

# 7 • Indigenous Cartography in Lowland South America and the Caribbean

NEIL L. WHITEHEAD

This chapter will consider the traditions of spatial representation, as well as geographical conceptions expressed in European maps, of the indigenous cultures of the Caribbean and lowland South America. This vast region (fig. 7.1) includes a wide range of cultural traditions, languages, and social forms represented here by examples from all the major cultural-linguistic groups of the lowland region—Carib, Arawak, Tukano, Gê, and Tupi-Guarani. Materials from independent or isolated cultural-linguistic families such as the Warao are also included, since it is sometimes hypothesized that they represent the descendants of the most ancient migrants into the Americas.

As a result of the colonizing of South America, many native societies and traditions were utterly destroyed, especially the more complex polities that once existed in the Amazon and Orinoco basins. During the period of colonial occupation, beginning with Columbus in the Caribbean and continuing to the end of the nineteenth century in Brazil, native peoples informed colonial cartography, resulting in a mingling of indigenous and European conventions of spatial representation. With the exception of celestial and cosmographical maps occurring as pictographs, everything we know about lowland South American and Caribbean cartography has been gleaned during the process of Western contact or inferred from modern ethnographic studies. This procedure is not always satisfactory, for it would be antihistorical to overlook the importance of European colonization in affecting indigenous traditions or to project modern practices onto past societies. Nonetheless, the probable intricacy of those past traditions is at least exemplified in the continuity of their practice up to the present. We can certainly appreciate, through modern analogy, the links between the mapping of physical space and the constitution of social space, as well as the preeminent role of the priest-shamans in constructing the moral order by manipulating the cosmological order. When we are told in the historical sources that celestial observation and interpretation were the special responsibility of the priestly caste, we may properly infer that the mapping of physical space was both an arcane skill and one that conveyed political power. This suggests that the precolonial range of carto-

graphic practice must have been far broader than we can now reconstruct. These societies certainly had refined calendrical and astronomical traditions, as well as a capacity for intricate spatial representation.<sup>1</sup>

Because these native traditions unfolded over a long period, however, we cannot speak of a single native cartographic tradition; rather, we must address the various ways widely distributed spatial conceptions were encoded and articulated, particularly as temporal and social constructs. Contexts included architecture and craft design, the view of the sky as a reflection of terrestrial relationships, and strictly prescribed dance and chant patterns.

Cartography and map are here understood in the broadest sense, for spatial representation on paper was not part of native tradition before the introduction of European cartographic methods. This does not indicate any lack of spatial knowledge on the part of the indigenous population or an absence of an active interest in its representation. Indeed, the earth and sky were actively mapped through a wide variety of mediums including rock carving and painting, basketry, woodworking, dance, chant, personal adornment, and architecture.

Three types of indigenous mapping are considered. The first category consists of celestial maps of the day and night sky. They are closely related to cosmographical mapping, usually depicting the content of shamanic visions during the flight of the soul over distant regions or representing the spatial relationships encoded in telluric lore. A central theme is the linking of earth and sky in a complex cosmographical system in which the layout of terrestrial features is closely reflected in star patterns in the heavens.

The second category consists of historical reports of indigenous mapmaking commissioned by Europeans eliciting geographical information for a number of purposes, including missionary work, military conquest, boundary demarcation, and the continuing search for various natural resources such as minerals, cacao, and rubber.

---

1. See the collection of articles in Anthony F. Aveni and Gary Urton, eds., *Ethnoastronomy and Archaeoastronomy in the American Tropics* (New York: New York Academy of Sciences, 1982).



FIG. 7.1. REFERENCE MAP OF LOWLAND SOUTH AMERICA AND THE CARIBBEAN.

Such information was sometimes literally extracted under threat of death or torture, but it was also freely offered and, no doubt, biased by native informants to suit their own purposes.<sup>2</sup> More recently, ethnographers and anthropologists have solicited maps by native peoples in order to study indigenous conceptions of the earth and cosmos.

Although such borrowings are not strictly indigenous mapping, it is also helpful to introduce the ways native spatial ideas were incorporated into European maps, since they provide a context for understanding indigenous cartography. These form the third category. A particular interest in the graphic depiction of telluric spatial relations has stemmed largely from the colonial curiosity of Western observers. This class of extant examples of native cartographic ideas expressed in two-dimensional picture form is derived from the inclusion of native telluric descriptions in the cartography of Europeans. However, these additions are by no means minor and often formed the basis of European cartography of the region for centuries. For example, the vast inland lake of Parime, on whose shores sat Manoa, the golden city of El Dorado, remained a feature of European maps until the mid-nineteenth century.

Maps are tokens of power, so the inclusion of native information on European maps also reflects a negotiation

of power relationships, whose outcome is a matter for specific investigation in interpreting these and other visual historical sources. Indeed, such activities repeat themselves across this region and up to the present, where the success of government agencies charged with the contact and incorporation of isolated native groups, such as the Fundação Nacional do Índio (FUNAI) in Brazil, still relies on indigenous geographical knowledge.

## THEORETICAL CONSIDERATIONS

Maps are also tokens of particular kinds of social relations between individuals and their environment. In the Americas, early European mapping was driven by the “plotting” of private property or the pragmatics of navigation rather than constituting disinterested mapping of a new geographic space. Accordingly, sometimes conventional north orientation was ignored or river courses were rendered only schematically. The kind of information included could range from the geographic to the mythical, the ethnological to the sociological, depending on the reasons for making the map in question. The discussion of these variations in European mapping and their meaning is not properly part of this chapter, but such considerations do underline that the types of maps familiar to the Western tradition are produced only from very particular social and cultural contexts. In lowland South America and the Caribbean, certain distinctions between land and water may have been vital to European seaborne navigators but not necessarily important to those already familiar with the lowland South American environment. In this sense the need for cartographic representation of the kind the Europeans initiated was largely superfluous to native cultures that were already “at home.”

The redundancy of cartography, except in particular historical and social contexts, is evident from the ways a lived space is mapped. In lowland South America this redundancy is enhanced by the topographical uniformity of the environment, but it also entails that space is usually mapped from a subject’s particular location at that time—there is no extratemporal or extraspatial “view-point” from which a European-style map might be envisioned. The following example, from the Achuar in Ecuador, allows us to appreciate this point.

2. For example, the Arawak of the Atlantic coast of the Guianas were specifically recruited at the end of the sixteenth century to give geographical orientation and guidance to Spanish punitive expeditions against their rivals, the Carib. But Carib constituted a political category for the Arawak, so their identifications reflected not the outcome of some form of dispassionate exercise in ethnology, but the power relations pertaining among the indigenous population at that time, represented in ethnological form. Equally, earlier European exercises in ethnological mapping of the Carib, though never given a final cartographic expression as artifact, strongly reflected the prejudices of non-Carib native leaders.

In Achuar culture, the concepts of right and left are used only to indicate an immediate and relative position, longer distances being expressed in the time it takes to cover them.<sup>3</sup> Beyond a local destination, travel time is counted in days or simply becomes “very far,” since the events of a temporally extended journey are unpredictable. Distance is measured for architectural purposes but not for travel. To give directions to a place that has not been visited before, people use a system of landmarks that are common across the Achuar habitat and can be read by anyone. Waterways are structuring elements of this system, but their use as landmarks requires individual experience of at least a section of that system. By these means, any Achuar can delineate a portion of the network, either in linear fashion, by enumerating successive rivers, or transversely, as if the rivers were being crossed while walking. A given settlement, necessarily built along a waterway, is therefore easily found because it can be fixed by using these riverine coordinates. Away from this system, more arcane markers are used to map the environment: a peccary wallow, a salt lick, a source of pottery clay, or stands of notable flora. Landmarks like these are recounted by returning hunters and help to build and sustain an active knowledge of the spatial characteristics of the environment. Perhaps just as important, “getting lost” is not the disaster it would be to those culturally dependent on cartographic representation. In the absence of this kind of mapping, basic survival skills and orientation techniques are sufficient to see most travelers home. For the Achuar it is not the course of the sun that provides this basic orientation but the direction of flow of the waterways, which follow an overall northwest-southeast direction. Geographical knowledge is thus always socially embedded. Without the persistent political need of European colonizers to produce internal delineations of subject populations or representations of external and unfamiliar ones, native mapping in lowland South America and the Caribbean took on different forms.

In this overview it is not possible to treat all cases of native cartography in sufficient depth to render that cartography intelligible to the external observer. To appreciate the meaning and content of native maps, we must also appreciate the set of ideas about the sky, sea, and land that activates indigenous interest and know how those ideas about physical objects and places are intimately connected to evaluations of the role of humans in the cosmos. The contrast between modern Western and native South American conceptions might be best summed up by emphasizing that for native South Americans the cosmos and its order constitute a joint project of humanity and divinity. This order may be read from the celestial vault, from the form of the land and its waters, and from a knowledge of the proclivities of gods and humans. For these reasons, indigenous cartography is largely directed to ends other

than geographic representation; the geography of the natural environment is mapped only as an incidental product of this much wider delineation of intellectual and physical space. Without the motivation for abstracted geographical representation, a “place” is seen as coextensive with an “event,” and nothing is represented if it does not have present or particular significance. In other words, “nowhere” is precisely *where nothing happens*. The concept of place, like the concept of event, is culturally dependent; thus we will see in this chapter that native South American ideas show radically different space-time understandings that challenge a rationalist tradition of opposing the “real” and the “imagined.”

For just these reasons, it is relevant to distinguish the conception of spatial relationships and their representation in a variety of forms, such as dance, music, and words, from a restricted definition of cartography as the practice of rendering those representations in graphic form. A more adequate definition of cartography needs to express not just the presence of geographical knowledge but also cosmographical or biographical information, such as the soul flight of shamans or the passage and pathways of gods, heroes, and ancestors.

For heuristic purposes, the types of native representation that have cartographic content might be divided into marking natural spaces with special positional importance as cultural places and representing such cultural places in a cartographic manner. Marking natural space as cultural place would, for example, include sites of special sociopolitical significance. The Arawak (Lokono) of northeastern South America use the kumaka tree to mark settlement sites, because this was the tree the ancestor *Loquo* sat under as the clans were created.<sup>4</sup> Places of special cosmological significance are also marked by reference to geographical features. These sites include the equatorial line, caves that are the abodes of important divinities, and places of ritual practice, such as dance areas. Finally, waterfalls and pools, as well as the savannas between forest stands, are denoted as places of ecological importance by petroglyph assemblages that enumerate faunal resources or portray fish species and how they are caught. By the same token, cultural places are also part of habitat and are marked sociopolitically. This is reflected in the way people’s bodies are painted, cut, or dismembered in order

3. The following discussion of Achuar culture draws on Philippe Descola, *In the Society of Nature: A Native Ecology in Amazonia*, trans. Nora Scott (Cambridge: Cambridge University Press, 1994), esp. 62–67.

4. The term “Arawak” refers to a cultural-linguistic group spread across the entire northern part of the continent. “Lokono” refers to a particular ethnic group living today on the coasts of Guyana and Suriname. See Everard Ferdinand Im Thurn, *Among the Indians of Guiana: Being Sketches Chiefly Anthropologic from the Interior of British Guiana* (London: Kegan Paul, Trench, 1883).

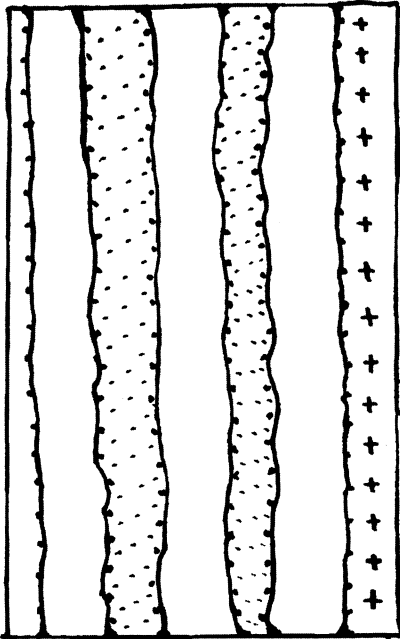


FIG. 7.2. THE STAR PATH (MILKY WAY). This representation of the Milky Way as a series of bands of stars strongly suggests the image of streams of semen; the personages of the celestial vault are the original procreators of the cosmos. The rightmost band shows individual stars, while the other bands suggest “milkinsness.” The pattern incorporates stylistic elements that are repeated in a variety of mediums, including basketry and drumheads. Drawn by Catherina Koloï, Kariña (Carib) of the Maroni River (Suriname).

From Edmundo Magaña, *Orión y la mujer Pléyades: Simbolismo astronómico de los indios kaliña de Surinam* (Amsterdam: Centre for Latin American Research and Documentation, 1988), fig. 2. By permission of Ren Spoelstra.

to express cosmological ideas, the ways houses and villages are laid out, and the way material products such as ceramics and basketry use motifs that encode aspects of spatial relationships, particularly celestial ones.

#### NATIVE CELESTIAL AND COSMOLOGICAL MAPPING

The sky, both day and night, is perhaps the physical feature most constantly mapped by indigenous people. Its significance, however, derives not from heliocentric ideas of the cosmos, as expressed in Western thought, but from an appreciation and close observation of this source of life-giving solar light and heat and the rains that so strongly mark the tropical forest environment. In view of this significance and the behavior of the sky's inhabitants—the stars, moon, and sun—the relations between the people, animals, and plants on earth are often understood or represented by reference to celestial phenomena.

Broadly speaking, the mapping of celestial entities is so-

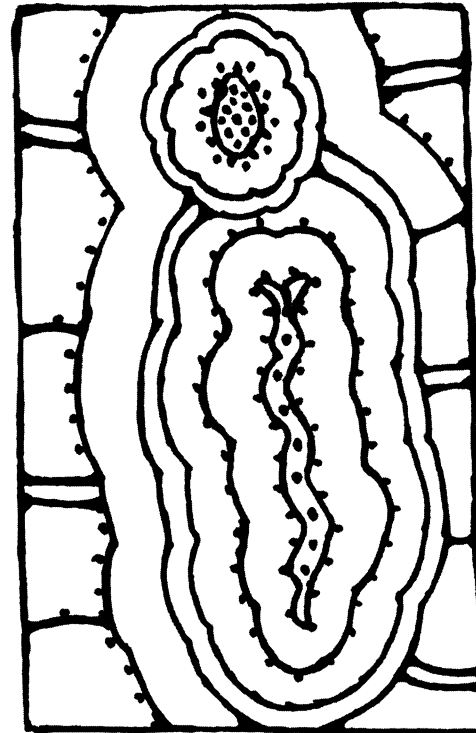


FIG. 7.3. THE BOA AND THE PLEIADES. The boa—or sometimes the celestial anaconda—is seen in the constellation Scorpio and is generally identified with aspects of male sociality (see fig. 7.5 below). In contrast, the Pleiades group is associated with the female, and the mapping of the constellation's yearly appearance, which coincides with the onset of the rains, is an example of the cosmological ordering of ecological relationships. The sexual conjunction of boa and the Pleiades, implied by the approach of the boa (at bottom) to the Pleiades (at top), alludes to the way terrestrial humans reproduce the celestial society of divinities. Drawn by Catherina Koloï, Kariña (Carib) of the Maroni River (Suriname).

From Edmundo Magaña, *Orión y la mujer Pléyades: Simbolismo astronómico de los indios kaliña de Surinam* (Amsterdam: Centre for Latin American Research and Documentation, 1988), fig. 17. By permission of Ren Spoelstra.

cially encoded in myths about the movement of heavenly bodies, in the layout of houses and villages, and in material artifacts, particularly basketry. In fact, all three media are synergistic, in that they simultaneously validate the production of celestial motifs in each cultural field while the ostensive mapping of the movement of celestial bodies is “explained” by reference to their cultural analogues.

For example, constellations are visualized as animals or persons, and their adventures are intimately linked to everyday concerns and interests. These adventures are related as star lore, but the acuity with which celestial observation is interlaced with sociological commentary belies the apparent simplicity of each story's particular cartography (figs. 7.2–7.4). In this way the movement of celestial bodies is assimilated to the behavior of the beings

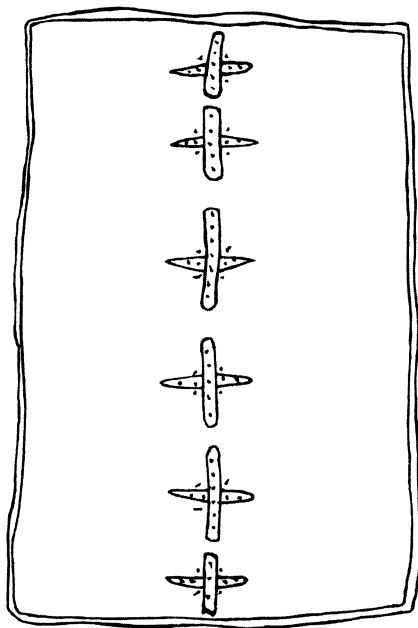


FIG. 7.4. THE PLEIADES. In addition to the associations mentioned in fig. 7.3, the Pleiades group is also configured within more local cultural tradition and is shown here as a pattern of individual stars. Obviously, enumeration is not central to this image (there are only six stars, not seven); rather, the essential representational feature is their disaggregation (in contrast to fig. 7.3 above). In the Carib legend of Tumong, the constellation represents his scattered entrails. Murdered by his brother, who desired his wife, Tumong's ghost haunts the brother until he is reburied and his entrails are scattered. The crime of fratricide, a threat to the fundamental male relationship of brothers, is linked to the celestial origins of the Pleiades. Drawn by Theresia, Kariña (Carib) of the Maroni River (Suriname).

From Edmundo Magaña, *Orión y la mujer Pléyades: Simbolismo astronómico de los indios kaliña de Surinam* (Amsterdam: Centre for Latin American Research and Documentation, 1988), fig. 18. By permission of Ren Spoelstra.

of the earth, and myths narrate their histories.<sup>5</sup>

For native groups from the Caribbean to southern Brazil and Paraguay there are recurrent mythical and symbolic motifs.<sup>6</sup> For example, the myths of the origins of the constellations Canis Major, the Pleiades, and Orion center on the symbolic adventures between humans and cosmos. A woman steals from her son-in-law (the fish trap constellation) and is dismembered by an alligator so that her head goes to the sky to become the constellation Canis Major; a woman takes a tapir for a lover and becomes the Pleiades; and a man has his leg cut off by his wife or her brothers and becomes the constellation Orion. However, there are also some consistent variations in the identification of these characters with particular constellations, as well as the introduction of other celestial actors such as the boa seen in the constellation Scorpio.<sup>7</sup> The boa motif is also used to encode social status (fig.

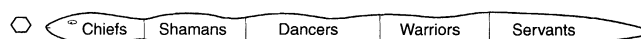


FIG. 7.5. MYTHIC BOA, NORTHWESTERN AMAZONIA. The mythic boa is used to symbolize the hierarchy of chiefs, shamans, dancers, warriors, and servants in Tukano society. The figure shows the way visual analogies are mapped between the cosmological, zoological, and sociological features of the world. The hexagon placed at the head of the boa symbolizes the solar energy that sustains the universe and thus the ranked approach of Tukano society to its source.

After Gerardo Reichel-Dolmatoff, "Algunos conceptos de geografía chamánica de los indios Desana de Colombia," in *Contribuições à Antropologia em homenagem ao Professor Egon Schaden* (São Paulo: Coleção Museu Paulista, 1981), 255–70, fig. 2.

7.5). Finally, although all stars are said to be people, not all are identified as significant in this way.<sup>8</sup> Of those that are, most lie along the Milky Way or "star path," itself distinguished from the path of the sun. In this manner, the heavens are populated by both personages and their accoutrements (figs. 7.6–7.8).

In addition to providing a mythological reference, there are also more direct physical modes in which celestial and social processes are integrated. This integration is evident in the east-west layout of villages, the encoding and placing of village structures in accordance with the daily movement of celestial entities, the cardinal directionality of ceremonial processions, the movement of men to different houses in the village during their life cycles, the location of particular kinship units within the village, and the coordinated positioning of villages that exchange marriage partners.<sup>9</sup>

Among the Desana of the northwest Amazon, origin myths refer to the "search for the center" or the "center of the day."<sup>10</sup> A culture hero carries a staff to search for

5. For an example of the links between celestial myth and social practice, see Stephen Michael Fabian, *Space-Time of the Bororo of Brazil* (Gainesville: University Press of Florida, 1992), 125–40.

6. See Claude Lévi-Strauss, *Le cru et le cuit* (Paris: Plon, 1964), and idem, *Du miel aux cendres* (Paris: Plon, 1966).

7. Edmundo Magaña, *Orión y la mujer Pléyades: Simbolismo astronómico de los indios kaliña de Surinam* (Amsterdam: Centre for Latin American Research and Documentation, 1988).

8. A good example is found in the regional astronomy of the Kapon and Pemon. Although the stars and constellations are personified, their significance lies in their climatological influence. See Audrey Butt Colson and Cesáreo de Armellada, "The Pleiades, Hyades and Orion (Tamökan) in the Conceptual and Ritual System of Kapon and Pemon Groups in the Guiana Highlands," *Scripta Ethnologica: Supplementa* 9 (1989): 153–200.

9. For a discussion on the integration of social and spatial processes of two groups from Mato Grosso, central Brazil, see Fabian, *Space-Time*, 37–63 (note 5), and Thomas Gregor, *Mehinaku: The Drama of Daily Life in a Brazilian Indian Village* (Chicago: University of Chicago Press, 1977), 35–62.

10. Gerardo Reichel-Dolmatoff, "Astronomical Models of Social Be-

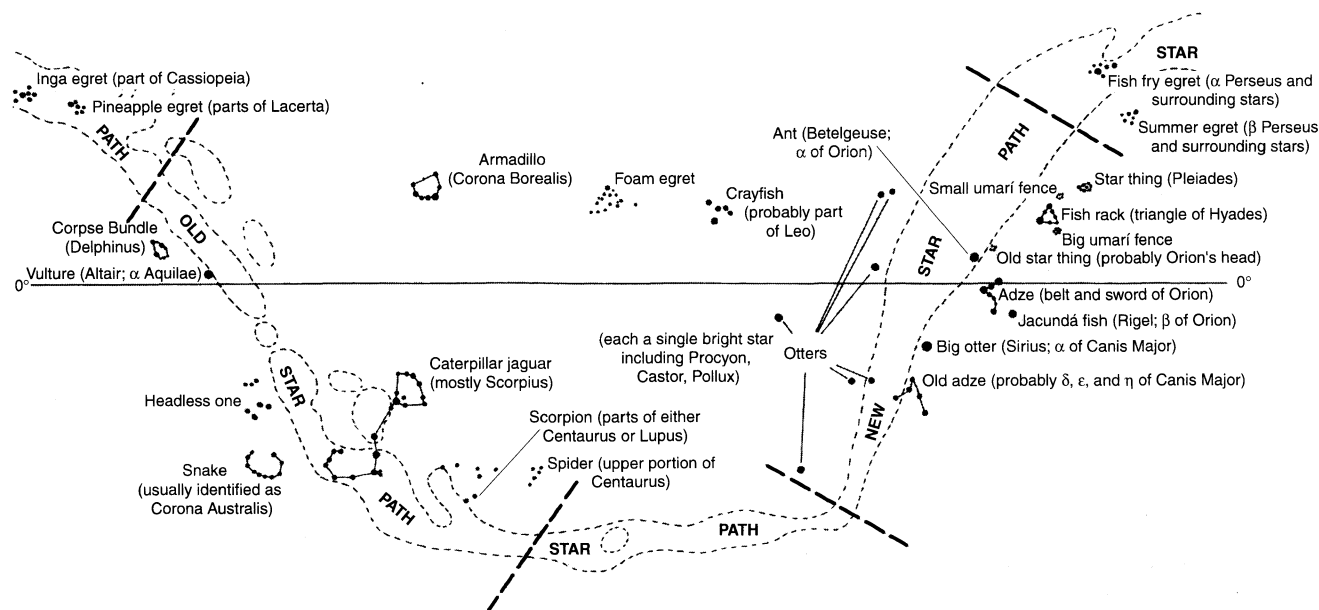


FIG. 7.6. CONSTELLATIONS OF BARASANA ASTRONOMERS. Both figures 7.6 and 7.7 illustrate the intensity with which the night sky is studied and mapped by the Tukano and other Amazonian peoples. This figure identifies the positioning of the uniquely identified constellations of Barasana astronomers. The manner of identification gives us a sense of how the movements of these celestial bodies are incorporated

the spot where it will not cast a shadow and eventually is able to place it on the equatorial line; it is here that the old-time people located themselves.<sup>11</sup> The staff is also envisioned as a shaft of sunlight that falls into a womblike lake and thereby fertilizes the earth, becoming the point where a cosmic sexual contact takes place and around which life on earth subsequently develops. The model for this structured space is found in the sky and consists of a huge hexagon, which also recalls the magic rock crystals that are central to shamanic practice, formed by the stars Pollux, Procyon, Canopus, Achernar,  $\tau_3$  Eridani, and Capella.<sup>12</sup> This celestial hexagon is in turn projected onto the earth, where it plots the territories of the social units of Tukano society. The native image is of a giant transparent rock crystal that stands upright on the earth, its six corners formed in the sky by the stars mentioned above, and on earth by six waterfalls in Tukano land. In addition, two major waterfalls, Ipanoré and Jirijirimo, are at the two intersections of the equator with the base of the hexagon (fig. 7.9). The central axis of the crystal tower is the line between  $\epsilon$  Orionis and a large rock covered in petroglyphs, the rock of Nyí (fig. 7.16 below), at a spot where the equator crosses the north-south flowing Piraparaná River. This crystal axis is then envisioned as a phallic staff that joins the male sky to the female earth. The hexagonal pattern is also repeated in the ideal distribution of the various Tukano social units and the loca-

tion of the intermarrying clans within those units. The image of the phallic or shamanic staff as a direct conduit and connection to the world above is a prevalent feature of native spatial organization and becomes the basis for a variety of symbolic transformations expressed in various mediums, such as funerary ware and the orientation of burials.<sup>13</sup>

Architecturally, the ideas just described are found in the design of the longhouse, whose structure and location provide a good example of how physical structures integrate celestial and social processes (fig. 7.10). The six

havior among Some Indians of Colombia," in *Ethnoastronomy and Archaeoastronomy in the American Tropics*, ed. Anthony F. Aveni and Gary Urton (New York: New York Academy of Sciences, 1982), 165–81, esp. 167.

11. The notion of "old-time" or "first-time" people occurs frequently in indigenous historical accounts as a rhetorical device that marks the beginning of "real" history or the history of the people in question. See Richard Price, *First-Time: The Historical Vision of an Afro-American People* (Baltimore: Johns Hopkins University Press, 1983), 6–8, and Neil L. Whitehead, ed., *The Patamona of Paramakatoi and the Yawong Valley: An Oral History* (Georgetown, Guyana: Hamburg Register Walter Roth Museum of Anthropology, 1996), 5–9.

12. The following description of the Tukano celestial hexagon and its terrestrial correspondences is based on Reichel-Dolmatoff, "Astronomical Models," 167–70 (note 10).

13. Denis Williams, "The Forms of the Shamanic Sign in the Prehistoric Guianas," *Journal of Archaeology and Anthropology* 9 (1993): 3–21, esp. 7–14 and figs. 3 and 6.

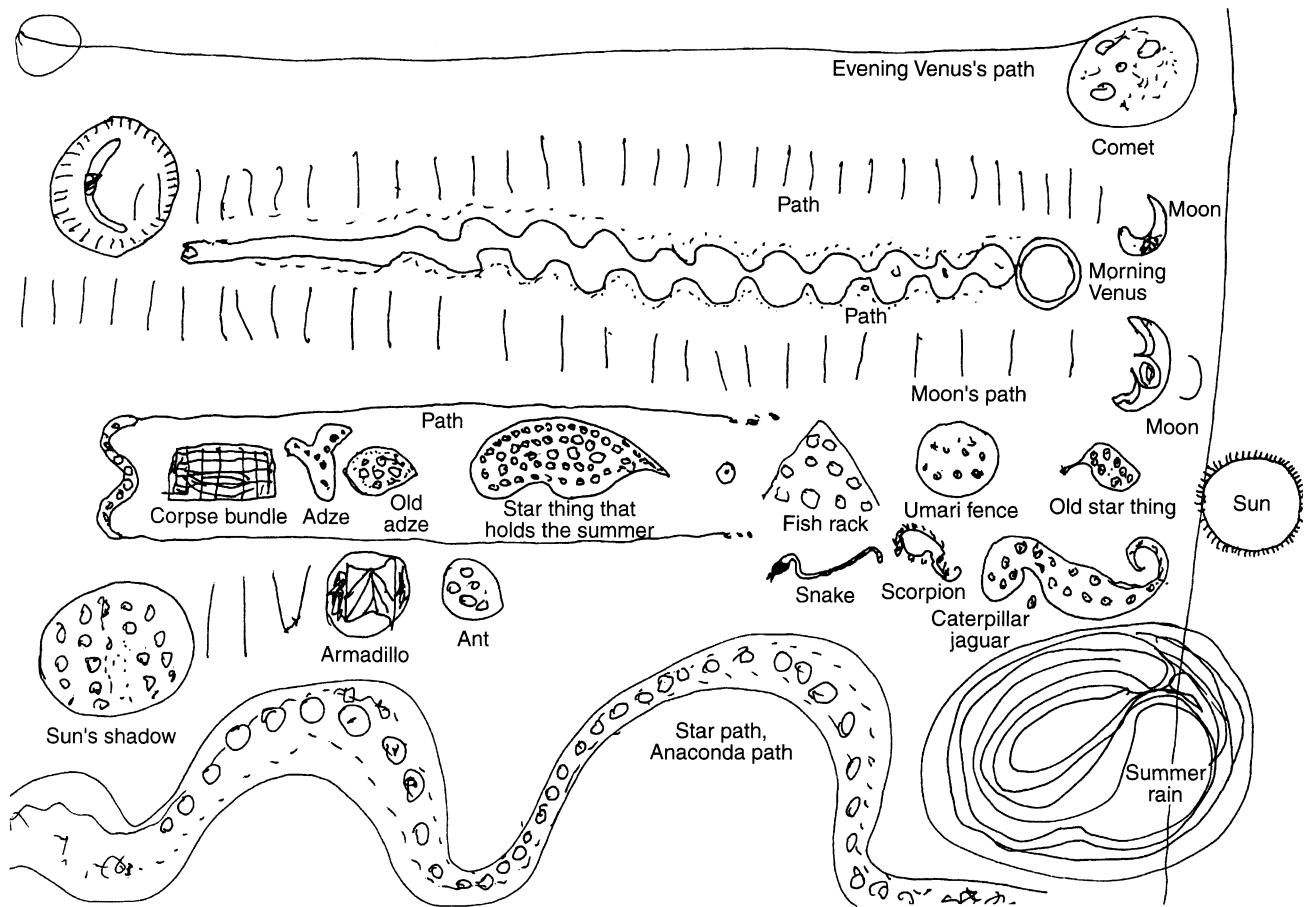


FIG. 7.7. THE BARASANA COSMOS DRAWN BY A BARASANA SHAMAN. Constellations are here mapped as identities from Barasana mythology. The star path is already familiar from the previous figures. The Pleiades, or Star Woman, is shown here as the “star thing that holds the summer.” A full explanation of the interplay of celestial observation and mythological repertoire is given in Hugh-Jones, “Pleiades and Scorpius.”

After Stephen Hugh-Jones, “The Pleiades and Scorpius in Barasana Cosmology,” in *Ethnoastronomy and Archaeoastronomy in the American Tropics*, ed. Anthony F. Aveni and Gary Urton (New York: New York Academy of Sciences, 1982), 183–201, fig. 2.

points of reference marked by the house posts are identified with the stars of the celestial hexagon, and the middle section of the roof “is supported by another set of six vertical posts that delimit a hexagonal central part that has ritual functions.”<sup>14</sup> However, it would be wrong to assume that these cosmological principles are restricted to the modeling of social organization, for they become philosophical principles as well. The six lines of the celestial hexagon that encompass sacred space are also a metaphysical model of a moral proposition called “the path, the way,” which an individual must travel in life.<sup>15</sup> The human brain is itself seen as organized according to the same principles as the celestial vault, so the use of powerful psychotropic drugs to induce shamanic visions constitutes an important means for mapping the cosmos as well as exploring other cosmic dimensions revealed in the journey of the soul during a drug experience.<sup>16</sup> As a result, astronomical mapping blends almost impercepti-

bly into a wider cosmology, since the heavenly bodies are understood as actors in human history and so take their place as discrete entities, distinct from their relative positioning in the overall celestial order. Moreover, the quest for cosmological knowledge takes its participants “beyond the Milky Way” and into the realm of metareality where shamans may battle with these celestial personages during a *yajé* trance.<sup>17</sup> Plate 13 and figures 7.11–7.13 map this normally unseen universe that is nonetheless directly connected to and interactive with that of daily observation.<sup>18</sup>

14. Reichel-Dolmatoff, “Astronomical Models,” 172–73 (note 10).

15. Reichel-Dolmatoff, “Astronomical Models,” 175.

16. Reichel-Dolmatoff, “Astronomical Models,” 176.

17. Gerardo Reichel-Dolmatoff, *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians* (Los Angeles: UCLA Latin American Center Publications, 1978), 7–14.

18. Plate 13 and figures 7.11–7.13 were produced by two Tukano in-

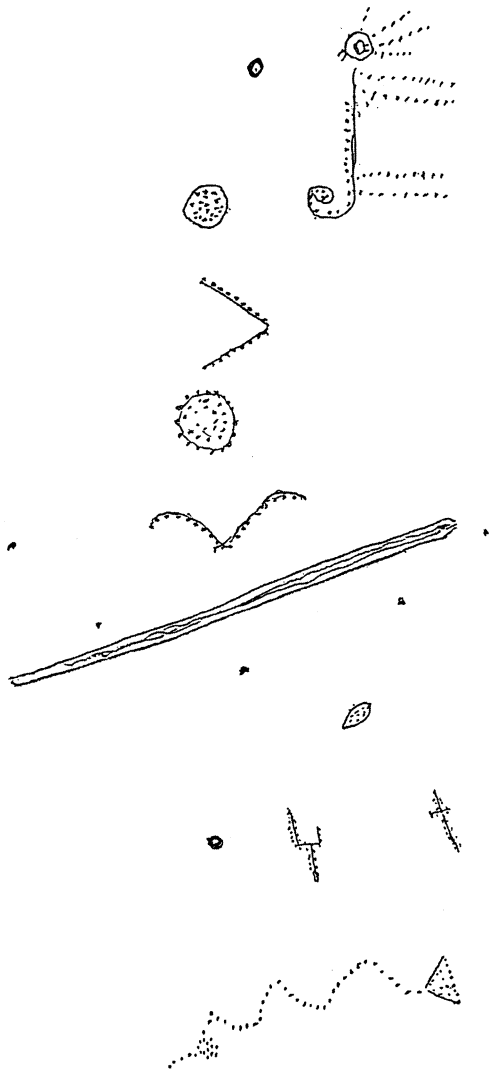


FIG. 7.8. THE NIGHT SKY OF THE TUKANO, DRAWN BY A TUKANO INDIAN FOR THEODOR KOCHGRÜNBERG. At the bottom of this drawing is the star path of the celestial anaconda, above which appear various isolated constellations and the path of Venus across the night sky. In the top half the V-shaped fish rack constellation, the fish trap constellation (*umari* fence), and the jaguar are also visible. Compare figure 7.7.

After Theodor Koch-Grünberg, *Anfänge der Kunst im Urwald: Indianer-Handzeichnungen auf seinen Reisen in Brasilien gesammelt* (Berlin: E. Wasmuth, 1905), pl. 55.

Such shamanic visions are part of the conceptual organization of everyday life, including subsistence activities. Among the Warao people of the Orinoco delta, both the location of settlements and the resulting means of exploiting the ecosystem follow shamanic interpretations of telluric features that are related to the cosmological order. In this way the paths of the culture heroes Dauarani and Haburi delimit zones of contrasting ecological practice

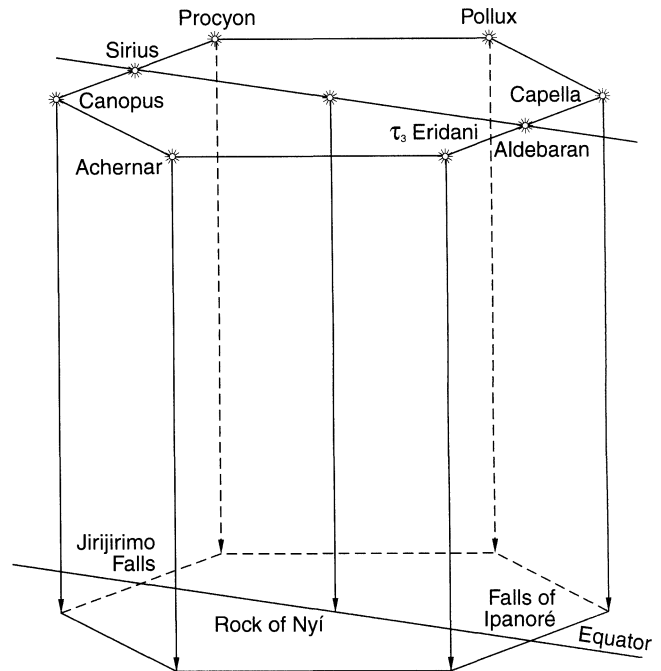


FIG. 7.9. THE HEXAGONAL PRISM THAT LINKS THE EARTH AND SKY. The Falls of Ipanoré are the point of origin of the Tukano, and the Jirijirimo Falls are the largest in the territory. The center of the prism is the rock of Nyi (see fig. 7.16 below). The hexagon is also a territorial and social map of Tukano society. It is divided into six tribal segments, united by three pairs of intermarrying clan segments, which are geographically arranged in a hexagonal pattern.

After Gerardo Reichel-Dolmatoff, "Astronomical Models of Social Behavior among Some Indians of Colombia," in *Ethnoastronomy and Archaeoastronomy in the American Tropics*, ed. Anthony F. Aveni and Gary Urton (New York: New York Academy of Sciences, 1982), 165–81, fig. 1.

and firmly link those practices to the cosmological order (figs. 7.14 and 7.15).<sup>19</sup>

A similar set of ideas informs Tukano ecological practice, where petroglyphic and pictographic representation is used to map the resources of the environment and even to delineate the "houses" of the "master of animals." Reichel-Dolmatoff writes:

Another kind of sacred space is that surrounding the lonely rock hills that rise here and there over the horizon of the rain-forest. . . . On the flat walls or overhanging cliffs of many of these hills one can observe pictographs painted in shades of ochre, representing game animals or abstract geometrical designs. . . .

dividuals, Biá and Yebá, when ethnographers presented them with a clipboard, sheets of white paper (28 × 22 cm), and colored pencils. For more information on the construction of these figures, see Reichel-Dolmatoff, *Beyond the Milky Way*, 49 and 145–48.

19. Johannes Wilbert, "Geography and Telluric Lore of the Orinoco Delta," *Journal of Latin American Lore* 5 (1979): 129–50.



These rock formations too are avoided by travellers and eventually have become game reserves because the hunters will rarely approach these spots. The sacredness of these hills or pools, with their respective petroglyphs or pictographs, is due to a complex of beliefs concerning . . . the Master of Animals . . . the fundamental idea being that these are the dwelling places of supernatural dwarf-like beings who are the keepers and protectors of all terrestrial game animals and aquatic creatures. . . . The hills and pools are imagined as womb-like enclosures where animals multiply.<sup>20</sup>

The master is visited by shamans during hallucinogenic trance when they seek permission for hunters and fishers to kill their prey. The master will then release a certain number of animals into the forests or rivers, but a price in human souls must be paid for this bounty. Those who transgress ritual and social rules are therefore greatly at risk, and the relationship between the shamans and the master becomes an effective means of sociological and ecological management.<sup>21</sup>

Another petroglyph is the rock of Nyí (fig. 7.16), where the river Piraparaná crosses the equator. The significance of the rock stems from the idea that the progenitor of the Tukano sought the place where the stick of his shamanic rattle would cast no shadow, identifying the place from which the first people emerged. The progenitor traveled in an anaconda canoe until he reached this spot on the Piraparaná River, and from here the first people spread out to take possession of the land.<sup>22</sup> The rock of Nyí is a feature of both the physical landscape and Tukano sacred geography.

In eastern Amazonia, very similar ideas have been noted with regard to petroglyphs as maps of ecological practice used to map and sign appropriate fishing techniques. In particular, a complex assemblage along the Kassikaityu River has been plausibly related to the control of fish stocks in that river. The individual glyphs represent fish traps appropriate to different species of fish (fig. 7.17). The systematic exploitation of these rivers thus had consequences for the use of the spawning pools where particular species occur.<sup>23</sup>

Other petroglyphs are given the interpretation of being traces of ancestors or of fantastic beings that preceded or inaugurated human occupation. The “nandu prints” are particularly well known. Both the Tupi-Guarani, of the southern part of the South American continent, and the European missionaries believed these marked the passage of a culture hero—Sumé or Sommay to the natives, and Tomé or Saint Thomas with whom he was identified by the missionaries.<sup>24</sup> Unfortunately, most of the cultural traditions related to such petroglyphs have long since disappeared, so that it is only from recent ethnographic cases that the cultural context of these spiritual maps can be recovered.

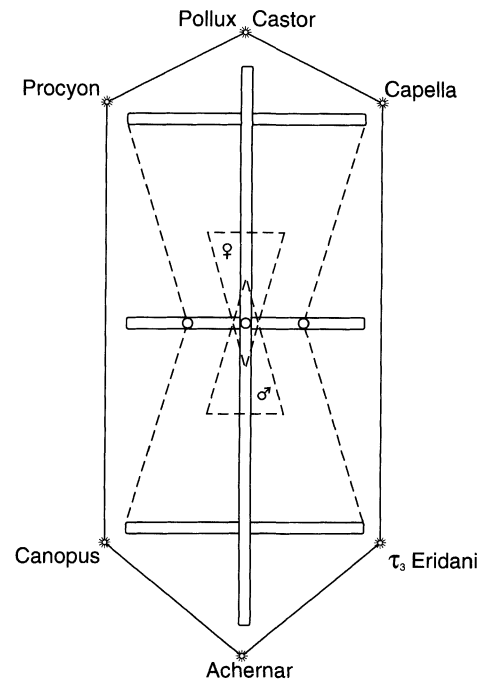


FIG. 7.10. THE LONGHOUSE IDENTIFIED AS ORION. The six stars of the hexagonal prism in figure 7.9 are also encoded in the architecture of the longhouse so that the movements of the dancers within replicate celestial movements without. The inner hourglass-shaped path marks the overlapping pattern of male and female dancers. After Gerardo Reichel-Dolmatoff, “Astronomical Models of Social Behavior among Some Indians of Colombia,” in *Ethnoastronomy and Archaeoastronomy in the American Tropics*, ed. Anthony F. Aveni and Gary Urton (New York: New York Academy of Sciences, 1982), 165–81, fig. 4.

Mapped or marked natural features are also part of a wider understanding of the cosmological position of the earth and its inhabitants with regard to both the celestial order and the unseen Underworld that lies below the “earth disk.” The Warao of Venezuela think that both the bottom and sides of the earth disk are smooth as it floats in the world sea, but that the surface is jagged like the skyline and cracked by the myriad waterways of the re-

20. Gerardo Reichel-Dolmatoff, *Shamanism and Art of the Eastern Tukanoan Indians* (Leiden: E. J. Brill, 1987), 6–7.

21. Reichel-Dolmatoff, *Shamanism and Art*, 8–9.

22. Reichel-Dolmatoff, *Shamanism and Art*, 4.

23. Williams has extensively documented the petroglyphs of northern South America and eastern Amazonia: Denis Williams, “Petroglyphs in the Prehistory of Northern Amazonia and the Antilles,” in *Advances in World Archaeology*, 5 vols. (Orlando, Fla.: Academic Press, 1982–86), 4:335–87, esp. 364–67 and 376–80, and idem, “Controlled Resource Exploitation in Contrasting Neotropical Environments Evidenced by Meso-Indian Petroglyphs in Southern Guyana,” *Journal of Archaeology and Anthropology* 2 (1979): 141–48.

24. C. N. Dubelaar, *South American and Caribbean Petroglyphs*, Caribbean Series 3 (Dordrecht: Foris, 1986), 63–65.



FIG. 7.11. MAP OF A VISION QUEST DRAWN BY YEBÁ, A TUKANO SHAMAN. The six panels, read top to bottom, serve as a guide to the hallucinatory imagery that appears as the shaman drinks successive cups of the drug *yayé*. The design maps a spiritual journey and serves as an introduction for the novice. The first panel shows, just as the first cup of *yayé* reveals, a crenellated line that represents the snake canoe of the Tukano creation myth. As soon as the second and third cups are taken, the next panel of crimped lines (red and brown in the original) appears in the guise of the body of the snake. The third panel, seen after the fourth cup, is the Milky Way, with the individual dots standing for clouds and some red ones for the berries that are used for fish bait. The series of engrailed

lines of running arcs in the fourth panel represents the sun-father, while the invested line below it (fifth panel) represents humanity, suggesting interpenetration and reciprocity. The sixth panel, seen after the seventh cup of *yayé*, begins with a chain of dots (red) representing fish bait and continues with a series of crenate lines that repeat the theme of divine reciprocity with humanity.

From Gerardo Reichel-Dolmatoff, *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians* (Los Angeles: UCLA Latin American Center Publications, 1978), pl. VI. By permission of Gerardo Reichel-Dolmatoff Foundation, Bogotá, Colombia.

gion. From the edge of the disk one can look across the ocean to the horizon, which lies at the end of the world (fig. 7.18). Encircling the earth in the world sea is the great “snake of being,” whose body contains the luminous essence of all life forms and whose breath creates the tides. Beneath the earth and world sea lives the goddess of nadir in the form of a gigantic serpent with four heads, each with antlers pointed in a cardinal direction. The

whole is contained under a bell-shaped firmament that is the celestial world. Other regions of this universe are inhabited by the “ancient ones”: the butterfly god to the north, the toad god to the south, the god of origin (in avian form) to the east, and the macaw god to the west. A shaman of human origin lives at the apex of the firmament and connects to the world down an *axis mundi*, recalling the phallic staff with which the sky penetrates the

earth in Tukano cosmology. Surmounting the firmament is a cosmic egg, laid by Mawári, the swallow-tailed kite, which houses a game played by insect spirits that determines the fate of life on earth and is elucidated by shamans.<sup>25</sup> This is above all a participatory universe, and both shamans and the dead must travel prescribed paths in the journeys of their souls across the cosmological landscape, just as humans must ensure the continuity of the cosmological order by their awareness and participation. This is no abstract or purely intellectual matter, however, since infant mortality rates can be very high, up to 49 percent, and the gods of the native cosmos must feed on human souls. There are high stakes in this struggle between people and divinities, in which almost half of the infants born are thought to lose their lives to supernatural beings.<sup>26</sup>

Similar conceptions exist for other lowland South American groups, including the Tukano and the Ye'cuana. Indeed, there are some striking analogies between the architectural expression of roundhouse symbolism (fig. 7.19) and the Warao model of the cosmos.<sup>27</sup> The cylindrical floor of the world-encompassing ocean and the earth disk that floats on it correspond to the ground plan of the Ye'cuana roundhouse, while the snake of the Underworld is likened to the "ring of family quarters whose extreme ends, like those of the snake, approach each other in the east."<sup>28</sup> This also recalls the use of the snake motif to map social hierarchy and its origins (fig. 7.5 above) by using the intellectual connection in native thought to the celestial anaconda. The snake is also a visual icon for the representation of rivers, physical paths of migration, and so ethnic origin (fig. 7.20).

For the Gê peoples of the savannas of central Brazil, such as the Kayapó, Xavante, Canela, and Timbira, the architecture of the house, as well as the layout of the village as a circle of dwellings connected by paths that form a spoke pattern, symbolically expresses the divisions of clan and moiety. Four major paths through the village are cardinally aligned. Like the Warao, the Kayapó conceive of the world in disk form. For the Kayapó, however, the world is formed by a series of concentric rings at whose core lies the men's house (fig. 7.21). The Apinayé, another subgroup of Gê speakers, also base their society on an ideal circular form (fig. 7.22).<sup>29</sup> Additional examples of the spatial arrangements of village life and the making of village plans can be found among ethnographic materials on the neighboring Mehinaku.<sup>30</sup>

Intimately connected to a society's origins are the origins of the environment it occupies. In the case of the



FIG. 7.12. ROUTES BETWEEN DIVINITY AND HUMANITY DRAWN BY YEBÁ. This illustration shows the wanderings of Pamuri-mahsë (the creator). The seven columns at the base of the map represent songs that correspond to different recitals of the creation myth. The row of fork-shaped elements depicts a series of ritual cigar holders men use in the gatherings that take place when two complementary exogamic groups meet and engage in ritual dialogue. To the right is the canoe that carried the first humans and their offspring, and above them appears a celestial door that visually maps the actions of men as singers and orators in their approach to divinity. To the upper left is a human figure, possibly Pamuri-mahsë, who plunges earthward bearing gourd rattles (L-shaped elements) and ritual songs (curlicues). The overall image maps the route between earth and cosmos and so emphasizes the reciprocity of men and divinities.

From Gerardo Reichel-Dolmatoff, *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians* (Los Angeles: UCLA Latin American Center Publications, 1978), pl. X. By permission of Gerardo Reichel-Dolmatoff Foundation, Bogotá, Colombia.

*the Afterlife in Pre-Columbian America*, ed. Elizabeth P. Benson (Washington, D.C.: Dumbarton Oaks Research Library, 1975), 163–89, esp. 180–82.

27. Wilbert, "Warao Cosmology," 40, n. 4, and 45–54.

28. Wilbert, "Eschatology," 48.

29. See Roberto Da Matta, *A Divided World: Apinayé Social Structure*, trans. Alan Campbell (Cambridge: Harvard University Press, 1982), esp. 35–45 and figs. 2–6.

30. See Gregor, *Mehinaku*, 48–60 and fig. 9 (note 9).

25. Johannes Wilbert, "Warao Cosmology and Yekuana Roundhouse Symbolism," *Journal of Latin American Lore* 7 (1981): 37–72, esp. 37–40.

26. Johannes Wilbert, "Eschatology in a Participatory Universe: Destinies of the Soul among the Warao Indians of Venezuela," in *Death and*

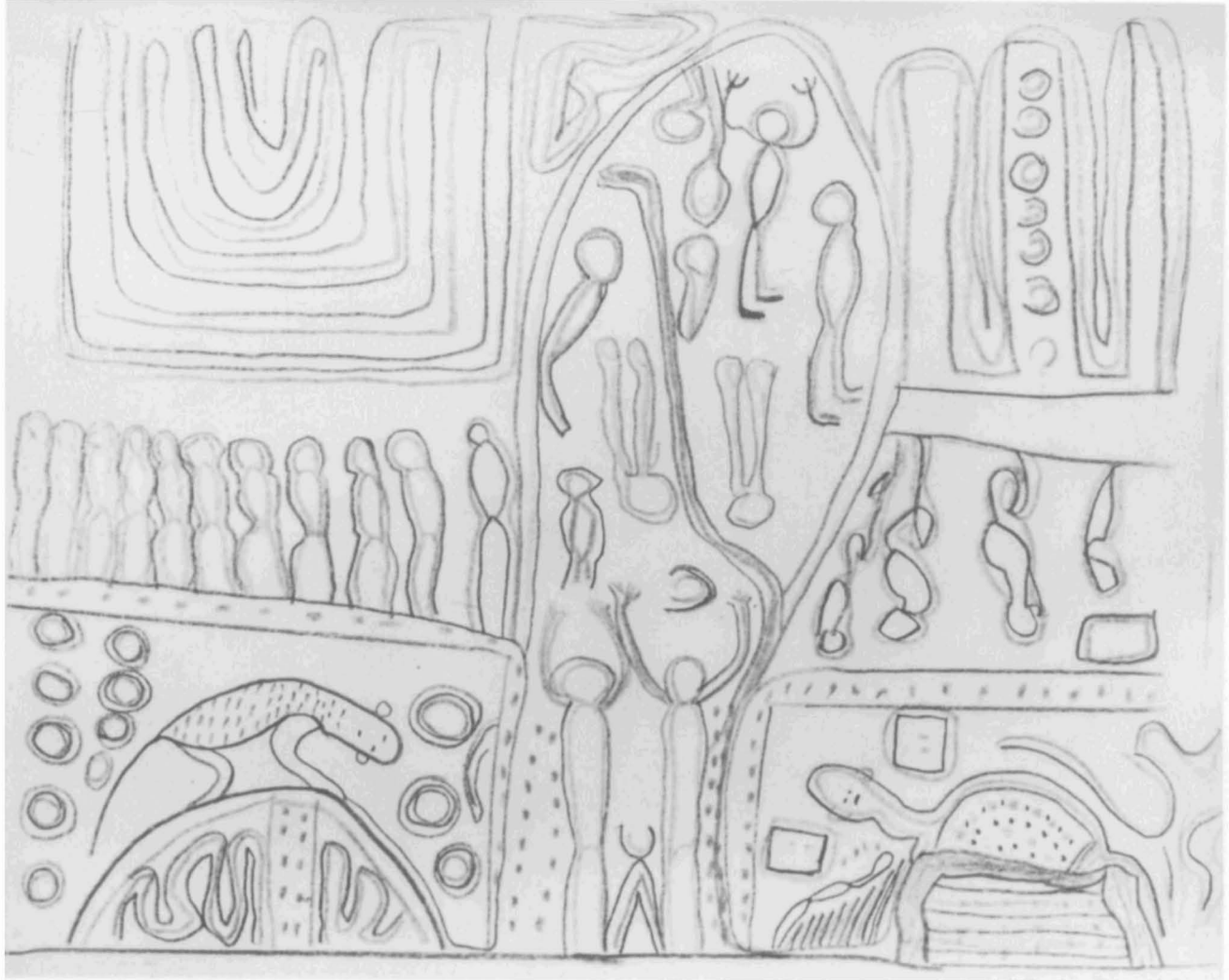


FIG. 7.13. THE VIEW FROM THE HOUSE OF PAMURI-MAHSĒ DRAWN BY YEBÁ. This design presents us with a chart of what can be seen from the house of Pamuri-mahsē. To the left is a jaguar atop the “house of the hills,” and to the right a turtle lies over the “house of the waters.” Beyond the house of the hills lies a celestial door below which are phallic beings. Immediately in front of Pamuri-mahsē’s house and con-

tained within a womblike U-shape, we see the First Man and First Woman making people.

From Gerardo Reichel-Dolmatoff, *Beyond the Milky Way: Hallucinatory Imagery of the Tukano Indians* (Los Angeles: UCLA Latin American Center Publications, 1978), pl. XVII. By permission of Gerardo Reichel-Dolmatoff Foundation, Bogotá, Colombia.

Warao, the world disk and its partitions into cosmological and ecological categories also constitute a map that can be used for ecological purposes. The disk expresses not only the location and identity of particular landscapes but also the compelling character of the relations with divinities, who are in their own way as dependent on humans as humans are on them. In this sense the world disk maps physical and metaphysical terrains, since it is vital to establish the correct place of humans with regard to multiple domains, not just the geographical. As Wilbert writes:

This example characterizes the spirit of the canoe peoples of the Caribbean . . . an intellectually active and

physically mobile society accustomed to living on an earth securely anchored within the round of the world snake that encircles it and sustained by the knowledge that as long as man lives according to established cultural norms he can live safely at the center of his universe. A north-south dynamic is built into this world view, inasmuch as the terrestrial disk is suspended between the earth-god mountains of Nabarima and Karoshimo, because the east represents the unapproachable world of the God of Origin (in the Atlantic Ocean) and the west the ominous region of the Underworld. On their journeys across the sea the Warao could always remain in the center of the universe as the circle of the horizon traveled with them, and, if

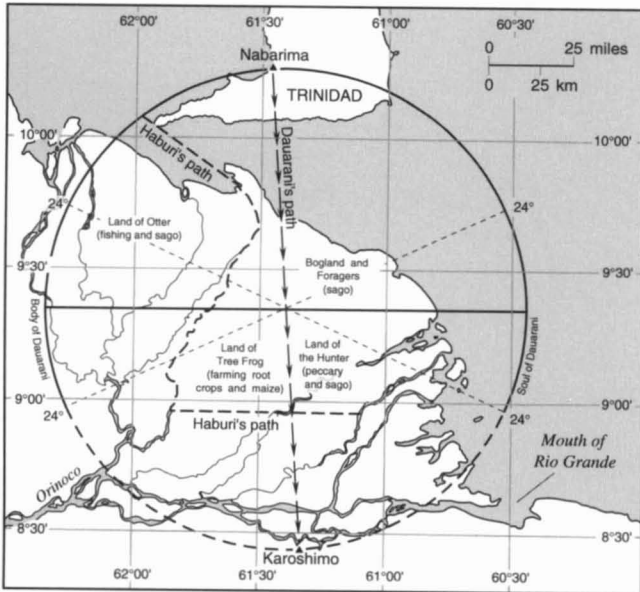


FIG. 7.14. HOBABI, LAND OF THE WARAO. Figures 7.14 and 7.15, derived from the research of Johannes Wilbert, help us visualize the way the Warao, ancient occupiers of the Orinoco delta, map their world according to ecological and mythological criteria. This figure illustrates the division of the landscape according to the ecological significance of each quadrant of the Orinoco delta, as appropriate for the practice of sago or maize farming, peccary hunting, foraging, and fishing. These classifications are embedded in the songs and tales of the origins of the cosmos, which trace the mythological journey of the culture hero Haburi. After Johannes Wilbert, "Geography and Telluric Lore of the Orinoco Delta," *Journal of Latin American Lore* 5 (1979): 129–50, esp. 136.

need be, they could establish a new home wherever two mountains could serve as the poles of their earth and the abode of the earth-gods.<sup>31</sup>

If characteristics of landscape elements are assimilated into existing maps of the cosmos, so too, as in early European mapping of this region, the search for places whose existence is indicated by cosmological ideas also forms an element of native cartography. The best-known example of this comes from the southern regions of South America and is part of the Tupi-Guarani cultural tradition. This is the spiritual and physical search for *guayuyupia*, the Land without Evil. This land of immortality and contentment was a product of the apocalyptic vision of the *karai* (prophet-shamans), and the hope of its discovery provoked mass migrations among the native population, who abandoned their villages and chiefs to follow the *karai* in their mystical quest. Such migrations had a uniformly east-west orientation and for some groups were directly identified with Kandire, the Inka empire toward the west. The arrival of the remnants of one of these millenarian migrations in Chachapoyas, Peru, in 1549, provoked an episode in Spanish mystical exploration, for

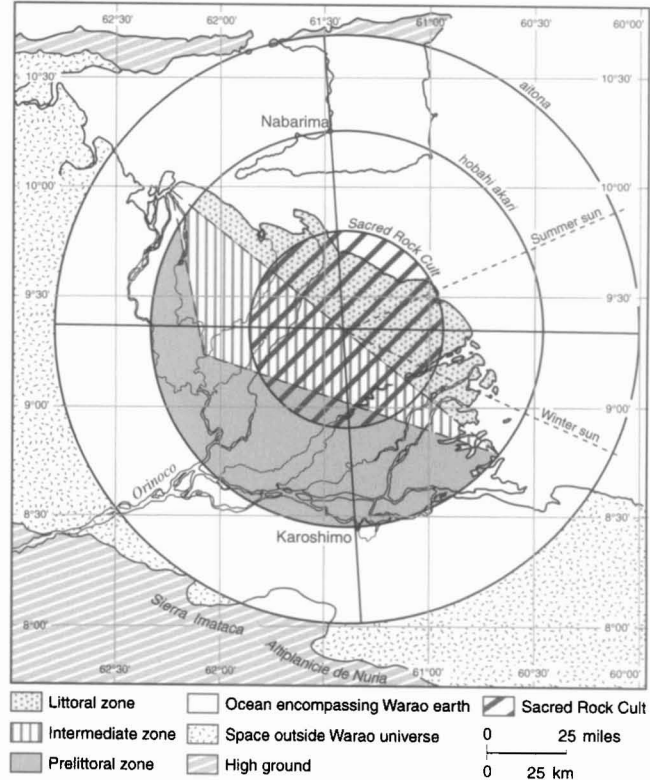


FIG. 7.15. WARAO TELLURIC LORE. In this illustration the mythical geography of Hobahi is further revealed. To the north is the abode of the earth god Nabarima, "Father of the Waves," which is visually identified with Naparima Hill near San Fernando, Trinidad. To the south is the abode of the earth god Karoshimo, "Red Neck," which is visually identified with the Cerro Manoa, Venezuela. The connecting arcs define the extent of the earth disk, which floats on the ocean's waters. By correlating terrestrial features with Warao cosmology, Wilbert determined that the diameter of the earth disk is 212 kilometers. This makes the total surface of the Warao earth 35,299 square kilometers, while the disk's radius (106 kilometers) fixes the literal center point of the earth. The earth disk, so conceived, delimits the proper domain of the Warao themselves within *hobahi akari* or "where the earth breaks off," bounded by the encompassing horizon of *aitona*, the very edge of the universe. After Johannes Wilbert, "Geography and Telluric Lore of the Orinoco Delta," *Journal of Latin American Lore* 5 (1979): 129–50, esp. 137.

the Spanish joined the Tupi in searching for the kingdom of Omagua, believing it to be El Dorado.<sup>32</sup>

A similar conception was also held by the peoples of the Greater Antilles in the Caribbean, but here the shamanic and physical search was for the land of *guanin* (a magic alloy of gold and copper). Again we find that this

31. Wilbert, "Geography and Telluric Lore," 148 (note 19).

32. Hélène Clastres, *The Land-without-Evil: Tupi-Guarani Prophetism*, trans. Jacqueline Grenez Brovender (Urbana: University of Illinois Press, 1995), esp. 22–24 and 49–51.

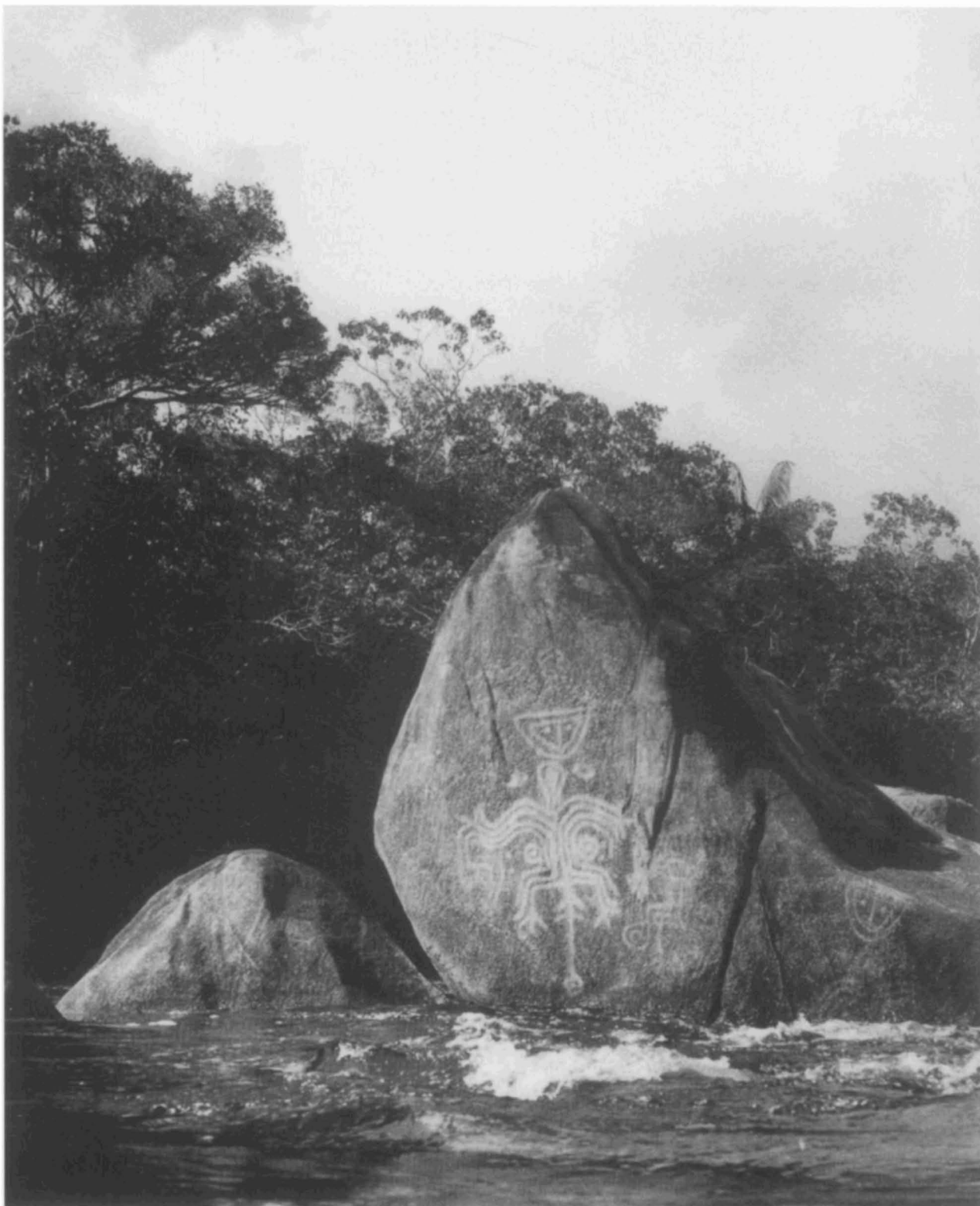


FIG. 7.16. THE ROCK OF NYÍ, PIRAPARANÁ RIVER, COLOMBIA. The inscribed petroglyph shows the mythical stick rattle in the shape of a winged phallus. The upper end points at a triangular face, which some see as a vagina. The rock marks the central axis of the cosmos and is also itself marked by the image of the stick rattle, which alludes to the

role of shamans in linking earth beings to the celestial activities of mythic heroes and gods.

From Gerardo Reichel-Dolmatoff, *Shamanism and Art of the Eastern Tukanoan Indians* (Leiden: E. J. Brill, 1987), pl. I. By permission of Gerardo Reichel-Dolmatoff Foundation, Bogotá, Colombia.

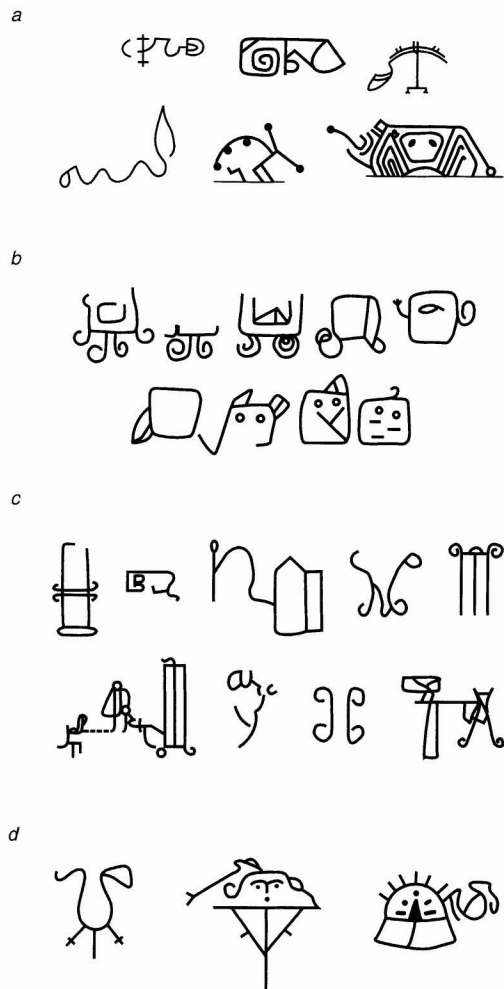


FIG. 7.17. MAPPING ECOLOGICAL USAGES. The petroglyphs in this sequence show how a direct inscription of the landscape can, with proper interpretation, serve as a map of permissible ecological activities. These examples taken from southern Guyana show the importance accorded to the “magical” or shamanic control of the unseen forces that are present in the landscape. Although the cultures that produced these petroglyphs are no longer extant, the complex of beliefs that produced them would have been analogous to those known ethnographically from among the Tukano. The petroglyphs enumerate species by indicating optimum techniques for their capture: (a) spring-basket fish traps (conical); (b) rectangular fish traps; (c) cylindrical fish traps; and (d) variations in fish trap placement. The ideal is a technique that does not excessively disturb the cosmological connections between persons, animals, and divinities.

After Denis Williams, “Petroglyphs in the Prehistory of Northern Amazonia and the Antilles,” in *Advances in World Archaeology*, 5 vols. (Orlando, Fla.: Academic Press, 1982–86), 4:335–87, figs. 7.17–7.19 and 7.22.

quest was deeply inscribed in the cosmology of the islanders but also expressive of geographic reality.<sup>33</sup> The

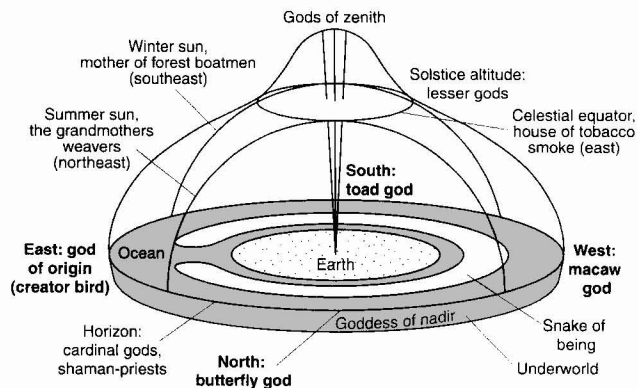


FIG. 7.18. PROFILE OF THE WARAO UNIVERSE. Figure 7.14 gave us a conception of how the Warao of the Orinoco delta organize spatial relationships according to the ecological wisdom encoded in the journeys of mythic heroes across the landscape. In this illustration we see how the earth disk is conceived spatially with regard to the rest of the cosmos. The earth disk is surrounded by the great snake of being in the all-encompassing ocean. At the cardinal points of the universe are four deities. Toad and butterfly indicate the north and south. Above are the gods of zenith. The changing annual positions of the rising and setting sun along the horizon are taken to illuminate the abodes of lesser deities. The lines drawn between these points on the solar horizon and the homeland of the Warao become physical paths for the destinies of the soul, which travels toward the zenith after death to encounter the final divine rapture.

After Johannes Wilbert, “Eschatology in a Participatory Universe: Destinies of the Soul among the Warao Indians of Venezuela,” in *Death and the Afterlife in Pre-Columbian America*, ed. Elizabeth P. Benson (Washington, D.C.: Dumbarton Oaks Research Library, 1975), 163–89, fig. 2.

land of *guanín* did indeed lie to the south and east of the islands, from where the *caniba* (enemy warriors) came to trade golden objects in exchange for persons.<sup>34</sup> As we shall see in the next section, this interplay between cosmological vision and physical mapping was also characteristic of European geographies of the early Renaissance. The context of the search for El Dorado will provide an

33. Sebastián Robiou Lamarche, “Ida y Vuelta a Guanín, un ensayo sobre la cosmovisión taína,” in *Myth and the Imaginary in the New World*, ed. Edmundo Magaña and Peter Mason (Amsterdam: Centre for Latin American Research and Documentation, 1986), 459–98, esp. 486–89.

34. Neil L. Whitehead, “The Mazaruni Pectoral: A Golden Artefact Discovered in Guyana and the Historical Sources concerning Native Metallurgy in the Caribbean, Orinoco and Northern Amazonia,” *Journal of Archaeology and Anthropology* 7 (1990): 19–40, esp. 30–31.

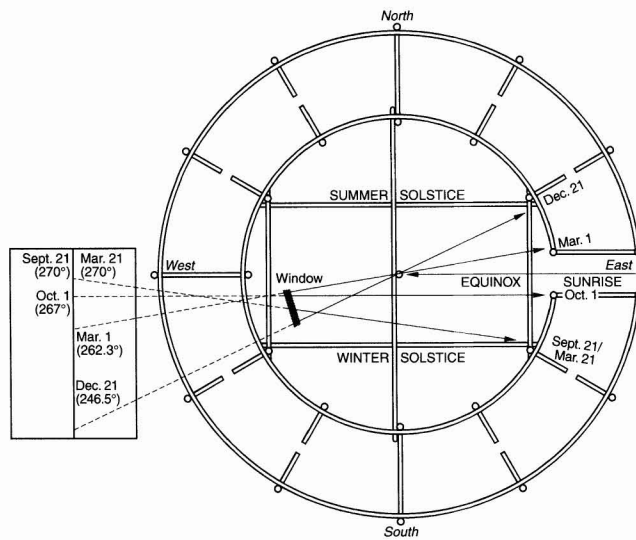


FIG. 7.19. THE ROUNDHOUSE AS COSMOLOGICAL MAP. The architecture of the Ye'cuana roundhouse from southern Venezuela (about 3–6°N) captures and illustrates key solar positions through the year. The entrance corridor of the house is oriented due east so that the equinoctial sunrise casts light on the central post. A roof window is positioned so that a beam of the setting sun at the winter solstice (21 December) aligns with the central pole and the northeastern corner of the solstice rectangle (the corners of the rectangle in the middle represent the sunrise and sunset points of the solstices on the horizon). The beam from the setting equinoctial sun falls through the roof window and illuminates the southeastern corner of the rectangle. The setting beam is cast on either side of the entrance corridor about 1 March and 1 October. In this sense the house is a microcosm of the universe, and the activities of its occupants are charged with cosmological significance.

After Johannes Wilbert, "Warao Cosmology and Yekuana Roundhouse Symbolism," *Journal of Latin American Lore* 7 (1981): 37–72, fig. 20.

example of how European and Amerindian cosmologies could blend.

In indigenous conceptions, ideas about the interconnection between persons and the cosmos may be enacted directly in ritual, through the design of costume and dance movements, or in songs and chants, since in a participatory universe it is only through ritual that the cosmic order is maintained. Both the costumes of dancers and the shamanically prescribed movements they make refer to the cosmos. The feathers that adorn the costumes of the Barasana in the Vaupés region of Colombia have many potential meanings, including their reference to birds—intermediaries with the sky world—while white egret plumage overtly recalls the stars and rain. As these cosmically charged ornaments circulate around the dance

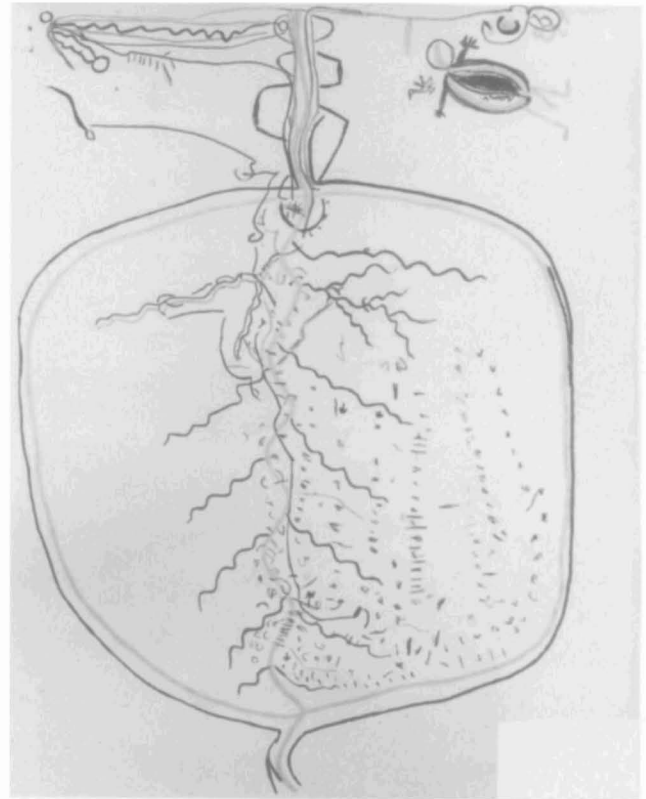


FIG. 7.20. THE AMAZON BASIN AS ANCESTRAL ANACONDA, DRAWN BY BARRETO OF THE TATUYO. Although much indigenous mapping is concerned with the structure of local relations between physical and spiritual space, this does not preclude the mapping of much wider, in this case continental, geography. In this example the mouth of the Amazon is the tail of the Anaconda, reflecting the alternative ways geographical significance is defined. It is an ascent of the Amazon, to the place where the ancestors first establish society, that interests the native cartographer, the track of that route being encapsulated in a "womb" to suggest genesis. To the upper right the shaman-bird steers the ancestors to their destination, which then suggests not just a physical ascent of the river system but a spiritual ascent to the knowledge of how real people ought to live.

From *L'Homme* 33, nos. 126–28 (1993), cover illustration. Collection Patrice Bidou, Laboratoire d'Anthropologie Sociale, Collège de France, Paris.

floor in the longhouse, which itself replicates the celestial vault, they follow the path of celestial bodies. The annual cycle of the stars and seasons is also replicated through the annual cycle of ritual and dance.<sup>35</sup>

Among the Arawakan Wakuénai, these kinds of representation occur in the form of chant. During male initiation rites, ritual specialists or "owners" of the sacred *málikai* chants construct an image of their locale by naming

35. Stephen Hugh-Jones, "The Pleiades and Scorpius in Barasana Cosmology," in *Ethnoastronomy and Archaeoastronomy in the American Tropics*, ed. Anthony F. Aveni and Gary Urton (New York: New York Academy of Sciences, 1982), 183–201, esp. 198–99.



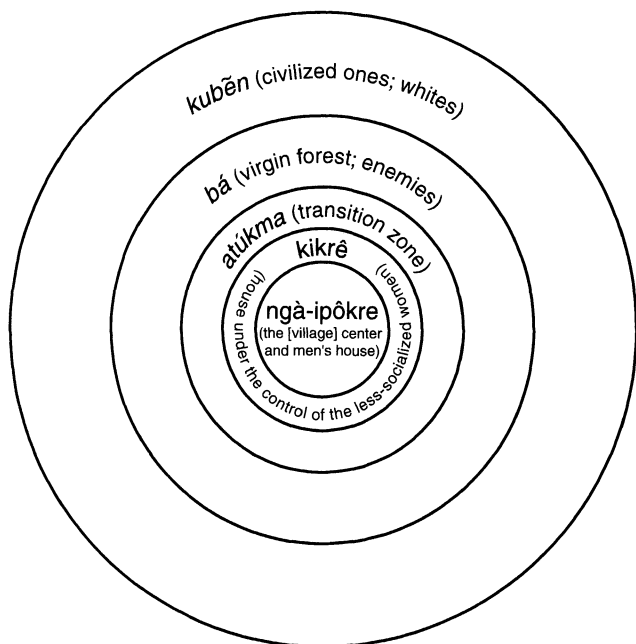


FIG. 7.21. THE WORLD OF THE KAYAPÓ. This illustration is a schematic for the Kayapó concentric conception of the place of the village in the radiating circuits of enemies and whites.

After Darrell A. Posey, "Pyka-tó-ti: Kayapó mostra aldeia de origem," *Revista de Atualidade Indígena* 15 (1979): 50–57, fig. 1.

sites significant in the mythology of the culture heroes Kuwái and Amáru. This recalls the telluric lore of the Warao as to the paths of Dauarani and Haburi (see fig. 7.14 above). The naming begins and ends at the place where humans emerged from the navel of the world and where Kuwái and Amáru are linked to the world of people by a cosmic umbilical cord. A long series of chants thus draws a journey across the Wakuénai landscape and thereby constructs a map of their world that shows an awareness of their place within the larger world of Arawakan speakers in South America.<sup>36</sup> These chants may also have been part of a deep cultural tradition of Arawakan speakers since the Lokono, and the Karipuna, who also extended into the Caribbean Islands, are particularly noted in the early sources for their complex astronomy. Although the mapping of natural and cultural spaces was largely confined to an oral cartography expressed through *areytos* (sacred chants), physical features like the constellations were held to be animate and so were also rendered in anthropomorphic form as stone *ceimi* (idols) (fig. 7.23) or were associated with cosmological authority and inscribed in the ceremonial *duho* (thrones) (fig. 7.24) of the elite.<sup>37</sup>

Such routes of ritual knowledge were nevertheless also practical guides to trading contacts and political allies. In the case of the Baré of the upper Rio Negro, trade routes

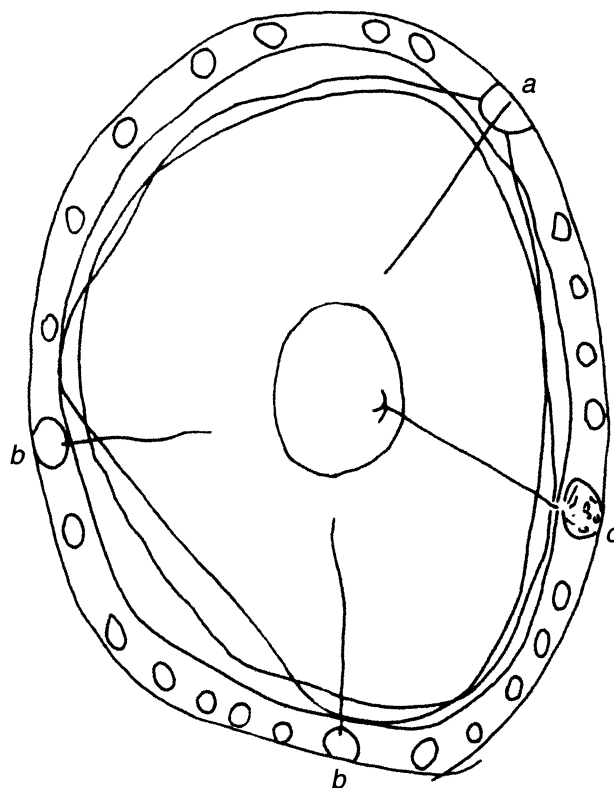


FIG. 7.22. IDEAL VILLAGE LAYOUT DRAWN BY CHIEF SÃO JOSÉ. At center is the village plaza with spokes connecting the chief's house (a) to those of his auxiliaries (b) and his counselor's house (c), corresponding to the two innermost circles on the schematic in figure 7.21. Although Chief São José's sketch accurately reflects the form of village layout, it also reflects his own view of social relations and reminds us of the ever-present connection between maps and wider political power.

After Roberto Da Matta, *A Divided World: Apinayé Social Structure*, trans. Alan Campbell (Cambridge: Harvard University Press, 1982), fig. 24.

linking the Amazon, Orinoco, and Atlantic coast are encoded in sacred geographies that delineate the paths of eminent ancestors and mythic heroes, such as Kuwái and Purunaminali.<sup>38</sup>

To one initiated into these meanings and their forms, the patterns on basketry or executed in body paint are replete with significance and can be read as a map, pro-

36. Jonathan David Hill, *Keepers of the Sacred Chants: The Poetics of Ritual Power in an Amazonian Society* (Tucson: University of Arizona Press, 1993), 43–44 and figs. 2.1 and 2.3.

37. Ramón Pané, *An Account of the Antiquities of the Indians*, ed. José Juan Arrom, trans. Susan Griswold (Durham: Duke University Press, forthcoming).

38. See Sylvia Margarita Vidal Ontivero, "Reconstrucción de los procesos de etnogenesis y de reproducción social entre los Baré de Río Negro (siglos XVI–XVIII)" (Ph.D. diss., Instituto Venezolano de Investigaciones Científicas, Caracas, 1993).

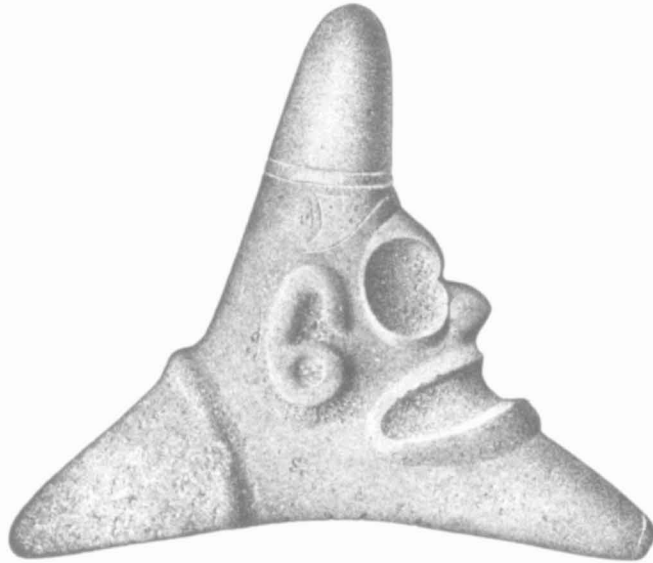


FIG. 7.23. *CEMI AS IMMANENT LANDSCAPE*. In the commonplace world of the native Ait'ij (modern-day Haiti and the Dominican Republic) farmer, the forces of terrestrial divinities loomed large and were indeed immanent within the trees, rocks, and earth as *cemi* (idols). Carving stone or wood into a *cemi* was thought to release and realize the form of the *cemi* within. Most powerful among the *cemi* were those associated with the high triangular peaks that are sites of volcanoes, some still active. The earth-transforming properties of volcanoes were evident enough, and given the richness of volcanic soils, the *cemi* within the triangular form was also powerful in agricultural matters and so would be buried in agricultural fields to enhance their fertility. It is therefore a spatial appreciation of the landscape form that connects the lonely peaks of the Caribbean islands with the divine powers of earthly production.

From Jesse Walter Fewkes, "The Aborigines of Porto Rico and Neighboring Islands," in the *Twenty-fifth Annual Report of the Bureau of American Ethnology to the Secretary of the Smithsonian Institution, 1903-04* (Washington, D.C.: United States Printing Office, 1907), 3-220, esp. 122 (fig. 21).

voking a chain of analogies that delineate the conceptual and physical space encoded in that motif. For example, a representation of the Milky Way can also suggest a river, a trail, a sloughed-off snakeskin, or streams of semen (see fig. 7.2 above). Meaning is engendered through reference to structurally similar objects in both culture and nature. An elaborate example of this comes from Ye'cuana basketry, and particularly the form *waja*, which functions as a flat, round serving tray (fig. 7.25). Enclosing rectilinear forms within a circle replicates the house and its garden and so gives basketry the same spatial symbolism as is found in the architecture of the house itself (see fig. 7.19 above). It also replicates the way its inhabitants surround the *waja* in prescribed ways as they eat.<sup>39</sup>

The modern ethnography of indigenous South American spatial concepts and their representation allows us to



FIG. 7.24. *CHART OF THE COSMOS CARVED ON CEREMONIAL DUHO*. This figure shows a cosmological design on the back of a pre-sixteenth-century wooden throne (*duho*) made by the native people of Ait'ij, illustrating the aesthetic use of spatial features. This *duho* incorporates a chart of the Pleiades supported by Orion's belt (band with three circles), whose significance is widespread on continental South America. The carving of these powerful symbols on the throne of the chief also alludes to the way a vital connection is maintained with the cosmos through the shaman and his throne. This doubly loaded reference then associates the seated chief with both earthly and divine power.

Photograph courtesy of Museo del Hombre Dominicano, Santo Domingo.

appreciate the now obscure traditions from which these practices emerged. Other available sources are historical reports of indigenous mapmaking and native information included in the European cartography of the New World.

39. David M. Guss, *To Weave and Sing: Art, Symbol, and Narrative in the South American Rain Forest* (Berkeley: University of California Press, 1989), 120-21, 163-70.

### HISTORICAL REPORTS OF INDIGENOUS MAPMAKING

Given the understanding we have developed of the cultural ideas that underlie indigenous representations of spatial relations, we are in a better position to evaluate various Western accounts of native mapmaking. A note of caution should be sounded at this point, however, since accounts of indigenous mapmaking may have been reported for a variety of reasons, some unconnected with the issue of native cartography—perhaps to demonstrate the author’s own credentials in dealing with “savage” peoples, or even to suggest the absence of developed cartographic abilities or geographical knowledge among the native population. An example of the former would be Raleigh’s presentation of a geography of the lower Orinoco River explicitly deriving from his claim to have enjoyed the confidence of the native rulers of the region, and so permitting him to finally identify the location of El Dorado.<sup>40</sup> By contrast, the latter motive seems to be implicit in many of the following examples; what is noteworthy in the opinion of the various authors is that native people are able to make abstract representations of spatial relationships in a way intelligible to outsiders. As we have seen, however, this entirely misses the point that indigenous mapping had cultural purposes other than geographic representation and was directed toward demonstrating spatial relations of various kinds.

These considerations are borne out by the fact that all the following examples of geographical representation were elicited from indigenous people to aid exogenous learning and to make up for the interrogators’ lack of linguistic, as much as geographic, understanding. As a result, we cannot simply assume that such exercises were part of a native tradition. They should be seen as providing evidence of the flexibility of indigenous cartographic practice as well as highlighting the differing cartographic needs of “locals” and “strangers.” In any case, such representations, even when made in a medium directly accessible to outsiders, might also be considered images of an ideal—not a physical—reality, since such inscriptions express relations of spiritual and political power as much as physical relationship. A good contemporary example of the importance of these considerations is from the Baniwa of the upper Rio Negro. A Baniwa elder drew a map of his village of Hipana for anthropologist Robin Wright (fig. 7.26).<sup>41</sup> Although the map was carefully drawn, it omitted places that the Baniwa elder disapproved of, such as the missionary’s house and the school, which placed this “ideal” (*lidana*) in the context of a spiritual and political landscape, as with the Kayapó example discussed above. With this in mind, we are better able to evaluate the significance of the following historical examples of native maps commissioned by Europeans.

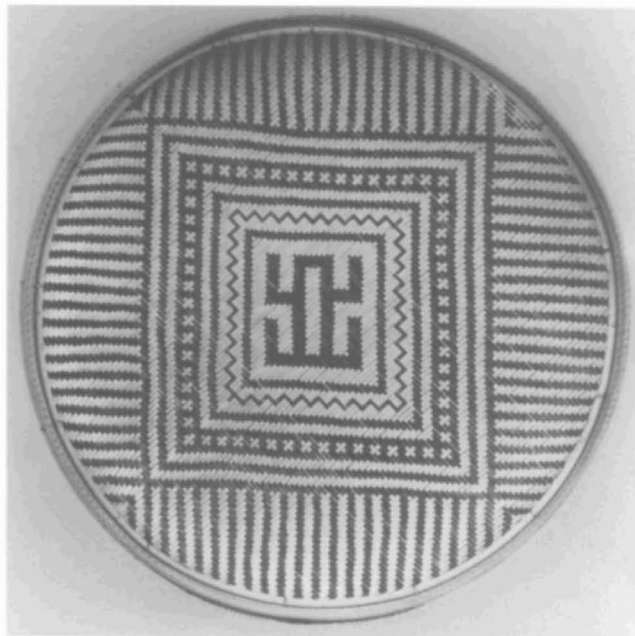


FIG. 7.25. THE BASKET AS CARTOGRAPHIC ICON. Just as domestic architecture can recall basic relationships that structure the universe, domestic artifacts are also significant for those who have the right cultural knowledge. The Ye’cuana roundhouse (fig. 7.19, above) and the *waja* (flat, round basket) pictured here are partially isomorphic in this regard. Baskets also share in the same spatial symbolism found elsewhere in Ye’cuana culture, such as in the layout of house and gardens or in the decoration of the body, ceramics, or other craft items. The motifs in this illustration recall the origins of hunting poisons (frog in center), the shamanic origins of basketry (squares), the acts of the originary Star People (stars as criss-cross squares), and the geographical encirclement of the Ye’cuana by white people (white heron as crenellated square around frog).

Photograph by Philip Galgiani. By permission of David M. Guss.

The earliest reference to such elicitation comes from the account of Bartolomé de Las Casas. He relates the story of King João II of Portugal, who ordered one of the Indians whom Columbus had brought to Europe to use fava beans to portray the islands of his homeland, which Columbus claimed to have discovered. “The Indian, quite boldly and readily, indicated the island of Española [Hispaniola], the island of Cuba, the islands of the Lucayos [Bahamas] and others of which he had knowledge.” The king then swept the beans aside and made the same re-

40. For an extended discussion of Raleigh’s diplomacy and geographical reporting, see Whitehead’s introduction to Walter Raleigh [Raleigh], *The Discoverie of the Large, Rich and Bewtiful Empyre of Guiana*, ed. Neil L. Whitehead (Manchester: Manchester University Press; Norman: University of Oklahoma Press, 1997).

41. Robin Wright, “History and Religion of the Baniwa Peoples of the Upper Rio Negro Valley” (Ph.D. diss., Stanford University, 1981), 49–50.

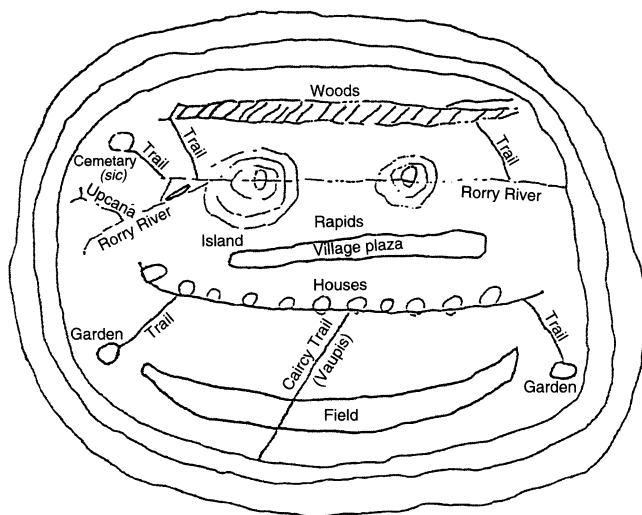


FIG. 7.26. *LIDANA*: MAP OF AN IDEAL BANIWA VILLAGE. The illustration shows the village of Hipana as a sacred center enclosed by three rings defining the world center, a zone of transition, and an outer zone beyond the forest. By permission of Robin M. Wright, State University of Campinas, Campinas, Brazil.

quest of another Indian, who repeated the same layout of beans but added many more islands, “giving account of all of them in his own language (that no one understood).”<sup>42</sup>

This example underlines the issue broached above concerning the meaning of such apparent cartographic representation, no matter how far it may accord with outsiders’ needs and purposes. It seems highly significant that, although the Caribbean islands might have been recognizably represented by the “Indian” through the medium of the bean map, its occasion and form were suggested by his European interrogators. Moreover, once this exercise was extended by the second “Indian,” the full meaning of the forms represented could not have been known to the audience because of the language barrier.

Many such exercises in eliciting geographical representations must have taken place during the course of colonial history, but few have been recorded in the literature, and most involve making sand maps to express the basic hydrology or settlement pattern of a region. With the exception of a very early reference in Yves d’Évreux’s 1614 account of the lower Amazon,<sup>43</sup> examples come from the nineteenth century and the dawn of ethnographic inquiry, and all are incidents of informants’ drawing sketch maps with finger or stick in sand or dirt in response to a specific external inquiry.<sup>44</sup> Much of the material reviewed in the first part of this chapter, however, is drawn from cases where, although pencil and paper were supplied, the requests made were more general so that the results reflected clearer examples of native cartography as cultural expression. The issue here seems

to be less a question of cartographic ability than an issue of cartographic forms and purposes.

The Tukano supply an important example for my arguments concerning cultural continuity and the relevance of modern ethnographic examples to an understanding of the past. Many of the materials for this chapter have been drawn from ethnographic publications on the Tukano peoples (Barasana, Desana). Similarities occur in form, style, and content between some of the materials published by Stephen Hugh-Jones in 1982 and those collected over three-quarters of a century earlier by Theodor Koch-Grünberg.<sup>45</sup> Comparing figures 7.7 and 7.8 should immediately suggest stylistic affinities in the representation of the night sky—stippling to indicate stars, the identification of various star paths in the form of celestial anacondas, and the presence of the fish rack, jaguar-caterpillar, and *umari* fence (fish trap) constellations.

One final example of mapping from an elicitation, which seems to draw on a still obscure native tradition of three-dimensional representation, involves modeling landforms. Richard Schomburgk gives a straightforward example, reporting that his request for geographical information produced a map modeled out of sand showing mountains, rivers, and settlements.<sup>46</sup> This recalls the Inka practice, noted by Wendell C. Bennett, of modeling their cities and domains in clay.<sup>47</sup> I have also seen similar clay models produced by the Patamona of Guyana, incorporating a school, hospital, and landing strip as a means of prophetic inducement—to bring these things into being. This also recalls the *lidana* of the Baniwa. It is noteworthy that Thomas Gregor mentions a category of representational forms, or *patalapiri*, that exists among the

42. Bartolomé de las Casas, *Historia de las Indias*, 3 vols. (Hollywood, Fla.: Ediciones del Continente, 1985), 1:324-25.

43. Yves d’Évreux, *Voyage dans le nord du Brésil fait durant les années 1613 et 1614*, ed. Ferdinand Denis (Leipzig: A. Franck, 1864), 70-71.

44. See Alexandre José de Mello Moraes, *Corographia historica, chronographica, genealogica, nobiliaria, e politica do Imperio do Brasil*, 4 vols. (Rio de Janeiro, 1858-63), 2:263-64; William Chandless, “Ascent of the River Purús,” *Journal of the Royal Geographical Society* 36 (1866): 86-118, esp. 106-7; Karl von den Steinen, *Durch Central-Brasilien: Expedition zur Erforschung des Schingú im Jahre 1884* (Leipzig: F. A. Brockhaus, 1886), 247; idem, *Unter den Naturvölkern Zentral-Brasiliens: Reiseschilderung und Ergebnisse der Zweiten Schingú-Expedition, 1887-1888* (Berlin: Dietrich Reimer, 1894), 153; and Theodor Koch-Grünberg, *Anfänge der Kunst im Urwald: Indianer-Handzeichnungen auf seinen Reisen in Brasilien gesammelt* (Berlin: E. Wasmuth, 1905), esp. 55-63.

45. Hugh-Jones, “Pleiades and Scorpius,” 187, fig. 2 (note 35), and Koch-Grünberg, *Anfänge der Kunst im Urwald*, pl. 54.

46. Moritz Richard Schomburgk, *Richard Schomburgk’s Travels in British Guiana, 1840-1844*, 2 vols., ed. and trans. Walter E. Roth (Georgetown, Guyana, 1922-23), 2:128.

47. Wendell C. Bennett, “Engineering,” in *Handbook of South American Indians*, 7 vols., ed. Julian Haynes Steward (Washington, D.C.: United States Government Printing Office, 1949-59), 5:53-65, esp. 58.



visualization is not lost on contemporary Amerindian leaders, and in the case of the Venezuelan Ye'cuana such an exercise in "autodemarcation" has resulted in a most impressive map (fig. 7.27). The form of presentation most effectively exploits the geographic sensibilities of the Venezuelan government—not least because this region is often "invaded" by miners from Brazil. The presentation of Ye'cuana ancestral claims in such a form is a token of the Ye'cuana's power in their own homeland, even as the occasion of its execution is an imminent threat of the loss of *kuyujani*.<sup>50</sup> The notion of *kuyujani*, like that of *guayupia*, is a form of *lidana* and an example of a *patalapiri* (see fig. 7.26 above). This suggests that it is less cartographic form than cartographic intent that is the key to understanding cultural difference in mapmaking. It now remains to consider how these various forms of native representation contributed to European cartography of lowland South America.

#### EUROPEANS' INCLUSION OF NATIVE INFORMATION

In discussing the incorporation of native spatial ideas into European maps, it is important to appreciate that geographical information may be transmitted in many ways other than graphic representation, such as gestures, words, songs, and so on. Given the complexity and intricacy of native mapping revealed by the ethnographic reports, one might think there was little possibility for Europeans and indigenous South Americans to understand each other's space-time concepts. In fact, the social context for gathering geographical information from the native population was such that these cultural differences varied in significance. For example, rivers were ostensibly enumerated by name, as were prominent landscape features. However, the gestures Europeans used to attain such identification would have been ambiguous at best; pointing at something with a questioning look does not automatically elicit a particular response. A pointing gesture may be interpreted as applying to almost anything within the field of vision or as having no immediate referent at all. Europeans' inquiries about topography and location beyond the field of view, as in the search for the courses of major rivers or the city of El Dorado, were indeed problematic. Yet it is easy to overwork this cultural contrast and infer that all such information so gathered was the product of native parochialism and nonnative credulity. This certainly happened, but more usually, bilingual native informants were a staple element of European cartographic efforts; for even if geographical knowledge was encoded by differing conceptual schemata, native people were perfectly able to recodify this spatial knowledge in forms intelligible to the Europeans. Indeed, where mutually advantageous endeavors were be-

ing contemplated, as in military campaigns against enemy sections of the native population, it was partly in natives' self-interest to do so. That native peoples had geographical intelligence or shared enemies with their would-be conquerors does not mean they did not also deceive the colonizers, or that such misinformation reflected poverty of geographical understanding, as those deceived might assume.<sup>51</sup>

I should also emphasize that such cartographic activities were usually the preserve of indigenous political or religious leaders. Within native societies, managing external relationships with persons or with the divinities that constituted cosmological space was the responsibility of shamans and chiefs. In turn, this elite control of external relations made geographical identification and location an issue of high political and spiritual significance, for which not all individuals were fitted. Consequently and not surprisingly, interest in matters cartographic was restricted to certain classes of persons rather than being a matter of general knowledge. Spatial conceptions were thoroughly infused with a range of cultural attributes whose interpretation was a key characteristic of the art of shamanism or the practice of chieftaincy and not restricted to a particular form of cartography.

A good example of the complex process of translating native geographical concepts into Euclidean space is the "Bericht" (report) of the Arawak native evangelist Jephtha.<sup>52</sup> This report was elicited by Moravian missionaries in the 1740s to aid their work among the unknown indigenous groups of the interior. Their informant, Jephtha, a convert to Christianity, described the major populations, something of their history, and their political relations with the Arawak (Lokono) of the Corantijn River in Suriname. The surviving result, recorded in the diary of the Moravian missionary Felix Staehelin, is not a drawn

50. Simeón Jiménez Turón and Abel Perozo, eds., *Esperando a Kuyujani: Tierras, leyes y autodemarcación. Encuentro de comunidades Ye'kuanas del Alto Orinoco* (Caracas: Instituto Venezolano de Investigaciones Científicas, 1994).

51. For example, in Walter Raleigh's account of his journey through the Orinoco delta, he records: "When it grew towards night . . . he tolde us but fower reaches more: when we had rowed fower and fower, we saw no signe. . . . At the last we determined to hang the Pilot, and if we had well knowen the way backe againe by night, he had surely gone. . . . but whether it was best to returne or go on, we began to doubt, suspecting treason in the Pilot more and more: but the poore old Indian ever assured us that it was but a little farther . . . and at last . . . we saw a light, and rowing towards it, we heard the dogs of the village" (Raleigh, *Discoverie*, 161–62 [note 40]). See also John Hemming, *The Search for El Dorado* (London: Joseph, 1978), for comments on the geographical information about El Dorado given to various explorers.

52. Felix Staehelin, *Die Mission der Brüdergemeine in Suriname und Berbice im achtzehnten Jahrhundert*, 3 vols. in 1 (Herrnhut, Germany: Vereins für Brüdergeschichte in Kommission der Unitätsbuchhandlung in Gnadau, [1914]), pt. 2, sec. 2, 173–81. In the original diary, dated 26 May 1751, Jephtha's "Bericht" is on p. 64.

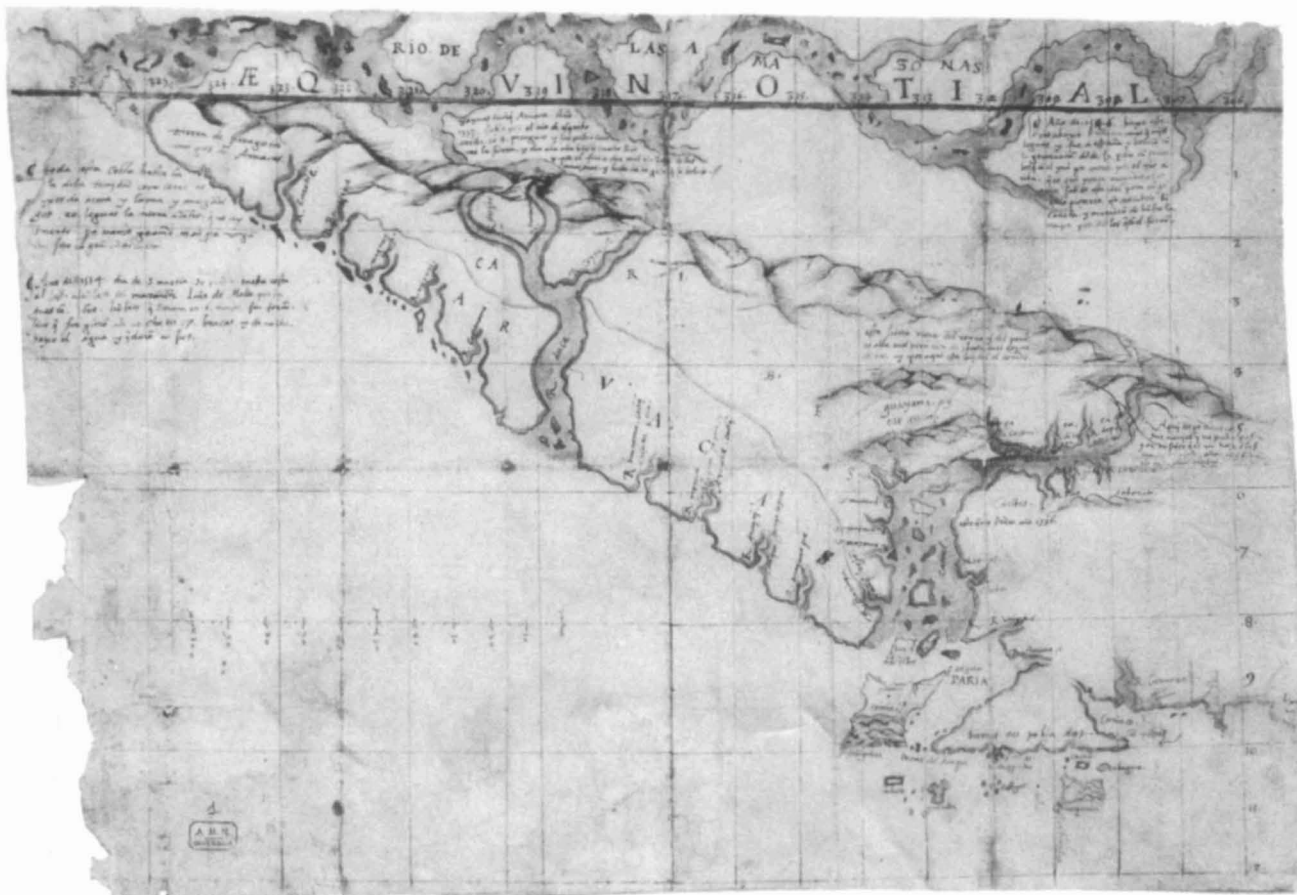


FIG. 7.28. MAPA DE LA PROVINCIA DE LOS ARUACAS, CA. 1560. Apart from the reversal of the conventional north orientation, this map is not visually difficult to interpret. Its significance lies in its hydrological information, which underscores the geographical knowledge of native leaders.

map but instructions for compiling such a map, including the latitudes and longitudes of the rivers and peoples mentioned. It seems likely that this information must have been drawn from an existing map of the region, since the location of the indigenous groups is a combination of native sociocultural categories and European geography. It is unusual in that the information pertains to the whole northern part of the continent and indicates that the Pacific Ocean was known to the Arawak, a group inhabiting the Atlantic coast. Jephtha's "Bericht" is therefore a striking piece of evidence illustrating that indigenous groups had knowledge of continental-scale geography through the long trauma of colonial occupation. That this tradition was maintained by the Arawak (Lokono) is perhaps less surprising when one considers that the Mapa de la Provincia de los Aruacas (ca. 1560) is one of the best examples of the inclusion of native information in a European chart (fig. 7.28).

The Mapa de la Provincia de los Aruacas reflects the close alliance of Aruaca (Arawak of the Lokono group)

and Spaniards along the Guiana coast in the sixteenth century.<sup>53</sup> Because this alliance was important to both groups, the geographical representation of Aruaca territories is commensurately detailed. In particular, the fluvial connection between the Guiana coast and the Amazon basin is clearly marked at top center, as is the native source for this data. A translation of the inscription reads: "Yayua Arawak chief, in the year 1553, ascended the Essequibo River to its upper region with four canoes and carried these across the mountain ridge, and came upon another river on the other side, and traveled through it to come upon the great river of the Amazons, and found so many people that he returned." This route apparently utilized the Rupununi River, which Raleigh was to associate with El Dorado (see fig. 7.29 below). The connection was well known to the Amerindians, and through them to the Spanish. However, this important

53. Joel Benjamin, "The Naming of the Essequibo River," *Archaeology and Anthropology* 5 (1982): 29–66, esp. 31–33.

fluvial highway became properly known to the Dutch, English, and Portuguese only in the early eighteenth century. That such an important artery of native commerce could have remained enigmatic to the Europeans for so long after its early revelation to the Spanish is directly related to the changing alliances of Europeans and Amerindians.

From the moment Columbus reached the New World, geographical information was critical to further exploration and exploitation. Such knowledge was required not only to identify the location of critical resources or plunder, but also because the enlargement of the world that the event implied upset the European worldview; an unknown region needed to be incorporated into existing European cosmography. Certainly Columbus's diary is filled with geographical observations, as well as reports containing native information on the position of the continental mass, sources of gold, and the location of fearsome *caníba*, thought to be the troops of the Great Khan.<sup>54</sup> But the diary also contains information on various marvels and monstrosities, such as Amazon women inhabiting the island of Matinino and the anthropophagy of the Carib, as well as being infused with an acute cosmological awareness. The naming of the Caribbean Islands, for example, is replete with religious iconography, while the names the Spanish gave to the sea passages between the Gulf of Paria and the Atlantic—Boca del Serpe and Boca del Dragos—recall the serpentine imagery the Amerindians also employed to describe the Orinoco and Amazon.

It is also evident that both Europeans and Americans of the fifteenth century were preoccupied with the spiritual significance of landforms and not just with their physical location. For the native inhabitants of the northern Caribbean at the time of contact with Columbus, the most important places were the endemic caves, the steep mountains rising precipitously from the sea, and the routes by which the magical alloy *guanín* traveled to and from the great encircling continent.<sup>55</sup>

European ideas of geography and of cosmography developed separately over the following centuries. This did not mean that European mapping became any less dependent on native information, merely that its cosmological aspects were codified or excised. This codification of cosmological notions according to geographical criteria is best exemplified by the mapping of El Dorado and particularly the lake of Parime. Although the ostentatious use of goldwork by Amerindian kings in the manner recounted in the reports of El Dorado was verified in a number of cultural contexts, preeminently that of the Colombian Chibcha, Tairona, and Sinú,<sup>56</sup> the general significance of goldwork as a symbol of prestige and authority throughout northern South America meant there were many possible locations where this legend could be

grounded.<sup>57</sup> Accordingly, after the plunder of the Colombian gold-using cultures, attention turned to the upper Amazon, where the lake of Parime became Paytiti, and El Dorado was assimilated to a chieftain of the Omagua polity. However, the failure to locate one centralized source of gold meant that the putative location of El Dorado moved once again, this time to its final cartographic placement at the headwaters of the Rio Branco, where a portage is formed in the rainy season to the headwaters of the Rupununi River, a tributary of the Essequibo. This flooded savanna, positioned at the intersection of ancient trade routes between the Amazon and Orinoco basins, was eliminated from Western maps only in the 1840s, after the expeditions into the interior by Robert Schomburgk, an emissary of the Royal Geographical Society.<sup>58</sup> Indigenous political geography had given such significance to this region that it was preserved in nonnative mapping.

The El Dorado legend might not have become so firmly attached to this region had it not been for the efforts of Walter Raleigh, whose voyage and description of the Orinoco region contains a wealth of geographical information collected directly from native informants. Certainly Raleigh also relied on prior Spanish intelligence, but native informants had been paramount in producing these first outlines of the geography of the area.<sup>59</sup> Taken together, these native sources represented a substantive digest of native conceptions, and it is by no means certain that either Raleigh or his Spanish predecessors fully understood the objects of native discourse.<sup>60</sup> Nonetheless, Raleigh's map gave cartographic form to native ideas concerning the units of cultural and geographical significance in the region (fig. 7.29). According to *A Relation of the Second Voyage to Guiana*, by Lawrence Keymis, Raleigh's lieutenant, this chart "invented" the lake of Parime, also

54. Hulme and Whitehead, *Wild Majesty*, 17–28 (note 49).

55. Robiou Lamarche, "Ida y Vuelta a Guanín," 489–90 (note 33), and Antonio M. Stevens Arroyo, *Cave of the Jaguar: The Mythological World of the Tainos* (Albuquerque: University of New Mexico Press, 1988), esp. 54, 151.

56. See Warwick Bray, *The Gold of El Dorado*, exhibition catalog (London: Times Newspapers, 1978), and Gerardo Reichel-Dolmatoff, *Orfebrería y chamanismo: Un estudio iconográfico del Museo del Oro* (Medellín: Editorial Colina, 1988).

57. Neil L. Whitehead, "El Dorado, Cannibalism and the Amazons—European Myth and Amerindian Praxis in the Conquest of South America," in *Beeld en Verbeelding van Amerika*, ed. Wil G. Pansters and J. Weerdenberg (Utrecht: University of Utrecht Press, 1992), 53–69.

58. Catherine Alès and Michel Pouyllau, "La conquête de l'inutile: Les géographies imaginaires de l'Eldorado," *L'Homme* 122–24 (1992): 271–308.

59. Raleigh, *Discoverie* (note 40).

60. Neil L. Whitehead, "The Historical Anthropology of Text: The Interpretation of Raleigh's *Discoverie of Guiana*," *Current Anthropology* 36 (1995): 53–74.



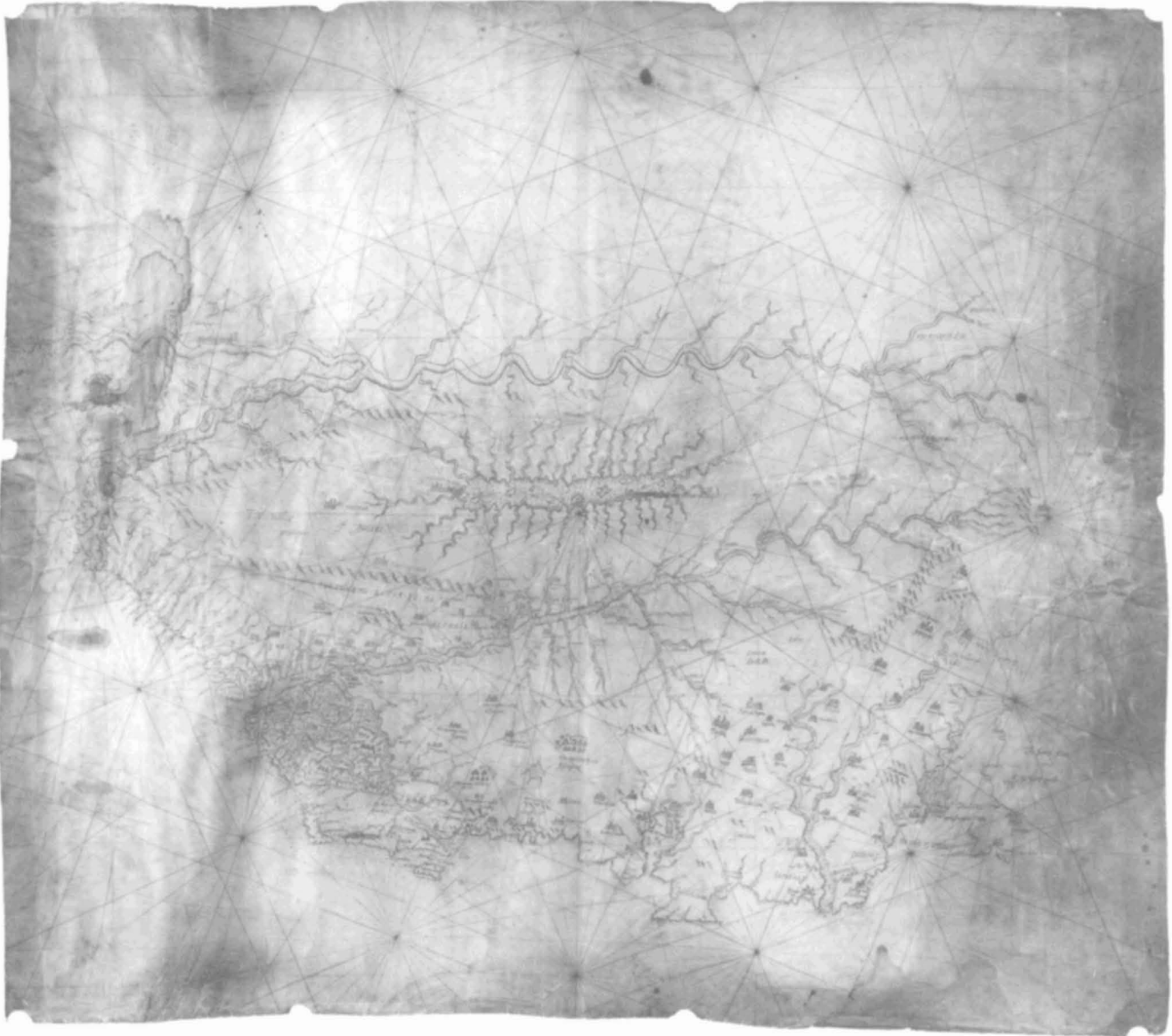


FIG. 7.29. MAP OF GUIANA PREPARED FOR WALTER RALEGH, CA. 1599. It was on the shores of the lake of Parime that Manoa, the fabled city of El Dorado, was supposed to lie. However, the information on El Dorado that Raleigh and his companions collected was not false but misinterpreted. The mapping of the lower Orinoco region was essentially accurate and, as with the Spanish Mapa de la

Provincias de los Aruacas (fig. 7.28), effectively illustrates native knowledge rather than European geographical survey. It was Amerindian notions of spatial relationships and not European measurement of them that informed Raleigh's map. South is at the top.

Size of the original: 71.7 × 80.7 cm. By permission of the British Library, London (Add. MS. 17,940A).

termed Ropononowini.<sup>61</sup> It also successfully plots the locations of important Amerindian settlements.

### CONCLUSION

Many native cartographic traditions, especially those in nonvisual mediums, would have been lost without the careful work of ethnographers. Yet the diagrams and figures that result from ethnographic enquiry necessarily conform to nonnative visual conventions. Moreover,

where a map does not exist as an independent physical object, the way geographical or cosmological information is communicated is still very much part of the cartographic act. The performance of a song, the experience of hallucinatory trance, the observation of the night sky, and the decision to make a garden are all part of knowing a

61. Lawrence Keymis [Kemys], *A Relation of the Second Voyage to Guiana* (1596; facsimile, Amsterdam: Theatrum Orbis Terrarum, 1968), B4v.

participatory universe; each activity charts that universe in a different way. Knowledge of geographic location alone is only occasionally expressed in abstract cartographic forms, and those forms in turn are often unfamiliar to those of us accustomed to Western graphic representations.

It is therefore the epistemological contrast between the participating individual and the possessing individual that defines the source of difference between indigenous and nonindigenous cartography of South America. Al-

though it was once part of the European tradition to participate more directly in the formulation of the cosmos, it is only our recent journeying to outer space that has returned us once again to the appreciation that the cosmos that we would objectively map is at the same time being subjectively created by us. In visualizing the world, we also locate and define ourselves. This was and is the meaning of the indigenous cartography of lowland South America and the Caribbean.