CHAPTER 7

THREADING SIGNS:
AN ANDean GEOMETRY

Aristippus, a Socratic philosopher, thrown by a shipwreck onto the beaches of Rhodes, on discovering there certain drawings of geometric forms let out a cry and said to his companions: "Take heart, because I see here traces of man."

VITRUVIUS

This could mean that for such a primitive mind, to think is to geometrize.

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During 1910–1911, Picasso and Braque produced a series of paintings that would change the artistic perception of the post-Renaissance West: spatial homogeneity is fragmented into an infinity of facetings and lines, mere abbreviations alluding to empirical reality; the color, applied in brief strokes, is cerebral, barely insinuated by a muted, earthy range. Kasimir Malevich and Piet Mondrian then took up the language of Cubism, and with an impeccable and reductive plastic logic they completely broke away from the hegemony of the natural model, proposing to replace it with a rigorous vocabulary of geometric forms.

This early evolution of twentieth-century art—rudimentarily simplified here—and the consequent Copernican changes that occurred in aesthetic definition do not appear to have left any traces on the scholars of pre-Hispanic art. Impervious, they continue to interpret the flat or cubical geometric forms of Andean art as "ornamentation."

Here I will not repeat the reasons, discussed in the Introduction, for eliminating this Western interpretative category from the study of the ancient art of America. Suffice it to say that as long as geometric signs are neutralized as "decorations," the historical picture of pre-Columbian cultures will remain incomplete.

Neither has attention been paid to the prehistoric moment in which these geometric signs appeared. Paleolithic man, in a clear act of intellectual abstraction, symbolic images from the natural world and painted them on walls; there is, however, a second moment in which an abstractive process of another order appeared in the practice of crafts such as basketry, pottery, and carpentry. Of course, thousands of years had passed; this specialization of labor was only possible after the development of
agriculture brought about a more sedentary way of life, the domestication of animals, and the beginnings of village life—all of which took place during the Neolithic.

Within this picture, basketry is crucial. It is the progenitor of more sophisticated forms of weaving with vegetable (especially cotton) and animal (wool) fibers. It also presupposes a long apprenticeship based on the rudimentary knotting of nets or the construction of stick frameworks, which very possibly emerged from observations of animal constructions, birds’ nests or spiders’ webs.1 Mary Frame likewise notes that “the structuring processes used to order chaotic loose fiber into utensils and shelter may have provided a tangible model for understanding and reflecting observed structures and phenomena in the natural world” (1984, 57). A. T. Vandermonde wrote in his 1771 treatise, Remarks on Problems of Position (cited by Ascher 1981, 166), “The craftsman who fashions a braid, a net, or some knots will be concerned not with questions of measurement, but with those of position: what he sees there is the manner in which the threads are interlaced. It would therefore be useful to have a system of calculation more relevant to the worker’s mode of operation, a notation which would represent his way of thinking, and which could be used for the reproduction of similar objects for all time.” Today, the study of position is the mathematical discipline called topology, but thousands of years ago it gave rise to basketry, weaving, and ceramics, making possible their later development (Francastel 1970, cited by Acha 1979, 258).

Once it had evolved, basket weaving was where the process of abstraction first occurred that enabled the weaver to extract and systematically replicate the essence of formal patterns previously immersed in natural chaos: the stylization of animals or vegetables, or, perhaps more importantly, the development of diamantine forms (the rhomboids on a snake’s skin?), the zigzag (lightning?), the meander (the course of a river?), or the spiral (the rotation of the night sky, or the structure of a sea shell?). The question of whether these forms were first used in body painting remains open. In any case, they quickly assume an archetypal—numinous?—meaning and exert an influence on other activities. “In other words,” writes Bremer (1925), “the Susa potter copies basketry models and the peculiar forms he gives to animals obey the demands of weaving. . . . At the same time the birds and animals, as well as the geometric symbols are the antecedents of the magical or divine signs later engraved on seals and that with the passage of time would become elements of writing” (italics mine; cited by Read 1957, 221).

This is an essential point: the so-called geometric decorations are the first expressions of conventional ideas, the ancestor of writing, and, very possibly, efficient substitutes for writing in many cultures. Here I can do no more than briefly sketch a question that requires an entire study dedicated to it alone. As the basis for my discussion, I will briefly touch on Greek geometric art, since its study clearly has manifested the “decorativist” prejudice.

During the twelfth century B.C., traces of the Minoan-Mycenean civilization were extinguished. The disappearance of the palace bureaucracies also meant the loss of the arts they sustained. “Even the art of writing was forgotten for over 400 years,” John Boardman observes (1978, 53), during the period in which Greece was devastated by the Doric invasions.
Athens, however, was hardly affected by the invasions, and its Mycenaean past remained relatively intact. Here a ceramic art gradually reemerged whose initial phase can be dated toward the end of the tenth century B.C. and whose apogee took place during the eighth century B.C. At that point, vases painted with rigorous and angular geometric designs take on monumental proportions; from funerary urns, they have become grave markers: some of them are the height of a person, measuring more than five feet (Plate 98).

Ceramics was, at that point, the central artistic medium. Bernhard Schweitzer believes that the tectonic plastic forces that transformed the funerary urn into an idealized monumental form are “the same [that] . . . expressed themselves hundreds of years later in the columnar architecture of Greek temples and in Early Archaic statues of young men. The Geometric funerary vase is simultaneously both architecture and sculpture” (1971, 25)—and painting, it should be added. Nevertheless, since paint was applied to the surface of the ceramics, it is consistently referred to as “decoration,” without consideration of the fact that no other “central” medium existed (such as casel painting would become in the post-Renaissance West); the idea is never suggested that in those historical circumstances, far from being a mere embellishment, the painted designs may very possibly have had a semantic function as the substitute for the lost art of writing.² Schweitzer himself suggests that from ancient times (the
FIGURE 26
Figure of a male condor from a Pre-Ceramic period fabric from Huaca Prieta. Drawing by Junius B. Bird. Reprinted by permission.

FIGURE 27

FIGURE 28
Neolithic) these geometric designs could represent "intellectual concepts" by means of "patterns with symbolic meanings" (1971, 13).

It is my contention, therefore, that when geometric funerary urns are gradually displaced during the late eighth century B.C. by the representation of humans and animals in ivory, bronze, and vase painting, first under the aegis of Near Eastern influence and then of Egyptian stone sculpture (the kouros and kore of the sixth century B.C.), the full use of writing has "absorbed" the function of the signs of Geometric art. One can also see sketched out here the basic tenets of what Western culture has extolled as the hallmarks of "high civilization": writing on the one hand, and an art grounded in the representation of natural forms on the other, which is to say, a mirror image of itself.

In any case, the development of a textile technique is the necessary condition for the appearance of these geometric "decorative" patterns. Schweitzer defines the plectogenic nature of these forms: "The Geometric style is without doubt entirely a pottery style, as it has come down to us. But a series of phenomena suggests that it developed alongside a lost textile art and that this may even have been the origin of Geometric art before 900 B.C. The early history of the meander in the tenth century can probably not be explained satisfactorily without the hypothesis that its roots lay in textile work. Surface ornaments such as the checkerboard, saw-tooth and lozenge patterns seem to be developed directly from weaving techniques" (1971, 13).

Franz Boas also observed that the artistic form most developed by a community imposes its style on the other "industries" and that "weaving and basketry have been particularly influential in developing new forms and powerful in imposing them on other fields" (1955, 182). Perhaps nowhere else is this phenomenon as evident as in the Andean region.

Several centuries before the appearance of ceramics, weaving was the primordial artistic form in the Andes. This can be proven beyond doubt thanks to the excavation Junius B. Bird undertook in Huaca Prieta, in the Chicama valley on the northern coast of Peru, in 1946–1947. More than four thousand pieces of cotton fabric were recovered, from some of which Bird was able to reconstruct the most ancient textile versions of the cultural archetypes of pre-Hispanic America: the condor, the puma, the two-headed snake, the human figure, and the geometric forms of the rhomboid or diamond and the chevron (Figs. 26–29). They were dated between 3000 and 2500 B.C., about one thousand years before the development of pottery. With the exception of some pyroengraved gourds, none of the other materials found—matting, basketry, wood, bone, shell, and stone—bore any trace of a design (see Bird 1967, 62, and Skinner 1984, 11).

It is possible that an investigation of the genesis and role of textiles in pre-Hispanic America, particularly after Bird's discoveries in the Andean region, would indicate that the coordinates of the textile medium—warp and weft—played a function similar to the coordinates of the Renaissance system of perspective in the West. While in Western culture this system made possible the representation of the appearances of empirical reality, in American antiquity the textile medium not only gave rise to geometric forms that later became archetypes, but also appears to have opened up the possibility of configuring far more inaccessible images: those of the

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PLATE 99

Four-cornered pile hat, Wari. Private collection. (Courtesy of Andrés Moraga.)

gods and mythic beings. Mary Frame has observed that “the grids and symmetries of fabric structures operate as a construct for the conceptualization of space, giving it form, division, direction and unity” (italics mine; 1984, 55). Furthermore, in a recent work on Andean four-cornered hats (Plate 99) subtitled “Ancient Volumes,” Frame writes, in the same vein, “The human-scale art of fabric-making, practiced by virtually everyone in ancient times, may have been used to codify mathematical concepts such as space and number, concepts that had application in diverse realms of daily life” (italics mine; 1990, 4). In other words, she is intimating that the construction of these three-dimensional textiles, the four-pointed hats, represented the application of the principles of a volumetric geometry.

No other artifact of Andean culture attained the primordial meaning that the symbolic and ritual use of weaving did in Andean life. Almost no religious, political, military, or diplomatic activity was complete without the presence, offering, interchange, or sacrifice of textiles. They were, as is known, buried with the dead, but they were also the trousseau the bride brought to her wedding. And despite five centuries of acculturation, today many of the ritual uses of textiles persist in Andean life. Its very fabrication was part of the textile’s symbolic function: the use of selected fibers and of diverse forms and techniques in every kind of garment defined the social rank of the person who used it and/or the region from which he or she originated. We have observed the fundamental role of the qipu as a census record; we should also point out that textile technique entered into the manufacture of containers (bags and baskets), fish nets, and scales, and
into the weaving of protective garments, the making of slings for war, and the construction of reed boats. Moreover, a textile macrotechnology was used in the construction of suspension bridges and in the elaboration of thatched roofing. Such was the crucial importance of textiles that Conklin has suggested we could speak of Andean antiquity as a Textile Age, in the same way as we speak of a Stone Age or a Bronze Age in the Old World (1981, 132). (The fact that today the importance of textiles has diminished very little, principally in its ritual uses, allows us to glimpse its past role.)

Summing up: I mentioned before the degree of mathematical knowledge involved in the two- or three-dimensional textile constructions; this knowledge was paralleled by the chemical advances involved—the invention of dyes, mordants, and paints. Certainly, textiles were the high-tech field of the period: it shouldn’t surprise us, therefore, that they would have an effect on other artistic media, decisively influencing the iconicographic development of Andean art. As Rebecca Stone-Miller wrote: “[T]extiles acted as a foundation for the entire aesthetic system to a degree unparalleled in other cultures of the world” (1992, 25).

Frame also pointed out that the astounding quantity of ancient Andean textiles known to us exhibit a “command of complex structure and construction” that is similar to the ancient peoples’ sophisticated mastery of engineering and mathematics, which went into the building of terraces, canals, and edifices (1990, 4). This brings to mind a reflection on the etymology of the word “tectonic,” an adjective I have used often in relation to sculpture because it refers to everything having to do with construction and the architectural. “Tectonic” derives from the late Latin tectonicus, which derives from the Greek tektonikós, from tekton, carpenter or constructor. Inspired by Cecilia Vicuña's poetic work with metaphors that are hidden in the intimate heart of a word, I discovered that the Indo-European root teks—the etymon, the true meaning of the tectonic—means “to weave,” and also to make a wicker or wattled frame for mud walls; in Latin, texere (to weave) is the word from which “text,” “texture,” and context are derived. And one of the root’s suffix forms, teks-la, is in Latin tela (net, warp, spiderweb), while another of its suffix forms, teks-na, means “artisanry” (weaving or fabricating), which in Greek is tekhnē (art, artisanry, skill). Thus, in its hidden meanings, the word “tectonic” illuminates the primordial meaning of art, in which weaving and constructing are identified with the same semantic resonance—a resonance that, from my point of view, becomes the subtext, the weft that interweaves with the expositive warp of the history of Andean art. Furthermore, this structural paradigm, which I would call the tectonic principle, casts a long shadow that, as we will see, reaches well into the art of the twentieth century.

**Woven Information: The T'quapu**

The obstinate or unthinking neutralization of geometric designs as “ornaments” appears to be slowly reversing itself in recent years. In practice, certain scholars have begun to consult the information codified in textile geometric designs.

R. T. Zuidema, for example, observed that, unlike the Mesoamerican calendars, which are articulated through a representative system of gods,
animals, and symbolic colors, the Inca calendar was recorded in the abstracted language of the qipu or the ceq'e. On that basis, Zuidema analyzed the organization and number of figures with calendrical connotations in two textiles. Those figures might have been overlooked as "geometric decorations" by other scholars.³

Some of the most remarkable examples of geometric designs in Andean art are found in Inca-style tapestry tunics—the t'oqapu (Plates 100, 101, and Fig. 30)—or carved or painted on ceremonial cups—the kero (Plate 102) or paqcha (Plate 23)—also from the Inca period. Cieza de León describes the "shirts without sleeves or collars, of the finest wool, with paintings in different manners that they called t'ocaqu, which in our language means garments of the kings" ([1554] 1973, Chap. 6, p. 25). The portraits of Inca rulers drawn by Guaman Poma to illustrate his Nueva Crónica of the early seventeenth century ([1615] 1988) show seven of them wearing the all-over t'oqapu-patterned tunics (Fig. 30) that are similar to the Dumbarton Oaks tapestry example (Plate 100); portraits of ñustas (Fig. 31), as well of prominent warriors, also depict them wearing garments with horizontal or, less often, vertical rows of t'oqapu. Although the Inca textile tradition did not come to a sudden end with the Spanish
invasion, the textile designs increasingly absorbed the figural, organic motifs of European filiation demanded by the new patrons as well as new materials, such as threads wrapped with silver or gold tinsel; the tapestry tunic example in the collection of the American Museum of Natural History in New York (Plate 101) is a case in point. Yet the predominance of the t’oqapu modular geometry suggests an early colonial dating, while other examples in which vestigial t’oqapu designs coexist with European flora or fauna representations would indicate a later, though imprecise, dating (seventeenth or eighteenth century) (for illustrations, see Stone-Miller 1992a, Plates 69a and 69b; and Dockstader 1967, Plate 179). A similar transitional period is observable in the production of the wooden ceremonial cups, keros and pagcha: while the introduction of figural motifs and the lacquer inlay technique indicate the European influence (coexisting, nonetheless, with bands of geometric patterns akin to the t’oqapu), predominantly incised geometric designs—only occasionally painted—would indicate pre-contact origin (Fig. 32; see Rowe’s meticulous survey of the archaeological record, 1961). (The example illustrated in Plate 102, belonging to the collection of the Museo de Ciencias Naturales de La Plata, illustrates a curious example: while the goblet shape of
FIGURE 32

PLATE 102
Kero (ceremonial cup), Inca culture (sixteenth century). Collection Museo de Ciencias Naturales de La Plata, Argentina.
(Photo permission of the Museum.)
the cup denounces the European influence—the traditional Andean shape is tumbler-like as far back as Tiwanaku—the designs are thoroughly geometric.)

Thomas S. Barthel (1971) and Victoria de la Jara (1964, 1967, and 1975) have studied these geometric designs, both the t'ogapu and the ones occurring on ceremonial cups—though without distinguishing between pre- and post-contact origin—concluding that they are semantic units. Although the entire Andean cultural context, pre- and post-Hispanic, appears to sustain the past viability of the system, it must be acknowledged that a convincing reading of the whole system has not yet been advanced. And only recently are the conclusions of Barthel and de la Jara gaining qualified reception among Andean scholars.

“The writing system brought by the Spanish explorers to the Amerindians in the New World was a measure of the distance which separated the two cultural entities,” writes Regina Harrison (1989, 55). To a large degree, the chronicles written by the Spaniards bespoke the derision with which they referred to the Andean peoples’ lack of script—at least one the Spaniards could identify as such, as we will see below. The Andeans, on the other hand, confronted with the written papers carried by the invaders, “concluded that their Iberian lords possessed a magical means of communication” (Harrison 1989, 55). Native testimonies “reveal a prolonged curiosity regarding the Spanish writing system. . . . The alphabet, seen through the indigenous eyes, assumes magical properties,” adds Harrison (1989, 56). Nonetheless, the Quechua speakers assimilated “writing” or “book” to the existing Quechua word quelleca, which primarily meant “painting” or “drawing” and is the root of the verb quellecani, whose meaning, as collected by sixteenth-century lexicographers, is “to write,” “to draw,” “to carve on hard surfaces,” “to embroider,” “to dye.” This semantic equation, once contact with Spanish writing had occurred, is a strong indication that the Andeans already had visual forms of communicating meaning resulting from the art practices of the period—painting, drawing, carving, and, most important, weaving (embroidering, dying). This linguistic analysis, first put forth by de la Jara (1964), should suffice to understand that the t'ogapu designs were more than “adornments” of clothing or drinking paraphernalia. In this light, it is most significant to quote from one of the Andean narratives, that of Tito Cusi Yupanqui's (1570). As he is characterizing the Spaniards, he makes special mention of their ability “to speak by means of a white cloth, and to name several of us by name without anyone having told anyone. [They do this] merely by looking at the cloth in front of them” (italics mine; cited and translated by Harrison 1989). Leaving aside the wonderment expressed by this pristine ethnohistoric source (Tito Cusi belonged to the Inca nobility), we find here irresistible evidence that “cloth” (weaving, that is), was in Inca society a most suitable means of transmitting information.

On the other hand, de la Jara observes (1964) that fifteenth- and sixteenth-century Europeans were ill-equipped to identify a pre-alphabetic system among the Incas because it was not until 1822 that Champollion began to decipher the Egyptian hieroglyphs; only after that did nonalphabetic semantic systems begin to be taken seriously. De la Jara cites Father Joseph de Acosta who, with great lucidity, was able to discern the ideographic nature of the designs and pointed out that the Incas “made up for
the lack of writing and letters, partly with paintings like those of Mexico, though those of Peru were very crude and rough; and in greater part with "qipus" ([1590] 1940).

In his Historia de los Incas, Sarmiento de Gamboa offers a valuable testimony:

A very great diligence is attributed to the Pachacuti Inga Yupangui, ninth Inca, who made a general call to all the old historians of all the provinces he had conquered and even of many more of all those kingdoms, and had them in the city of Cuzco a great while examining them on antiquities, origin and notable things of their past kingdoms. And after, he made them paint by his order on large boards, and set aside in the Houses of the Sun a great hall where the boards were kept, that were embellished with gold, they were like our libraries, and he constituted doctors who knew how to understand and declare them. (emphasis mine; [1572] 1907)

De la Jara (1975) maintains that these boards may have been painted with the geometric designs of the logographic signs, in the manner of the painted ceremonial vases, the keros. She believes the vases are partial transcriptions of the content of the boards.

It does not necessarily follow from the existence of "doctors" (camayoc?) who "knew how to understand and declare them" that the paintings were (geometric) logographs. Even a group of figurative paintings would have needed the camayoc's narrative to explain it, since there was no writing. It should be observed, nonetheless, that Molina "El Casqueño," referring to the existence of these painted boards, does so in the same paragraph in which he mentions the lack of writing: "And to understand where the idolatries had their origin because it is thus: that those men did not use writing and had in a House of the Sun Piquen Cancha which is near Cuzco the life of each one of the Incas and of the lands he conquered, painted by their figures on some boards and there they had their origin" (italics mine; [1573] 1943, 7).

A contextual reading suggests that Molina glimpsed the existence of some idiosyncratic figures ("their" figures—were these the symbols?) that sustained a "narration." It can be conjectured that, indeed, these belonged to the geometric repertory of the textiles and the kero, which began to reflect a more intensely figural modality only after coming into contact with the European tradition, as I mentioned before. In 1572, the boards were sent to Spain by order of the Viceroy Toledo, and they have subsequently disappeared. Only the woven symbols and the kero remain.7

First I would like to point out that in some superb examples of tunics, the designs are repeated in an intermittent and irregular fashion, such as the one in the Bliss Collection at Dumbarton Oaks, Washington D.C. (Plate 100), the one at the Museo de América in Madrid, and the one in the American Museum of Natural History in New York (Plate 101). What is, for Rowe, "the lack of a simple pattern of repetition" (1979, 257) offers, in my view, a striking parallel with the asymmetrical ordering that defines linguistic structure. If this perspective is dismissed, it then remains to be explained why, in these scarce and sumptuous examples, the repetitive organizational principles applied to the modular designs are so decisively subverted.8 Since the reiteration of modular units appears to be
inherent to the textile language, it is important to note here some observations made by Edward Franquemont, who has done a great deal of intensive ethnographic research in the area of Chinchero where the Peruvian textile tradition is still extremely vital. He suggests that, rather than trying to decipher the textile symbol, we should pay attention to the operative modality in which it developed. The textile is a chronicle of basic thoughts "full of language"; the weaver expresses mathematical principles, the most fundamental being that of formal symmetry; a basic cell that generates forms by means of repetitions, spatial reflections, rotations, and so on (1987). It is clear that the formal conception of the t'qapu signs internally responds to this process, but the asymmetry of the total composition of the aforementioned examples remains highly significant as an exception to that norm.

Second, leaving aside those examples of exceptional construction, the design of such textiles was standardized as a general rule, which indicates a central state policy involving the systematization of cultural codes in order to facilitate their diffusion and imposition (see Chapter 1). The reductive geometric design of the t'qapu is the culmination of a process already observed during other moments of unification and centralization: Chavin and Wari-Tiwanaku. "Standard" implies uniformization but also a convention, a preordained use, the sine qua non for the existence of a code, a system of signs. This systematization obviously is another aspect of the ubiquitous repertory of visual signs we have been analyzing: the protuberances on the walls—the unobtrusive sculptural version of a geometric language—the qipu, the painted staffs. And while certain scholars acknowledge the symbolic character of these designs as heraldic designations of rank, like military insignia, we should not forget that these classifications are made from within our alphabetic culture. In societies where writing was not developed, these visual ways of transmitting meaning—which were the only graphic way of transmitting meaning—must have had an importance and an intensity that is difficult to imagine today.

A most compelling argument in favor of the viability of the t'qapu as a sign system is made by Regina Harrison in Signs, Songs and Memory in the Andes (1989). Although she concludes that "no researcher has yet deciphered the meaning of these symbols," she states flatly: "we must assume that they possessed more than mere decorative value within Incaic culture" (p. 60). She analyzes the chronicle by Santacruz Pachacuti Yamqui (1613) and particularly emphasizes its description of the crucial moment when the conquistador Pizarro and the priest Valverde confront the Inca Atahualpa. While Pizarro is depicted as "nakedly bereft of symbolic trappings," the chronicler is attracted to the liturgical significance of the priest Valverde's pointed miter and cape, and, even more markedly, to the symbols that define Atahualpa's authority, the symbols "he knows best from his Andean heritage. He mentions the royal litter, the ornate garments and royal plumage, the sungopaucar (the royal staff) and the royal insignia instead of describing the individual characteristics of the Incan ruler." Harrison concludes that "Santacruz Pachacuti Yamqui is disposed to write in this fashion because of his exposure to the t'capu, an Inca sign system, which was still in use in his lifetime" (1989, 60). Indeed, seventeenth- and eighteenth-century colonial paintings of the Cuzco school
portray members of the Inca nobility wearing traditional woven garments displaying rows of t'oqampi designs (color illustrations in Gisbert 1992, 153, 154; see also Figs. 31 and 33). Rowe mentions the existence of ten colonial paintings in the church of Santa Ana in Cuzco that represent scenes of the Corpus Christi procession in which some of the participants are also wearing Inca style clothing (1979, 243). In light of all of this evidence, Harrison writes, "it is safe to assume that the [t'oqampi] symbols portray a hierarchical reference to the elites in Inca society" (1989, 60). In short, the t'oqampi were an emblematic sign system. Harrison is fully aware of the signifying power of this system in a society without alphabetic script. From Santacruz Yamqui's description of the way people identified their towns of origin through an emblematic code, Harrison concludes, "Knowledge, then, was conveyed through visual signs, and this cultural mapping was so complete that one could identify at a glance the participants at a ceremonial gathering" (1989, 62).

The importance of ethnographic study in understanding the pre-Columbian past is often proclaimed today. One of the areas where there has been the greatest continuity of tradition is textiles, despite the disappearance of many of the traditional techniques. At the last Conference on Andean Textiles in honor of Junius B. Bird, held at the Textile Museum in Washington, D.C., in 1984, no distinction was made between pre- and post-Hispanic textiles, in recognition of that continuity.

Recent studies on Aymara textiles (Plate 123), which inherited the ancient highland tradition—extending farther back than Tiwanaku textiles—to which Inca weaving must be ascribed, point out that the designs are chosen for their meaning and not for their "aesthetics." In general, the placement and number of stripes symbolically represent the physical and social world of the Aymara (see Cereroea 1986). In particular cases, certain colors can illustrate the vertical property of the land and even the crops that can be cultivated at different altitudes (Joseph W. Bastien, cited by Adelson and Tracht 1983, 45). This still occurs in the Andean region, which is as besieged as anywhere on the planet by the unprecedented development of the means of mass communication propelled by Western technology, and therefore it can be supposed that in antiquity the semantic function of the geometric textile designs must have been in wide use.

Angelika Gebhart-Sayer has studied the designs of the Shipibo-Conibo (1983, 145-175) and believes that, though their intricate geometry does not constitute a true writing, they may have been graphic artifacts that included semantic or symbolic unities, perhaps in a mnemonic form, to be used in ritual contexts. She also observes that the Shipibo come from the same northwestern region of South America—on the eastern slopes of the Peruvian Andes, in the Ucayali River basin—where other mnemonic codes were developed. Among these, she mentions the t'oqampi, which represented, according to her, the Inca custom of weaving highly important information into ponchos or painting it on ceremonial cups.

David M. Guss has recovered the mythic content that informs the designs on the basketry of the Yekuana, a tribe that inhabits the isolated region along the upper course of the Orinoco River in Venezuela. The memory of the origins of this culture's artifacts—canoes, weapons, instruments, and, primarily, baskets—is not only recorded in myths, but is also
incorporated in designs. Guss writes, "By simply making an artifact, one repeats the message codified in the history of its origin" (1989, 101). The symbolism of the compositional design of each basket at once amplifies and repeats the meaning of its origin, name, and physical properties.

The rigorous designs of the Yekuana have, in their finest examples, the effect of kinetic structures in which the interminable perceptual movement of the components seems to absorb the spectator (Plate 127). This dynamic relation, unlike other figurative designs of static images, is the simultaneous description of a dual reality: image and counterimage constantly compete for the perceptual focus.

I mention Yekuana basketry for two reasons: First, because it shows how these rigorous geometric compositions, far from being "decorations," are the signifiers of mythic content. The very process of making them, as we have seen, implies a reduction of the nature-culture opposition, allowing their entrance into the Yekuana cosmos. My second reason is that basketry, as the progenitor of weaving, establishes the ancient ancestry of the geometric signs. I will return later to the geometry of the Yekuana basket designs.