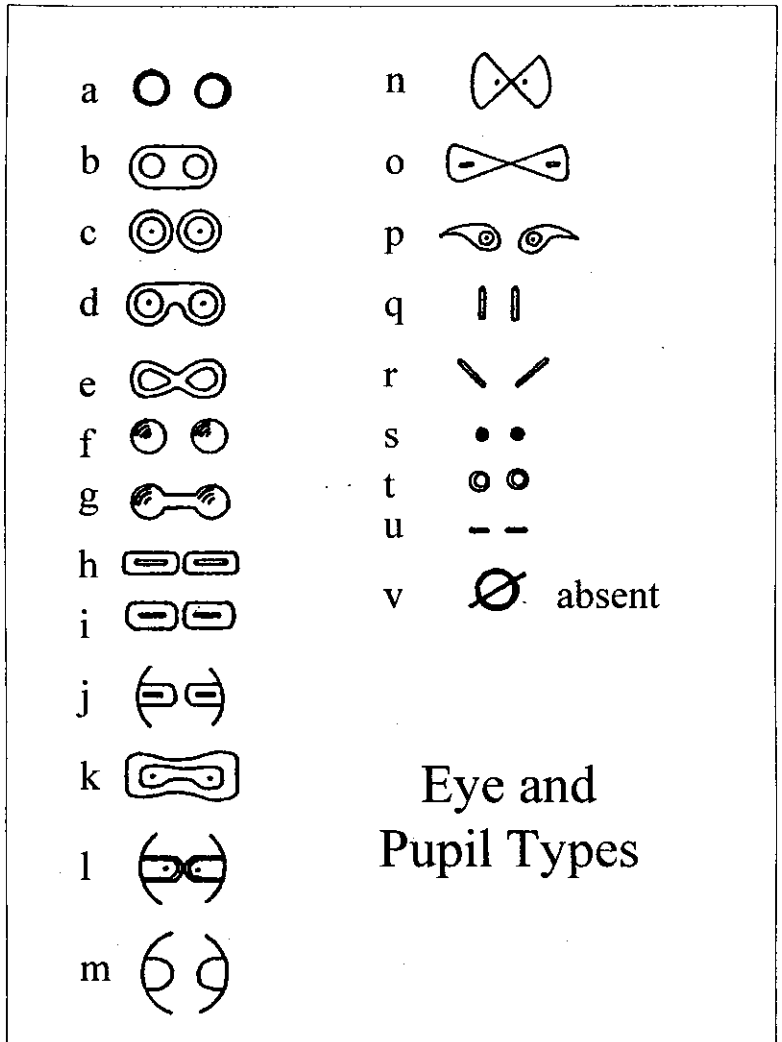

Figure 8.12. A componential approach to the somatic components of anthropomorphic petroglyphs in Puerto Rico.

Figure 8.13. The beginnings of a generative grammar for Puerto Rican anthropomorphic petroglyph design (Roe 1991a:Figures 34–35).

from ancient designs by noting the inappropriate combination of motifs. With new finds, or the better documentation of already-known finds, the catalog is revised and updated.

Using cluster analysis, Hayward et al. (2001) grouped categories of designs by site in an effort to identify associations between kinds of petroglyphs and kinds of sites. Tentative associations, like spirals with river boulder petroglyphs (Hayward et al. 2001:Figures 7, 16) as potential representations of eddies or whirlpools, have been suggested for the numerous glyphs at El Palo (Roe and Rivera Meléndez 1995).

Floating in Time: The Problematic Temporal Context of Rock Art

One of the limitations of New World rock-art research has been in dating the images (Veloz Maggiolo et al. 1973). Stylistic cross-ties between datable ceramics and petroglyphs and even ethnographic body paint (Pereira 2001:227), and accidental paint spall spillage from pictographs on datable living floors have been employed to suggest temporal placement for rock art in the lower Amazon (Roosevelt et al. 1996). However, secure time placement for Antillean rock art was lacking until recently (Pagán Perdomo 1988). Some have suggested pictographs to be as early as the Saladoid arrivals (Morbán Laucer 1972:15), while most petroglyphs were assumed to date to the late prehistoric/protohistoric period. Research at the Caguana site in Utuado has provided plausible dating for the elaborate Classic Taíno menhir petroglyphs (Alegría 1983). Juan González Colón's (1984) uncovering of the earlier ball parks at Tibes on the south coast near Ponce, and their associated simpler head-only petroglyphs, began to suggest a seriation, but problems of field recovery and restoration at that site raised serious questions.

A breakthrough in discovering the diachronic dimension of *arte rupestre* in Puerto Rico came from the world of cultural/heritage resource management. The El Bronce excavations, directed by Linda Sickler Robinson, yielded a stone row of menhir petroglyphs in association with a small datable ball park (*batey*) (Robinson 1985b). Among the petroglyphs were two slabs: one depicts an elaborate human head with a complex crown (Figure 8.14a) and the other shows the profile of an entire shark associated with a simple frontal human face (Figure 8.5B8). While cruder and less detailed than the Caguana specimens, they were nonetheless much more elaborate than the Tibes specimens. Culturally, this was significant since their workmanship and imagery not only hinted at increasing hierarchy and stratification but also suggested the greater importance that local fauna represented in pre-Taíno culture, in

contrast to the imported symbols from the Amazon-Guianas characteristic of the earlier Cedrosan Saladoid phases. Perhaps this was a form of mythic substitution, where local fauna began to stand for *tierra firme* symbols of their migrant Cedrosan and Huecan Saladoid ancestors (Roe 1989a, 2000a). By associating the formidable shark, pictured accurately down to its parallel gill slits, and which was a sea predator not characteristic of lowland South Amerindian art, with high-status humans, the lithic art of El Bronce mirrored the local ecological success of the pre-Taíno period in terms of both site density and inferable demographic expansion, for which it was a primary symbolic expression. In its development and associated artifacts, El Bronce predated Caguana and postdated Tibes. It also presaged the recent demonstration by Rivera Fontán and Silva Pagán (1997) of the saltwater dolphin, another important local natural symbol of oceanic predation, as part of the iconography of later Taíno provincial ball parks. The El Bronce petroglyphs were incised on the fronts of large boulders, separated spatially from chronologically distinctive artifacts and datable carbon; linkages remain likely but not absolute.

It was against this backdrop of previous work that I embarked on a qualitative seriation of petroglyphic art. I instituted documentary work on all of the recognized types of rock art on the island, as well as serendipitously adding a new subtype to the inventory. The latter emerged at the Maisabel Playa site in conjunction with Peter E. Siegel's Centro de Investigaciones Indígenas de Puerto Rico (CIIPR)–sponsored project at the Maisabel site proper in Vega Baja (Siegel 1992). There, guided by Carlos Ayes, we uncovered a complex of unique petroglyphs incised into the horizontal bedding plane of the soft eolinitic strands. These formations of lithified sands occur within the semilunar embayment fronting the Maisabel site (Figures 8.6, 8.9) (Roe 1991a). This research added the new subtype (Beach Petroglyphs) to the three previously recognized varieties of petroglyphs known for the island: Ball Park, River Boulder, and Cave petroglyphs (Fewkes 1903). Due to the finding of Elenan Ostionoid sherds sedimented *within* the same lithified dunes that the petroglyphs were carved into, combined with local geomorphology and specific componential/stylistic details of the rock art itself, we were afforded a *terminus ante quem,* a chronological point before which the rock art could have not been executed.[2] A tentative three-phase qualitative seriation of Puerto Rican rock art can now be suggested (Figure 8.5). This scheme shows the genre appearing (Figure 8.5, Phase A) in pre-Taíno times (at Tibes and Maisabel), early Elenan Ostionoid (Monserratean times), not during the Saladoid era as had been suggested before (Morbán Laucer 1972), becoming complex in later Elenan times (Santa Elena) (Figure 8.5, Phase B) (e.g., El Bronce [Robinson 1985b]), and then shifting to even greater elaboration, with

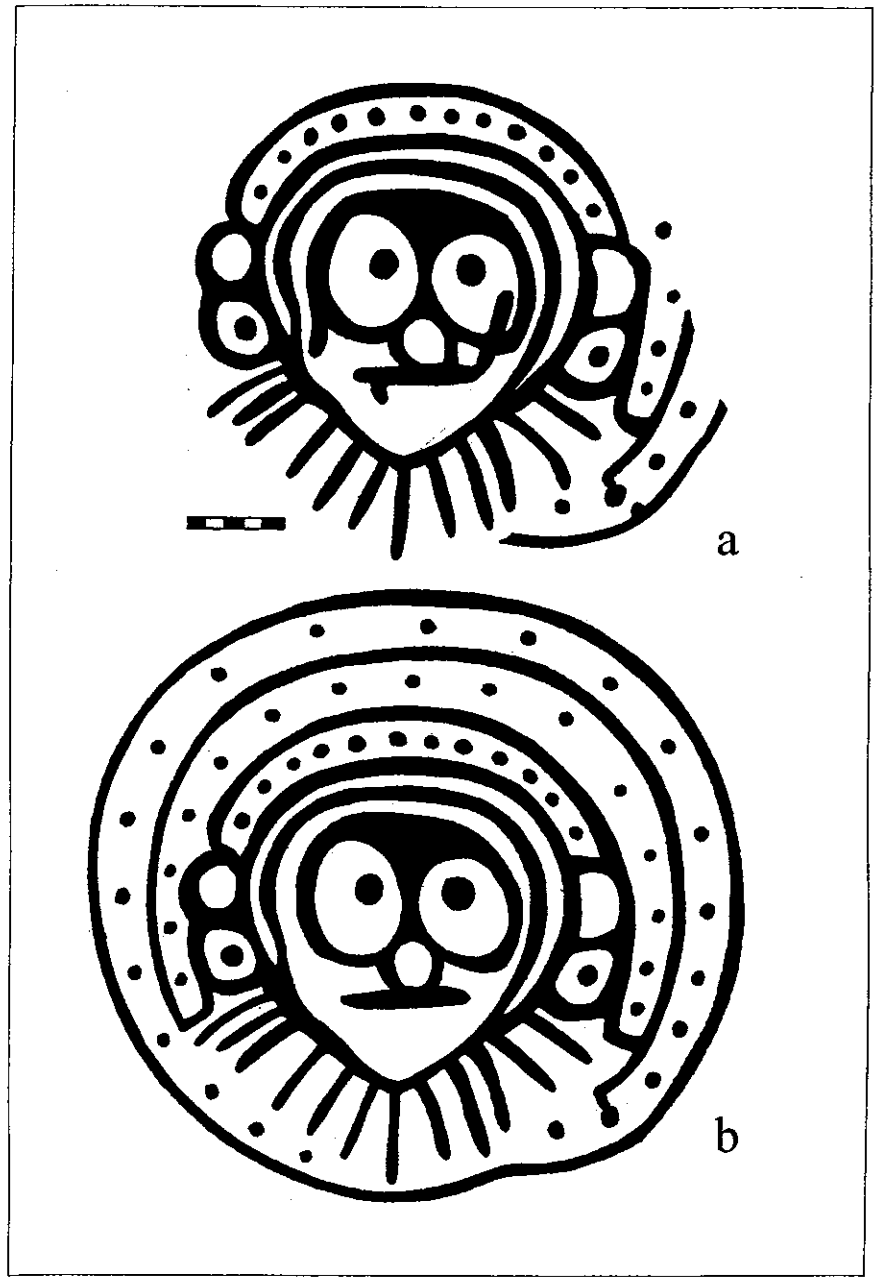

Figure 8.14. Two versions of an El Bronce crowned anthropomorphic head, from a clear plastic tracing by the author, scale 5 cm (from Roe 1991a:Figure 14). (a.) The head as traced from the "menhir," incorporating obvious "mistakes" and postexecution damage. (b.) The head as reconstructed by the author according to probable intent.

clear indications of hierarchy, in the Classic Taíno petroglyphs of Caguana, Utuado (Capá) (Figure 8.5, Phase C). The latter site was the seat of one of the most powerful Contact-period *cacicazgos* (chiefdoms) on the island (Rouse 1992:113). For the first time, and rarely for rock-art research generally, we can now suggest dates for many petroglyphs by style and relate them to other media, such as ceramics, in order to discern social and ideological trends over time.

To this end, I produced clear plastic tracings of the menhir-style ball park petroglyphs of Caguana (Roe 1993). Cross-media isomorphisms or stylistic similarities between motifs and design layouts on Chican Ostionoid (Classic Taíno) pottery (Figure 8.15a, g) and those on the menhirs (Figure 8.15e, f) were established. I demonstrated both the importance of these motifs in Taíno cosmovision and the icons underlying the symbols (in the Peircian [1991] sense) of their art, and addressed culture historical reconstructions concerning the possible diffusion of mythological concepts from Central America vs. independent invention derived from lowland South America.

At first glance, geometric layouts composed of roundels and flanking triangular motifs (Figure 8.15b) look purely decorative. However, in many lowland styles (Roe 1990, 1995c) supposedly "geometric" or "nonrepresentational" motifs are not mere decoration, but encode actual "representational" meaning (Roe 1989b). I proposed a similar process for these ubiquitous Antillean incised motifs, such as the roundels; they may be "kennings," or frozen metaphors, for "joints" (Figure 8.15d), among other "bodily portal" referents mentioned by the chroniclers, such as the umbilicus (Figure 8.15f) (Roe 2000c).

In collaboration with José Rivera Meléndez, I followed these coastal and north highland themes farther into the interior by focusing on the southern highlands and the next type of island petroglyphs, those on river boulders. We documented a huge boulder with a series of incised designs (Figure 8.11) at El Palo (Roe and Rivera Meléndez 1995). That study revealed how reversible imagery (Figure 8.11b, c) was as central to rock art as it was to other forms of aesthetic artifacts such as woodcarvings and modeled and incised ceramic depictions (Figure 8.4h, i; Roe 1999). Pictorial dualism was a standard Antillean graphic device dating to Cedrosan Saladoid times (Figure 8.4a, b) (Roe 2000c). It appears to have been derived (literally) from the curiously inverted *cohoba* (*Anadenanthera peregrina*) visions of Taíno (and undoubtedly pre-Taíno) shamans and artists as documented by the chroniclers.

José Rivera, Peter DeScioli, and I (Roe et al. 1999a) then shifted our attention to documenting and interpreting some of the most spectacular petroglyphs and pictographs found in Puerto Rico. These occurred in the last subtype on our agenda: caves. Our lithic "text" was located in the central

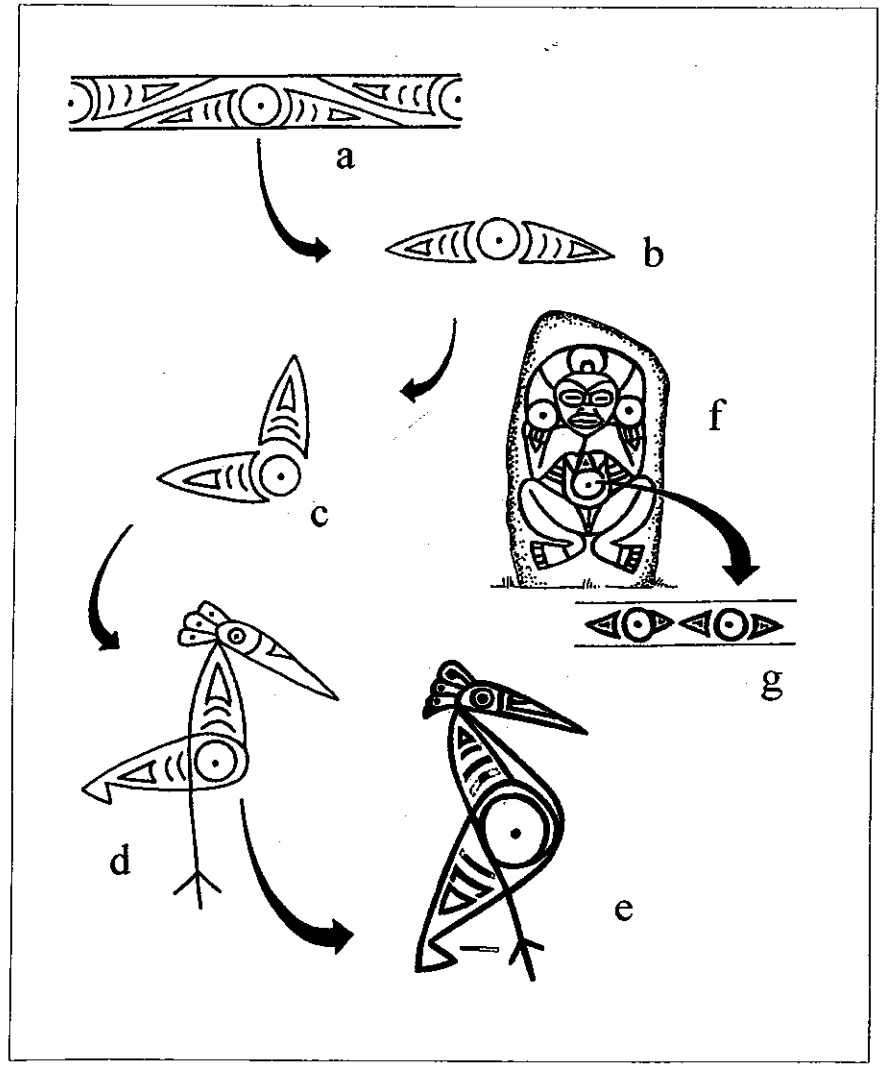

Figure 8.15. Cross-media isomorphisms in Chican Ostionoid (Taíno) incised ceramics and petroglyphs. (a.) A common ceramic design layout of roundels and transverse-reflected triangles. (b.) The isolated repeat module. (c.) One wing of the module rotated 90 degrees vertical. (d.) This "geometric" motif is the core of a "representational" heron (Roe 1993:Figure 8a–d). (e.) The actual great blue heron from the menhir petroglyph row at Caguana, based on a clear plastic tracing by the author (Roe 1993:Figure 7a). (f.) The "Diosa de Caguana," the Frog Lady *Attabeira* Earth Goddess, from a clear plastic tracing by the author. (g.) The "geometric" layout nested within this "representational" image, composed of a belly roundel, inter-breasts triangle and pubic triangle, rotated 90 degrees horizontal, also a common ceramic design layout.

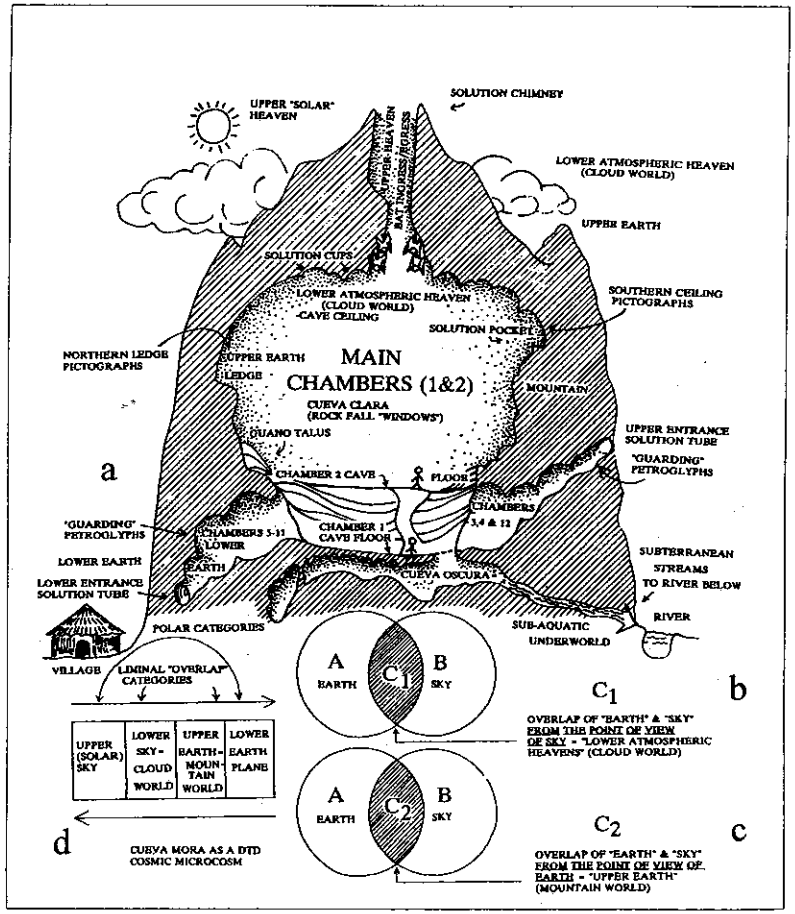

Figure 8.16. The Cueva la Mora, Comerío, as cosmogram. (a.) A cross section of the cave with the main chamber and solution tube entrances, rock art locations plotted. (b.) The DTD (Dual Triadic Dualism) model generating the Cloud World of the southern ceiling pictographs. (c.) The DTD model generating the Mountain World of the lower northern ledge pictographs. (d.) The "chromatic" model of all four realms, including Lower Earth of the "guardian" petroglyphs (Roe et al. 1999a:Figure 38).

highlands cavern of Cueva la Mora in Comerío (Figure 8.16). With the aid of my wife, Amy W. Roe, we initiated the first accurate planimetric map of an entire cave and its rock art in the Greater Antilles (Figure 8.17).[3] This map revealed a functional and spatial division between two rock-art genres: sim-

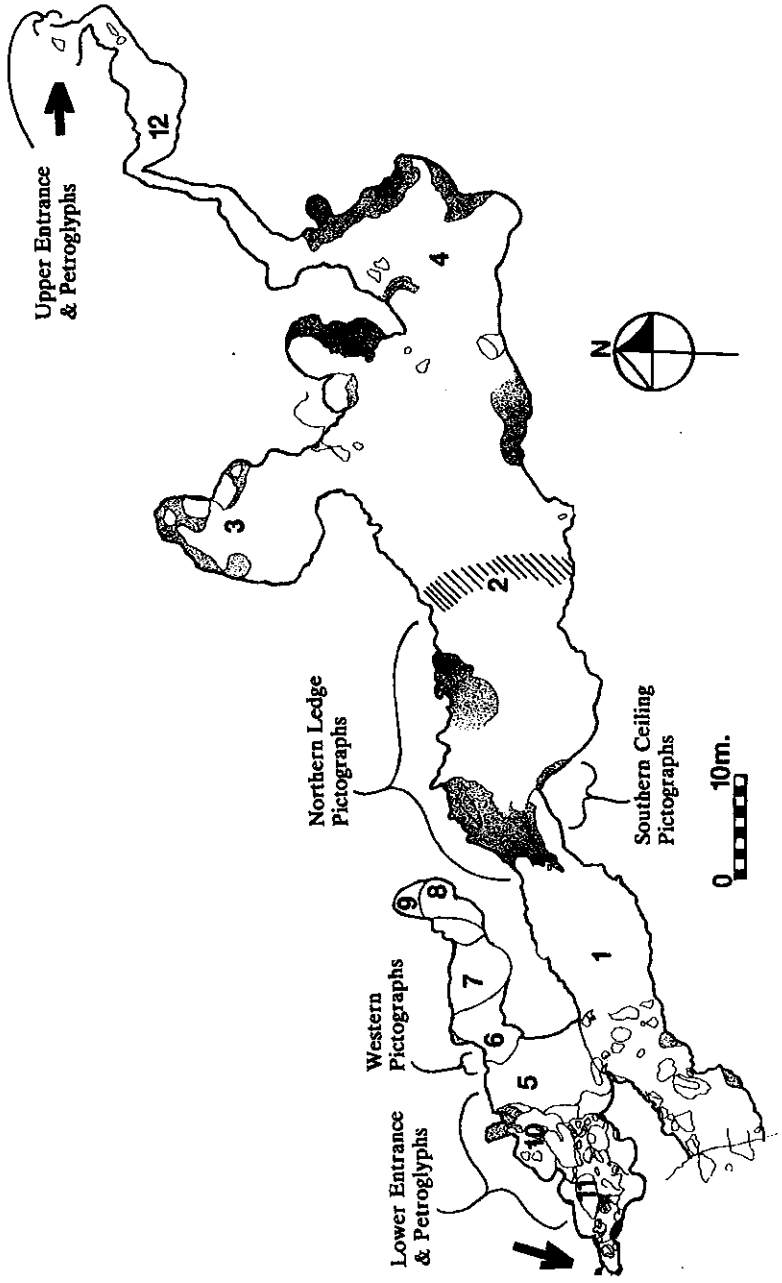

Figure 8.17. A planimetric map of all 12 chambers of la Mora cavern, locating the peripheral and lower "guardian" petroglyphs and the central "cult image," higher, and more elaborate coeval pictographs (adapted from Roe et al. 1999a:Figure 2).

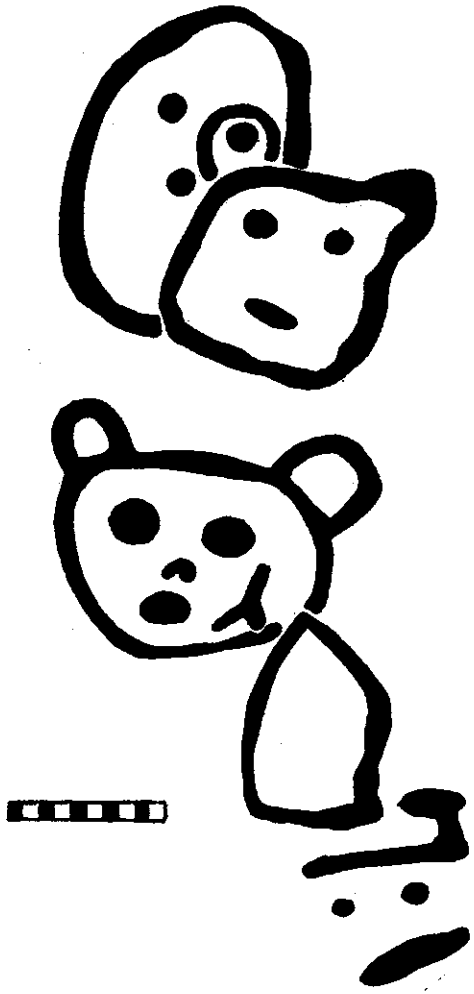

Figure 8.18a. The peripheral "portal guardian" petroglyphs from Cueva la Mora. The upper solution tube entrance petroglyphs, scale 10 cm (Roe et al. 1999a:Figure 12).

pler petroglyphs serving as "portal guardians" on the upper (Figure 8.18a) and lower solution tube entrances (Figure 8.18b, c) to the central chamber and the larger, more elaborate pictographs. These imposing paintings took central stage as the major cult images (Figures 8.19–8.23) in the cavern's main chamber, situated between and above the flanking petroglyphs. Previous dogma, long enshrined in oral tradition, had placed these two media of rock art in a diachronic relationship: earlier (Saladoid) pictographs vs. later (Taíno) petro-

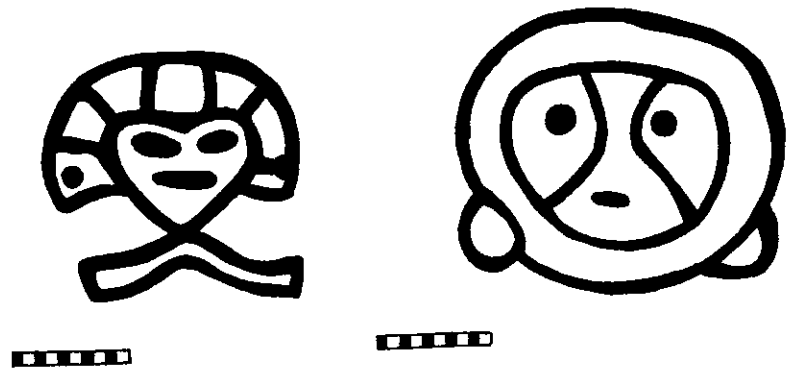

Figure 8.18b. The north wall petroglyphs of Chamber 5, scale 10 cm (adapted from Roe et al. 1999a:Figure 10).

glyphs. It is more likely that the two media functioned as related parts of a whole story rather than as temporally successive expressions.

The iconography, symbolism, and spatial relationships of these portrayals allowed for a detailed demonstration of how rock art may physically instantiate a cosmology. These are some of the most impressive images in the Caribbean, giant life-size pictographs of "wrapped ancestors" (Figure 8.19), executed in a kind of positive-negative painting (Figures 8.19d and 8.20f) in true polychrome that provides stylistic continuity in design rules to Saladoid ceramic decoration, yet without any specific motifs that would date them to that period. They encompass the usual suspects associated with the dead (García Arévalo 1997): bats and owls (Figures 8.19b and 8.20i). They also include the first portrayal of the demonic giant cave spiders, or *guabá* (Figure 8.20b), as well as fish (Figure 8.20d), turtles (Figure 8.20j), and birds (Figure 8.20k). But, by far, the most numerous, penetrating into the light boundary itself, were the multiple, large, wrapped ancestral figures (Figures 8.19a, c, d; 8.20e; 8.21a–d), all painted high up on a natural ledge and out onto the actual curved ceiling (Figure 8.21d). They are located so far above the present floor (and even above the estimated original floor before guano extraction in the last century), that lashed sapling scaffolding would have been necessary to draw them. Indeed, the ceiling glyph could only have been executed by artisans lying on their backs. On the other side of the vast central cavern, whose interior is home to millions of brown bats, is a much higher series of solution concavities, which would have required true rappelling with jungle vine and cave aerial-root ropes to reach. There, a number of humanoid (Figures 8.22 and 8.23d) and turtle effigies (Figures 8.23a, b, f, g) were drawn that evoke

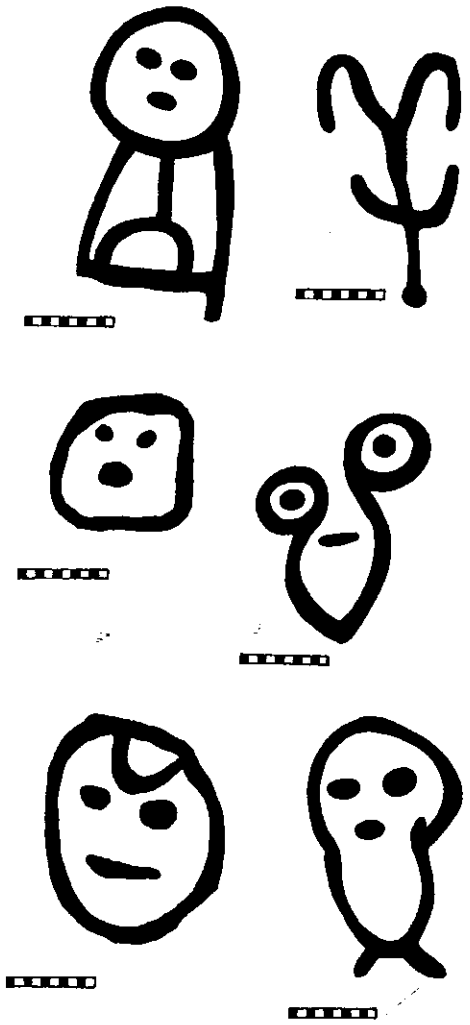

Figure 8.18c. The lower solution tube exit petroglyphs from Chamber 10 pillar, scale 10 cm, all from clear plastic tracings by the author (adapted from Roe et al. 1999a:Figure 7).

Taíno myths of turtle progenitrixes (Pané 1974, 1992, 1999) and even a frontal view of a sacred three-pointer (Figure 8.23c).

The placement of these images vis-à-vis the lower petroglyphs and the presence of an underground wet cave below the dry one (the latter connected in local legend and hydrology to the river far below) hint at a microcosmic recapitulation of the macrocosmos in Taíno art and cosmology (Figure 8.16). Using the same kind of dynamic dualistic thought that is found in the low-

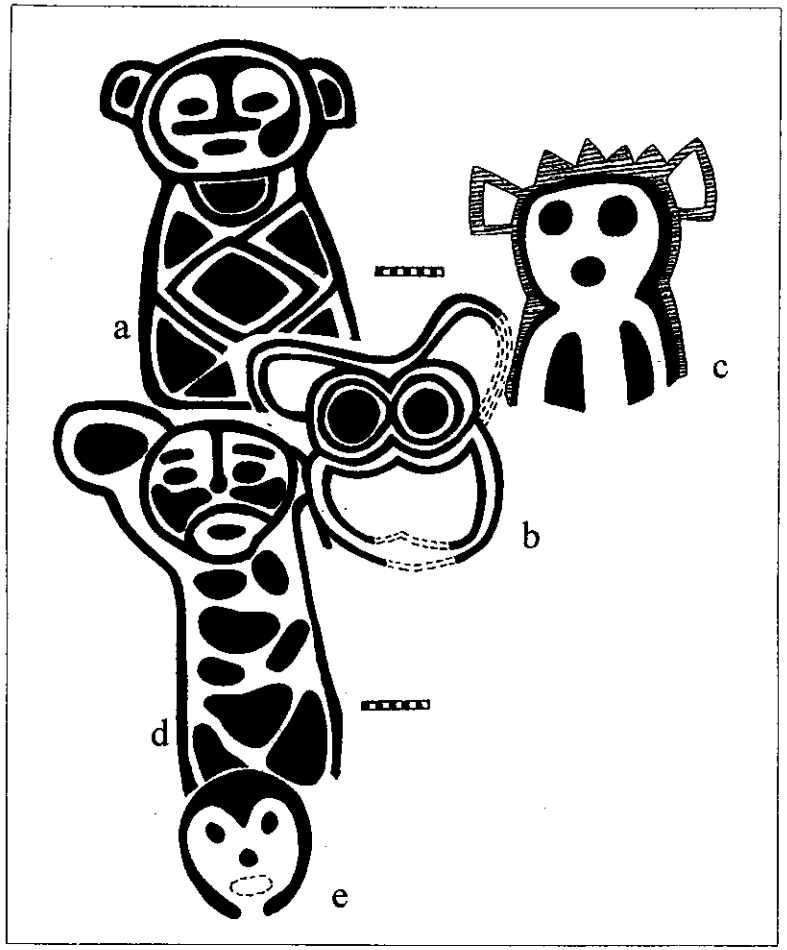

Figure 8.19. The "wrapped ancestor" group from the northern ledge of Chamber 2, Cueva la Mora, from clear plastic tracings by the author, scale 10 cm. (a.) An "eared" ancestor with diamond body wrappings. (b.) An owl face, the Múcaro, herald of the dead. (c.) A fragmentary plumed wrapped ancestor. (d.) Another "eared" ancestor with positive-applied, negative-perception wrapping. (e.) A heart-shaped human face, possibly of a descendant (adapted from Roe et al. 1999a:Figure 26).

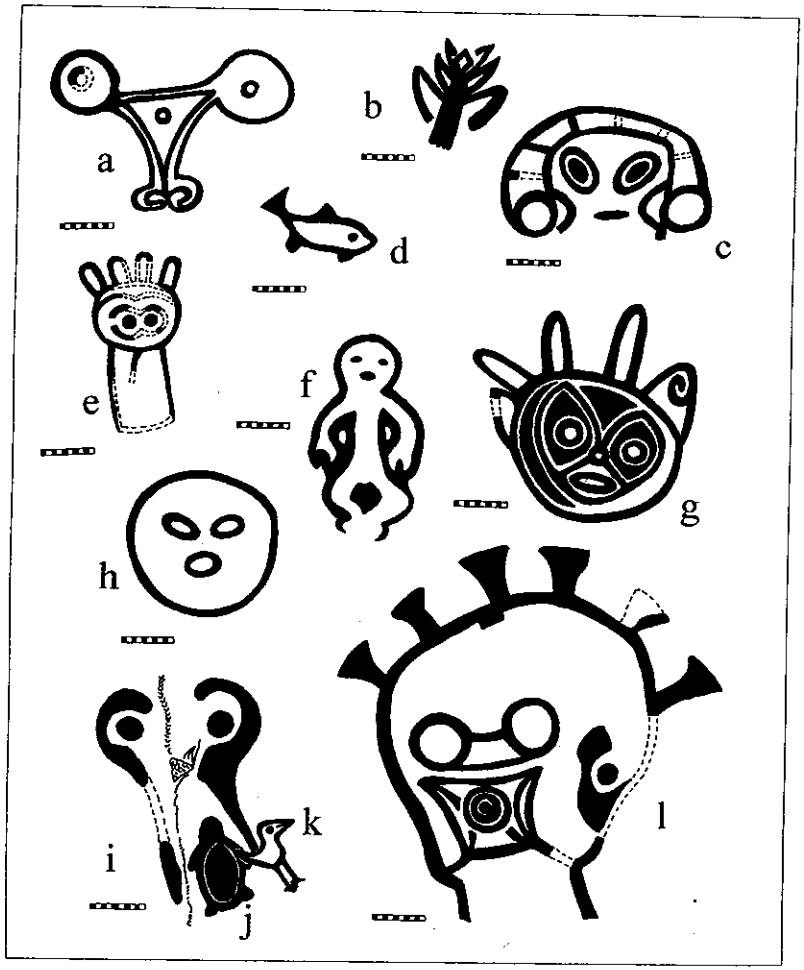

Figure 8.20. A selection of the northern ledge pictographs from Chamber 2, Cueva la Mora, all from clear plastic tracings by the author, scales = 10 cm. (a.) A probable "vaginal-with ovaries" motif (Roe et al. 1999a:Figure 28a). (b.) A possible *guabá* large cave spider, demonic in folk classifications even today (Roe et al. 1999a:Figure 29a). (c.) The crowned head of a "wrapped figure" (Roe et al. 1999a:Figure 29b). (d.) A profile fish associated with the vaginal motif (Roe et al. 1999a:Figure 28b). (e.) A fragmentary plumed, wrapped ancestor (Roe et al. 1999a:Figure 28c). (f.) A naturalistic infant depiction executed in positive-negative paint (Roe et al. 1999a:Figure 29c). (g.) The elaborate plumed face, the internal designs perhaps representing face-paint (Roe et al. 1999a:Figure 31b). (h.) A "simple face" (Roe et al. 1999a:Figure 28d). (i.) The "owl" group, with the "naturefact transformational" use of a seepage line to represent the beak (Roe et al. 1999a:Figure 27a). (j.) An incised turtle (Roe et al. 1999a:Figure 27c). (k.) An associated profile bird (Roe et al. 1999a:Figure 27b). (l.) The huge plumed skull (Roe et al. 1999a:Figure 33).

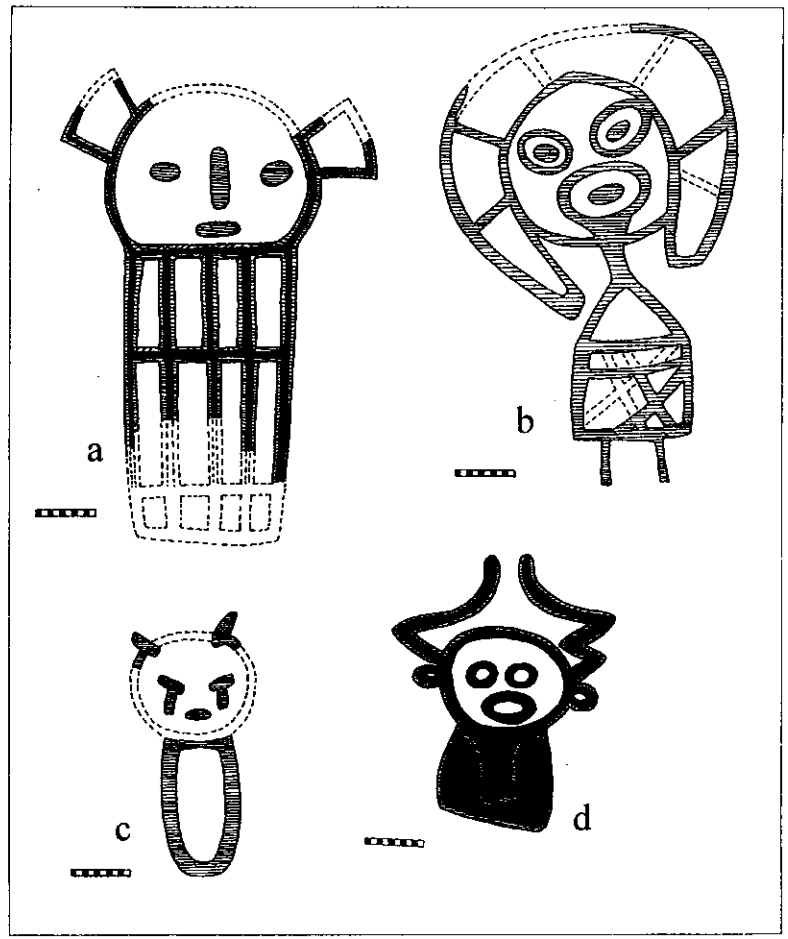

Figure 8.21. A group of "wrapped ancestors" from Chamber 2, Cueva la Mora, all derived from 1:1 clear plastic tracings by the author, scales 10 cm. (a.) A large "eared" wrapped figure with vertically elongated grid body bundle markings in black under-painting and white and red over-painting (Roe et al. 1999a:Figure 35). (b.) The last "wrapped ancestor," a crowned form, almost outside the light boundary in the deep interior, weathered to red monochrome (Roe et al. 1999a:Figure 37). (c.) A small wrapped figure with the remains of a plume headdress, again weathered to monochromatic red. The "tears" may represent *Boinyael,* the Taíno deity of auspicious rains (Roe et al. 1999a:Figure 34b). (d.) The little crowned wrapped figure actually painted on the inclined ceiling above the northern ledge (Roe et al. 1999a:Figure 34a).

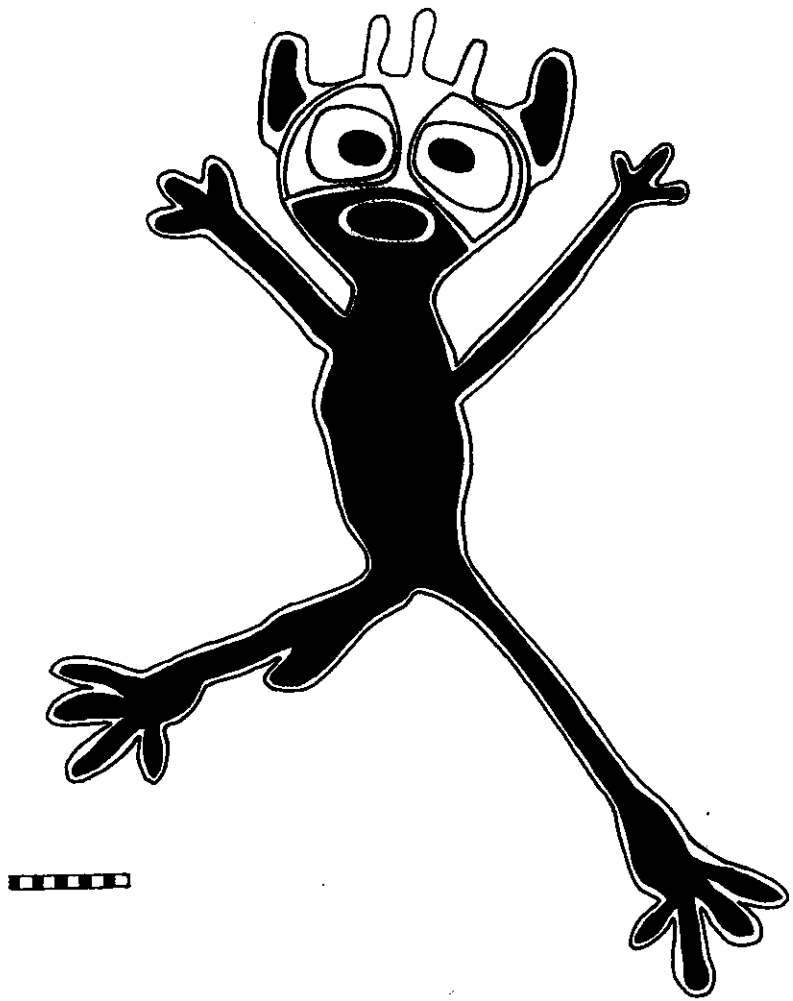

Figure 8.22. The central "shamanic" male figure pictograph from the southern ceiling, Cueva la Mora, from a clear plastic tracing by DeScioli, scale 10 cm. Note the erection (Roe et al. 1999a:Figure 18).

lands today, with its emphasis on the liminal overlap categories as conceptual "bridges" to otherwise opposed polar categories (Crocker 1983), the high ceiling of the cave, with its sink-hole apertures for the nightly escape of the immense flights of the resident bats (nocturnal fruit-eating and seductive souls in Taíno belief) may represent the Upper Heavens of the Sky World.

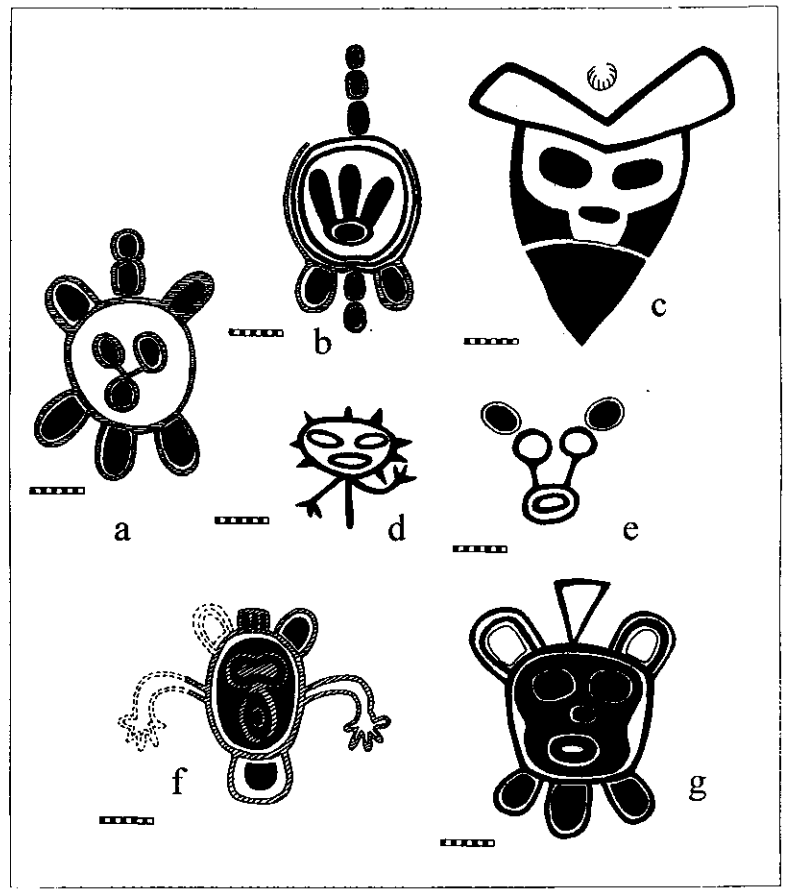

Figure 8.23. A selection of the southern ceiling pictographs, Cueva la Mora, from clear plastic tracings by DeScioli, scales = 10 cm. (a.) A probable "Turtle Woman" effigy with flippers, a stylized head and a carapace face (Roe et al. 1999a:Figure 21). (b.) Another turtle effigy with eroded front flippers (Roe et al. 1999a:Figure 25). (c.) The large three-pointer effigy with a skull face painted on a triangular eminence, the highest depiction in the cave (Roe et al. 1999a:Figure 23). (d.) A small plumed humanoid with a raised hand and a stick body (Roe et al. 1999a:Figure 21a). (e.) The "testicular" face (Roe et al. 1999a:Figure 19a) between the legs of the male shaman (Figure 8.21). (f.) The humanoid were-turtle that flanks the left of the large shaman (Roe et al. 1999a:Figure 19b). (g.) The carapace-face turtle effigy that flanks the right of the shaman, both of these flanking turtles are probable females (Roe et al. 1999a:Figure 17).

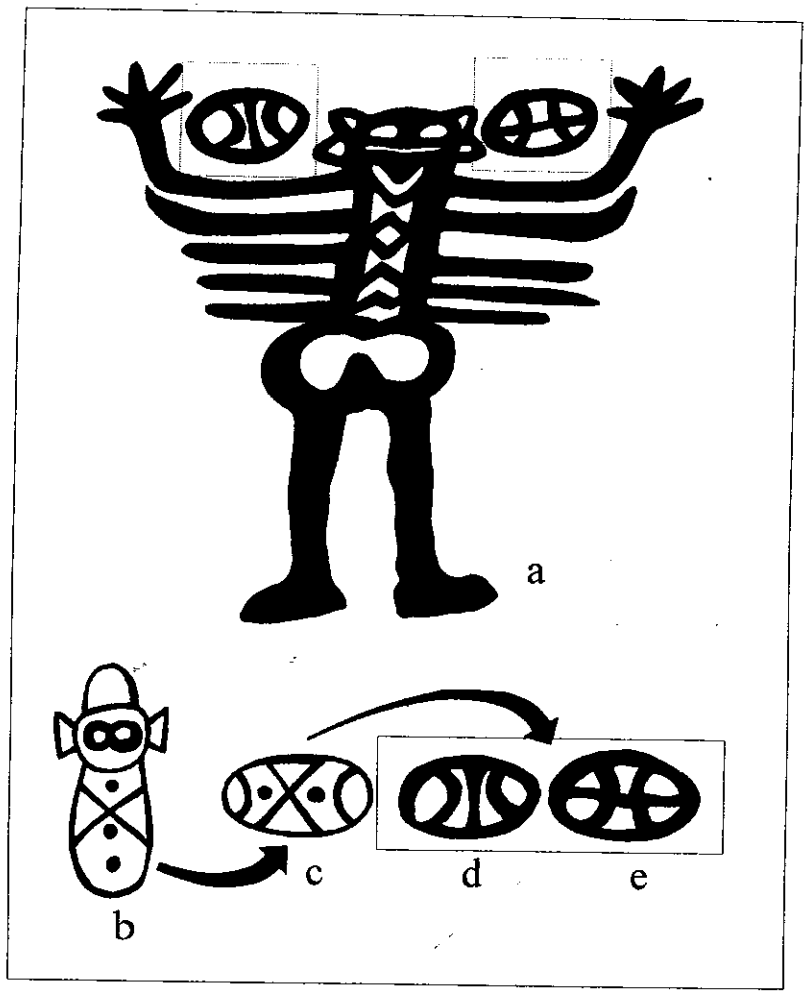

Figure 8.24. The "living dead" and their ancestors. (a.) A skeletalized "shaman," with erection, pictograph from a cave on Mona Island, between Puerto Rico and Hispaniola, (photo by the author). The image was *inverted* in the cave (drawn from Roe 1997:Figure 3). (b.) A typical "wrapped ancestor" from Cueva del Indio, Arecibo, drawn from a clear plastic tracing by the author—see Figure 8.8. (c.) The body lozenge of that wrapped figure, minus the head and rotated 90 degrees. (d.) His right-hand lozenge, a transform of "c." (e.) His left-hand lozenge, another analog of wrapped "c," also representing a probable ancestor.

The southern pictographs on the curved sides just below the ceiling might occupy the Lower Atmospheric Heavens of the Cloud World. Their position may have answered a shaman's query, whereby his point of view alternated in a dyadic fashion. This is a cognitive style analogous to the Antillean artist's visual shifting between figure-and-ground in his graphic and plastic art.

For example, the *behique* might have said, in instructing a particularly obtuse neophyte, "what is the overlap between 'Sky' and 'Earth' *from the point of view of Sky*" (Figure 8.16b)? That would be, of course, the Lower Heavens, the atmospheric Cloud World that hangs so low upon the mountains in this part of the Puerto Rican cordillera every morning that it is truly palpable. The even more elaborate lower pictographs on the northern ledge, on the opposite side of the main chamber, may have inhabited the adjacent lower plane, Upper Earth, the Mountain World level (e.g., "what is the overlap between 'Sky' and 'Earth' *from the point of view of Earth*?" [Figure 8.16c]). Those mountain peaks, literally Upper Earth, are frequently wreathed in clouds at these elevations (and Cueva de Mora is formed right in the side of one such peak), an arduous nearly vertical climb from the valley below (so steep that we only ascended in the rainy season on our knees, desperately grabbing roots or even tufts of grass to keep from plummeting back down).

These paired liminal categories: Upper Earth and Lower Sky, are both dynamic dualistic overlaps between Sky World and Earth World in cognate lowland cosmology. Four linked categories (two polar and two liminal) are created from the dual terms (Figure 8.16d), thus providing what Claude Lévi-Strauss (1981) has called "chromatism," the South Amerindian tendency to take small conceptual steps between something and its opposite. The rungs of these steps are generated by overlapping, or bridging, the polar categories. The thinker now progresses in either direction, both to and from either pole (absolutely contrastive), thus turning apparently static dyadic contrast sets into an intercommunicating series. Note that this mental progression recapitulates the journey of the shaman as he flies or climbs through the levels of the universe to cure/bewitch. Thus, like a Taíno shaman, a *behique,* one can get from Earth World to Sky World by first traversing, as in a Sky Ladder or Rope (mythemes abundantly demonstrated in cognate lowland mythology [Roe 1991c]), the intermediary overlap worlds of Upper Earth (the mountain tops), and from thence, via an easy transition, to the Cloud World literally enshrouding such peaks. These crags form the Lower Atmospheric Heavens, the bottom rung of a further ascent to the Upper Sky of the remote Sun and Moon. These may sound like complex doings to a Westerner, burdened as we are by the hoary, and unbridgeable static "Desert Religion" dichotomies of Man/God, Heaven/Earth, Good/Evil, God/Devil, Culture/Nature, and such,

but they are old hat for South (and presumably Greater Antillean) Amerindians reared in an ancient "Jungle Religion" based on movement and transformation, not just dyadic opposition.

The guardian petroglyphs extend this chromatism in the opposite direction; the dual liminal overlaps between the Earth World of humans and the subaquatic Underworld of ancestral spirits. Instantiating this descent at Cueva de Mora, the ancient cultists climbed the mountain past the dark and wet unvisited cave below (the Subaquatic Underworld proper), and entered the dry chambers of the upper cave through the narrow lower solution tube entrance (Chamber 11), Inner Earth. A liminal layer, this passage answered the rhetorical question, "what is the overlap between 'Earth World' and 'Subaquatic Underworld' *from the point of view of Earth World*?" The next rung of their ascent/descent, overseen by the small "guardian" petroglyphs of the wrapped dead and their heralds (Chambers 10 and 5), would have represented the Upper Underworld, the soil horizon, (responding to the query "what is the overlap between 'Earth World' and 'Subaquatic Underworld' *from the perspective of Subaquatic Underworld*?"). The same identification marked the upper entrance (Chambers 3, 4, and 12) with its analogous "guardian" petroglyphs.

Scrambling up to the cave floor of Chambers 1 and 2, the humans viewing and paying cult to the large pictographs of the main chamber (2), far above their heads, occupied the surface of the Earth World proper. Thus a trinary system of Sky, Earth, and Underworld would have yielded a complex Lévi-Straussian chromatic continuum of the ascent/descent to and from the cave. (Although, as a Cartesian himself, the master was often blind to such subtleties, save for his discussion of "binary operators" [Roe 1983b], preferring instead typically Western Culture/Nature dyads.) Like a cosmic ladder, these levels could be traveled in either direction, up or down, by shamans and others in their visits to the ancestral animal/avian/fish-turtle spirits. The mountain in Comerío becomes the World Mountain, the shamanic tower-ladder armature anchoring all the levels of the universe and uniting the domains of life and death via the "living dead" *behique*.

To continue the ascent, the eyes of the propitiating human spectators would have taken in the upper rungs of these chromatic worlds, carved by carbolic acid in limestone over eons and by stone axes wielded by artists (and applied in paint by others). The large and imposing lower northern ledge pictographs rising above them to the left represented Upper Earth (chiefly Wrapped Ancestors and their bat-owl avatars). Farther distant and above them to the right loomed the Lower Atmospheric Heavens (occupied by the towering southern ledge, largely showing paired "shamanic progenitor" and

"turtle progenitrix" pictographs). Lastly, nearly vertically above and hidden in the gloom of the solution concavity-pocked ceiling, was the chirping Upper Heavens (cave roof apex–nocturnal solution tube exit of bat Death Spirits–*opía*) as they would have poured forth at night into the Middle Earth of the human villages in the valleys below.

It is remarkable that this DTD (Dual Triadic Dualism, cf. Roe 1995b) vision coheres point-by-point with the rock-art images carved and painted within the vertically stratified levels (geomorphological "design fields") of the gigantic Cueva de Mora, Comerío, central highlands, Puerto Rico. Perhaps mute rock art can speak after all?

This work also showed images of other sacred artifacts associated with *cemíism* in the Greater Antilles, such as three-pointers (Figure 8.23c). I obtained an early Elenan Ostionoid image (Figure 8.6a) from Maisabel Playa of this same enigmatic artifact, hitherto only known sculpturally, and now, tucked near the ceiling at more than 30 meters above the cave floor, and accessible to us and the aboriginal artists only via rappelling; we had a late Elenan–early Taíno three-pointer on a much grander scale.[4] The painter who executed this *trigonolito* took advantage of the triangular space in the ceiling to show yet another anthropomorphic image, significantly, the highest of all the images painted in the cave, and one of the largest.

Further work in the vicinity by Rivera Meléndez, James Byerly, Nicole Cornell, and myself (Roe et al. 1999b) documented an additional type of cave formation context (Cueva de la Momia), petroglyphs carved into stalagmites and stalactites (Figure 8.10). We used the same instrumentation to produce the first topographic map of a cave site in Puerto Rico and tested the qualitative seriation by isolating pre-Taíno (Figure 8.10f) and provincial Classic Taíno motifs (Figure 8.10b, c) and matched them with the feature lists already mentioned. This cave illustrates another aspect of Puerto Rican rock-art style, the Boasian (Boas 1955 [1927]) "reading-in" of human visages upon three-dimensional natural cave relief. Here, the natural convexity of a stalagmite was emphasized to give relief and roundness to a carved human visage (Figure 8.10d).

Beyond Documentation: The Hermeneutics of Petroglyphs and Pictographs

Once all of the rock art on the island has been documented and sorted into either stylistic provinces or temporal phases correlated with changing ideological and social phenomena, then the really challenging task begins: that is cultural interpretation (Geertz 1976), and specifically, inferences into the

iconic and symbolic significance of the images (Llamazares 1988; Pagán Perdomo 1982). This level of analysis is of fundamental importance, especially since numerous ethnographies are available of living lowland South Amerindians, the survivors of cognate ancient populations that migrated to the Caribbean. These ethnographic descendants demonstrate the centrality of art in their very definitions of human culture (Guss 1989; Roe 1985b, 1989a, 1989b, 1990, 1995b, 1995c, 1997c).

Further, we have available the work of Ramón Pané, which was commissioned by Columbus on his second voyage, and carried out in the field from 1494 to 1496, with the goal of making the Spanish missionization of the Taíno easier by learning about their religion (Bourne 1906). Oliver (1992b, 1998, this volume) and others have used Pané to identify key mythic characters (Gods, Spirits) and episodes (mythemes), with great success (Alegría 1978; Arrom 1986; Deive 1976; Jiménez Lambertus 1983; López-Baralt 1977; Stevens-Arroyo 1988, etc.).

Yet Pané's work is not without problems. The most obvious is a simple artifact of his times, an era long before trained and dispassionate observers. Pané tended to garble what, thanks to contemporary lowland ethnography, we now know to be complete myths. Further, he collapsed several myths into one, such as the tale of *Deminán Caracaracol.* His tale of "sexless beings," for example, conflates elements of both the Wooden Bride and the Mermaid mythic cycles for the origin of women found from the Guianas to the Upper Amazon in South America (Roe 1982). Like authors up to the middle decades of the twentieth century, he is also guilty of the literary conflation of the whole corpus into linear narrative (the tendency of literate Westerners to combine distinct oral myths into an integrated and developmental storyline). To partially compensate for these difficulties, one can best approach his fifteenth-century fragments via the lens of complete mythic cycles derived from modern lowland ethnography (Roe 1992). In this case, the present can illuminate the past. The direct-historical approach, utilizing ethnohistorical and ethnographic analogy, is appropriate for Puerto Rican rock art. Aided by Pané and modern lowland ethnographies, as well as close visual, componential, and syntactical analysis of the artifacts themselves, an attentive student can propose a number of testable iconographic rock-art patterns.

On the level of subsistence, it is clear from the iconography of the images engraved at the Maisabel Playa site, as well as its location near where a freshwater river flows into the ocean, that these petroglyphs marked the zone as the joint property of specific social groups (perhaps lineages and clans) as suggested by "wrapped ancestral" figures (Figure 8.5, Phase A: 4) associated with "solar" images, fish, fish traps, and sea turtles (Figure 8.6b–f). Long

called "swaddled infants," based on the false analog of North Amerindian practice. Vega (1976) was the first to recognize, using analogous Dominican Taíno depictions, that these frontal figures with bodies covered in "X"-shaped motifs really indicated the dead wrapped in the strands of their hammocks (Griswold 1997b) prior to carrying them on a burden pole to prepared graves or to caves. But no ordinary dead merited such iconographic depiction; repeated images on rocks from the sea to the interior indicate that these were the "ancestral dead," still absorbed with the fate of their descendants and worshipped by the latter for favors and intercession.

To what resources would such potent ancestors have vouchsafed access for their earthly descendants? The protected semilunar embayments, of which Maisabel Playa is an excellent example, are one of the few places along the storm-lashed northern coast where calm anchorages are offered to dugout canoes, the transport of fishermen in aboriginal times. The submerged eolinitic formations, like coral reefs, also provide haven for innumerable small fish and mollusks, myriad life upon which larger fish depend. Their emergent headlands provide excellent foot access to the deep waters beyond. Indeed, all forms of fish, large and small, are portrayed in the Maisabel petroglyphs, from jacks to snapper and grouper (Figure 8.6f). Moreover, while the fish point to the bay, their habitat, a turtle effigy, whose shell does "double duty" as a frontal human face, points to the shore (Figure 8.6b) where it would have crawled to lay its eggs. These huge marine reptiles are an excellent source of fat and animal protein for insular populations. As well as the turtle unwittingly delivering its own flesh, either to be slaughtered while helpless on land after egg-laying, or captured and kept alive in special ethnohistorically documented flooded shore storage pens for later consumption, it also provides large quantities of soft fat-rich eggs. A geometric basketlike image, which could only be a stylized trap, appears next to the fish (Figure 8.6e), showing the graphic form of their entrapment. Freshwater fish could also have been snared at the mouth of the nearby river. Thanks to ethnohistoric data, we know that such locations were prime fish-netting territories for Contact-period groups, locations requiring protection, both symbolically and socially. Groups were ranked by their access to, and control of, such territories and the resources associated with them. Analogous lowland river petroglyphs have also documented similar associations, linking petroglyphs with prime fishing spots (Lippi 2001), including in the Guianas groups cognate with the ancestors of the Antillean populations (Williams 1978, 1979).

Relevant to the mythic validation of kinship and subsistence-based claims, the spatial positioning of these figural elements within the complete petroglyphic assemblage argues for a recapitulation of mythic syntagmatics. That

is, the arrangements of characters into episodes from the oral tradition ("The Sun's Fish Trap") are pictured, similarly arrayed, in a true petroglyphic frieze (Figure 8.6c–f). Perhaps we should not look at rock art as a mélange of isolated images. Instead, they should sometimes be considered as lithographic "friezes" that depict specific episodes from the oral tradition. Thus, it may not be sufficient to accurately depict the single figure. Rather, one should show how that figure is related, spatially and thematically, to surrounding figures, and to the background of decorated space: the beach, the ball park, the river, the cave.

The ideational control of subsistence also implies social competition and hierarchy, the exercise of both power and authority vis-à-vis other populations. Thus, on the level of political evolution, a study of the now-seriated petroglyphs shows a clear shift from the "personal presentation" material culture of the egalitarian early Saladoid arrivals to a material culture of "public power" as complex tribes or incipient chiefdoms initiated two forms of monumental art in tandem: petroglyphs and ball parks (Figure 8.5A6). As the scale of the parks and petroglyphs increased so too did the visual complexity of the rock art, with the emergence of rank society: Classic Taíno paramount caciques, *nitaíno* nobility, and *naboría* commoners. A visual shift occurred away from the physiognomy of the human visage, something all humans possess in common, from the humblest to the most powerful, the "simple face," to status-implying accoutrements such as headdress types, ear plugs, breastplates, and stools (Roe and Rivera Meléndez 1995). Rock art was a clear contributor to social evolution, as visual idioms of hierarchy became fused to ancient shamanistic egalitarian metaphors in a manner parallel to what was happening in cult practices. Thus, the "priest-temple-idol" Intermediate Area–Greater Antilles complex emerged from the formative pattern of egalitarian tribal shamanism (Roe 1997a:157).

That this shamanism was clearly derivative from South America also begins to address a long-festering question of a possible Mesoamerican origin of the Taíno pantheon (Fernández Méndez 1979; García Goyco 1984), and the ball park complex itself (Alegría 1983, 1986a; Roe 1984). While contact clearly occurred, my syntagmatic analysis of the "lithic frieze" formed by the main Caguana alignment of menhir petroglyphs (Roe 1993) shows South American iconography illustrating South American (*not* Mesoamerican) myths. They are of the sort that I have recorded in my ethnographic work on either side of the Amazon, both in the Peruvian jungle and in the Guianas. Thus the visual art conforms to the same lowland South Amerindian pattern as the verbal art of the mythology recorded by Pané (Roe 1982:191). If the ball park was a Mesoamerican innovation why do the images that adorn it speak of

lowland South Amerindian sacred tales, specifically the "breaking of the teeth" of the *vagina dentata* of the Frog Woman–*Attabeira* Earth Goddess by the long-beaked phallic aquatic bird, the great blue heron (Roe 1992)? Once again, although now in the fully developed form of élite-commissioned Classic Taíno menhir ball park petroglyphic art at the end of the rock-art sequence, we see the episodic significance of petroglyphic friezes we first encountered at Maisabel Playa at the beginning.

Recently, José Oliver (1992b, 1998, this volume) has shown the cosmological function of the entire ball court of which this alignment is but a component part. His reconstruction allows us to explore in considerable detail the functioning of the entire Taíno religious system. Crucial to the iconography of the *batey* was its association with still and flowing water bounded by the artificial rocky "shores" of its dual stone alignments, and the "play" of forces, telluric and astronomical, that took place therein. Since it clearly played a central role for the people who painted and carved these images adorning the bordering stone, what can rock art tell us about the hallucinogenic "cultural epistemology" of the insular Arawak?

Rock Art as a Conduit to the "Cultural Epistemology" of Extinct Societies

The use of inversion and multiple-view dualism in ancient Puerto Rican rock art (Roe 1997a, 1997b, 1999, 2000c, see Figure 8.4 here) coheres with similar graphic devices in Saladoid (Figure 8.4a, b) to Elenan Ostionoid (Figure 8.4c, e–f) and Taíno (Figure 8.4h, i) pottery, stone, bone, and shell carving, and in wood sculpture. Together, they argue for a worldview characterized by the radical dualism of a waking reality and a realer-than-real (privileged) hallucinogenic reality of Supernatural and proto-Cultural domains. What humans experience in normal rational waking states of consciousness was therefore not really "real." Instead, they were lies invented by malignant spirits to fool and mislead humans (Guss 1989). Real reality is hidden, it lies beyond the Sun, in infinite regress from the terrestrial world humans dwell upon. It hides within the perfect Celestial or Underworld unity of Supernatural/proto-Cultural Species Masters/Mistresses, a sacred world inaccessible to the waking senses. Access to these dual domains is attained via the ritual ingestion of psychotropic drugs like *cohoba* (Schultes and Hofmann 1992). In that spiritual world, shamans became the intermediaries between the dead (the ancestors) and the living (their descendants) via the principle of "genealogical circularity." This is the tendency within unilineal descent systems for the dead to be "recycled" as the newly born replace the recently dead in an

infinite circuit of social reproduction that insures the continuity of the lineage or clan. That continuity derives from the fertility of the ancestors and the shamans who communicate with them (note the prominent erections on the two shamanic portrayals pictured here, Figures 8.22 and 8.24a). They are the skeletal/seminal causes of such generational replacement. In Greater Antillean rock art, the ghostly images of the "living dead" shaman yielded fecundity, not mortality, and transferred it to the kin group's women; hence, a skeletal, fasting, and *inverted* (chroniclers describe how initiates under the influence of *cohoba* saw people as walking upside-down) shaman from a Mona Island Taíno period pictograph (Figure 8.24a). Located in a cave on the island, halfway between Puerto Rico and Hispaniola, and within the culturally interacting Mona Passage (Rouse 1992:Figure 8), he holds in his upraised arms the wrapped "eggs" of his lineage's ancestors.

But how do we know he is a shaman, and how do we know he holds his lineage's progeny in his arms? It all sounds like more rock art "reading-in" fantasy. And it would be were it not for congruent imagery derived from cognate living oral continental tradition and recorded ethnohistoric Antillean traditions, as well as close iconographic observation of related archaeological artifacts. We have countless depictions of skeletalized shamanic figures, emaciated from fasting up to four months with only enough nutrition to keep life together (Griswold 1997c), seated on their *duhos* (benches) of power in ceramics (Roe 1997a:Figures 104–105), wood, and stone from the Greater Antilles. Everywhere, skeletalized visages and bodies, sometimes paired in life/death Janus depictions (Roe 1997b:Figures 127–128), signify the fasting shaman, the "living dead" in direct contact, via visions, with the ancestral dead. He visits them as an intermediary, on behalf of the living. In this "jungle religion," attuned as it is to the recycling of the rain forest itself, skeletonized anthropomorphic imagery signifies life (more specifically, the life emergent out of death and decay, gestation springing from rot like the plants and fungi from the leaf litter of the forest floor). These skeletal beings are not symbols of death, as the linear-logic "desert religions" of the West would view them. This Taíno shaman actually stands on his head in the cave wall, as the inverted image of the sacred mirror world of the hereafter, rather than vertically as I have portrayed him here.

But what does he carry in his upward/downward-raised/lowered arms? They are geometric motifs, paired lozenges with internally crossed and curved lines (Figure 8.24d, e). Since such geometric, "nonrepresentational" motifs are frequently, in fact, "representational" in cognate lowland South Amerindian belief (Roe 1995c), what might they stand for? I have decoded the enigmatic lozenges as "eggs," shorthand for "offspring," based on close comparative

grounds, this time from Antillean prehistory and ethnohistory, as well as lowland ethnography. My equation derives from the study of cave pictographs and petroglyphs in nearby Puerto Rico, and from the mythic imagery in Pané (El Caribe 1979, referencing Rivera Meléndez's discoveries in Cayey). Marlén Díaz González (1990), in her study of the pictographs of la Cueva de la Catedral, barrio Bayaney, Hatillo, recorded a profusion of drawn lozenges with the same kind of "X" and "+" motifs as are found on the similarly lozengelike (legless) bodies of the classic "wrapped ancestor" figures of pre-Taíno and Taíno rock art (Figure 8.8, redrawn as Figure 8.24b). All one has to do is remove the frontal "head" of the ancestor from his ovoid wrapped body, and rotate the body lozenge horizontally (Figure 8.24c) to generate the encapsulated dead-soon-to-be-reborn (recycled) offspring of this Mona Island pictograph (Figure 8.24d, e). The "living dead" shaman carries his descent group's offspring in his arms as a necessary intermediary to the fecundity of the dead ancestors, defunct but potent with the inseminating power of life, owing, paradoxically, to their affinity with death.

Such graphic conventions derive from "ethnophysiology," a thoroughly "phallocentric" theory of conception common to both the current lowlands and the prehistoric Antilles (Roe 1982, 1991b). In the profound sexual division of labor that characterized South American and Antillean subsistence strategies alike, men : hunters/artisans in solid materials worked subtractively (stone)/warriors/religious specialists :: women : mothers/horticulturalists/artisans in yielding, additively ["gestationally"] produced hollow media (pottery). This Sexual Antagonism Complex was reinforced on symbolic and social levels (men : culture :: women : nature). Men appropriate female fecundity by relegating the female's role to that of passive ambulatory wombs, mere "containers." Indeed, First Women need not even be "women" at all. They appear as artifactual Gourd Women (Roe 1982:63), or Turtle Women (Stevens-Arroyo 1988:95). Even men can give birth via similar hollow, magically induced round bodily protuberances. For example, a hardened hunchback in a male progenitor (*Deminán Caracaracol*) is induced via "spiritual impregnation" from the flung strings of *cohoba-tobacco* induced snot (mislabeled "spittle") of a senior irascible (withholding) male (*Bayamanaco*), seminal in function via the hoary Freudian-Amerindian equation of the nose with the phallus and nasal discharge with semen, to serve as a "dorsal womb." *Deminán*'s disfigurement is split by stone axes, and "he" gives birth to the First Woman, the ancestral progenitrix, which happens to be another "round and hollow" ambulatory womb, a female turtle–First Turtle Woman who becomes the mother of all Taíno (Griswold 1997d). This Antillean picture derived from ethnohistory can only be understood in terms of both an act of analogy

linking the white viscous fluid emitted from the protuberance above (mucus from the nose) with similar fluids emitted from the projection below (semen from the phallus), and the lowland South Amerindian theory that semen from repeated male ejaculations accumulates within the passive womb of the female to form the "congealed mass" of the fetus. Such a phallocentric theory conveniently robs women of any active role in gestation and assigns it to men; she is just the gourd-pot within which men build babies.

From the point of view of an Antillean archaeologist, this also explains the frontal bone pectorals, represented on the petroglyphs (Roe 1993:Figure 5a), and carved as a species of the "trophy head" curation of portable human bone artifacts associated with Saladoid and pre-Taíno culture. What is a man's skull but a portable bony womb wherein the killer can engender animal fertility and magically give birth to that prey via the "birth canal" of his trophy's *foramen magnum*? Thus the successful homicide not only appropriates his victim's vital life force but his fecundity as well (Roe 1991b)! Pané (1974, 1992, 1999) turns this ethno-logic full circle when he recalls how sequestered bones in suspended gourds break and "give birth" to fish fecundity, how a Turtle Woman, when copulated with by human males, gives birth to human descendants, and how even a hunchbacked man can produce offspring dorsally. All these symbolic vectors intersect to produce life from round and hollow lozenges in the care of a sacred masculine figure, the shaman, who abstains from sexual contact with women when dieting, yet is always depicted, perhaps for that very reason, with a prominent erection (Figures 8.22, 8.24a).

Many Levels, Many Worlds: Rock Art and Antillean Amerindian Cosmology

This sacred Greater Antillean ethnophysiology of conception is situated, as it is in the lowlands of South America (Roe 1982:Figure 3), within a multilevel universe (Siegel 1997:Figure 1) connected by a continuously recycling "water gyre" where life becomes death and death engenders life in a constant cycle that mimics the ecology of the tropical rain forest itself, the same humid biome within which this entire symbol system emerged. In such a dynamic cosmology, a Sky World linked to men and birds hovers over an Earth World associated with society, which, in turn, rests upon, and is surrounded by, a dark Subaquatic Underworld of swimming reptiles and fish linked with women and their theriomorphic seducers (Roe 1982). Studies of both lowland (Roe 1983a) and Antillean (Robiou Lamarche 1988) ethnoastronomy show how this diurnal system is inverted when night falls, the cold and watery Underworld now stretching above one's head as the foaming river of the Milky Way, the nocturnal domain of beneficent ancestors and maleficent ghosts (*opía* among the Taíno). The watery origin of the night sky explains why the constellations that pass through it are invariably fish-souls, aquatic reptiles, or water-associated artifacts (canoes).

The spatial and thematic analysis of the huge Cueva de Mora petroglyph/pictograph assemblage in the highlands of Puerto Rico (Figure 8.16) directly instantiates this worldview in low-lying simple petroglyphs and intricate, larger-than-life pictographs painted high above them (Figure 8.17), some ten meters beyond the cave floor. The vertical and horizontal layering of these images couple shamanic themes of death-birth and avimorphic transformation with a type of dynamic dualism heretofore only documented from the jungles of South America (Roe et al. 1999a).

Lowland ethnography and Pané's (1974, 1992, 1999) paleoethnology suggest that caves are portals into the dark Underworld from which ancestral figures emerge. The limestone solution caverns of the karst topography of the mountainous interior of Puerto Rico and Hispaniola were formed by running and dripping water. Like Cueva de Mora, they frequently have "wet" lower chambers uninhabited by the living. These lie underneath the "dry" upper chambers visited by Amerindians for ritual purposes, such as to propitiate the ancestors that emerged from these watery and dark depths in mythic space-time (Stevens Arroyo 1988:137–138). These caves are, indeed, filled with representations of the dead wrapped in their hammocks, and the shamans that continue to contact them, together with their frequently avian power animals and, not incongruously, fish. The West, the Land of the Dead in Taíno cosmology, a floating island, is also the site of the mortal (setting) sun, whose body disarticulates to bones and is carried from west to east under the earth in the flowing rivers of the dead. These rivers continue into the Milky Way of the similarly cold and dark night sky. The next day the sun, newly invigorated, ascends as a neonate in the east to mature and climb to the zenith before beginning his aged descent toward the west once again. Thus the sun establishes daily periodicity just as his pale, and mutable, younger brother, the moon, does in the nocturnal river–Milky Way. Together, they form the primordial Magical Twins of Amazonian-Antillean mythology.

Water Falling from Above, Water Upwelling from Below: Rock Art and the Water Gyre

Perhaps all four classes of rock art—cave, river boulder, ball park, and beach—are but connected way-stations on the same watery journey of the souls of the dead ancestors as they too participate in this endless water gyre

of birth-death-rebirth? The dead, wrapped in their cotton "canoes," float on their riparian journey, accompanied by fish, aquatic turtles, and water birds, from the mountaintop caves, rivers within stone, to the rivers flowing from their flanks toward the distant low-lying coastal plain and the sea beyond. Those rivers, dry for half the year, are littered with a jumble of cyclopean boulders from the cordillera, stone-within-rivers. Such huge rocks are covered with petroglyphs of the same wrapped ancestors and the spirals that mimic the swirling eddies of the turbulent flowing water. In turn, the rivers lead to the lower mountain plateaus with their *bateys* and from thence to the flat coastal plain where the bulk of the ball parks were located (before their erasure by nineteenth-century sugar cane plowing). There, they flow into the sea next to eolinitic wave-cut caves and lithified strands pocked with the same ancestral petroglyphs.

Oliver (1992b, 1998) is probably correct in reading the parallel lines of boulders and menhir petroglyphs marking the margins of the open rectangular courts, sunken and often filled with standing water during the rainy season, as the same "rivers" that continue to course toward the sea. They are bordered by banks of hand-laid stone filled, again, with "wet" ancestral images: frogs, fish, aquatic mammals (Rivera Fontán and Silva Pagán 1997), and water birds. The ebb and flow of the game itself, Indian soccer, may have been cosmic in its portent, the play canalized within these twin banks, rivers of stone, hurrying on its way to the sea. Further on, the same aquatic and ancestral images greet the river mouths in the form of beach petroglyphs. This mutable rock art goes under water with the tide, and emerges dry, once again, as the tide ebbs, as the dead will submerge, only to upwell once again in the clear pools and lakes within the island's interior. Lowlanders, and perhaps ancient Antilleans too, make a distinction between the dynamic and demonic aspects of flowing water, turbid with sediment, whirlpools and bubbles, vs. the enigmatic and sacred still waters (pools, lakes, ponds), mirrors-doors of standing water. Such lakes and *cenotes* nestle within the karst topography of Puerto Rico's mountainous interior, and flow into caves, only to begin their sacred journey all over again.

Conclusions

As this excursion into the Möbius-strip cosmic linkages of Puerto Rican rock art indicates, *arte rupestre* is not some marginal bailiwick of avocational archaeologists and overly enthusiastic amateurs but a central medium of affective expression among Greater Antillean Amerindians. It must be recorded accurately, and in multimedia, together with its entire spatial and cultural context, to yield unparalleled insights into the subsistence, social, and ideological realms of insular Arawak culture. It can also shed light on culture contact and cultural evolution, addressing questions such as diffusion vs. parallel development, as well as unique cultural epistemologies and the icons and symbols that derive from them. Caribbean insular rock art thus joins the rock art of the Guianas, and other regions of lowland South America, as a major exposition of the animistic "jungle religions" derivable from the ancient Amazonian Formative synthesis. These images, so static and immobile, are really "kinetic art" of a vast circuit of egalitarian shamanic transformation into both eternal life, social continuity, and, ultimately, priestly and chiefly privilege masquerading as a spiritual conduit to "real" (otherworldly) reality for the common weal.

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Notes

1. The preliminary qualitative seriation of the rock art (Roe and Rivera Meléndez 1999) from which this shift becomes perceptible is not based on conjecture, a presumed chronological sequence of designs from simple-old to complex-recent, although such a progression is, in fact, produced by the analysis. Rather, it is anchored

in rare in situ geological associations and the ^{14}C dating of related archaeologica within which these images are found (i.e., we know that Caguana postda Bronce, which, in turn, postdates Tibes and that the Tibes simple faces are c stylistically to the Maisabel Playa effigies).

2. While it is true that objects are continually being incorporated into the rock, and therefore that people may have carved images into the rock prior t oldest artifact that we saw in the eolinitic formation, except in the precise locat said artifact, there are several factors that lead me to regard the glyphs as being c shortly after the dune lithified with early Elenan Ostionoid pottery and asso Monserratean artifacts already encrusted within it. First, given the active geomorphic regime on the wind-lashed north coast (at sites like Hacienda Grande and Maisabel) that combines both beach strand progression due to river sedimentation (and there is just such a river feeding into the ocean immediately to the east of the embayment) with equally massive wave erosion of such sediments, it is highly unlikely that the embayment had anything like its present form in Saladoid times (geologist Eduardo Questell, personal communication, 1985). There are no Saladoid sites found along the present coastline of northern Puerto Rico for precisely that reason. They are all located on high ground some distance inland. Moreover, we conducted an exhaustive surface survey of the beach and dunes coupled with only the second underwater archaeological survey along the north coast of Puerto Rico (two scuba divers in a controlled sweep), in front of the beach. While we recorded one incised edge grinder of the sort that persisted into Monserratean times and numerous Elenan Ostionoid sherds, both in situ above and redeposited below water, we found no Saladoid material despite the proximity of a Saladoid component in the Maisabel site proper, just a short distance inland on high ground. Nor did we find any later European material.

3. This survey was accomplished using an altimeter and electronic compass-equipped watches, hand-held electronic compasses, laser levels, and GPS units, all mounted on custom-fabricated, camera tripod-adapted, nonmagnetic aluminum billet stands.

4. These pictographs are cross-dated to Classic Taíno conventions, but are not as hypertrophied, and therefore are arguably somewhat earlier.

9

The Aftermath of Conquest

The Indians of Puerto Rico during the Early Sixteenth Century

Karen F. Anderson-Córdova

In this chapter I will discuss what is known about the first decades of the sixteenth century at the onset of contact between Europeans and the Taínos of Puerto Rico. I will attempt to answer three basic questions:

1. Once the European conquest and colonization of Puerto Rico began, what happened to the Taínos?
2. How did contact between the Spanish and Taínos develop and what were the consequences?
3. Is there anything new and relevant to be gained by the study of this devastating period of New and Old World history?

The short answers to these questions are simple enough: first, the Taínos quickly succumbed to European-introduced diseases and forced labor; second, the historical record provides only limited and European-biased information about the Taínos and their culture, largely extinct by the first half of the sixteenth century; and, third, their demise was so swift that the Contact-period archaeological record is practically nonexistent.

Although it is true that the Taínos have been extinct for at least five centuries, their society, culture, and response to the Spanish conquest and colonization continue to intrigue scholars of history, ethnohistory, anthropology, linguistics, religion, and archaeology. This interest goes hand in hand with the concomitant study of Spanish adaptation to the New World and the

genesis of new cultures and societies that sprung from the amalgam of peoples in the Caribbean. Those tumultuous years of the early sixteenth century were the starting point of modern Caribbean society. They witnessed the encounter of peoples whose societies and cultures had developed independently of one another for hundreds of generations and whose mutual "discovery" forever altered the history of humankind. Seen within this broader context, a more complicated story emerges.

Approaches to the Study of Spanish-Indian Contact in the Sixteenth-Century Caribbean

The term Caribbean in this context refers to the Antillean islands explored or settled by the Spanish, and the mainland areas forming an arc along the Caribbean Sea and the Gulf of Mexico, from Florida to Venezuela, also known as the circum-Caribbean. Spanish exploration, conquest, trade, and colonization took place throughout this entire area, and the events in Puerto Rico should not be studied in a geographical vacuum. The literature on Spanish-Indian interactions during the early sixteenth century within the larger circum-Caribbean area is more considerable than that available for Puerto Rico, and is too voluminous to discuss here in detail. However, there are approaches and themes evident in the literature, which are important to discuss with respect to Contact-period Puerto Rico.

Among these are studies that view ethnohistories as narratives, which can inform on the nature of Taíno culture and society during the late prehistoric period. The primary ethnohistoric sources have been used to support alternative conclusions about the level of sociopolitical organization displayed by the Taínos at the time of contact. Following a cultural-evolutionary perspective, José Alcina (1983) argued that the Taínos exhibited a tribal level of organization, in transition to chiefdoms. In contrast, Roberto Cassá (1979) and Samuel Wilson (1990) contend that the Taínos were organized into fully developed chiefdoms, and Francisco Moscoso (1983, 1986) purported that they were well on their way toward social stratification. The primary sources have also been used to reconstruct many aspects of Taíno culture, from religious beliefs, rituals, political organization, agricultural and other subsistence practices, language, mythology, settlements, and so forth (e.g., Alegría 1978, 1979b, 1981, 1997b; Arrom 1975; Cassá 1979; Sued Badillo 1978; Veloz Maggiolo 1983).

Ethnohistoric documents have also been analyzed by historians interested in studying how the Spanish-Taíno encounter was perceived and interpreted by Europeans and what new ways of looking at "the other" developed as a result of this encounter (Jara and Spadaccini 1992; Pastor 1983; Todorov 1984; Varela 1982; Varela and Gil 1984). Scholars have addressed the inherent biases and limitations of the European narratives and descriptions of the Caribbean Indians, both for the reconstruction of late prehistoric Taíno culture and society and for the study of Indian acculturation during the early colonization period (Bucher 1981). However, any discussion of the Contact period in the Caribbean generally and for the Taínos specifically must begin with a consideration of these limited narratives.

The Spanish produced volumes of official documents relating to the conquest, colonization, and governing of their overseas possessions, thus providing a wealth of information that may be used to help understand the context of the period and events. Their penchant for writing things down is a bonus for modern scholars. Many official documents have been published; even more information is available in manuscript form in various archives in Spain, as well as in local archives in countries throughout the Caribbean. Critical analysis of the published and unpublished documents offers an indispensable body of data to assist in the reconstruction of the early history of Spanish colonization, and can provide insights into the responses by the Indians. I have found the sources to be particularly revealing for Indian acculturation in Hispaniola and Puerto Rico (Anderson-Córdova 1990).

An excellent example of the detailed analysis of Spanish documentary sources is Jalil Sued Badillo's (2001) recent volume on the history and economy of Spanish gold mining in Puerto Rico during the first half of the sixteenth century. The primary sources demonstrate the importance and profitability of the gold-mining economy of Puerto Rico for the Spanish. They also show how this extraction economy was largely dependent on forced Taíno labor, which was exhausted before the ore-bearing deposits were. Such new insights on conquest economics and its linkage to Indian labor indicate the wealth of information that can be extracted from a careful and systematic use of manuscript sources.

The careful analysis of Spanish documentary sources can provide a general context and enable more detailed interpretations of the Spanish-Indian interactions (e.g., Sued Badillo 2001:310–338). In addition to supplying information on the use and abuse of Indian labor, the primary documents provide insights into the responses of Indians to contact with the Spanish. In particular, I have found the 1514 Indian *Repartimiento* and the Hieronymite Interrogatory of 1517 to be of great importance (Anderson-Córdova 1990:122–126, 156–177).

The third main body of research available for the study of the early Spanish colonial period is archaeology. Archaeological investigations of the Con-

tact period in the Caribbean have proliferated over the past 10 to 20 years. Studies have emphasized Spanish adaptations in the New World, Indian acculturation and change, Spanish-Indian contact, and multiethnic identities and interactions (Deagan 1985, 1987, 1988, 1995; Ewen 1987; Smith 1986; Willis 1984). Archaeology provides a unique perspective on the material correlates of the Contact period, without the inherent biases of the primary written records. Indian responses to the Spanish potentially are best studied archaeologically, provided that appropriate sites are identified and excavated. Early Spanish settlements may hold evidence of Indian presence or occupation; late prehistoric or protohistoric Indian settlements may have been occupied into the historic period and/or Indians may have occupied some sites in post-Contact times. A reconstruction of what happened in the Caribbean during the early sixteenth century must rely on three major bodies of data: ethnohistoric, documentary, and archaeological. Ethnohistoric sources are the first-hand European accounts of the conquest and colonization of the Caribbean and of Indian cultures and lifeways. Documentary sources are official written records produced by the Spanish bureaucracy, such as royal decrees, census records, and other official correspondence between Spain and its colonies.

Demography is an important aspect of the Contact period, especially in regard to such issues as sources of labor for the Spanish and the general resilience of the Indian population. Reconstructing population figures at the time of contact has been a major area of research (Anderson-Córdova 1990:138–218; Borah 1976; Brau 1966; Cassá 1979; Cook and Borah 1971–1974; Crosby 1972; Denevan 1976; Dobyns 1966, 1983; Fernández Méndez 1984; Henige 1978; Jacobs 1974; Lipschutz 1966; Moya Pons 1978; Ramenofsky 1987; Rosenblat 1954, 1967; Sánchez-Albornoz 1974; Sauer 1966; Smith 1984). This is an important line of inquiry that is most productively evaluated using ethnohistoric, documentary, and archaeological data.

To date, archaeological research has not addressed demography of late Taíno societies in the Caribbean.[1] A major contribution that archaeology can make for Contact-period studies is to provide a baseline body of population estimates. This would not only be significant for the study of demography in Caribbean chiefdoms but would also provide a realistic framework for studying the decline of historic Indian populations.

The Spanish-Indian Contact Period in Puerto Rico

Ethnohistoric Narratives

The islands of Hispaniola (now the Dominican Republic and Haiti), Puerto Rico, and Cuba were the first inhabited areas of the New World colonized by the Spanish and bore the brunt of Spanish conquest and domination. The chronicles of this early period refer generically to the Taínos as the aboriginal groups who inhabited these islands at the time of the Europeans' arrival. Most of the historical descriptions refer to experiences in Hispaniola, the first of the Greater Antilles to be settled by the Spanish. The chroniclers Fray Bartolomé de Las Casas, Gonzalo Fernández de Oviedo y Valdés, and Pedro Mártir de Anglería are the principal sources of information about the events of the conquest and about the Taínos. Fray Bartolomé de Las Casas arrived in the New World in 1502 and had first-hand information about the Taínos of Hispaniola and Cuba. He observed the effects of the Spanish *encomienda* system of forced labor and became a defender of the Indians. Las Casas's detailed narrative, *Historia de las Indias* (1985), benefits from his experiences in the Caribbean during the early historic period, as well as incorporates information from descriptions by Christopher Columbus and his contemporaries.

Gonzalo Fernández de Oviedo y Valdés did not arrive in Hispaniola until 1514, by which time the aboriginal population was already in steep decline (Alegría 1997b:17). Unlike Las Casas, he was not sympathetic toward the Indians, but his multivolume historical work is nevertheless full of very detailed descriptions of the Taínos that are critical for a study of this period. In addition, as pointed out by Alegría (1997b:17), he dedicates an entire chapter of his *Historia* to the island of Puerto Rico, its natural history, conquest, and colonization.

Pedro Mártir de Anglería (1944) (also known by his anglicized name of Peter Martyr) is another important early source. Although he never set foot in the New World, he had personal access to many of the individuals who participated in the events in the Caribbean, and to the accounts of Christopher Columbus, Fray Ramón Pané,[2] Bartolomé Colón, and others. The wealth of information available to Mártir de Anglería and his ability to synthesize and place it into a larger perspective confirms his importance as an early chronicler of late-fifteenth- and early-sixteenth-century Spanish exploration and colonization in the New World.

The Conquest and Colonization of Puerto Rico

These early narrative sources describe the aboriginal inhabitants of the Caribbean and the events of Spanish conquest and colonization in considerable detail, although from a distinctly European viewpoint. Most early narrators relied on what were, for them, primary sources: the diaries of Christopher Columbus's first two voyages (Dunn and Kelley 1989), Fernando Colón's manuscript *Historia del Almirante* (1984), Dr. Diego Alvarez Chanca's letter

(1949) describing Columbus's second voyage, and the *Probanza de Juan González* (Tió 1961:30–109), among others (see Alegría 1997b:15). Primary sources documenting the early conquest and colonization of Puerto Rico are considerably more limited than for Hispaniola.

The events described below have been summarized previously (Anderson-Córdova 1990:88–103) and are based on the Spanish chronicles, official Spanish documents of this period, secondary sources (Brau 1966; Fernández Méndez 1981, 1984; Sauer 1966; Tió 1961), and research of such historians as Murga Sanz (1971) and Otte (1975). The recently published work of Puerto Rican historian Jalil Sued Badillo (2001) was another important source of information.

The purpose here is to summarize what we know about events in Puerto Rico and draw comparisons with what occurred in Hispaniola. Further, this will provide the framework for a discussion of the Indian response to conquest and colonization and the consequences of contact to the ensuing Indian culture, society, and demography. Finally, future avenues of research for Contact studies in Puerto Rico are suggested.

Puerto Rico (or San Juan Bautista de Puerto Rico, as it was christened by Columbus) was discovered by Columbus on his second voyage, on November 19, 1493. Columbus's expedition made a brief stop somewhere along the west coast of the island (the exact location has been both a source of pride and dispute for years among the municipalities of Aguada, Aguadilla, Añasco, and Rincón) but did not encounter any Indians, who ran away from Columbus's landing party. The Spanish fleet of 19 vessels continued on to Hispaniola.

There is some discrepancy as to when the first exploration of Puerto Rico occurred. According to the *Probanza de Juan González* (Tió 1961:30–109), the initial exploration occurred in 1506 when a temporary base was supposedly established near the Bay of Añasco, on the west coast of Puerto Rico (Solís 1988:8). However, most sources indicate that it was not until 1508 that Juan Ponce de León, under the authorization of the Governor of Hispaniola, Don Nicolás de Ovando, began the exploration of Puerto Rico.

The *Probanza* also describes events that were to have occurred in 1508, and it may be just confusion in dates. Nevertheless, the first sustained encounter between the Spanish and Indians was peaceful, and an exchange of gifts occurred. Juan González, a member of Ponce de León's expedition, served as interpreter. The Indians indicated that there was a good bay on the north coast of the island (San Juan harbor). While Juan Ponce de León stayed on the south coast at the village of Cacique Mabo el Grande, Juan González and other Spanish crossed the Cordillera Central and arrived to the Bay of San Juan, passing numerous Indian villages and continuing the pattern of exchanging gifts (Tió 1961:49, 70).

According to Ponce de León's own testimony of 1509 (*Historia Documental de Puerto Rico [HDPR]* 1973:II:519–522), he left the province of Higüey (his land grant since 1504 on the southeast coast of Hispaniola) on July 12, 1508, with 50 men. He stopped at Mona Island (a small island located half way between Hispaniola and Puerto Rico), which he found was occupied by one or more Taíno polities. He landed on the south coast of Puerto Rico, in the territory of Cacique Agüeybaná I, on August 12, 1508. The expedition encountered at least two storms (most probably tropical storms or hurricanes) on the way to Puerto Rico, and it was running low on food.

The Spanish requested Agüeybaná to plant a *conuco* (the Taíno term for the raised mounds of earth in which they planted cassava) for them, which he apparently agreed to do. Sources indicate that Agüeybaná's mother advised him to be friendly toward the Spanish, in order to avoid the fate of the Indians of Hispaniola (Anderson-Córdova 1990:91; Oviedo y Valdés 1959a:II:90; Fernández Méndez 1981:40; Sued Badillo 2001:61). Most sources agree that of the various chiefdoms that existed on the island of Boriquén (as Puerto Rico was known by the Taíno) at Contact, the principal one, located in the south-central part of the island, was Cacique Agüeybaná's (Sued Badillo 2001:61).

Ponce de León left Agüeybaná's territory and sailed west and north bordering the coast until he arrived at the Bay of San Juan. Here he encountered Indians, including some he identified as Caribs, explored some of the rivers along the north coast, sent some men to prospect for gold, and others back to Mona Island to acquire food (Anderson-Córdova 1990:91; *HDPR* 1973:II:520). Ponce de León also established the settlement of Caparra, which he located a few miles inland from the Bay of San Juan, close to the areas where gold was found.

As had been the case during the conquest and colonization of Hispaniola, the Spanish immediately proceeded to prospect for gold. Their actions in this respect, however, were limited by the lack of food, and Ponce de León again indicates asking five caciques to plant crops to feed the Spanish (Anderson-Córdova 1990:93; *HDPR* 1973:II:521; Murga Sanz 1971:37). The shortage of food may have been a consequence of the two storms that hit the Spanish ships on their way to Puerto Rico. These same storms may have affected the Indians' crops, and the Spanish may have been unable to acquire much food from them. Whatever the reasons, the alleged lack of food inhibited the Spaniards ability to prospect for gold in this early stage of exploration of the island.

Spanish exploration and settlement of the island continued, and Ponce de

León began distributing Indians (*repartimientos*) among Spanish from the mainland and Hispaniola who wished to settle on the island (Anderson-Córdova 1990:94; Murga Sanz 1971:46). In the meantime, Nicolás de Ovando was replaced by Diego Colón (Christopher Columbus's son) as governor of Hispaniola, who proceeded to name Juan Cerón as *alcalde mayor* of the island of San Juan (i.e., Puerto Rico). The Indians who had been distributed by Ponce de León were thereby taken away from their Spanish "owners" (*encomenderos*) and reallocated by Cerón to other settlers late in 1509 (Anderson-Córdova 1990:95; Murga Sanz 1971:47). Diego Columbus instigated this redistribution of Indians because he considered Ponce de León's allocation of Taínos to the settlers as a contradiction to his family's rights to Puerto Rico, based on Christopher Columbus's original discovery of the island.

However, former Governor Ovando, who had returned to Spain, convinced the king to reappoint Ponce de León as Captain Governor of Puerto Rico. Ponce de León proceeded to send both Juan Cerón and Miguel Díaz (who had been named *alguacil mayor* of Puerto Rico by Diego Colón) back to Spain as prisoners on July 10, 1510 (Anderson-Córdova 1990:95; Murga Sanz, 1971:51).

The Indian Rebellion of 1511

As a result of the power struggles between the interests of the Columbus family and the Spanish Crown, the Indians of Puerto Rico were subjected to two *repartimientos* within the span of less than one year. They were moved arbitrarily from one Spanish *encomendero* to another, required to plant crops for the Spanish (Anderson-Córdova 1990:118; *Relación de Ponce de León 1509* in *HDPR* 1973:II:520–521; Fernández Méndez 1984:16–19) and forced to mine for gold. According to Las Casas (1985:II:376; see Anderson-Córdova 1990:95–96), these were the seeds that ignited the Indian rebellion of 1511.

The rebellion started in the territory of Cacique Agüeybaná II, brother and successor of Agüeybaná I, the cacique whom Ponce de León met in 1508 (Anderson-Córdova 1990:194), in whose lands the Villa de Sotomayor settlement had been established. According to the accounts of Las Casas and Fernández de Oviedo, the caciques formed a confederacy to attack the Spanish; Agüeybaná, leader of the rebellion, attacked the town of Sotomayor, killing Cristóbal de Sotomayor and burning the settlement (Anderson-Córdova 1990:96; Fernández Méndez 1981:45; Las Casas 1985:II:388; Tió 1961:52–53).[3] At least 30 caciques participated in the rebellion (Sued Badillo 2001:62). This was the beginning of a general uprising on the island, which probably also involved Indians from neighboring islands (Anderson-Córdova 1990:97; Tió 1961:57–58, 75, 92–93; Sued Badillo 1978:144–145). Sued Badillo (2001:62) indicates that as early as 1510, the Spanish, including Cristóbal de Sotomayor, were bringing Indian slaves from neighboring islands into Puerto Rico.

Spanish retaliation was swift. Ponce de León in Caparra marched against the Indians, attacking them at night (Anderson-Córdova 1990:96; Fernández Méndez 1981:57). He gave an ultimatum to the Indians to surrender, but only two caciques did so (Cacique Caguas of Turabo and Cacique don Alonso of Utuado) (Anderson-Córdova 1990:98; Fernández Méndez 1984:26). The Spanish responded by intensifying their raids of neighboring islands and bringing other Indians to Puerto Rico as slaves (Anderson-Córdova 1990:97; Tió 1961:58, 75–76). In addition, some Spanish captains raided Indian settlements in Puerto Rico, took Indian prisoners, and enslaved them (Anderson-Córdova 1990:98; Murga Sanz 1971:280–288; *Documentos de la Real Hacienda de Puerto Rico* 1971:I:II).

Indians killed at least 100 Spaniards during the uprising (Sued Badillo 2001:63). Spanish retaliatory raids and the ensuing enslavement of Indians amounted to a true military conquest. Sued Badillo (2001:63) cites historian Carlos Pereira: "Puerto Rico was the only one of the Greater Antilles in which there were episodes of true military conquest" (Pereira 1924:V:58, my translation).

As if this were not enough, Miguel Díaz and Juan Cerón were reappointed by Diego Colón to their positions in Puerto Rico and ordered to carry out yet another *repartimiento*, putting the Indians to work in the gold mines (Royal instructions of July 25, 1511, in Murga Sanz 1971:75; Anderson-Córdova 1990:99). The general uprising of the Indians continued, and King Ferdinand authorized all-out war against them. This served as a perfect excuse to acquire Indian slaves, especially among the Spanish settlers loyal to Ponce de León who felt short-changed by the Cerón-Díaz *repartimiento* (Sued Badillo 2001:64).

Spanish expeditions to neighboring islands for the purpose of enslaving Indians and bringing them to Puerto Rico continued. At this time (late 1511), numerous incidents appear in the historical record of so-called Carib Indians raiding settlements in Puerto Rico. The Spaniards tended to use the term "Carib" in very broad terms, referring to any Indians who rebelled against them. Once captured, these "Caribs" could legally be enslaved and forced to work as laborers in the gold-mining operations. The situation on the island continued to be very unstable between the years 1511 and 1515. Cycles of Indian raids followed by Spanish retaliatory raids persisted.

In 1513, an alliance of Indians from Puerto Rico and the Leeward Islands, the latter of whom the Spanish called Caribs, burned the settlement of Ca-

parra, killing 18 (Sued Badillo 2001:64). The Spanish retaliated by attacking caciques under *encomienda,* especially along the eastern and central mountainous areas of the island, specifically against caciques Orocoviz, Don Alonso (Utuado), and Jayuya (Sued Badillo 2001:65).

Amidst all this, under the orders of prosecutor Sancho Velázquez (a Spanish official from Hispaniola), another *repartimiento* was carried out in 1514. Occurring during a time of considerable Indian resistance, and benefiting the established royal authorities rather than the majority of the Spanish settlers on the island, this *repartimiento* caused more resentment and confusion (Anderson-Córdova 1990:100–101; *Memoria de Melgarejo* 1582 in Fernández Méndez 1981:112–113; Murga Sanz 1971:169–170). Only 4,000 Indians were distributed, since pockets of resistance continued (*Boletín Histórico de Puerto Rico [BHPR]* III:67 *Relación de carta a su alteza 8 agosto de 1515;* cited in Sued Badillo 2001:65, 99, footnote 136).

The 1513 Laws for the Protection of the Indians were ignored on the island (Anderson-Córdova 1990:101; Murga Sanz 1971:186). These laws included provisions for adequate food, clothing, and better treatment of the Indians than previously. However, they applied only to *encomienda* Indians, not to Indian slaves. The latter had no legal protection under Spanish laws. The situation in Puerto Rico at this time suggests that numerous Indians were being enslaved, since any Indian pacified on the island or captured as a result of Spanish raiding expeditions immediately lost his/her freedom.

To summarize, in Puerto Rico, as was previously the case in Hispaniola, the seemingly initial peaceful contact between Indians and Spaniards rapidly deteriorated into violence. In Puerto Rico, the period of Indian rebellion was much longer than in Hispaniola. Despite the fact that there are relatively few first-hand accounts of the conquest and colonization of Puerto Rico, compared to Hispaniola and Cuba, the available sources suggest that the Indian rebellion was widespread across the island (Anderson-Córdova 1990:119). Various Spanish sources indicate that Indians on the island were still not subdued as late as 1517 (Sued Badillo 2001:65–66). Carib raids on the island continue to be mentioned through the sixteenth century (Anderson-Córdova 1990:101; Sued Badillo 2001:66). A regional and protracted Indian rebellion was not reported for Hispaniola.

Several factors may have contributed to this situation in Puerto Rico. The smaller geographical area of Puerto Rico, compared to Hispaniola, may have made for easier alliance building against the Spanish (Anderson-Córdova 1990:119). One form of resistance employed by the Indians may have been to take refuge in the neighboring Leeward Islands and then return to raid the Spanish (Anderson-Córdova 1990:101; Brau 1966:258; Sued Badillo 1978:152, 157). Sued Badillo (1978) has discussed the close kinship, trade, and ritual ties that existed among the Taínos of Puerto Rico and the neighboring islands. These connections may have facilitated the flight and fight strategy of Taíno resistance (Anderson-Córdova 1990:120).

Spanish population on the island was relatively sparse during the sixteenth century, and there were only two main settlements: Caparra on the north coast and San Germán on the west coast. A number of Spaniards lived outside of these settlements or were with their Indians mining for gold. In addition, Puerto Rico's mountainous terrain and lack of large interior valleys may have made it easier for the Indians, who knew the territory well, to maintain pockets of resistance for a longer period of time (Anderson-Córdova 1990:102; Sued Badillo 2001:67). The late prehispanic chiefdoms of Puerto Rico may have also situated their civic/ceremonial centers in the extremely dissected mountainous interior as a defensive strategy in response to interpolity feuding (Siegel 2004).

The principal causes of the persistent Indian rebellions on Puerto Rico were probably the manner in which the Spanish authorities established the *encomienda* system (three *repartimientos:* first by Ponce de León, followed by Cerón and Díaz and then Sancho Velázquez) and the enslavement of Indians as mine workers.

The 1530 Census

In 1530, Indian slavery was officially banned. However, this ban excluded the Caribs, which meant that Puerto Rico could legally continue to import Indian slaves, if they were officially designated as Caribs. This same year, Governor Francisco Manuel de Lando carried out the first population census of Puerto Rico. The census documents the small Spanish population of the island, and the fact that of the small number of surviving Indians, the majority were slaves (Anderson-Córdova 1990:102–103; Lluch Mora 1986; Ramírez de Arellano 1934:20–46).

A previous analysis carried out by the author of the de Lando census indicates a total Indian population of 1,543 (Anderson-Córdova 1990:181–187, 208). These were divided between 1,039 slaves and 504 free Indians, a proportion of 2 to 1. Although we do not know the Indian population of Puerto Rico at the time of contact, a conservative estimate ranges between 30,000 and 60,000. (See Anderson-Córdova [1990:180, 1995] for a review of Contact-period Taíno population estimates.) If the Contact-period estimates and the de Lando census are accurate then a precipitous decline in population occurred in 22 years. In addition to documenting this decline, the 1530 census suggests that most of the remaining Indians were captured elsewhere and

brought to the island as slaves. In other words, the number of Taíno survivors 22 years after Spanish colonization was considerably less than the total number of Indians documented in the census. The historic Indian population in Puerto Rico was not only very small but also included many non-Taínos.

The Conditions of Spanish-Indian Interaction

The Spanish-Indian Contact period in Puerto Rico effectively spanned a period of 20 to 30 years. Historic documentation about the conditions of contact in Puerto Rico is very sparse. Hostilities developed quickly, and the Indians began a pattern of attacking Spanish settlements and then fleeing into the interior of the island or to neighboring islands. There is no documentation comparable to the 1514 *Repartimiento* or 1517 Hieronymite Interrogatory documents of Hispaniola, so Indian cultural responses cannot be gauged using Spanish sources.

In the past, I have described the cultural processes of Spanish-Indian interaction in the Caribbean as an example of acculturation (Anderson-Córdova 1990). However, the conditions of contact were so destructive to the Taínos and their culture that I now hesitate to use that term. The rapid introduction of the *encomienda* system and the fact that the Indians organized into open rebellion early during the Contact period, which persisted in pockets of sporadic resistance until they had practically disappeared, combined with the use of slave labor to work the agricultural fields and mines created a climate of exploitation and coercion where acculturation may not have been possible.

The use of forced Indian mine labor is one aspect of the Contact-period conditions that was not specifically addressed by scholars in the early history of the Caribbean. Sued Badillo's (2001) recent analysis of the gold economy in Puerto Rico, based on the detailed study of primary archival sources, demonstrated the importance of the gold-mining industry for the economy of the island, as well as of the Spanish mainland. He described the various gold-extraction methods used on the island and indicated that it was based on a rudimentary technology with great reliance on intensive manual labor. Further, Sued Badillo documented that, contrary to conventional wisdom, it was the depletion of labor, not gold, that spelled the end of the gold economy on Puerto Rico. The Spaniards, who immediately exploited Indian labor for its extraction, recognized the plentitude of gold.

The local Taíno population quickly became insufficient to fill this need, so the Spanish resorted initially to raiding neighboring islands and later the wider circum-Caribbean area to import laborers to Puerto Rico. As the pool

of Indian slaves became increasingly small, the Spanish resorted to African slaves, a much more expensive form of labor that limited buying power and ultimately their ability to exploit the mineral wealth of the island. Thus the gold-mining industry in Puerto Rico was doomed, owing to the shortage of labor, not to the lack of gold.

Sued Badillo's (2001) analysis includes a description of how the mining operations and labor were organized. Mining was the most important economic activity undertaken by the Spanish during the early sixteenth century. *Encomienda* and enslaved Indians were used intensively in the mines, for periods (called *demoras*) of up to nine months. The basic unit of labor was the *cuadrilla,* which consisted of 10 to 50 Indians (the optimum number was between 12 and 15) under the direction of a Spaniard. These groups would establish mining camps, stake out territories, and prospect for gold (Sued Badillo 2001:310). The mining areas were carefully measured and claimed by individual miners or groups of miners, and prospecting occurred intensively for many months at a time (Sued Badillo 2001:313, citing Oviedo y Valdés 1959a).

Sued Badillo, based on Oviedo y Valdés and other primary sources, describes the following activities that were carried out in the mining camps: "prospecting, weeding, felling of trees, removal of rocks and boulders, excavation, carrying of soil, washing of soil, construction of dikes or canals, tunneling, wells, construction of tents for protection from the elements, construction of corrals for the cattle and pigs, collection of wood, cooking of food, slaughter of animals and food conservation, preparation and conservation of tools, taking care of cattle, breaking and crushing of stones, transportation of equipment" (Sued Badillo 2001:313–314, my translation).

Native patterns of food production were seriously disrupted. The food necessary to feed Spanish and native laborers alike was obtained from the royal *encomiendas* that the Crown established on Mona Island, Toa (northeastern Puerto Rico), and Otoao (central mountains of Puerto Rico); the latter two coincided with areas rich in gold (Sued Badillo 2001:176–177). Many other farms in which cassava was produced were located throughout the island, but local production was insufficient to meet the demands of Spanish and Indian groups, whose labor pools were dedicated mainly to mining. Cassava, among other foodstuffs, was imported into the island (Sued Badillo 2001:149, 286–299). The diet in the mining camps consisted of cassava bread, fish (mainly salted and imported), and pork. Although *encomienda* Indians were supposed to receive adequate food, the physical rigors of work and the high costs to the miners of importing food and equipment

into the mountainous regions, where the mines were located, undoubtedly resulted in a less-than-satisfactory diet for the Indians (Sued Badillo 2001:327).

The poor diet combined with hard physical work depleted the number of local Taíno laborers, and the Spanish overseers increasingly depended on imported Indian slaves. Hundreds of "foreign" Indians were brought to the island annually; the preponderance of Indian slaves continued well into the 1530s. They were brought in to replace the dwindling population of local Indians. In addition, the foreigners were preferred by the Spanish, since the Indian-protection laws did not apply to them (Sued Badillo 2001:307–309). As gold production increased in Puerto Rico, beginning in 1519, more Indians were imported; commerce in Indian slaves was conducted throughout the Caribbean by the 1530s (Sued Badillo 2001:358).

Under conditions of intensive forced labor, Indian acculturation was highly unlikely. The disintegration of indigenous social and political organization and of traditional patterns of food production were not conducive for acculturation. Grouping together *encomienda* and slave Indians under extreme working conditions further undermined the survival of traditional cultural patterns. Indians from disparate sections of the circum-Caribbean region were brought to Puerto Rico and communication amongst them would have been difficult. Sources document Indians from the Bahamas, Aruba, Bonaire, Curaçao, the Lesser Antilles, Trinidad, the Gulf and Peninsula of Paria, Cumana, Margarita, and Cubagua, as well as the entire coast of what was known in the sixteenth century as Tierra Firme (from Venezuela to Yucatán, up the coast of New Spain into Florida) were brought to the Spanish Caribbean, including Puerto Rico (Anderson-Córdova 1990:247–258).

Questions persist. Archaeological research in Puerto Rico during the last 20 or 30 years has been considerable. Because of the application of U.S. federal cultural resources protection laws on the island, numerous sites have been surveyed, tested, and excavated. Some of these have been discussed in previous chapters. But, given this amount of archaeological research, why, with the exception of de Hostos's (1938) excavations at Caparra, Mason's (1941) work at Caguana, and Rouse's (1952a) work at the Sardinero site (Mona Island), have no historic-period contact sites been discovered in Puerto Rico?

We know of many more such sites in Hispaniola (e.g., Deagan 1987, 1988, 1995; Ortega and Fondeur 1978) and Cuba (Domínguez 1978, 1980, 1983, 1987; Pichardo Moya 1945; Rivero de la Calle 1978). Puerto Rico is much smaller than these islands, but Taínos, very similar to those who lived in Hispaniola and Cuba, also densely populated it. The Spanish conquest and colonization of these islands was similar as well.

Contact-period sites may still be present on Puerto Rico, and it is only through archaeology that these can be identified. Unfortunately, the areas surrounding Caparra, the first Spanish settlement in Puerto Rico, where ethnohistoric sources indicate that many Indian villages were located, has been highly urbanized. The same may be said, albeit to a lesser degree, for San Germán (the second Spanish settlement, located in western Puerto Rico). If any Contact-period sites remain to be found, these will most likely be found in the mountainous interior. Sued Badillo (2001) indicates that the gold-mining operations were extensive and that camps were occupied nearly year round. Gold prospecting occurred throughout the first three decades of the sixteenth century, and archaeological evidence of these activities may still exist. As development continues to encroach on the mountains of Puerto Rico, many of these sites, if they exist, will be obliterated. According to Sued Badillo, sources mention at least 20 sites where gold was extracted during the first half of the sixteenth century. The principal areas where gold was found include Corozal, Luquillo, Utuado, and San Germán–Lajas (Sued Badillo 2001:333). Localities within these areas that correlate with regions of Utuado, such as Caguana and Don Alonso, among others, are mentioned (Sued Badillo 2001:333–334). A systematic survey of selected areas to locate the early gold-mining sites may be able to provide archaeological evidence of Spanish-Indian interaction. It would be interesting to determine whether Indian ceramic traditions persisted during the early historic period, whether there is material evidence for the influx of foreign Indians into the labor force, and whether there is any indication of Indian modification of Spanish material culture. A study of this type would compare with work done in the Spanish town site of Puerto Real, located in Haiti (Deagan 1995). In Puerto Real, Taíno ceramic traditions were quickly substituted by unidentified plain pottery that appears in the early contexts of the site (pre-1550) and declines through time, and by an undecorated Colono ware called Christophe Plain, interpreted by Smith (1995:373, 374) as being made by Africans.

A complete explanation of what the aftermath of conquest meant to the Indians of Puerto Rico, both native and foreign, may never be possible. Historical research has been conducted, but the necessary archaeological fieldwork that focuses on locating, testing, and excavating Contact-period sites has not occurred. It is sorely needed in order to add pieces to solve the puzzle of Spanish-Indian interaction on Puerto Rico and to compare with the archaeological investigations of this period that have been conducted elsewhere in the Caribbean. The scarcity of Contact-period sites in Puerto Rico remains to be explained.

Notes

1. The exception is Antonio Curet's study of Indian demography in the Maunabo River Valley, which suggests that, at least in this area, the Taíno chiefdoms were below carrying capacity and that demographic pressure could not be considered the cause for their development (Curet 1992a).

2. Fray Ramón Pané was sent by Columbus to live among the Indians of Hispaniola and learn as much as he could about their customs. He is known as the first Caribbean ethnographer for his treatise *Relación acerca de las antigüedades de los indios,* the first and only primary source available about Taíno mythology (Pané 1974).

3. Cacique Agüeybaná had been given in *encomienda* to Don Cristóbal Sotomayor.

10

Multiple Visions of an Island's Past and Some Thoughts for Future Directions in Puerto Rican Prehistory

Peter E. Siegel

My goals in this chapter are twofold: (1) review the salient themes addressed in the previous chapters, and (2) offer some insights into what I think connect the disparate bodies of evidence relating to environment, subsistence, settlements and polities, and religion and cosmology. In the preface, I observed that a book on the prehistory of Puerto Rico is contrived because things that were happening on this island were undoubtedly linked to affairs on neighboring islands and Central and South America. This truism notwithstanding, the chapter authors have demonstrated that from various perspectives there is plenty to say about what happened on Puerto Rico specifically. Some of the authors have explicitly tied the happenings on Puerto Rico to larger Caribbean-wide social, political, and environmental currents. As such, these studies both reflect and illuminate issues of fundamental importance to the Caribbean, lowland South America, and Central America. This overextended justification for a book on the prehistory of Puerto Rico may be summarized by saying "we and the Native Americans who occupied the island were and are not alone."

Themes of the Book

Numerous themes may be identified in the previous chapters. I've chosen three to address: interaction and social change; subsistence, environment, and social change; and cosmology and social change. Social change is the common theme.