

21

Lowland South America

John Greer



This chapter examines the kinds of problems, research concerns, and considerations typical of current study, as well as needs and potential for further work in most of lowland South America—a massive area of incredible natural and cultural diversity—by focusing on a small area in the northern part of the zone (fig. 21.1). The core region is the *selva*—the rainforest—of northern Amazonia, which by its extreme complexity precludes meaningful simplification. The basic kinds of rock art in the region are known, but fieldwork continues to introduce unanticipated figures, motifs, relationships, and distributions. Who produced the art usually is not known, although studies of motif and style distributions will help define geographic limits and related cultural boundaries. Attempts are often made to assign ethnic identity for the most recent art; little is known for anything over a few hundred years old. Age determination begins with relative dating, and most absolute ages rely on cross-dating with other archaeological materials. More expensive methods of direct dating are just beginning. Interpretation is best handled through ethnographic comparison with modern iconographic portrayals, decoration, and mythology.

THE AREA

Lowland South America (which also includes parts of Peru, Bolivia, and Ecuador) is represented here by the northern Amazonas-Guianas region of southern Venezuela, southeastern Colombia, northern Brazil, Guyana, Suriname, and French Guiana—a region characterized by the land and people of the Amazon and Orinoco rainforests, savannas, and intervening areas (fig. 21.2). Rock art and other cultural developments in the Caribbean are often related to those in Venezuela, particularly the spread of early iconographic influences (see fig. 21.3, discussed below). The overall area is anything but uniform. Elevations vary from sea level along the coasts, with little increase up major rivers, to highlands

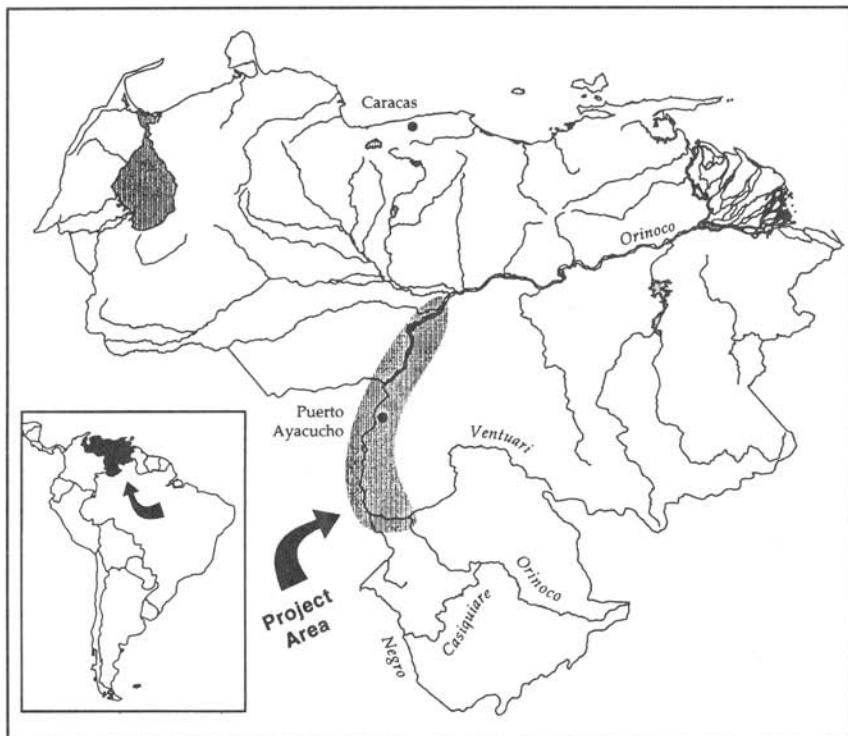


Figure 21.1. Venezuela, showing area of Orinoco rock art study centered on the Atures Rapids at Puerto Ayacucho.



Figure 21.2. Northern South America, showing the approximate area presently considered the core of basic northern Amazonia rock art complex (or Guianas Complex), with a possible northern extension of the riverine petroglyph complex during later times.

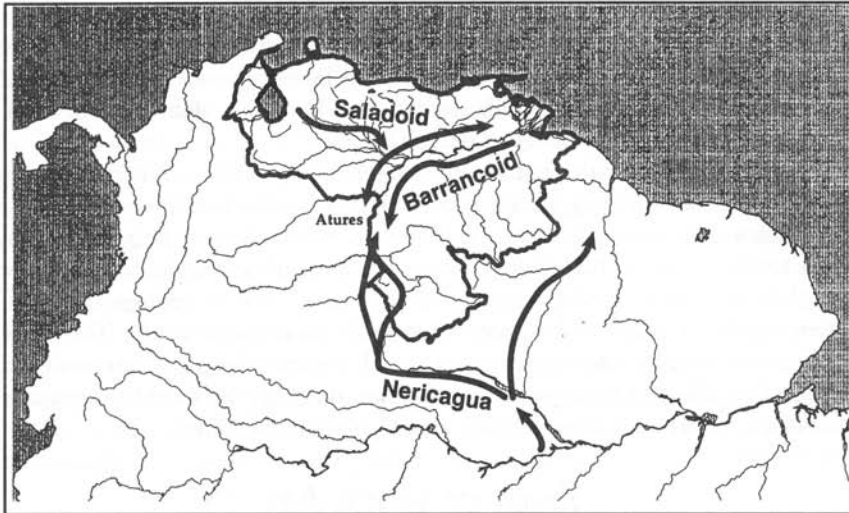


Figure 21.3. Suggested model for the spread of three basic archaeological complexes.

over 3,000 m above sea level. In some areas of southern Venezuela, Guyana, and Brazil, mountains majestically soar into the clouds while remaining culturally—and almost geographically—inseparable from the tropical rainforest below. The dense jungle base not only forms the birthplace but at times envelops impressive sandstone and limestone pinnacles, mesas, tepuys, and craggy splinters. Extensive areas of flat to rolling open grasslands alternate with cattle pastures and agricultural expanses. Some arid areas are overwhelming in their scattering of thorns, while other zones densely covered with scrub vegetation are barely passable. The region is known for seasonal rains that transform the countryside with immense floods, creating marshes, swamps, and new waterways for seasonal travel. Rivers rise tens of meters, colorful poisonous frogs and aggressive snakes abound, breathtaking flowers, birds, and butterflies enhance the natural beauty. The world is a different place until the waters recede and the dry season again exposes the old footpaths and fields.

At the Great Bend of the Orinoco River are the Atures Rapids, the geographic and cultural boundary between the upper and lower river, or essentially between the plains and the rainforest. This is perhaps the center of the northern Amazonia-Guianas pictograph domain. This natural and cultural region is characterized by its diverse geography—people, terrain, vegetation, animals, soils, and weather—but there is continuity in the character of the forest, the open country, the highland islands, cultural appearance, and way of life for the native people. In the north, the Orinoco basin of Venezuela and Essequibo of Guyana are separated from the Río Negro and Río Branco arms of the main Amazon basin by a band of irregular uplands and mountains. The northern and southern areas are connected by the Río Casiquiare, which flows from the Orinoco into the Río Negro, thus connecting the two main independent drainage systems flowing into the Caribbean and the Atlantic.

Much of the area is rural, with little intensive development in areas where pictographs and petroglyphs occur on abundant rock exposures—impressive faces of pink, yellow, blazing white, streaked limestone, and coarse-grained sandstone. Gigantic granite hills, mountains, boulders, slabs, and bedrock exposures all contain painted and pecked figures.

Indigenous people throughout the region live at various levels of native culture, and have undergone significant changes in the last fifty years. Some large areas are now mostly abandoned by native groups. Many villages, however, have retained some of their older customs, traditional knowledge, and stories—a tightly knit, integrated communal lifestyle controlled by ecological beliefs, overseen by shamans and accompanied by hallucinogenic drugs. The older tradition of painting and engraving rocks and cave walls has not been produced within the collective memory of these people, although the same iconographic tradition is still maintained in other aspects of material culture.

KINDS OF ROCK ART

Rock art, in a number of forms, is ubiquitous throughout lowland South America. Its close relationship with geography may reflect habitation, procurement, and travel customs for local groups and villages.



Figure 21.4. Pictograph human motifs, Atures area. These seem to represent costumed dancers in a variety of forms, with both males (rectangular) and females (triangular, some with leg rattles) represented. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

Pictographs

Painted pictographs occur in caves, rockshelters, overhangs, and on boulders and vertical rock faces. They seldom occur on rock exposures immediately beside rivers but are more common on exposures and elevations in valley bottoms, larger inselbergs, ridges, hilly country, and other upland areas—places where petroglyphs are rare. Pictographs in valley bottoms are not associated with rapids as much as with distinctive rock formations. Paintings cover a wide variety of subjects, both figurative and geometric, and are done in numerous colors and shades of mostly red, orange, yellow, brown, black, and white (figs. 21.4–16). Paintings appear to be closely related to other kinds of traditional painted iconography, such as designs on manioc grater-boards, baskets, and body decoration. Pictographs have a great historical depth indicated by a long chronological sequence, presumably covering several thousand years, of superimposed styles that change considerably through time in all aspects of technology, personal manner of application, and subject content (Greer 1995).

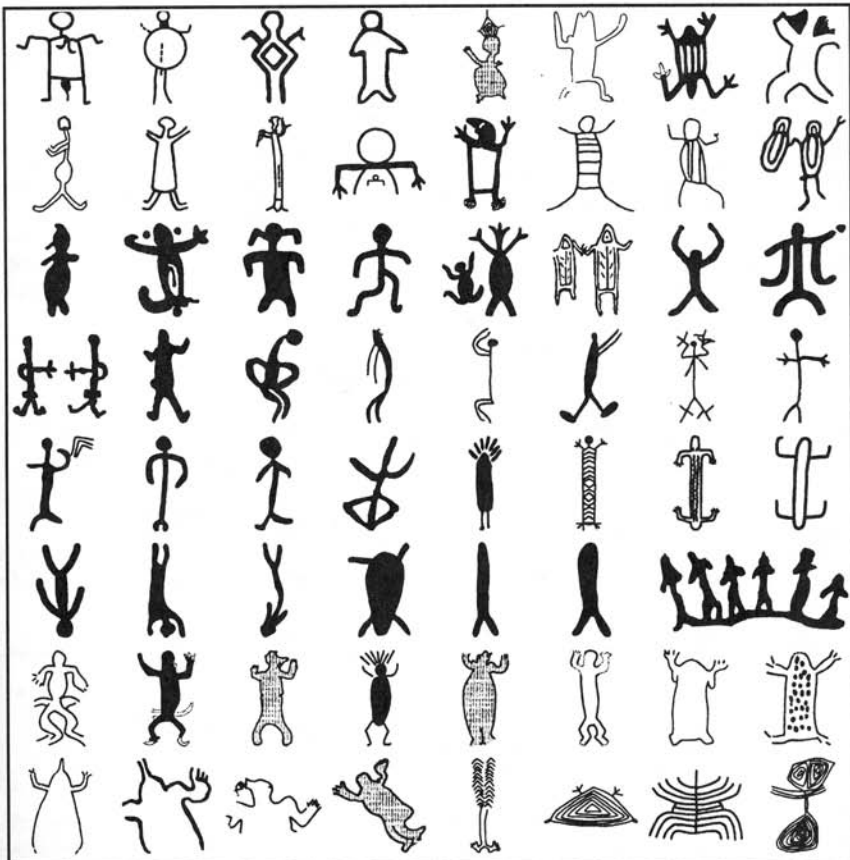


Figure 21.5. Pictograph miscellaneous human figures, Atures area. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

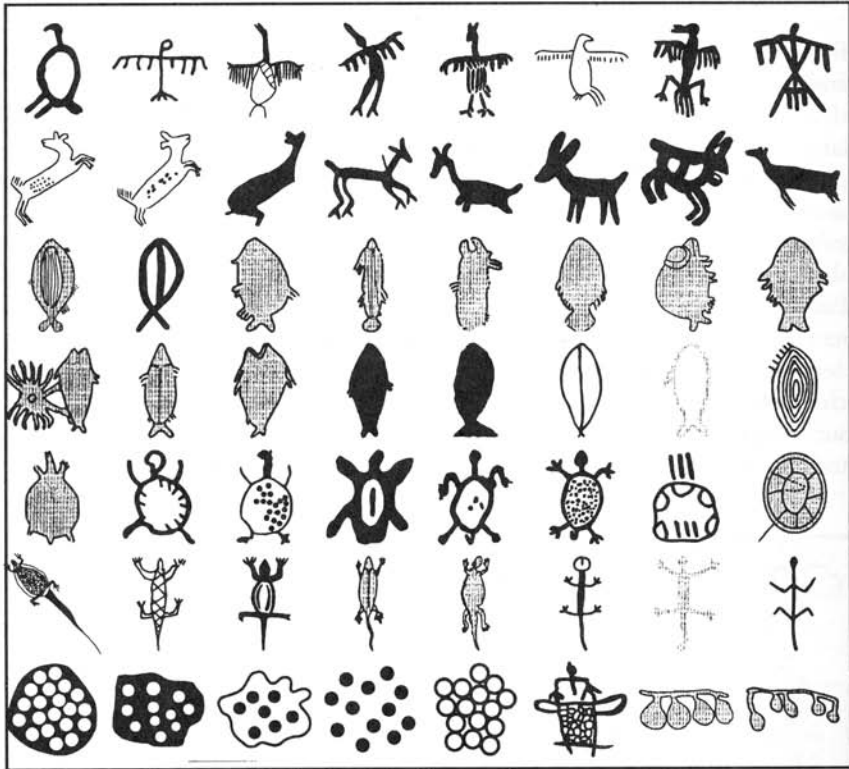


Figure 21.6. Pictograph animal motifs, Atures area. Birds, deer, fish, turtles, sauria (lizards, caimans), nests (turtle eggs, bird landing on nest of eggs, hanging bird nests). Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

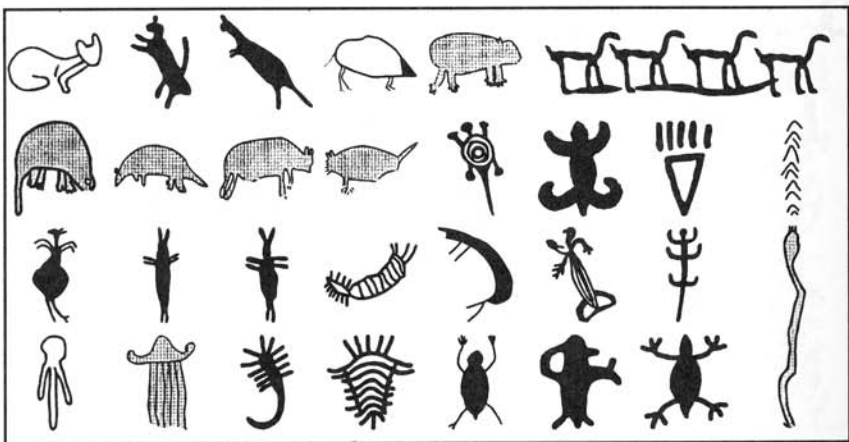


Figure 21.7. Pictograph animal motifs, Atures area. Cats, tapirs, camelids, armadillos, unidentified, sloths, tracks (bear?, deer), insects, unidentified forms, snake. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

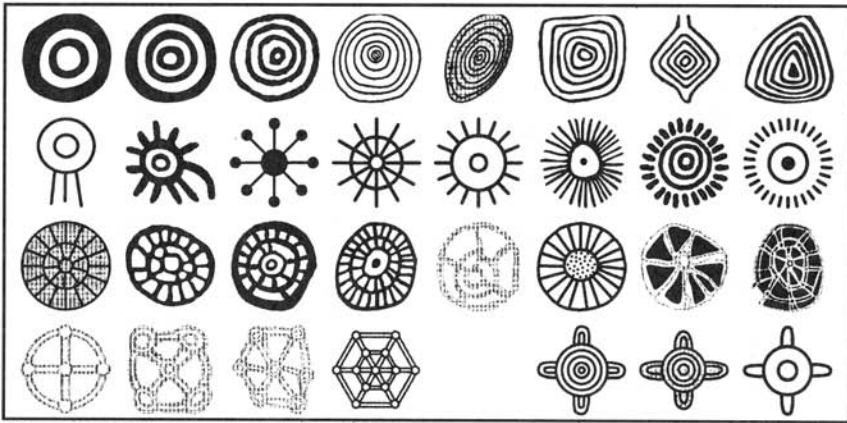


Figure 21.8. Pictograph circle motifs, Atures area. Concentric circles, rayed circles, segmented circles, circle grids, circle crosses. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

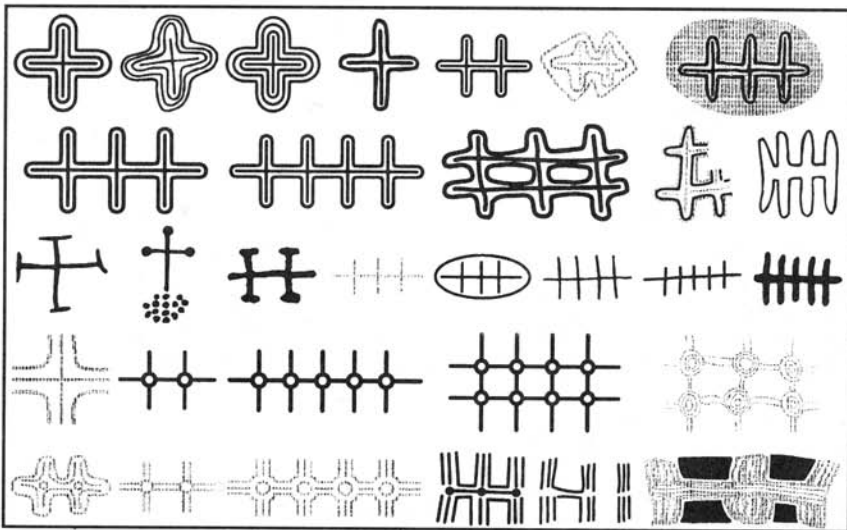


Figure 21.9. Pictograph cross motifs, Atures area. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

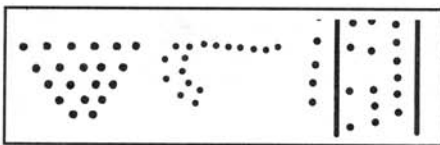


Figure 21.10. Pictograph dot patterns, Atures area. Late figures made of caraña, a dark brown to black, wax-like, aromatic substance produced by boiling a leafy plant. This highly affective medicine is often believed to possess magical qualities. (After Greer 1995; not to scale.)

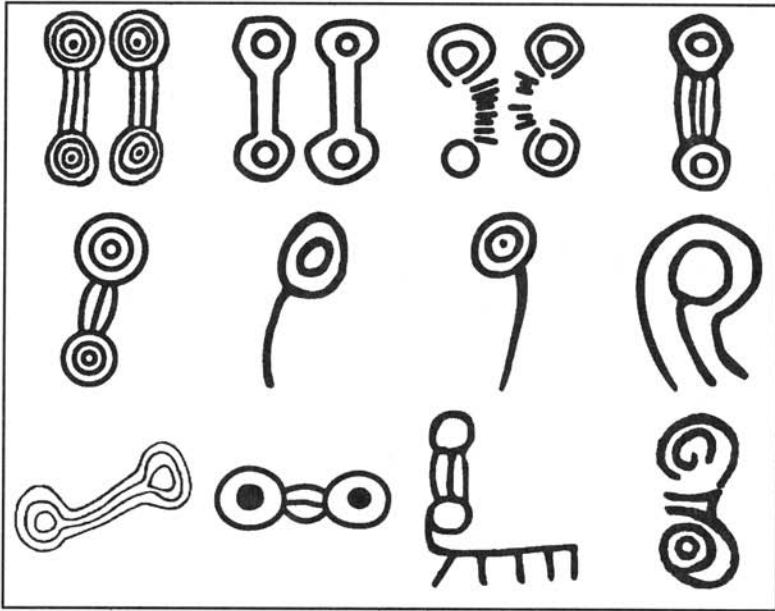


Figure 21.11. Pictograph Saladoid and Barrancoid geometric motifs, Atures area. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

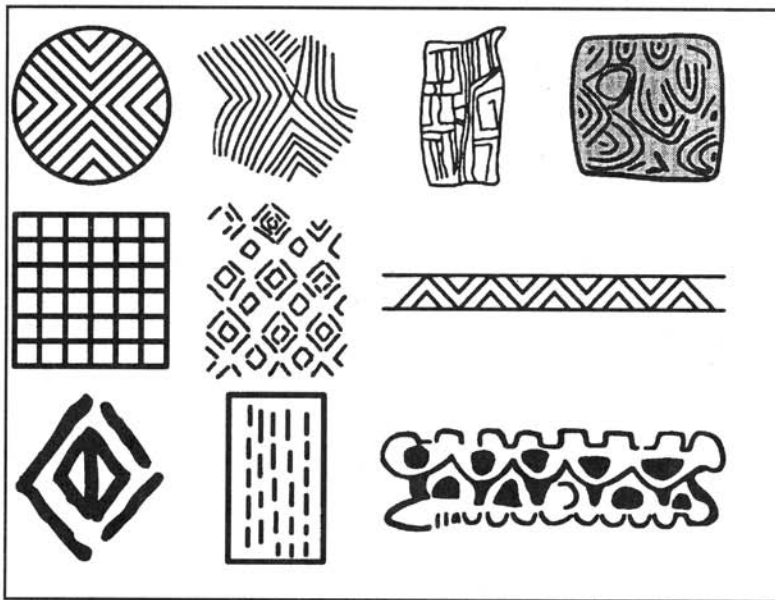


Figure 21.12. Pictograph stamp and pattern figures, Atures area. These are similar to designs on body stamps used by modern groups and ceramic or stone roller stamps from archaeological contexts. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

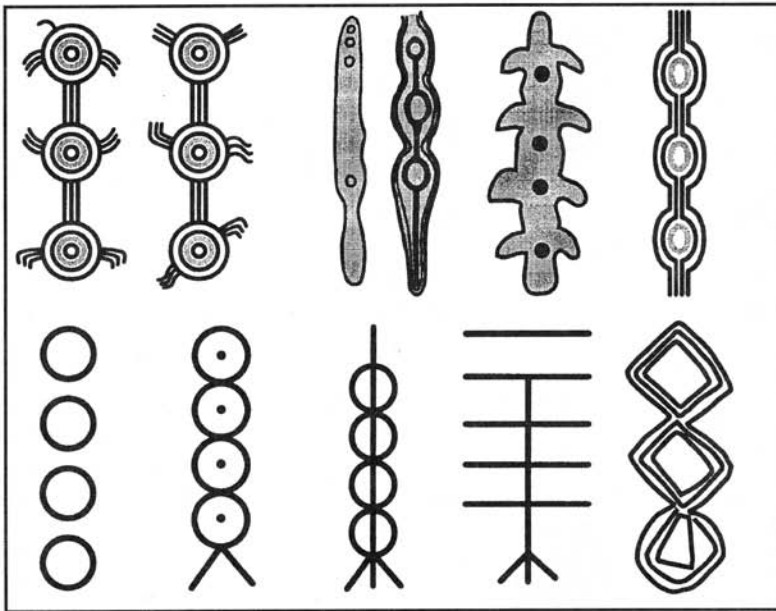


Figure 21.13. Pictograph vertical series geometric figures, Atures area. These occur late in the pictograph sequence. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

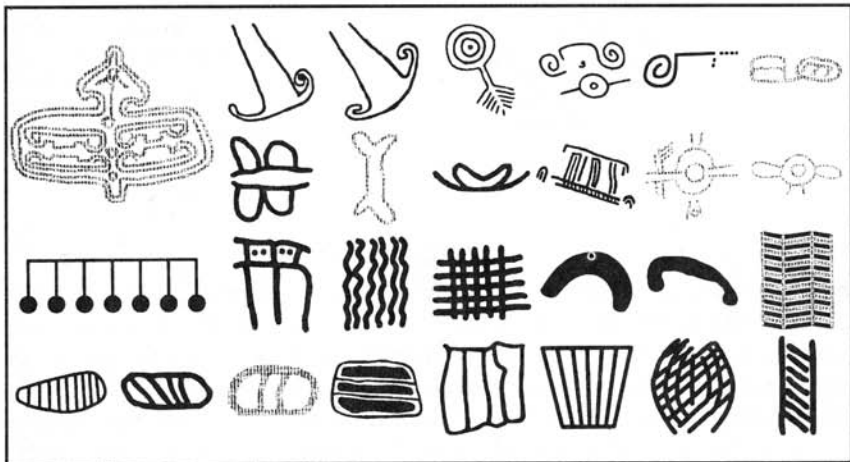


Figure 21.14. Pictograph miscellaneous geometric figures and motifs, Atures area. These occur late in the pictograph sequence. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

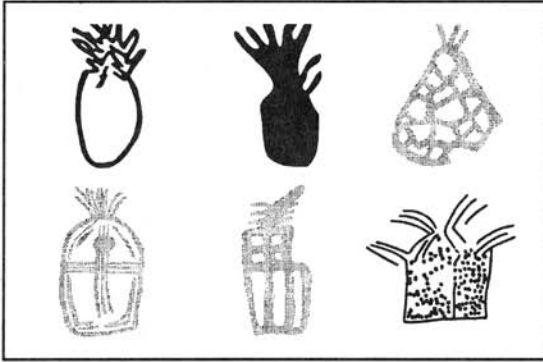


Figure 21.15. Pictographs plant (pineapple?) motifs, Atures area. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)



Figure 21.16. Pictographs of miscellaneous objects, Atures area. Church, Indian house (historic), hafted stone axe, ceramic jar. Solid color is red or black; shading is white. (After Greer 1995; not to scale.)

Petroglyphs

Pecked and incised petroglyphs, some still containing colored pigment (Dubelaar 1986b:7–10), mostly occur on boulders and sloping bedrock exposures along waterways, particularly major rivers. They are most common in the context of rapids, fast moving water, waterfalls, and deep pools (Botero and Oostra 1977:28), where fishing is best; they often occur within the channel itself. Some petroglyphs are covered during high water and can only be viewed when water recedes during the dry season (Koch-Grünberg 1907:18, 19, 52, 66; Netto 1885:551–52; Stradelli 1900:458; Wallace 1853; Williams 1985:336). During this season, low water forces fish into deeper holes and channels, and this is where petroglyphs are most concentrated. The association of petroglyphs with fishing (Koch-Grünberg 1907:76)—or procurement of riverine animals—is also supported by ethnographic data (Reichel-Dolmatoff 1971). Most figures are scattered across

the rock surface with no obvious integrative planning (Koch-Grünberg 1907:38). In most cases, relatively little is known of the age, chronology, and archaeological association of petroglyphs, although the situation is better in areas of more intensive recording such as parts of Brazil and western Venezuela. The northern Amazonia-Guianas petroglyph system mostly appears unrelated to pictographs (figs. 21.17–18), although researchers are divided on the subject. There is some minor sharing of motifs between the two systems—more in some areas, time periods (especially late), and subjects than in others. Ethnographic information also suggests a similar function, especially pertaining to fertility, food procurement, and ecological regulation, at least in later times (Reichel-Dolmatoff 1971, 1975, 1978, 1987; Valles 1993; Zerries and Schuster 1974).

A few giant petroglyph panels—possibly somewhat related to riverine sites—are etched high on open granite hillsides in the area of the Atures Rapids on the Orinoco, in both Venezuela and Colombia. Enormous figures—anacondas 30–50 m long, huge humans, birds, lizards, caimans, centipede-like figures, and various designs and symbols—are intended to be seen for great distances or to

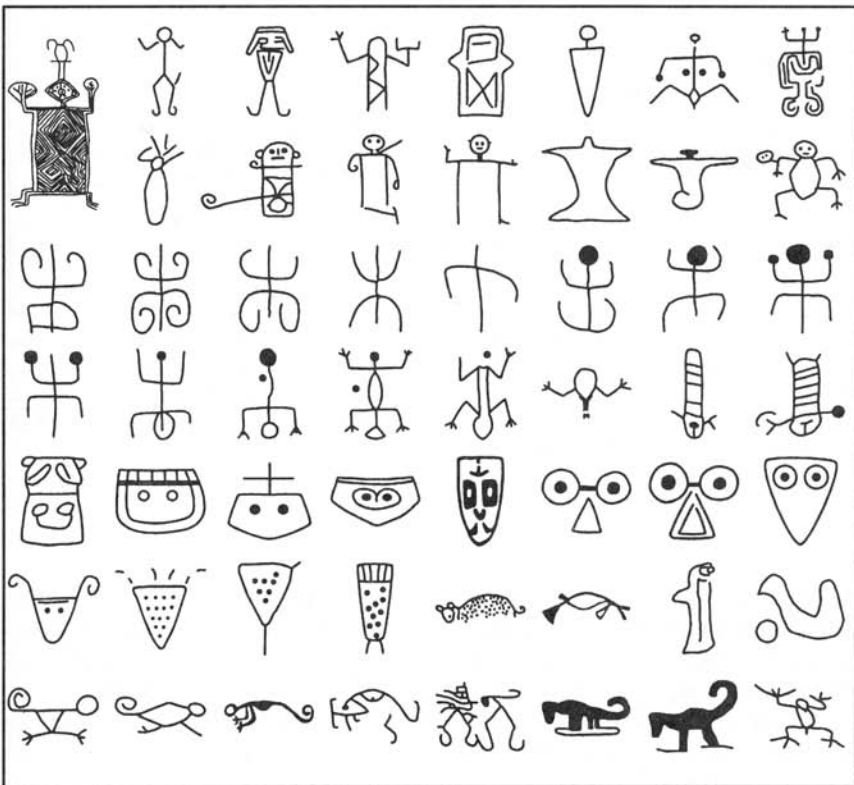


Figure 21.17. Petroglyphs of human and animal motif classes, upper Orinoco and tributaries from Atures Rapids to mouth of the Casiquiare, Amazonas State, southern Venezuela. (Some figures after photos in de Valencia in Sujo 1987; not to scale.)

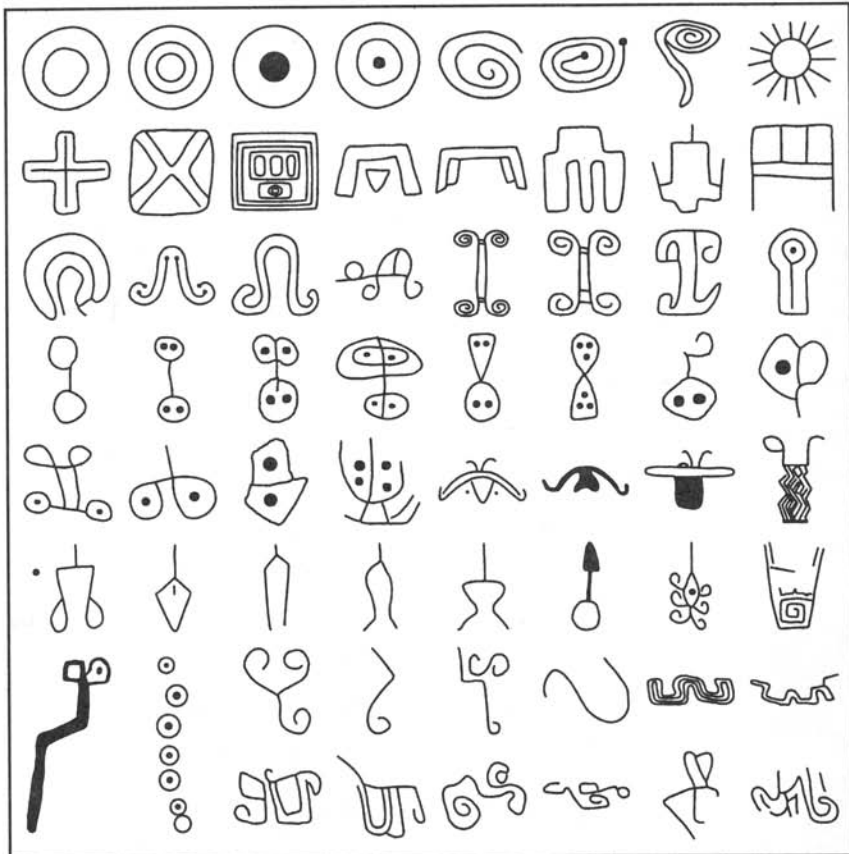


Figure 21.18. Miscellaneous petroglyphs on the upper Orinoco and tributaries from Atures Rapids to mouth of the Casiquiare, Amazonas State, southern Venezuela. Variations of most figures are repeated at various sites throughout the area and down into the Colombian lowlands (cf. Koch-Grünbert 1907). (Some figures after photos in de Valencia in Sujo 1987; not to scale.)

look out over vast expanses. The massive petroglyphs appear to be a local expression, probably with stimulus from traditions originating upstream to the south. Their age is uncertain, but a similarity with late prehistoric painted figures in local caves suggests a date of around A.D. 1200–1400 (Greer 1995).

Other petroglyph classes include carved stelae and faced rock, such as those surrounding dance plazas in the Caribbean. All appear late and seem to be local expressions of a general system widespread in Central and South America where some ballcourts and dance plazas are bordered by plaques with carved human portraits and other figures.

Rock Art in Underground Caverns

Paintings, engravings, and various forms of sculpture are also associated with underground caves and caverns. Markings occur around the entrance zone in daylight, further back in the twilight zone of limited indirect light, and in the dark zone where observation is possible only with artificial light. Little synthesis has been done for this kind of site in the New World (Greer and Greer 1995, 1997; Faulkner 1995, 1996; Stone 1995).

In South America, caverns containing pictographs occur but are not well publicized. Unpublished photographs from Brazil show that simple to very complex paintings occur in the mouths of enormous caves as well as far back in the dark zone. Across the continent, however, the distribution, age, and function of such pictographs presently are unknown. To my knowledge, no dark zone paintings have been noted in Venezuela, Colombia, or Ecuador although numerous caverns exist, some with dark zone passages used for ritual activity, human burial, and extraction of various resources, such as birds and eggs.

Dark zone paintings and other kinds of figures are most common in limestone caverns in the Caribbean, particularly on Cuba (100+ sites), the Dominican Republic (25+), and to some extent Puerto Rico (3+) and other islands (Antonio Núñez, personal communication, 1995). Information on Cuban sites is mostly available due to a lifetime of recording by Núñez and colleagues (Núñez Jiménez 1975, 1985, 1995). Most of the island's rock art is associated with underground caverns, where dark zone locations were specifically selected for special use throughout the island's occupational history of several thousand years.

Paintings are the most common form of dark zone art and occur on clean rock faces. Petroglyphs are less common and usually occur on poorer-quality surfaces near the cave mouth. Interior cave formations occasionally are modeled into three-dimensional faces or anthropomorphs, mostly in eastern Cuba and the Dominican Republic.

Passageways, travel routes, burial areas, and ceremonial stations are marked with painted or engraved figures. Some painted figures occur long distances from visible light while others, not actually within the darkness, appear to pertain to dark zones or activities which took place there, such as unique figures in entrances or at the beginning of passageways in recognition of the dark cave interior (Núñez Jiménez 1975, 1985; Fernández Ortega 1994). Núñez Jiménez (1995) has suggested that in many caves the first figure either marking the entrance or encountered inside the entrance is different from all others in the cave and perhaps designates or identifies that particular site. At Cueva Pluma (north-central Cuba), for instance, I have observed a red painted sun symbol (the only one at the site) marking the entry to a passage where 200 m distant begins a long series of painted walls, some with figures also in liquid red fingerpaint identical to that used for the sun.

Rock art under or near interior *skylights*—natural eroded openings in the ceiling—may be seen in natural light but can be reached only through dark passages with the use of torches. This is especially the case with geologically old caves in the Caribbean. Some skylights may be celestial observation points,

and associated rock art may pertain to nighttime viewing of star constellations and the moon (Núñez Jiménez 1975, 1985). In other caves pictographs in normally dark areas may be selectively lit at certain times of the year. On the Isle of Pines off the southwest coast of Cuba, sunlight shines through a cave entrance and onto the principal figures, in otherwise dark areas, only at the time of summer or winter solstice, depending on the figure (Núñez Jiménez 1985; Gutiérrez Calvache n.d.).

Previous work on dark zone art in Cuba and other islands has been mostly descriptive with some comparison between sites, but with little discussion of time depth, chronology, or geographic differences. Differences in content, style, setting, subject matter, function, materials, and technology reflect a long history and some geographic variation, but detailed analyses of these differences have not been published (Núñez Jiménez 1975). Only recently have researchers begun to define descriptive and possibly functional styles, the first step to other cultural considerations (Gutiérrez Calvache 1992, 1994a, b; Guarch Rodríguez and Pérez Iglesias 1994; Maciques Sánchez 1988). However, superpositional relationships between distinct styles are common, and my observations suggest they represent different cultures and ages. I also suggest a temporal change in cave art, with early paintings directly associated with ritual, changing more toward a referential system of symbols, and finally to a biographic recording of events, still with religious overtones.

HISTORY OF ROCK ART STUDY

Writings have mentioned rock art since Columbus first landed in the Caribbean. Explorers, army patrols, missionaries, travelers, and self-made geographers and ethnographers continued to look and write well into the 1900s. After 1900–1920 reports became more serious about rock art, especially as related to Indians in general. Modern, post-1950 works reflect the general trends of historical conjecture, attention to detail, specialization of research interests, and studies of limited depth or extent. The modern approach essentially follows the New Archaeology of questioning everything and demanding more reliable data, at a time of more available money, better transportation facilities, and more accessible back country. This has led to increased detail and a wider variety of studies. Although there is still little information on site inventory, and even less on how to organize what these sites have to offer, progress is steadily increasing in speed and intensity.

1500 to 1800

From at least the mid-1700s Spanish missionaries and numerous travelers noted the existence of rock art in northern Amazonia and described petroglyph sites and figures (Dubelaar 1986b; Koch-Grünberg 1907:1; Novoa Alvarez 1985; Perera 1986a, 1986b, 1992; Scaramelli 1992; Sujo Volsky 1975; Zent 1992). Diaries and descriptions by explorers in the early 1800s, such as Humboldt's (1821, 1956) observations of painted caves and human burials, introduced sites

and native peoples to the Western scientific and geographic communities. About 1798 Bueno, a local priest, prepared a rock art study on the middle Orinoco but, as reported by Humboldt, his manuscript was lost in a flood and was never published.

1800 to 1940

Throughout the 1800s and well into the 1900s—concentrated during the 1880s to 1920s—description and conjecture continued from explorers, travelers, and ethnographers (Broglia 1890; Brown 1873; Chaffanjon 1986; Crevaux 1988; Ernst 1889; Koch-Grünberg 1907, 1909; Labesse d'Angers 1904; Marcano 1971; Matos Arvelo 1912; Stradelli 1900). The quality of information, however, is variable. Petroglyph drawings by Stradelli (1900), for instance, are imprecise, and much of his ethnographic information is likewise unreliable (discussed by Koch-Grünberg 1907:21, 47).

Visitors mostly traveled along rivers by boat, with minimal experience overland, and relatively little attention therefore was given to pictographs, given their mostly upland locations. Paintings were thought to be rare, recent, relatively unimportant, and with little meaning because they were done with pigment and were assumed to weather quickly (Im Thurn 1883; Koch-Grünberg 1907:15). Riverine petroglyphs associated with rapids and waterfalls, however, were thought to be old, and therefore more important; they were common, widely distributed, and deeply carved into the rock, thereby being mostly impervious to weathering (Im Thurn 1883; Koch-Grünberg 1907:15). The belief that petroglyphs are older is strong even today, sometimes with the corollary that older things are more important and pictographs are somewhat expendable because they must be recent. This attitude is not limited to South America.

Most early commentaries agree that all rock art was produced by earlier people and not by modern groups. Some early explorers, mostly from the mid-1800s, believed that petroglyphs, because they were well-made and often detailed, must have been done by previous higher, more complex cultures than the hunter-gatherers and simple horticulturists they were familiar with. Some even attributed the “writings” to Egyptians, Phoenicians, and anyone else considered worthy of such feats (syntheses in Dubelaar 1986b; Koch-Grünberg 1907:17; and Sujo Volsky 1975). Basic human characteristics of art development or religio-artistic expression apparently were not thought applicable to people of the forest.

Particularly during the early 1900s, ethnographic observations pointed out renewal of petroglyphs over a long period of time, modern renewal of glyphs, related modern interpretative beliefs, and considerable detail on paints and decorations (Botero and Oostra 1977:28; Koch-Grünberg 1907, 1909). Indians were said to paint their bodies, weapons, other items, and pictographs with vegetal paint. Im Thurn's comment (1883) that people also used a red earth pigment, or mineral paint, is the only such reference and is more likely speculation rather than observation. There was also considerable interest during this period in technological aspects, such as how petroglyphs were made. One project to make new petroglyphs and renew (or deepen the grooves in) old ones

showed the work to be difficult, time consuming, and easily distinguished from older figures (Koch-Grünberg 1907:79).

Mid-1900s to Present

The mid-1900s, following a worldwide trend, saw an increase in scientific work, with attention concentrated on ceramic sequences (Cruxent and Rouse 1958, 1961; Rouse and Cruxent 1963). Published articles became progressively more detailed and attempted to place rock art into limited archaeological, ethnographic, and interpretive contexts (Acosta Saignes 1956, 1961, 1980; Padilla 1956; Tavera-Acosta 1956). The main introduction to pictographs occurred during the late 1940s and 1950s (von der Osten 1946; Cruxent 1946, 1960) and, since the 1950s, there has been increased attention toward painted art, especially in the Orinoco country (Colantoni and Delgado 1992; Perera 1983, 1986b; Perera and Moreno 1984; Sanoja 1977; Sanoja and Vargas 1970), nearby areas of Colombia (Reichel-Dolmatoff 1971, 1975, 1978, 1987), and over much of Brazil (Guidon 1986; Prous 1994). Attention to riverine petroglyphs has continued throughout the region because of their prominence (Cruxent 1947; Cruxent and Kamen-Kaye 1949a, 1949b; Gheerbrant 1955; Grelier 1953, 1955, 1957; Zerries 1956). In the last few decades more detailed studies by specialists have become common, in concert with a general increase in ethnographic and archaeological work.

Rock art in northern Amazonia-Guianas has been discussed to various degrees, but there is mostly little detail on site content and distribution. Some areas have better survey coverage than others, but none is complete (Dubelaar 1986a, 1986b, 1995; Greer 1995; Scaramelli 1992, 1993). Sites have not been recorded in detail, and usually only the most impressive or obvious figures are described, while the underlying, more faded, and therefore older figures are not mentioned (e.g., Sanoja and Vargas 1970). There is mostly no indication of the number of sites, site locations, geographic or topographic distribution, range of contents, or overall amount or diversity of art.

As part of an increased sensitivity toward rock art worldwide, more detailed recent studies emphasize general recording, stylistic analysis, ethnographic considerations, comparisons with other iconographic forms, and future research directions (Greer 1995; Scaramelli 1992, 1993; Scaramelli and Tarble 1993; Sujo Volsky 1976, 1978; Tarble 1990a, 1990b, 1991, 1993; Tarble and Scaramelli 1993a, 1993b; Tarble and Vaz 1986). Researchers have compared rock art with other aspects of material cultural (such as roller stamp designs and pottery decoration) within dated ceramic periods in an attempt to understand better the larger iconographic context (Tarble and Vaz 1986). I have attempted to organize upper Orinoco pictographs into a temporal framework and to relate that framework provisionally to the established ceramic chronology and modern ethnographic context (Greer 1993, 1994, 1995, 1998, n.d.). The ongoing study of body painting is expected to contribute to rock art motif interpretation (Hernández Rosas 1992; Valles 1993; Zerries and Schuster 1974).

REGIONAL OVERVIEWS

Syntheses of South American rock art have been completed from various levels at broad-areal, regional, country, and local perspectives. Koch-Grünberg (1907) provides an early synthesis and critical review of the present state of knowledge of what was, at that time, known of South American rock art and discusses in detail petroglyph observations made during his ethnographic work on the Brazil-Colombian border. Roe (1993) categorizes kinds of advances and directions for further work for the northern Amazonia-Guianas area while looking at his specialty area, Puerto Rico. Consens (1991, 1995) presents a continent-wide synthesis from his perspective of southern Brazil, Uruguay, and Argentina. Noteworthy for its incredible detail, however, is the continental coverage by Dubelaar (1986b), who presents historical and motif syntheses somewhat from his longstanding Caribbean perspective. This work is absolutely essential for anyone working in South America.

Other country-wide inventories and areal discussions which include lowland areas have been presented for Venezuela (Sujo Volsky 1975; de Valencia and Sujo Volsky 1987), the Guianas and parts of the Caribbean (Dubelaar 1986a, 1995), Colombia (Botero and Oostra 1977; Pérez de Barradas 1941), Ecuador (Porrás 1985), Brazil (Prous 1992, 1994), Peru (Núñez Jiménez 1986; Ravines 1986), and Bolivia (Strecker 1987, 1995). Anyone interested in South American rock art should keep abreast of recent publications, reviews, and updated news from SIARB (Sociedad de Investigación del Arte Rupestre de Bolivia) in Bolivia and GIPRI (Grupo de Investigación de la Pintura Rupestre Indígena) in Colombia. Other national publications from Argentina, Uruguay, Brazil, and elsewhere also are regionally informative.

The usefulness of these regional studies should be strengthened when more local work is done based on dating the art and placing it into overall geographic and cultural contexts (Greer 1995; Scaramelli 1992; Tarble 1990b, 1991). One such study, based on assumed relations between rock art and nearby villages, places middle Orinoco rock art sites into an integrative social model of prehistoric activity and land use. Caves are viewed as representing shamanic activities, which have different geographic associations from other community activities (Tarble 1990b).

Most reviews exhibit a universal interest in chronology, although such studies generally have met with limited success. Considerations of regional similarities and differences, both in technology and form, have led to attempts to recognize temporal, geographic, analytical, and cultural divisions (or *styles*) within the art. Recording methodology is varied, but an increase in technological approaches is aimed at enhancing the quality and quantity of data available for research, with computer manipulation of digitized photographic images presently in the forefront. There is agreement that rock art understanding ultimately must be achieved by studying those motifs relative to other kinds of iconography and native data such as body painting, ceramic designs, and mythology. Roe (1993)

points out the value of componential analyses—breaking motifs down into their finest component parts and then building them back up analytically for an understanding of their construction—and several researchers point out the need for panel or site-wide analysis (Consens 1991). Unfortunately, there presently is very little distribution of basic field information upon which to base any kind of analysis, and many areas (including all of Venezuela) have no central system of site numbering or site files. Even the results of analyses themselves generally are difficult to obtain, whether based on firm data and careful work or the product of free and unbridled imagination.

ORGANIZING ROCK ART IN TIME AND SPACE

Regional Culture History

Rock art, combined with other kinds of archaeological information, contributes to a basic understanding of regional culture history. In southern Venezuela, at least by agricultural times, rock art and ceramic distributions indicate that local resident populations were affected by cultural influences moving both up and down the Orinoco. The main spread of people and ideas, at least beginning with introduced ceramics, appears to have been from development centers on the middle and lower Orinoco, and from there up the river and tributaries, most strongly to the Atures Rapids boundary, but seemingly beyond and into northern Brazil and southern Colombia (fig. 21.3). In a contrasting movement, people and ideas spread northward from the Amazon drainage of northern Brazil, both into the Guianas and directly across Venezuela. The area of the Atures Rapids seems to have impeded these expansions somewhat, suggesting some kind of local autonomy. Pictograph stylistic distribution, viewed chronologically, suggests that a local resident population was technologically, and to some extent politically, influenced by these movements of people and ideas, in different directions, across broad areas of the continent. The resulting cultural system, viewed both ethnographically and through rock art, is one of extreme complexity of various cultures differentially affecting each other in different ways and to varying extents, with separate, but overlapping, geographic distributions and a long chronology of stylistic change (Greer 1995).

Ages of Paintings and Engravings

It is not known how many different rock art systems are in the northern Amazonia-Guianas region. There are systems of upland pictographs (including river valleys), riverine and high bluff petroglyphs, non-riverine petroglyphs (upland and varzea settings), and complexity between categories based on differences in distribution, style, and content (Botero and Oostra 1977:27). Categories may be parts of different cultural or social systems and different ages. What is clear, however, is that rock art production covers a very long time span.

Of universal interest is the absolute age of the oldest rock art. Pictographs in excavated cave sites in the São Raimundo Nonato area of northern Brazil (Piauí) may extend well back into the Pleistocene to 17,000 B.P. or more (Guidon 1986;

Guidon and Delibrias 1986), with some firmly dated deposits containing pieces of spalled wall with possible paint suggesting that wall painting may extend beyond 30,000 B.P. (Delibrias and Guidon 1986:315; Guidon 1986:770). Bednarik (1989:104–5) challenges the assessment that paintings still visible on the walls are that old. He prefers an age of several thousand years for figures in the Pedra Furada rockshelter (which he presumably equates with Guidon's Nordeste Tradition of about 6000+ B.P.) and at least 9500 for the buried panel at Perna I. He also notes that other, previous paintings easily could have existed at these sites during the Pleistocene. He strongly proposes, however, that some of the completely repatinated petroglyphs at two other nearby sites are Pleistocene in age and points out their conformity with early prefigurative—geometric or freestyle—art from other parts of the world.

Pictographs at Caverna da Pedra Pintada, in northeastern Brazil (Pará) midway between the Amazon mouth and confluence of the *Río Negro*, have been indirectly dated to a little over 10,000 years. This relatively conservative age, if the pictographs actually are associated with the dated deposits, supports the São Raimundo sites to the south by showing that formal styles of complex wall paintings were well developed at least by terminal Pleistocene times (Gibbons 1996; Hall 1996; Roosevelt 1992; Roosevelt et al. 1996). Caves with portrayals of early camelids and hunting scenes date beyond 9,000 years along much of the Andes (see Ravines 1986), and early traditions dating back to 11,000 years are fairly well-defined for much of eastern and central Brazil (Schmitz 1987).

While people continually quibble over the earliest ages of archaeological materials in South America, it appears from an increasing number of dated sites that northern lowland areas were occupied sometime prior to 9500 B.P. (Barse 1989, 1990; Roosevelt et al. 1996). Complex recognizable pictograph styles were firmly established at least in Brazil before 10,000 B.P., and chronological ordering and other studies indicate pictographs in Venezuela, Colombia, Bolivia, and probably other areas extend back well into the Archaic, currently at least to 5000 B.P. Only a minuscule portion of rock art known to exist here has been studied (though only barely), and continued survey and direct dating of rock art certainly will add numerous sites in the pre-9000 year category. Thus, the general tradition of painting appears to date back at least to the end of the Pleistocene, and non-riverine petroglyphs in some areas may be at least as old.

Most of the known rock art in the northern Amazonia-Guianas area seems to be from Archaic and ceramic periods. Early ethnographers and travelers from the 1880–1920 exploration period noted that river petroglyphs were not all the same age (Koch-Grünberg 1907:53). Some were noted as recent, only a few days old, while others appeared to be very old (Koch-Grünberg 1907:66–67). Riverine petroglyphs usually occur on the hardest of granite boulders, and most therefore were not seen as representing the work of a single person at one episode but rather the continued work of many people, often generations. This explains not only deep grooves but also the changing styles of add-on elements to single figures, often resulting in a confusion of lines and incongruous figure parts (Koch-

Grünberg 1907:76–78). Determining the relative age of figures on a single boulder or at a particular location was believed impossible due to constant renewal, change, addition, and alteration of figures. Indeed, it was thought almost meaningless to attempt such a chronology (Koch-Grünberg 1907:78).

Various chronological schemes support early dates for painted art, but absolute ages for petroglyphs and relative ages for petroglyphs-pictographs remain in question. It presently appears that pictographs have a long history of use and probably extend back many millennia. They are thought to have begun earlier and continued later than most *riverine* petroglyphs, although there is temporal overlap.

It currently seems that riverine petroglyphs are mostly fairly late within the overall history of the region, although earlier ones undoubtedly exist. Style of execution, general application to rock surfaces, placement of motifs relative to each other, specific motif forms, and stylistic and motif uniformity indicate an unusual degree of continuity for such a large region and suggest a single artistic tradition, presumably over a reasonably short time span and done by people with a common heritage or in contact with each other. The earliest recognizable petroglyph motif on the Orinoco is the outlined cross, which comes into the painted chronology around 1000–1500 B.C., presumably about the time of the Saladoid entry, but continues in use well into later ceramic periods. Costumed human dance figures constitute a shared motif class that occurs throughout the region and seems to relate to similar artistic traditions dating to or slightly after the introduction of Saladoid ceramics, but again the general motifs continue considerably later. Other motifs similar to those in painted art, and bearing strong similarities with Arawak designs, do not seem to appear until sometime after about A.D. 500–1000. It is possible that the most commonly observed riverine petroglyphs are associated with various movements of Arawak people or ideas.

How recently rock art production continued is still open to question. Some production of both pictographs and petroglyphs continued into early historic times (Dubelaar 1986a:45–46), as evidenced by portrayals of European people, animals, ships, churches, warfare, and other distinctive subjects. Pictograph production apparently ceased before the memories of the present people, although historic figures on the Orinoco date at least into the middle 1700s (Greer 1994, 1995) and likely somewhat later. Riverine petroglyph production in some cases continued into historic times, and some Indians during the 1800s reported having made petroglyphs, or at least having seen them made during their youth. Active renewal, cleaning out, and modifying of older petroglyphs continued into the early 1900s (Dubelaar 1986a; Koch-Grünberg 1907, 1909) and may still be practiced today on the Colombian Orinoco (Harry Marriner, personal communication, 1996). At least one Panare Indian on the middle Orinoco is reintroducing the practice of petroglyph making (Rob Quinlan, personal communication, 1996). Various forms of modern iconography, including seemingly haphazardly painted designs, figures, and handprints on adobe-plastered houses, are close in form and application to older pictographs.

PREVIOUS APPROACHES

Researchers have attempted to organize rock art in local areas of South America into a number of analytical and organizational units, terms, and concepts (Consens 1991), not all of which are used in traditional ways: *styles, types, varieties, units, traditions, great traditions, sub-traditions, phases, facies, categories, stylistic groups, stylistic units, stylistic complexes, stylistic tendencies, periods, great periods, modalities, and horizons*. Constructions are usually based on perceived similarities and differences in technology, content, superpositional relationship (or other indicators of temporal difference), and geographic distribution. Three general organizations are discussed here.

Guiana Shield Complex

Williams (1985), with a central research base in Guyana, proposes that rock art in the northern Amazonia-Guianas area and into the Caribbean is internally homogeneous enough to be considered a single analytical unit, the *Guiana Shield Complex*. Although aware of previous observations that petroglyphs and pictographs have different styles, functions, and distributions (e.g., Botero and Oostra 1977:27–28; Reichel-Dolmatoff 1971), he contends that the two forms are indistinguishable in ideational content and differ only in the medium employed, implying common origin. They both date from pre-ceramic and ceramic times. Graphics elements are shared among various media, including pictographs, petroglyphs, body painting, carved gourds, and women's aprons (fig. 21.19). Animals are shown in profile, while humans and birds are shown in full frontal view with bilateral symmetry (with a couple of notable exceptions). Williams points out that some petroglyph panels are "integrative" in that all elements were placed together on a single boulder for a single purpose or message (conflicting with the previous evaluation by Koch-Grünberg 1907:38). In several areas petroglyph figures lie permanently below present-day water levels and may have been made during drier periods. Some large sites have figures "stratified" on high walls, with figures up to 8 m above the ground, indicating use of platforms or ladders.

The Guiana Shield Complex, as discussed by Williams, comprises a number of graphic "types" (or motif complex classes): a *Figurative Type* (called the *Aishalton Type*; biomorphic forms—animals, humans, plants, other figures—and geometric forms); a *Human Dancer Type* (called the *Timehri Type*; dancers in typical lowland palm leaf costume; includes masks); and *Fish Trap Type* (presumed traps of various forms). Kinds of figures differ between rainforest and savanna settings, with some overlap in correlation. Coastal settings do not have a motif complex unique to coastal subsistence, but rock art styles instead represent adaptations to forest or savanna settings. Some local areas have unique petroglyph types (such as the Fish Trap Type). Forms have different, overlapping geographic distributions that suggest a *west to east* diffusion across northern South America and two routes into the Antilles. The Human Dancer Type is correlated with Saladoid expansion or migrations of horticulturists out of eastern Venezuela and

<p>Clothing clothing (various) dance aprons, women's (woven) dance aprons, men's (longer) dance clothing (ceremonial costumes, of leaves)</p> <p>Weapons arrow points (wooden or cane) arrow point holders arrow shafts blowguns blowgun dart carrying tubes</p> <p>Body Decoration human bodies (both sexes, all ages) human faces (both sexes, all ages)</p> <p>Daily Use Items baskets woven trays manioc grater boards benches (wooden) ceramic vessels (utilitarian) ceramic urns for hallucinogenic beverages toys for children canoes paddles (for boats)</p>	<p>Houses house fronts (Tukano) house posts (Tukano) house walls (mud or wood; Panare, Guahibo)</p> <p>Ceremonial Objects dance masks dance staffs cigar holders (wooden) masks placed on dead bodies human skulls (cleaned) of the deceased</p> <p>Musical Instruments drums drum sticks flutes (bone) flutes (cane; many kinds) panpipes trumpets (wooden) ceramic whistles bullroarers rattles (cane) rattles (gourds) dance stamping tubes</p> <p>Other sand drawings (temporary) human figures carved on trees (bark) in the forest</p>
--	---

Figure 21.19. Ethnographically painted objects, southern Venezuela and lowland Colombia.

into the Antilles, beginning about 2000 B.P. (Williams' date for Saladoid). The expansion corresponds with an arid period and therefore may have been a response to environmental stress (Williams 1985).

Williams compares overall rock art function with Tukano ethnographic concepts outlined by Reichel-Dolmatoff (1971). Tukano culture is based on a symbiotic relationship between humans and animals used as food, in which access to dietary resources is regulated and permitted by the mythological Master of Animals (and similar counterparts), with requests made to him by village shamans, and with responding cultural actions controlled by the shaman. Petroglyphs reflect the need to maintain equilibrium between humans and animals and preserve the biotic equilibrium for long-term human survival. Petroglyphs help assure a least-effort, least-risk procurement efficiency strategy in contrasting types of environments, with orientation mainly toward inland terrestrial settings and less for marine resources procurement. Human Dancer figures serve as symbols for human fertility and ecological increase (e.g., in food production of animals, plants, and horticultural yields), while petroglyphs of the Figurative type serve as signs regulating extractive behavior. Fish Trap Type figures, and perhaps others, may be signposts, to designate food procurement locations and extractive controls associated with those locations. These original uses suggest it is best to consider petroglyphs from a sociocultural perspective rather than an art-historical approach (Williams 1985:375-80).

Ethnographic work prior to Williams' discussion also pertains to this complex. It was noted early that petroglyphs throughout the northern Amazonia-Guianas area, and perhaps across all of lowland South America, have an overall distinctive character that suggests a direct developmental relationship (Koch-Grünberg 1907:77). This, of course, is essentially the basis for Williams' (1985) Guiana Shield Complex—an overall stylistic similarity across a wide area. Within the area, early ethnographers recognized two classes of petroglyphs distinguished by the depth of the groove—deep or shallow—each class with its own kinds of figures (Im Thurn 1883). From the many differences, each class was thought to have been done by different people and for different purposes (*ibid.*), and not necessarily of the same age (Koch-Grünberg 1907:15–16). These classes can be related somewhat to Williams' types.

Deep engravings are carved or pecked deeply into the parent rock, sometimes up to 3 cm into granite. Figures mostly are smaller (around 30–45 cm tall) than the shallow class and occur as multiple elements in a group. These are also usually representational (men, monkeys, snakes, other animals) or geometric designs (Im Thurn 1883); many of the same designs used today in body painting (Koch-Grünberg 1907:15–16). These figures generally pertain to Williams' (1985) Figurative Type petroglyphs.

Shallow engravings are made by light pecking to remove only the discolored surface of the stone. Figures are usually larger (up to 4 m tall) than the deeper class and are mostly stylized portrayals of costumed dancers or masks (Im Thurn 1883). These coincide with Williams' (1985) Human Dancer Type figures.

Some costumed dancer petroglyphs are portraits of modern mythological individuals—named, with their own personalities and specific functions, and readily identifiable by special details of their costume or biological attributes. These mythological beings are portrayed today both as costumed dancers in ceremony and through modern drawings of the personages those dancers represent. Petroglyph form and detail agree exactly with modern drawings of specific dance costumes (Koch-Grünberg 1907:54–57; 1909:II:70).

Koch-Grünberg (1907:58) sees that petroglyph dance figures and masks of this kind occur throughout the region. He suggests, therefore, that Arawakan speakers using these kinds of dance costumes and masks most likely spread from *east to west* out of the Guianas and into Venezuela, then south into the Rio Negro drainage of Brazil, and next into the upper Guaviare-Vaupés area of Colombia where the Arawaks passed the traits on to Betoya groups (now Eastern Tucanoid speakers) spreading in from the west and southwest (Koch-Grünberg 1907:58–59). The *east to west* direction of spread is opposite the proposed *west to east* direction of Williams (1985).

Both researchers note the possible use of distributional information from petroglyph motifs, such as dancers and masks, to identify historical movements of cultural groups, and contacts between groups, and thereby model large-scale aspects of the peopling of northern Amazonia and subsequent cultural interactions within that area and beyond (Koch-Grünberg 1907:60). Within the general category of dancers and dance masks, there appears to be an age hierarchy of dancer

forms, more or less progressing from simple portrayals to forms more detailed, elaborate, and stylized (Koch-Grünberg 1907:61).

The proposed Guiana scheme of Williams lacks detail and simply discusses briefly some characteristics of the regional rock art—based on non-representative distributional data (which is all that is available) and without taking into account time depth—rather than a culturally integrated system. It is, however, one of the few attempts, along with Im Thurn (1883) and Koch-Grünberg (1907, 1909), to organize rock art data of this region beyond simple description.

THE SOUTHERN VENEZUELAN PICTOGRAPH CHRONOLOGY

Pictographs along part of the Orinoco drainage in southern Venezuela have been tentatively organized into a series of periods and geographic subdivisions based on physical characteristics (technology and manner), content, superposition, and distribution (Greer 1995). Technological attributes include kind, color, shade, and thickness of paint. Manner of execution is exemplified by figure size, line width, amount of figure detail, and degree of execution control (sloppy versus finely executed). Superposition is singularly most important for organizing the sample into a chronological arrangement of artistic differences. Specific motifs have different geographic and temporal distributions both absolutely (where they occur overall) and relatively (how common or rare they are in different places or at different times). Similarities and differences in technology and manner indicate relationships between regions. Some widespread patterns persist through several periods while being interrupted or affected by outside influences. Integrating the pictographic analysis with archaeological information on ceramic cultures produces a wider view of rock art organization into provisional units to serve as a temporary framework for regional considerations and for more detailed future reevaluation and reorganization.

The result has been a provisional scheme of time periods and branches, or geographic zones, observed on a broad level. Presently missing are precise definitions of phases, or the individual periods of each branch. Eventual phase definition will be useful for detailed consideration of the geographical influence of changes between branches and periods. For instance, each phase will have a different area of primary residence, different areas of influence, and different degrees of outgoing and incoming influence relative to preceding or succeeding phases in that area. Relations between periods (both within and between branches) and between branches (both within and between periods) may be easier to discuss with phase designations. The fluidity of phase content and extent—through time and space—reflects constantly changing culture settings in the region, a situation that increased—became more complex or less stable—through time. The earliest rock art was somewhat homogeneous and widespread, presumably representing something akin to a single basic culture with similar means of expression and similar beliefs. Succeeding periods became shorter, geographic divisions were smaller and more pronounced, and rock art became more diverse between these various units, while at the same time showing varying degrees, kinds, and directions of influence from one phase to another.

Influence in iconographic style can be a measure of territoriality and cultural cohesion between regions, an indicator of prehistoric regional organization. Territoriality can be measured by core distribution of key elements in rock art content and technology. The intensity and distance of the spread of artistic traits or elements from one place to another indicate characteristics of the source culture, while the degree of acceptance and rejection of design elements and technology is a measure of the cultural cohesion of recipient groups. Thus, distributions of rock art styles indicate cultural traits of contributing and recipient groups, formal boundaries between groups, and the kind and degree of cultural interaction between them.

The proposed sequence of southern Venezuela pictograph periods ranges from early pre-ceramic hunter-collector cultures, through the introduction and development of ceramics, and into the early historic period (Greer 1993, 1994, 1995, 1998, n.d.). Periods are relative, with tentative dates estimated by comparison with the middle Orinoco ceramic sequence, assumed to be applicable to the rock art, of probably 3000–4000 B.C. to A.D. 1750–1800.

Knowledge of middle Orinoco archaeology, and especially the chronology, is less than ideal, although it has been studied for decades. Essentially nothing is known of 10,000 years or more of pre-ceramic occupation, and there is no consensus whether the Orinoco ceramic sequence began 6,000 or 2,000 years ago, or somewhere between. There are, however, basic changes between subsequent periods and differences along the length of the Orinoco and into the llanos to the north and west. Of the various archaeological schemes proposed for this area, the rock art chronology agrees most closely with the La Gruta ceramic sequence of the Middle Orinoco (Greer 1995) proposed by Rouse and Roosevelt (Roosevelt 1978, 1980; Rouse 1978; Rouse and Allaire 1978) and augmented by Zucchi and Tarble (Tarble and Zucchi 1984; Zucchi and Tarble 1984; Zucchi, Tarble, and Vaz 1984; see also Lathrap and Oliver 1987; Oliver 1989 and for a longer time span). Other schemes, however, are equally viable (Sanoja 1979; Sanoja and Vargas 1983; Vargas Arenas 1981).

The key to correspondence between the rock art chronology and the ceramic sequence is the appearance of the intrusive Saladoid culture (or Cedeñoid branch; Greer 1995) with distinctive white-on-red painted decorations. These people brought with them the first pottery, presumably agriculture, and a number of other cultural traits. The immigration is recognized within the rock art sequence by a distinctive style containing newly introduced white paint, and specifically white-on-red designs similar to Saladoid ceramics.

Other proposed parts of the seven-period rock art sequence agree fairly well with the ceramic sequence in both technology and postulated cultural changes from period to period. In general, proposed explanations of cultural attributes within rock art periods and changes between periods based on content, relationships between kinds of motifs, paint technology, and manner of painting agree well with cultural explanations and implications based on ceramic attributes, site distributions, and other kinds of archaeological data.

Within the study zone of about 400 km along the Orinoco there appear to be at least three developmental *branches* relating to different cultural, and to some extent geographical, organizations. Stylistic attributes representing these overlapping ranges are believed to indicate movements of people; degrees of religious, artistic, or political influence; and cultural or political boundaries. Thus, the proposed organization is divided according to both time and space, with interactions at both levels.

Ayacucho Branch

Similarity of content, style, and distribution of early pictographs suggests a degree of cultural uniformity and widespread contact throughout the upper Orinoco region, more or less centered on the Atures Rapids at Puerto Ayacucho, and extending up tributary rivers into interior Venezuela and Colombia. Development of the indigenous rock art tradition begins, probably 4000 B.C. or earlier, as the product of a widespread pre-ceramic base population of local groups, initially hunter-collectors, with no obvious outside influence from other cultures. Before the introduction of ceramics these groups developed a strong social structure, recognized territoriality, and a degree of territorial control. The earliest geometric art, mostly of monochrome reds and light orange, becomes more complex, with changing themes and an abundance of people and animals in a variety of scenes and relationships. It is during this *florescence* period that the first strong external influence comes in from ceramic cultures of the middle Orinoco to the north (Cedeño Branch) and continues, with increasing intensity, during the following periods. Rock art styles of subsequent periods, throughout the ceramic occupation, are progressively more heterogeneous, with changes in technology, content, and geographic extent at least partially in response to external influence.

Thus, the local political unit, as viewed through rock art, is seen to have developed and gained a regional importance. It then limited the degree and geographic extent of the northern pressure and thereby maintained the local identity, integrity, and a degree of territorial control during the encroachment. Lingering integrity is further indicated by the continued trend to retain local rock art technology and general approach to art. By probably A.D. 1400, however, the culture and rock art of the enduring local organization, because of constant pressure, finally had changed enough to constitute new entities within a transformed tradition.

During the local rock art sequence, there is progressive change in use of colors and application manner. For instance, there is a change through time in degree of control, from early well-executed realistic drawings in a variety of highly processed paints to a later expression of sloppily executed meandering figures in crudely mixed paints. The change corresponds with local modern ethnic attitudes that what is of value is only the idea, not how it is expressed, and manner of execution and degree of control are not important (Reichel-Dolmatoff 1987). This decline in quality in later periods also exemplifies local diversification and increased cultural fragmentation as observed by early travelers. There is less regional uniformity of content or approach, and the region

likely was fragmented into small, politically autonomous groups in constant contact with each other, and regionally held together through an extensive and intensive trade network, and other kinds of social interaction—such as intermarriage (group exogamy) and other ceremonies (inter-group cohesion and conflict prevention). This is the situation, observed during early historic times, which continues today.

Sipapo Branch

Pictographs above the rapids apparently represent another tradition or regional development, possibly associated with the upper Orinoco Nericagua ceramic tradition, with technological influence from the south, ultimately from the Río Negro–Amazon drainage in northern Brazil. There seems to be a different set of figures, manner of expression, and an emphasis on distinctive geometric designs. There is also overlap with the local tradition below the rapids (the Ayacucho Branch). Overall, little has been studied of the definition and development of this branch.

Cedeño Branch

The earliest Saladoid ceramics were introduced by Arawak speakers into the middle Orinoco around 1500–2000 B.C. and were decorated with white-on-red paint and curvilinear incised and painted designs (Rouse 1978). The Saladoid culture apparently was formed when people (or at least Osoid stylistic influence) from the western llanos of Venezuela entered the middle Orinoco, and from there spread south (upriver). At about the same time the Barrancoid missionary wave from the lower Orinoco, stylistically closely-related to Saladoid, spread upstream influencing the artistic development of everything it encountered. These stylistic expansions presumably represent population movement and some degree of political power, although perhaps initially affiliated with small-group exploration and trade. Ceramics from this wave extend upstream to the Atures Rapids (Barse 1989; Cruxent 1950; Cruxent and Rouse 1958).

The Cedeño Branch represents this stylistic influence in rock art, first directly from Saladoid and Barrancoid cultures (ca. 1500–350 B.C.), and subsequently through continued development and later iconographic transformations arising out of that combined tradition. The influence appears as the sudden introduction of white-red bichrome representational figures and colorful complex designs. Especially common are portrayals of unusually large red-white bichrome animals and fish and distinctive geometric designs. There is use of new paints, such as bichrome, polychrome, black, a distinctive dark red, and coarser paints. The Atures Rapids also essentially forms the boundary for the initial Saladoid-Barrancoid bichrome and polychrome stylistic influence.

The multicolored elements are intrusive into the local, predominantly monochrome art tradition and indicate interaction between resident people and the intruders, and a new influence into presumably religious aspects of the local culture. Subsequent developments in ceramic decoration are reflected, increasingly, in pictographs throughout the sequence, and this decorative

influence is interpreted as interaction between settled agricultural communities with recognizable modes of ceramic production to the north (representing the pictographic Cedeño Branch) and an established cultural entity with defined territorial boundaries to the south (the Ayacucho Branch). Stylistic distinctiveness of the northern influence and the interaction between northern and southern entities make possible the dating of various rock art styles, their correlation with linguistic families, and trends in cultural development.

Following Saladoid (as representing Arawakan-Maipuran speakers), the introduction of Cariban speakers seems to equate with the *Corozal* ceramic period, dating about 350 B.C. to A.D. 600. This is recognized by different kinds of ceramic decorations that also appear in the post-Saladoid rock art, particularly as symbols, stylized and abstract drawings, and patterns superimposed over the previous rock art. The subsequent *Camoruco* ceramic period represents an expansion or domination by Cariban groups and a development in their ceramics. This period appears to be reflected in some of the latest pictographs, ca. A.D. 600–1600, with an increase in color combinations and some design complexity. Pictograph designs and those on ceramics both seem less carefully done than before.

The latest pictographs, such as a Spanish church drawn by the Mapoyo, date to the middle 1700s, a time of intensive cultural change and drastic reduction of local Indian populations. Not only did art content change in protohistoric or early historic times, but there is a new dominance of poorly mixed paints, use of watery white paint, and use of a processed medicinal resin (*caraña*) for paint. The overall style is clearly a continuation of the Cedeño Branch influence.

Thus, rock art data combined with ceramic and settlement information provide a view of early organization and possible kinds and reasons for culture change (Greer 1995). Multidirectional models of spreading populations now, because of rock art studies, replace older views of everything spreading north out of Brazil and up through Venezuela. Cultural boundaries coincide with natural features—particularly river confluences and rapids (Greer 1998)—and processes of cultural development are paralleled between rock art and ceramic production.

LARGE-SCALE REGIONAL PATTERNING

As the third example of attempted regional considerations for rock art, an intriguing proposal regarding broad geographic patterning in Venezuela has been suggested from rock art inventory information (Sujo Volsky 1978; de Valencia and Sujo Volsky 1987). Geographic plotting of sites according to ratios of motif classes produces three major clusters that correspond with parts of the country and, in archaeological terms, should represent major traditions. Rock art of the huge region of the southern Orinoco has an overall uniformity that sets it apart from the rest of Venezuela and surrounding areas.

The results can be construed as indicating a kind of regional character, presumably indicative of longterm cultural cohesion, or a degree of in-place development over a long period of time. This contrasts with the common idea of

massive movements of cultures and different traditions across the northern part of the continent causing what today is seen as a disorganized clutter of cultural groups. The statistically derived structure, however, could represent a prehistoric organization, dominant in the more plentiful and older prehistoric rock art, that changed and became masked in recent times in response to, or because of, massive movements of people and what may be thought of as progressive cultural confusion during the terminal late prehistoric and early historic periods. This disarray reaches its peak in the historic period during the Kariña (Caribe) slavery raids and warfare and the explosive, relentless pressure of the European military-religious movement. The statistical results could be masking this later effect—this latest tip of the iceberg—and may be exposing the buried larger corpus, or longer history, of an integrated regional prehistoric cultural development, as detected through rock art, prior to the beginning of late prehistoric cultural fragmentation.

The information upon which the analysis is based is admittedly weak (no more was available in 1975), but it will be interesting to see if this “big picture” view of rock art structure—which detects overall patterns and ignores inconsequential noise—holds up when more detailed regional data are available and patterns are checked against time periods. If the proposed geographic distinctiveness is supported, it certainly will necessitate revision of—or addition to—current models regarding the spread of cultures, culture contact, and cultural integration in northern South America. This is another example of the potential power of rock art study.

FUTURE DIRECTIONS AND RECOMMENDATIONS

Future contributions will be based on a number of factors—access to basic field data and comparative information and ideas, internal analysis of observed field data, interpretation through ethnographic comparison, and discussions and interaction between specialists. Basic to future new directions and ideas is the conservation of not only the present information, but also the sites themselves.

1. Each country should maintain a national archaeological (or rock art) database that comprises the national inventory. Sites should be individually numbered, and detailed topographic maps should be maintained showing exact site locations. All data pertinent to archaeological study, including rock art information, should be permanently curated at a major research institution such as a national museum, university, or government-sponsored research facility. Site files should include full descriptions, site maps, locational maps, drawings, computerized files, digitized photographs and drawings, descriptions of all known visits to sites, copies of all published and unpublished papers on sites, and any other miscellaneous notes. All information should be available for research purposes, and there should be a system to provide copies of documents to domestic and foreign researchers (presumably photocopies). Eventually, an electronic data retrieval system should be available, which by today's standards would involve external access to an in-house database via a modem and phone line, or perhaps an Internet related access strategy.

2. The central curation or research facility should include a library of publications dealing with sites and materials. Like the site information, there should be a computerized bibliographic database for all published and unpublished references pertaining to rock art sites and related studies (whether or not those books and reports are curated at that facility). This bibliographic list should be updated constantly and should be available worldwide through electronic form, such as over the Internet.

3. Rock art should be analyzed according to standard archaeological methods dealing with form and distribution. Classification systems will be based on geographical and temporal distribution of motifs, analysis of motif configurations, and comparison between those configurations—usually referred to now as *styles* or *phases*. A major question will be how to deal adequately with the definition of geographic and temporal units so as to demonstrate and explain geographic differences, temporal differences, enduring traditions, kinds and degrees of temporal and geographic influences from one configuration to another, and the interpretation of internal cultural attributes related to each configuration and to differences between configurations contiguous in time or space. The study of motif form, distribution, and interaction should be used to determine relationships between pictographs and petroglyphs. The next problem will be to relate configurations, initially based mostly on rock art, to other archaeological and ethnographic materials, and combine them into explanations of village, group, tribe, culture, or other levels of sociocultural organization. In some cases, an eventual outcome might be relating those cultural units to recognized, perhaps modern, ethnic groups.

4. The future of rock art interpretation, especially for the later periods, almost certainly will be through ethnographic comparison with information already available and with data still to be collected in rural areas of South America. Synthesizing and extracting information pertinent to rock art studies and related iconography and belief systems, including observations during ethnographic fieldwork of petroglyph distribution and form, could be the subject of dissertations and specialty studies for generations.

In this regard, a specific investigation is suggested. Distributional differences between pictographs and at least riverine petroglyphs have been discussed. Petroglyphs are on waterways, most often near rapids and waterfalls, occupy settings associated with fishing, and pertain to a fishing culture. The settings could be thought of as feminine. Pictographs are on small inselbergs, hills, and back-country uplands, associated with larger forms of upright rocks, occupy settings associated with hunting, and pertain to a hunting culture. These settings could be thought of as masculine. It would be interesting, in future investigation, to consider different kinds of motifs specifically referring to fishing and hunting, and plot those motifs relative to distance from water or other geographic attributes. The hypothesis is that the pictographs-hills-hunting association should contain more figures of animals, while the petroglyphs-rivers-fishing association should have more figures of fish. Two other possible associations also should be considered: those dealing with agriculture as an activity or

containing figures referential to agriculture, and a similar consideration for ritual-ceremonial activities and figures.

Thus, the initial gross attributes to be cross-referenced might be technology (pictographs, petroglyphs, and what kind of manufacture of each), setting (hills, rivers, distance from major river, distance from any river), and content (motifs, motif classes). In some cases it might be interesting to estimate the distance from the most likely village location, but this should be done carefully since it not only is inherently inaccurate but makes unsubstantiable assumptions regarding the artist. The outcome might be compared with presumed activity (hunting, fishing, agriculture, ceremonial) and the possibility of sex or gender associations. Figures at any location specifically linked with one of the four classes of activities might be assumed also to pertain to the same activity, regardless of our ability to identify them as such. Such a case would enhance understanding of the overall prehistoric system and related figurative and geometric symbolism.

5. Effort should be made to preserve rock art sites and the art itself. Almost universally the best results come from publicity through educational programs that affect not only the visiting public but also those who immediately control access to the sites. Rock art information for sites being disturbed or destroyed by construction projects should be conserved through detailed recording (with financing available from the companies doing the construction, if adequate local laws are available) and eventual storage of that information in the national data repository.

ACKNOWLEDGMENTS

The Venezuelan research is carried out jointly with my wife, Dr. Mavis Greer. We wish to thank several people who helped in various ways during the preparation of this paper: Matthias Strecker (SIARB, Bolivia), Dr. Mario Consens (Uruguay), Dr. Stanford Zent (IVIC, Venezuela), Harry Marriner (GIPRI, Colombia), Guillermo Muñoz C. (GIPRI, Colombia), Rob and Marsha Quinlan (USA), and Rodrigo Aguiar (Brazil). Special thanks also go to Jeannine Sujo (Venezuela), Prof. Gibbs Milliken (USA), and Dr. Antonio Núñez Jiménez (Cuba) for more than can be itemized here. So many others have helped with the ongoing research in Venezuela and our numerous visits to rock art sites throughout Central America, South America, and the Caribbean, and we acknowledge their assistance, ideas, contributions, and friendship. Of course, credit must go to Dr. David Whitley for his foresight in putting this book together and making the information available to the widest possible audience.

REFERENCES

- Acosta Saignes, M.
1956 Introducción. In *Los petroglifos de Venezuela*, by B. Tavera Acosta, pp. 9–32. Instituto de Antropología e Historia, Universidad Central de Venezuela, Caracas.

- 1961 *Estudios de Etnología Antigua de Venezuela*. Ed. "la Biblioteca," Caracas.
- 1980 Introducción a un Analisis de los Petroglifos Venezolanos. In *Estudios en Antropología, Sociología, Historia y Folclor*, edited by M. Acosta Saignes, pp. 9–32. Biblioteca de la Academia Nacional de la Historia, Caracas.
- Barse, W. P.
- 1989 *A Preliminary Archeological Sequence in the Upper Orinoco Valley, Territorio Federal Amazonas, Venezuela*. Ph.D. dissertation in Anthropology, The Catholic University of America, Washington, D.C. UMI, Ann Arbor.
- 1990 Preceramic Occupations in the Orinoco River Valley. *Science* 250:1388–90.
- Bednarik, R. G.
- 1989 On the Pleistocene Settlement of South America. *Antiquity* 63:101–11.
- Botero, S., and M. Oostra
- 1977 Arte Rupestre en Colombia. In *Lecturas en Teoría y Práctica de la Arqueología Colombiana*, edited by Mary Anne Gómez Fabling and Alvaro Soto Holguín, pp. 1–40. Departamento de Antropología, Facultad de Artes y Ciencias, Universidad de los Andes, Bogotá, Colombia.
- Brogliá di Mombello, Conte G. Orsi
- 1890 Sculture di Indigeni dell'Alto Orenoco. *Bollettino della Società Geografica Italiana* (Series III) 3:474–79. Roma.
- Brown, C. B.
- 1873 Indian Picture Writing in British Guiana. *The Journal of the Anthropological Institute of Great Britain and Ireland* 3:254–57. London.
- Chaffanjon, J.
- 1986 *El Orinoco y el Caura*. Translated from French to Spanish by Joëlle Lecoin; edited and annotated by M. A. Perera. Organización Orinoco, Fundación Cultural Orinoco, Caracas. [1889, *L'Orienoque et le Caura: relation de voyages exécutées en 1886 et 1887*, Librairie Hachette et C^{ie}, Paris.]
- Colantoni, R., and L. Delgado
- 1992 *Formas del Inicio: La Pintura Rupestre en Venezuela*. Catálogo 123, Exposición 130. Galería de Arte Nacional, Caracas.
- Consens, M.
- 1991 Methodological Approaches in the Research Processes of South American Rock Art. In *Rock Art, the Way Ahead*, edited by S.-A. Pager, B. K. Swartz Jr., and A. R. Willcox, pp. 269–85. Southern African Rock Art Research Association First International Conference, Natal Drakensberg, Conference Proceedings.
- 1995 Rock Art Sites of Southeastern South America. In *Rock Art Studies in the Americas, Papers Presented to Symposium B of the AURA Congress, Darwin 1988*, edited by Jack Steinbring, pp. 151–63. Monograph 45, Oxbow Books, Oxford.

Crevaux, J.

- 1988 Viajes por la América del Sur (translated from French to Spanish by Joëlle Lecoin). In *El Orinoco en dos Direcciones: Relatos de Viajes de Sir Henry Alexander Wickham 1869-1870 y Jules Crevaux 1880-1881*, edited and annotated by M. A. Perera, pp. 119-333. Translated from French to Spanish by Joëlle Lecoin. Organización Orinoco, Fundación Cultural Orinoco, Caracas. [1883, *Voyages dans l'Amérique du Sud*, Librairie Hachette et C^{ie}, Paris.]

Cruxent, J. M.

- 1946 Pinturas Rupestres de El Carmen, en el Río Parguaza, Estado Bolívar, Venezuela. *Acta Venezolana* 2(1-4):83-90. Caracas.
- 1947 Algunas Actividades Explotativas de los Indios Piaroa del Río Parguaza (Guyana Venezolana). *El Agricultor Venezolano* 10(121):12-15. Caracas.
- 1950 Archeology of Cotua Island, Amazonas Territory, Venezuela. *American Antiquity* 16(1):10-16.
- 1960 Pinturas Rupestres del Cerro Papelón, Territorio Federal Amazonas. *Boletín Informativo* 1:15-17. Departamento de Antropología, Instituto Venezolano de Investigaciones Científicas, Caracas.

Cruxent, J. M., and M. Kamen-Kaye

- 1949a Reconocimiento del Area del Alto Orinoco, Ríos Sipapo y Autana, en el Territorio Federal Amazonas (Part I). *Memorias de la Sociedad de Ciencias Naturales La Salle* 9(25):271-317. Caracas.
- 1949b Reconocimiento del Area del Alto Orinoco, Ríos Sipapo y Autana, en el Territorio Federal Amazonas (Part II). *Memorias de la Sociedad de Ciencias Naturales La Salle* 10(26):11-23. Caracas.

Cruxent, J. M., and I. Rouse

- 1958 *An Archeological Chronology of Venezuela*. Social Science Monographs 6. 2 vols. Pan American Union, Washington, D.C.
- 1961 *Arqueología Cronológica de Venezuela*. Estudios Monográficos 6. 2 vols. Unión Panamericana, Washington, D.C.

de Valencia, R., and J. Sujo Volsky

- 1987 *El Diseño en los Petroglifos Venezolanos*. Fundación Pampero, Caracas.

Delibrias, G., and N. Guidon

- 1986 L'Abri Toca do Boqueirão do Sítio da Pedra Furada. *L'Anthropologie* (Paris) 90(2):307-16.

Dubelaar, C. N.

- 1986a *The Petroglyphs in the Guianas and Adjacent Areas of Brazil and Venezuela: An Inventory; With a Comprehensive Bibliography of South American and Antillean Petroglyphs*. Monumenta Archaeologica 12, Institute of Archaeology, University of California, Los Angeles.

- 1986b *South American and Caribbean Petroglyphs*. Foris Publications, Providence.
- 1995 *The Petroglyphs of the Lesser Antilles, the Virgin Islands and Trinidad*. Foundation for Scientific Research in the Caribbean Region, Publication 135. Amsterdam.
- Ernst, A.
1889 Petroglyphen aus Venezuela. *Zeitschrift für Ethnologie* 21:650–55. Berlin.
- Faulkner, C. H.
1995 Four Thousand Years of Native American Caving in the Southern Appalachians. Paper presented at the National Speleological Society Convention 1995, Blacksburg, Virginia. (Abstract published in the Program, p. 36.).
1996 Mud Glyphs of the Eastern Woodlands: A Synchronic and Diachronic Perspective. Abstracts of the Fifty-Third Annual Meeting, November 6–9, 1996. Southeastern Archaeological Conference, *Bulletin* 39. Birmingham.
- Fernández Ortega, R.
1994 El Arte Rupestre en las Cuevas Funerarias Aborígenes de Cuba. Paper presented in the Taller Internacional Antropología '94, Centro de Antropología del Ministerio de Ciencia, Tecnología y Medio Ambiente, La Habana, 1994. Copy courtesy of the author.
- Gheerbrant, A.
1955 *La Expedición Orinoco Amazonas 1948–1950*. Colección El Mirador. Librería Hachette, S.A. Buenos Aires (Argentina). Originally published in 1952 as, *L'Expédition Orénoque-Amazone*, Librairie Gallimard; translated from the original by Jorge Bautista.
- Gibbons, A.
1996 First Americans: Not Mammoth Hunters, But Forest Dwellers? *Science* 272(5620):346–47.
- Greer, J.
1993 Venezuela: Bolívar and Territorio Federal Amazonas. In: Current Research: The Amazon, Eastern Brazil, and the Orinoco, edited by Ronald L. Weber. *American Antiquity* 58(1):154.
1994 The Painted Rock Art of Southern Venezuela: Context and Chronology. *American Indian Rock Art* 20:45–58. American Rock Art Research Association, San Miguel, CA.
1995 *Rock Art Chronology in the Orinoco Basin of Southwestern Venezuela*. Ph.D. dissertation, Department of Anthropology, University of Missouri, Columbia. UMI Dissertation Services, Ann Arbor.
1998 Recent Fieldwork in Southwestern Venezuela. *American Indian Rock Art* 22. American Rock Art Research Association, San Diego, California, in press. (Paper presented at the 1995 annual meeting of the American Rock Art Research Association, Albuquerque).

- n.d. Anthropomorphs in Pictographs of Southern Venezuela. *American Indian Rock Art* 21. American Rock Art Research Association, San Diego, California, in press. (Paper presented at the 1994 annual meeting of the American Rock Art Research Association, Albuquerque.)
- Greer, J., and Mavis G. Greer
 1995 Introduction to the Dark Zone Rock Art Study. Paper presented at the Rock Art '95 Symposium at the San Diego Museum of Man, San Diego.
- 1997 Dark Zone Rock Art in North America. In *Rock Art Papers*, Vol. 14, edited by K. Hedges, pp. 107–19. San Diego Museum Papers 35. San Diego Museum of Man, San Diego.
- Grelier, J.
 1953 Los Indios Piaroa de la Región de Puerto Ayacucho. *Boletín Indigenista Venezolano* 1(2):253–63. Comisión Indigenista, Ministerio de Justicia, Caracas.
- 1955 Habitat, Types d'Habitation et Genres de Vie Chez les Aborigènes du Bassin de l'Orénoque. *L'Ethnographie* 50:42–59. Société d'Ethnographie de Paris.
- 1957 *To the Source of the Orinoco*. Translated by H. A. G. Schmuckler. Herbert Jenkins, Wyman and Sons, London.
- Guarch Rodríguez, J. J., and L. R. Pérez Iglesias
 1994 *Arte Rupestre: Petroglifos Cubanos*. Ediciones Holguín, Holguín.
- Guidon, N.
 1986 Las Unidades Culturales de São Raimundo Nonato—Sudeste del Estado de Piauí—Brazil. In *New Evidence for the Pleistocene Peopling of the Americas*, edited by Alan Lyle Bryan, pp. 157–71. Peopling of the Americas, Symposia Series, Center for the Study of Early Man, University of Maine, Orono.
- Guidon, N., and G. Delibrias
 1986 Carbon-14 Dates Point to Man in the Americas 32,000 years ago. *Nature* 321:769–71.
- Gutiérrez Calvache, D. A.
 1992 El Arte Rupestre en la Cueva de la Pluma, Matanzas, Cuba: Contraposición de dos Estilos y su Implicación Cronocultural. Paper presented at the II Congreso Espeleológico de América Latina y el Caribe, La Habana, 1992.
- 1994a Tipología y Analisis de Rasgos Mediante “Cluster Analysis” en los Pictogramas Ornitomorfos del Arte Rupestre Cubano. *Casimba* Año 5, Serie1(6):34–41.
- 1994b Los Estilos Pictográficos en Cuba, Reflexiones Metodológicas. *Casimba* Año 5, Serie 1(6):34–41.
- n.d. La Cueva N° 1 de Punta del Este, Isla de la Juventud, Cuba: Un Observatorio Astronómico Precolombino. *Casimba*. Boletín del Organó Científico-Técnico

Oficial del Grupo Espeleológico Pedro A. Borrás, Sociedad Espeleológica de Cuba. La Habana. In press.

Hall, D. A.

1996 Amazon Cave. *Mammoth Trumpet* 11(3):1, 16–20. Center for the Study of the First Americans, Corvallis, OR.

Hernández Rosas, M. J.

1992 *El Diseño Piaroa: Su Carga Simbólica en Relación a la Vida Social de una Comunidad*. B.A. thesis in Anthropology, Universidad Central de Venezuela, Caracas.

Humboldt, A. von

1821 *Personal Narrative of Travels to the Equinoctial Regions of the New Continent During the Years 1799–1804*. Translated by Helen Maria Williams. Vols. 5 and 6. Longman, Hurst, Rees, Orme, and Brown, London.

1956 *Viaje a las Regiones Equinociales del Nuevo Continente*. Vol. 6. Biblioteca Venezolana de Cultura, Ed. Ministerio de Educación. Caracas. [1824, *Voyages aux régions équinoxiales du Nouveau Continent*. J. Smith, Paris; 1985 and 1991, *Viaje a las Regiones Equinociales de Nuevo Continente*. Monte Avila Editores, Caracas.]

Im Thurn, E. F.

1883 *Among the Indians of Guiana*. London.

Koch-Grünberg, T.

1907 *Südamerikanische Felszeichnungen*. Ernst Wasmuth, A.G., Berlin.

1909 *Zwei Jahre unter den Indianern, Reisen in Nordwest-Brasilien 1903/1905*. 2 vols. E. Wasmuth, Berlin. [1967, Akademische Druck-u. Verlagsanstalt, Graz, Austria.]

Labesse d'Angers

1904 *Les Sépultures (cuevas) des Indiens de Haut-Orénoque*. Angers.

Lathrap, D. W., and J. R. Oliver

1987 Agüerito: El Complejo Policromo más Antiguo de América en la Confluencia del Apure y el Orinoco. *Interciencia* 12(6):274–89. Caracas.

Maciques Sánchez, E.

1988 El Arte Rupestre de Matanzas. *Museo* (Segunda Epoca) 1(1):12–20. Centro Metodológico Provincial de Museos y del Museo Provincial Palacio de Junco. Matanzas, Cuba.

Marcano, G.

1971 *Ethnografía Precolombina de Venezuela*. Instituto de Antropología e Historia, Facultad de Humanidades, Universidad Central de Venezuela, Caracas. [1890, *Ethnographie Precolombienne du Venezuela*, Paris.]

Matos Arvelo, M.

1912 *Vida Indiana: Usas, Costumbres, Religión, Industria, Gobierno, Ceremonias y Supersticiones de los Indios*. Casa Editorial Maucci, Barcelona.

- Netto, L.
1885 *Archivos do Museu Nacional do Rio de Janeiro*. Vol. 6. Rio de Janeiro.
- Novoa Alvarez, P.
1985 Pinturas Rupestres del Territorio Amazonas de Venezuela. *Revista de Arqueología* 6(55):36-45. Madrid.
- Núñez Jiménez, A.
1975 *Cuba: Dibujos Rupestres*. Editorial de Ciencias Sociales, La Habana.
1985 *Arte Rupestre de Cuba*. Editoriale Jaca Book Spa.
1986 *Petroglifos del Peru, panorama mundial del arte rupestre*. 4 vols. Proyecto Regional de Patrimonio Cultural y Desarrollo. Ministerio de Cultura, Editorial Científico-Técnica, La Habana.
1995 Nuevas Investigaciones en el arte rupestre de Cuba. Paper presented at the Congreso Internacional, 15th Aniversario de la Sociedad Espeleológica de Cuba, La Habana, 1995. Abstract published in *Programas y Resúmenes*, p. 73.
- Oliver, J. R.
1989 *The Archaeological, Linguistic and Ethnohistorical Evidence for the Expansion of Arawakan into Northwestern Venezuela and Northeastern Columbia*. Ph.D. dissertation in Anthropology, University of Illinois at Urbana-Champaign. University Microfilms, Ann Arbor.
- Padilla, S.
1956 *Pictografías indígenas de Venezuela*. Talleres de Grabados Nacionales, Caracas.
- Perera, M. A.
1983 Sobre un Cementerio Piaroa en el Río Parguaza, Distrito Cedeño, Estado Bolívar. *Boletín de la Sociedad Venezolana de Espeleología* 20:29-38. Caracas.
1986a Sobre el Tamaño de la Población Precolombina de TFA y su Evolución Demográfica. *Montalban* 17:155-73. Universidad Católica "Andrés Bello," Facultad de Humanidades y Educación, Institutos Humanísticos de Investigación, Caracas.
1986b Ataruipe (31 de Mayo de 1800). *Boletín de la Sociedad Venezolana de Espeleología* 22:11-28. Caracas.
1992 Los Últimos Wánai (Mapoyos), Contribución al Conocimiento de Otro Pueblo Amerindio que Desaparece. *Revista Española de Antropología Americana* 22:139-61. Facultad de Geografía e Historia, Universidad Complutense de Madrid. Madrid.
- Perera, M. A., and H. Moreno
1984 Pictografías y Cerámica de dos Localidades Hipógeas en la Penillanura del Norte, Territorio Federal Amazonas y Distrito Cedeño del Estado Bolívar. *Boletín de la Sociedad Venezolana de Espeleología* 21:21-32. Caracas.

- Pérez de Barradas, J.
1941 *El Arte Rupestre en Colombia*. Instituto Bernardino de Sahagún, Serie A, No. 1. Madrid.
- Porras G., P. I.
1985 *Arte Rupestre del Alto Napo—Valle del Visagualli, Ecuador*. Quito.
- Prous, A.
1992 *Arqueología Brasileira*. Editora Universidade de Brasília. Brasília, Brasil.
1994 L'Art Rupestre du Brésil. *Bulletin de la Société Préhistorique de l'Ariège* 49:77–144. Foix, France.
- Ravines, R.
1986 *Arte Rupestre del Perú*. Instituto Nacional de Cultura, Lima.
- Reichel-Dolmatoff, G.
1971 *Amazonian Cosmos, The Sexual and Religious Symbolism of the Tukano Indians*. The University of Chicago Press, Chicago.
1975 *The Shaman and the Jaguar, A Study of Narcotic Drugs Among the Indians of Columbia*. Temple University Press, Philadelphia.
1978 *Beyond the Milky Way, Hallucinatory Imagery of the Tukano Indians*. UCLA Latin American Center Publications, University of California, Los Angeles.
1987 *Shamanism and Art of the Eastern Tukanoan Indians, Colombian Northwest Amazon*. E. J. Brill, Leiden, The Netherlands.
- Roe, P. G.
1993 Advances in the Study of Lowland South American and Caribbean Rock Art. Paper presented at the 58th Annual Meeting of the Society for American Archaeology, St. Louis.
- Roosevelt, A.
1978 La Gruta, An Early Tropical Forest Community of the Middle Orinoco Basin. In *Unidad y variedad, ensayos antropológicos en Homenaje a José M. Cruxent*, edited by Erika Wagner and Alberta Zucchi, pp. 173–201. Ediciones del Centro de Estudios Avanzados, Instituto Venezolano de Investigaciones Científicas, Caracas.
1980 *Parmana*. Academic Press, New York.
1992 Paleo-Indians at Monte Alegre in the Brazilian Amazon. Paper presented at the 20th Annual Midwest Conference on Andean and Amazonian Archaeology and Ethnohistory, University of Illinois at Urbana-Champaign.
- Roosevelt, A. C., M. Lima da Costa, C. Lopes Machado, M. Michab, N. Mercier, H. Valladas, J. Feathers, W. Barnett, M. Imazio da Silveira, A. Henderson, J. Silva, D. S. Reese, B. Chernoff, J. A. Holman, N. Toth, and K. Schick
1996 Paleoindian Cave Dwellers in the Amazon: The Peopling of the Americas. *Science* 272(5620):373–84.

Rouse, I.

- 1978 The La Gruta Sequence and its Implications. In *Unidad y Variedad, Ensayos Antropológicos en Homenaje a José M. Cruxent*, edited by Erika Wagner and Alberta Zucchi, pp. 203–29. Ediciones del Centro de Estudios Avanzados, Instituto Venezolano de Investigaciones Científicas, Caracas.

Rouse, I., and L. Allaire

- 1978 Caribbean. In *Chronologies in New World Archaeology*, edited by R. E. Taylor and Clement W. Meighan, pp. 432–81. Academic Press, New York.

Rouse, I., and J. M. Cruxent

- 1963 *Venezuelan Archaeology*. Yale University Press, New Haven.

Sanoja, M.

- 1977 Nuevas Fechas de Radiocarbón para la Cueva de el Elefante, Estado Bolívar, Venezuela. *Boletín de la Sociedad Venezolana de Espeleología* 8(15):47–50. Caracas.

- 1979 *Las Culturas Formativas del Oriente de Venezuela: La Tradición Barrancas del Bajo Orinoco*. Estudios, Monografías y Ensayos No. 6. Biblioteca de la Academia Nacional de la Historia, Caracas.

Sanoja, M., and I. Vargas

- 1970 *La Cueva de "El Elefante," Investigaciones Arqueológicas en el Bajo Orinoco: Estado Bolívar, Venezuela*. Proyecto Orinoco, Informe 2. Instituto de Investigaciones Económicas y Sociales, Universidad Central de Venezuela, Caracas.

- 1983 New Light on the Prehistory of Eastern Venezuela. In *Advances in World Archaeology*, Vol. 2, edited by Fred Wendorf and Angela E. Close, pp. 205–44. Academic Press, New York.

Scaramelli, F.

- 1992 *Las Pinturas Rupestres del Parguaza: Mito y Representación*. B.A. thesis (tesis del grado) in Anthropology, Universidad Central de Venezuela, Caracas.

- 1993 La Prospección Espeleohistórica en el Area del Barraguán. In *Contribuciones a la Arqueología Regional de Venezuela*, compiled by Francisco Fernández and Rafael Gassón, pp. 199–207. Asociación Venezolana de Arqueología, Fondo Editorial Acta Científica Venezolana, Caracas.

Scaramelli, F., and K. Tarble

- 1993 Las Pinturas Rupestres del Orinoco Medio, Venezuela (Contexto Arqueológico y Etnográfico). Paper presented at the 15th International Congress for Caribbean Archaeology, San Juan, Puerto Rico.

Schmitz, P. I.

- 1987 Prehistoric Hunters and Gatherers of Brazil. *Journal of World Prehistory* 1(1):53–126.

Stone, A. J.

- 1995 *Images from the Underworld: Naj Tunich and the Tradition of Maya Cave Painting*. University of Texas Press, Austin.

Stradelli, Conte E.

- 1900 Inscrizioni Indigene della Regione dell'Uaupés. *Bollettino della Società Geografica Italiana*, Serie IV, 1:457–83. Rome

Strecker, M.

- 1987 *Arte Rupestre de Bolivia*. Contribuciones al Estudio del Arte Rupestre Sudamericano, No. 1. Sociedad de Investigación del Arte Rupestre de Bolivia (SIARB), La Paz.

- 1995 *Arte Rupestre de Bolivia: Índice de Sitios y Bibliografía Comentada*. Ms. on file, Sociedad de Investigación del Arte Rupestre de Bolivia (SIARB), La Paz.

Sujo Volsky, J.

- 1975 El Estudio del Arte Rupestre en Venezuela. *Montalbán* 4:709–840. Universidad Católica Andrés Bello, Caracas.

- 1976 Nuevas Consideraciones Metodológicas para el Estudio del Arte Rupestre Venezolano. *Actes du XLIIe Congrès International des Américanistes*, Vol. IXB, pp. 241–58. Fondation Singer Polignac, Paris.

- 1978 Un Experimento con la UNIVAC 1110. In *Unidad y Variedad, Ensayos Antropológicos en Homenaje a José M. Cruxent*, edited by Erika Wagner and Alberta Zucchi, pp. 295–327. Ediciones del Centro de Estudios Avanzados, Instituto Venezolano de Investigaciones Científicas, Caracas.

Tarble, K.

- 1990a *Proyecto de Arqueología y Espeleología Histórica en el Area de Influencia del Complejo Los Pijiguaos, Estado Bolívar*, compiled by Kay Tarble. Convenio MARNR-BAUXIVEN. Departamento de Antropología, Universidad Central de Venezuela, Caracas.

- 1990b *La Cosmovisión Orinoquense y el Contexto Arqueológico: Un Ensayo en Interpretación*. Paper presented in the symposium "Sacred Sites and Sites of Significance," World Archaeological Congress II, Barquisimeto, Venezuela, September 1990.

- 1991 Piedras y Potencia, Pintura y Poder: Estilos Sagrados en el Orinoco Medio. *Antropológica* 75–76:141–64. Fundación La Salle, Instituto Caribe de Antropología y Sociología, Caracas.

- 1993 Criterios Para la Ubicación de los Asentamientos Prehispánicos en el Area del Barraguán, Estado Bolívar. In: *Contribuciones a la Arqueología Regional de Venezuela*, by Francisco Fernández and Rafael Gassón (compilers), pp. 139–64. Asociación Venezolana de Arqueología, Fondo Editorial Acta Científica Venezolana, Caracas.

- Tarble, K., and F. Scaramelli
1993a Análisis Cronológico de las Pinturas Rupestres en Abrigos Rocosos, Río Parguaza, Estado Bolívar. Research proposal submitted to CONICIT by the Departamento de Antropología, F.A.C.E.S., Universidad Central de Venezuela.
- 1993b Una Correlación Preliminar entre Alfarerías y el Arte Rupestre del Municipio Autónomo Cedeño, Estado Bolívar, Venezuela. Paper presented at the 15 International Congress for Caribbean Archaeology, San Juan, Puerto Rico.
- Tarble, K. L., and J. E. Vaz
1986 Distribution Analysis of Precolumbian Roller Stamps from the Middle Orinoco. *Journal of the Steward Anthropological Society* 16(1-2):1-35. Urbana, Illinois.
- Tarble, K., and A. Zucchi
1984 Nuevos Datos Sobre la Arqueología Tardía del Orinoco: La Serie Valloide. *Acta Científica Venezolana* 35:434-45.
- Tavera-Acosta, B.
1956 *Los Petroglifos de Venezuela*. Instituto de Antropología e Historia, Universidad Central de Venezuela, Caracas.
- Valles C., C.
1993 *Signos en la Piel: La Pintura Corporal en la Cultura Panare*. Caracas.
- Vargas Arenas, I.
1981 *Investigaciones Arqueológicas en Parmana: Los Sitios de la Gruta y Ronquín, Estado Guárico, Venezuela*. Estudios, Monografías y Ensayos No. 20. Biblioteca de la Academia Nacional de la Historia, Caracas.
- von der Osten, E.
1946 Las Pictografías de Cueva Pintada. *Acta Venezolana* 1(4):409-15. Caracas.
- Wallace, A. R.
1853 A Narrative of Travels on the Amazon and Rio Negro. London. (Republished 1969, New York).
- Williams, D.
1985 Petroglyphs in the Prehistory of Northern Amazonia and the Antilles. In: *Advances in World Archeology*, Vol. 4, edited by Fred Wendorf and Angela E. Close, pp. 335-87. Academic Press, New York.
- Zent, S.
1992 *Historical and Ethnographic Ecology of the Upper Cuaio River Wothiha: Clues for an Interpretation of Native Guianese Social Organization*. Ph.D. dissertation in Anthropology, Columbia University. UMI Dissertation Services, Ann Arbor.
- Zerries, O.
1956 Vorgeschichtliche Felsgravierungen in Venezuela. In *Umschau* 56(15):446-59. Frankfurt.

Zerries, Otto, and M. Schuster

1974 *Mahekodotedi: Monographie eines Dorfes der Waika-Indianer (Yanoama) am oberen Orinoco (Venezuela)*. Ergebnisse der Frobenius-Expedition 1954/1955 nach Südost-Venezuela, Band II. Klaus Renner Verlag, München.

Zucchi, A., and K. Tarble

1984 Los Cedeñooides: un nuevo grupo prehispanico del Orinoco Medio. *Acta Cientifica Venezolana* 35:293–309. Caracas.

Zucchi, A., K. Tarble, and J. E. Vaz

1984 The Ceramic Sequence and New TL and C14 Dates for the Agüerito Site of the Middle Orinoco. *Journal of Field Archaeology* 2(2):155–80.