# **WAR** Lords of the Ancient Andes

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# **Tapestry-woven Tunics**

Figure 144 [117]. Tunic with face-fret motif; camelid fiber and cotton; 102.2 x 102.2 cm. Dallas Museum of Art, The Eugene and Margaret McDermott Art Fund, Inc., in honor of Carol Robbins' 40th anniversary with the Dallas Museum of Art, 2004.55McD. Wari tapestry-woven tunics, versions of an ancient garment type known in the native languages of the Andes as unku (Quechua) and khawa (Aymara), belong to a distinguished tradition of ancient Andean tapestry weaving that culminated chronologically with the Inca, the last completely indigenous culture to develop in the region before the Spanish conquest (fig. 144).<sup>1</sup> Tapestry, which refers to cloth woven in a specific way rather than to pictorial cloth in general, made its debut in the Andes during the first millennium BC<sup>2</sup> and quickly became a prestige fabric used not for interior furnishings, its principal function in the West, but for sumptuous garments such as tunics (shirts), mantles (shoulder wraps), and loincloths. By the time of the Inca Empire, tapestry-woven textiles were classified as cumbi (also spelled "qompi"), a category of treasured, superior-quality cloth that Inca royalty claimed as their exclusive privilege, whether for personal wear or to bestow as esteemed gifts to strengthen bonds of loyalty.<sup>3</sup> In the early years following the conquest, Spanish commentators shared this enthusiasm for cumbi, which they uniformly ranked as finer than European cloth and admired for its exquisite, silk-like softness and technical refinement.4

The Spaniards' eye for textiles is not surprising since in pre-industrial Europe cloth was highly valued because of the enormous amount of labor and time that its creation demanded. As textile scholar Ann Pollard Rowe remarks,<sup>5</sup> it is no accident that the Industrial Revolution focused first on streamlining the production of this costly, essential commodity, which was so expensive that in the late eighteenth-century United States it was harder to obtain than food and lodging.<sup>6</sup> Rowe goes on to say that, in areas of the world where cloth is made entirely by hand as it was in the ancient Andes, the process of creating it usually ranks second only to food production in economic and occupational importance-an astonishing statement from a contemporary perspective. But in the Andes cloth's importance went far beyond the economic. For instance, in one of the most celebrated quotes in Andean studies, John Murra concluded that among the Inca "no political, military, social, or religious event was complete without textiles being volunteered or bestowed, burned, exchanged, or sacrificed."7 Experts assume that cloth had similar importance, if not identical uses, in many earlier Andean cultures, which together created one of the most aesthetically accomplished and technically innovative textile legacies in the world.

Wari textiles are a crucial chapter in this history, particularly tapestry-woven cloth. Using the tapestry weave Wari weavers fabricated several types of garments, among them mantles and headbands (fig. 145; see also [131], p. 274). Far more common, however, are tunics, which likely served as partial inspiration for the cumbi tapestry-woven tunics that Inca rulers, nobles, and state functionaries wore (see fig. 240).<sup>8</sup> Except for a handful of stone sculptures, the tunics are the largest of Wari artifact types and certainly the most complex. Their intricacy derives from the physical structure of the cloth—for the initiated, a fascinating world into which the ancients poured intellectual energy-along with more visible systems of artistic composition, including flamboyant color, format, imagery, and an arcane, cerebral convention for distorting imagery that culminates in a geometric abstraction admired today for its "modern-ness."



Figure 145 [130]. Headband; camelid fiber and cotton; 67 x 12 cm. The Textile Museum, Washington, DC, Museum Purchase, 1965.32.1.

The Tapestry Weave and Tunic Construction A few features of the tapestry weave—a simple structure from which the ancients wrought great aesthetic complexity-contributed to its choice as a preferred fabric type for high-status garments. First, it lends itself to the creation of intricate, mosaic-like patterns made up of areas of pure, undiluted color that are woven into the cloth rather than added to a pre-existing fabric with needlework. This is accomplished by passing the wefts-the multicolored yarns that the artist worked horizontally during weaving—back and forth in areas that range from tiny to large, and then packing the wefts down so tightly that they completely conceal the undyed, vertical warps.<sup>9</sup> The packing-down consumes extravagant amounts of yarn and, of course, the labor and time the extravagance implies.

The process begins with gathering and/ or growing the fiber (silky camelid hair for the weft and either cotton or camelid fiber for the warp) and continues with harvesting and cleaning. Next are the very time-consuming tasks of spinning and plying, and then dyeing, often with precious colorants. Only then can weaving commence, followed by garment construction. In other words the tapestry weave is resource-intensive at every stage of manufacture, which is no doubt another reason both the Inca and the Wari revered it as a noble cloth. A shorthand way to state the human investment is to say that a Wari tapestry-woven tunic of routine quality incorporates around seven miles of carefully handmade yarn, while the finest example so far documented has an extraordinary eighteen miles.<sup>10</sup> Based on comparing yarn counts, an objective measure of quality, Wari tapestry weaving far outstrips even the greatest tapestry weavings of sixteenth-century northern Europe, which are

among the most famous examples of the technique in the world.<sup>11</sup> In an added refinement Wari tapestry weavers painstakingly finished the cloth on both its faces, one of the essential qualities of cumbi among the Inca; in contrast, European counterparts have a distinct back or wrong side marked by dangling yarns.

In creating a tapestry-woven tunic the great majority of the effort went into producing the cloth. Garment construction was straightforward since, like most Andean clothing, Wari tunics are not elaborately tailored affairs made of pieces cut from a larger whole. Rather, the cloth was woven to shape on the loom and while there completely finished on all but one of its edges, a process that required weavers to conceptualize every aspect of design before work commenced. Wari tunics consist of two such loom-shaped panels that most often are simple rectangles, each about 50 by 200 centimeters (20 by 80 inches). The panels were placed side by side and stitched together along a seam that falls at the tunic's center; they were then folded in half to form the shoulder line and seamed up the sides. Gaps in the seams serve as openings for the neck and arms. The resulting, roomy garment is roughly 100 cm (40 in.) on a side and on a person of five-foot stature fell to the knees at the front and back and well below the elbows at the sides. Artistic representations suggest that tunics were sometimes belted and were worn without a lower body garment, or at least one that was visible below the tunic's lower edge.

# Imagery and Wearer

In the Andes tunics were an essential article of men's attire; as the scholar R. Tom Zuidema has observed, they cannot be understood without imagining the presence of the lords who wore them—the iconographic whole was the



Figure 146 [36]. Figure in tapestry-woven tunic and four-cornered hat; ceramic and slip; 28.7 x 23 cm. Fundación Museo Amano, Lima, FMAC-000020. Photo: Daniel Antonio Giannoni Succar.

Figure 147 [144]. Fourcornered hat with geometric motifs; camelid fiber and cotton; 12.4 x 17.5 cm. The Metropolitan Museum of Art, New York, Gift of Arthur M. Bullowa, 1983, 1983.497.6. Image: © The Metropolitan Museum of Art. Image source: Art Resource, NY. lord, including tunic, ornaments, headgear, and other paraphernalia.<sup>12</sup> Based on artistic representations, ornaments included large ear spools that undoubtedly also signaled high status, as they did among the Inca (see pp. 217–31, "Inlaid and Metal Ornaments"). Headgear ranged over several different types, among which four-cornered hats were important (figs. 146, 147).<sup>13</sup> Other items certainly sometimes included staffs, one of the period's most important symbols of human and divine sovereignty (see fig. 1).

The sumptuousness and great standardization in the size, format, color, construction, and technical features of Wari tunics have long suggested that, as among the Inca, they were made under state auspices and worn by those important to the administration of the Wari polity: rulers, their representatives, and probably valued allies, who received them as prestigious gifts. This supposition raises the possibility that the tunics' imagery corresponds to official functions, if only in a loose way, since that imagery also is standardized to encompass a narrow range of motifs, only one of which usually repeats in different orientations and colors in any given tunic.<sup>14</sup> Unfortunately, little can now be said about these functions as most representations of tunicwearing individuals provide few hints and the vast majority of tunics come from unscientific excavations, most probably of tombs that may have held insignia related to the roles the deceased played in life. There are one or two exceptions, however, and the tunics themselves can be used to make broad generalizations.

## Profile-face and Stepped-fret Tunics

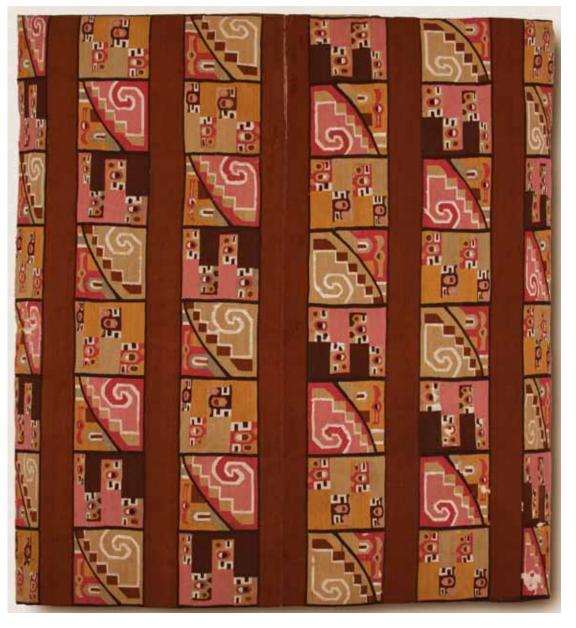
One of the most common of Wari tunic types features a profile-face and stepped-fret (facefret) motif (fig. 144).<sup>15</sup> In the arts such tunics appear on humans of unknown identity but obvious power: one strikes a pose akin to that of the staff deity, arms outstretched and hands cupped to form holes into which implements, perhaps staffs of authority or weapons, were once likely inserted (fig. 146). Clear military associations for this tunic type occur in ceramics recently unearthed at Conchopata, an important Wari site near the capital; on these vessels fierce, axe-wielding warriors dressed in face-fret tunics, probably military leaders, parade in belligerent ceremonial display (see fig. 7).<sup>16</sup> The Wari also occasionally associated the face-fret with supernatural sacrificers in



Figure 148 [121]. Views of the front and back of this tunic are arranged as though the tunic is unfolded at the shoulder, marked by a white line. A single profile face appears in the third row from the bottom. Tunic with paired-fret motif; camelid fiber and cotton; 98 x 106 cm. Staatliches Museum für Völkerkunde, Munich, 57-20-245 (NM 245).



Figure 149 [123]. Tunic with face-fret and interlocked U-shaped motifs; camelid fiber; 106 x 94 cm. American Museum of Natural History, New York, 41.2/8604. Image: courtesy American Museum of Natural History, Anthropology. Photo: Craig Chesek.



tapestry-woven tunics as well as ceramics on which the staff deity also appears (see fig. 102).<sup>17</sup> In at least some cases, then, the motif seems to relate to conflict and death, some of it cosmically sanctioned.

What the motif represents is still mysterious. The consistent pairing of the face and fret implies that they have complementary and reinforcing meanings, but the fret's formal simplicity and presumed abstraction have so far resisted interpretation.<sup>18</sup> The face too has few identifying features beyond its eye ornament, vertically divided eye, and the N-shaped canines that it often bares, all generic traits of the suprahuman in Wari art. Unconfirmed suggestions about its identity, to which the sacrificer should be added, include a trophy head or the head of one of the staff deity's winged attendants.<sup>19</sup>

With a few exceptions, face-fret tunics are only ordinary in quality (as measured by yarn counts); thus their wearers, though distinguished, probably did not occupy the summit of the Wari hierarchy.<sup>20</sup> These tunics divide into several subtypes that may correlate with variations in time or place of manufacture;<sup>21</sup> a small group of tunics combines the facefret with other geometric motifs, and the fret sometimes appears on its own in compositionally related examples (figs. 148, 149). Figures 150a, 150b [114]. Views of the front and back of this tunic are arranged as though the tunic is unfolded at the shoulder, marked by a white line. Perhaps in antiquity one row of figures was removed from one edge (at the top of the photograph). The detail below shows two figures from the lower left corner. Tunic with sacrificer; camelid fiber and cotton; 106.7 x 112 cm. The Cleveland Museum of Art, John L. Severance Fund 2007.179.





Figure 151 [116]. Tunic with sacrificer-related creature; camelid fiber and cotton; 100 x 112 cm. Museum der Kulturen, Basel, collected by Hans Theodor Cron (1921–1964), IVc23577. Photo: Markus Gruber, 2008. Winged Attendant and Sacrificer Tunics Another very large group of tapestry-woven tunics features the figures that in other contexts accompany the staff deity: sacrificers, which appear in more than a half-dozen iterations that always include a weapon and a human victim or its head (figs. 150, 151), and, much more commonly, the more benign winged attendants, which occur in bewildering variety (figs. 152, 153). The attendants are always shown in profile, bent on one knee, holding a staff of authority to the front of the body, and wearing a complex headdress; an elaborate wing sprouts from the back, usually over an appendage that streams from the figure's neck (fig. 154). But there the similarity ends. Ornaments that festoon the figures change kaleidoscopically and so do the figures' heads, which range from birds and animals to humans and others whose heritage



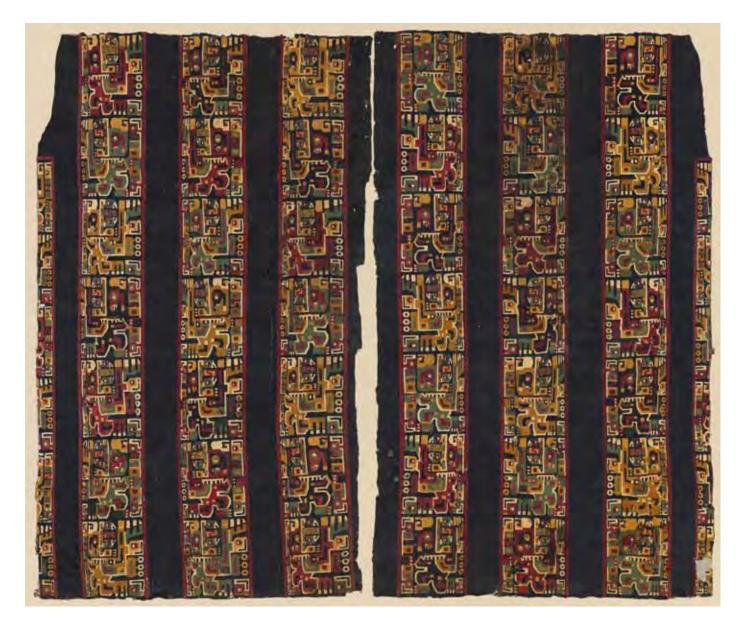


Figure 152 [103]. These large fragments come from a tunic that had sleeves. Each represents the length of the tunic from the shoulder to the lower edge. Together, they probably formed a single panel that has been divided along the shoulder line. Tunic fragments with bird-headed staff-bearing creature in profile; camelid fiber and cotton; 90 x 53 cm and 89.4 x 53.5 cm. The Cleveland Museum of Art, Purchase from the J. H. Wade Fund 2005.53.a-b.

is unclear. In total, the tunics feature more than twenty distinct versions of the winged attendant.  $^{\rm 22}$ 

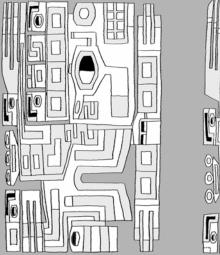
Most versions of this figure type appear in only a few tunics, but three occur in many more examples. Of those three, two are adorned with figures, both with heads raised up, that are different and yet so similar they raise suspicion of kinship.<sup>23</sup> One is a bird-headed attendant that may conflate the features of several species, including the Andean condor (one of the world's largest birds of flight) and other raptors such as a falcon or the harpy eagle, as well as a parrot, perhaps one whose brilliant feathers were a form of wealth (figs. 152, 154 right). The second figure is an

attendant with an animal head of unclear derivation and a persistently two-fingered "hand" undoubtedly based on the cloven hooves of a deer or, perhaps more likely, one of the Andean camelids—llama, alpaca, vicuña, or guanaco (figs. 153, 154 left). Although the two figures' heads and elaborate eye markings are distinct, many of the remaining ornaments are virtually identical, down to a unique combination of headdress trimmings that include small heads with L-shaped mouths. (In a few tunics with the bird-headed attendant, such as the one illustrated, bird heads substitute in the headdress.) None of the other tapestrywoven attendants share as many features as these two. In terms of quality, however, tunics

Figure 153 [104]. Tunic with camelid- or deerheaded staff-bearing creature in profile; camelid fiber and cotton; 103.7 x 108.5 cm. Deutsches Textilmuseum, Krefeld, 12299/2558.



Figure 154. Comparison of the camelid- or deerheaded creature (left) and the bird-headed creature (right). The camelid (or deer) has somewhat different side-to-side proportions because of the effects of distortion. Tracings: Susan E. Bergh, based on a tunic at the Textile Museum, Washington, DC, 91.386 (left) and Taullard 1949, 56 (right).



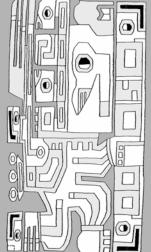


Figure 155 [106]. Tunic with feline-headed staff-bearing creature in profile; camelid fiber and cotton; 104.7 x 102.8 cm. The Textile Museum, Washington, DC, Museum Purchase, 1961.3.17.

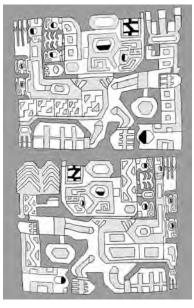


Figure 156. Feline-headed staff-bearing creatures from a tunic very similar to that shown in Figure 155. Tracing: Susan E. Bergh, based on a tunic at the Staatliches Museum für Völkerkunde, Munich, 34-50-6.



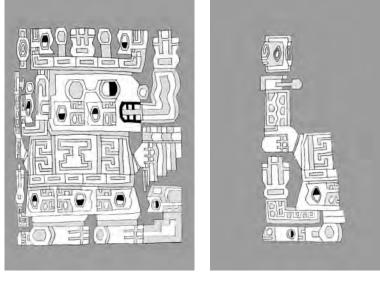
with the bird-headed attendant are superior to those with the camelid (or deer). They incorporate many more figure repeats, an index of weaving skill and investment, as well as far more yarn, much of it a deep indigo-dyed blue, the most prestigious color that Wari weavers employed.

That the bird and camelid (or deer) relate to one another is further suggested by the interest that most other winged attendant and sacrificer tunics evince in paired figures.<sup>24</sup> Rather than being segregated in different tunics, however, these two figures—often closely similar but sometimes very different—alternate regularly with one another in the same garment. In the third large group of winged attendant tunics, for instance, the figures, whose upright ears may refer to ancestry in the feline world, are identical except for the decoration of headdresses, neck appendages, and staffs, here perhaps transformed into the hunter's (or warrior's) spear-thrower by the side hook that emerges from the upper portion (figs. 155, 156). The staffs are of particular interest since they represent two types that the Wari used very often to distinguish figural variants, at least in the tunics: a wavy zigzag decorates the shaft of one and a nested square the length of the other. The same contrast occurs in sacrificer tunics, one very beautiful example of which provides illustration (figs. 157, 158). To one side of its body the figure holds a panpipe

Figure 157 [113]. Tunic with sacrificer; camelid fiber and cotton; 103.4 x 110.8 cm. The Textile Museum, Washington, DC, Museum Purchase, 1966.5.2.



Figure 158. The sacrificer featured on the tunic shown in Figure 157. On the left is the entire figure, its rear portions contracted and nearly illegible. On the right is the expanded rear portion of another figure repeat. Tracing: Susan E. Bergh.



and to the other an axe with a haft patterned by either the zigzag or the nested square.<sup>25</sup> These two versions are otherwise established only by consistent, subtle differences in the orientation of the bird heads that dangle from the sacrificer's belt.

This insistence on paired figures finds its likeliest explanation in dualism, a principle so fundamental in the Andes that it has structured native thought and practice from ancient times to the present day (see pp. 103-21, "The Coming of the Staff Deity").<sup>26</sup> Generally stated, dualism is founded on the conviction that the world comes into being and continues to exist through the dialectical, give-and-take balancing of two forces that are at once intrinsically antagonistic but profoundly complementary and indispensable to one another. The two forces or principles are often gendered male and female but also conceived as many other natural dyads, such as left-right and upperlower. Today and in the past, Andeans activate this pervasive way of thinking in two broad ways that often interpenetrate, one reinforcing and legitimizing the other, but do not necessarily imply each other.<sup>27</sup> One is in the realm of symbolic thought, including beliefs about the unseen structure and workings of the universe. Given the tunics' numinous imagery-the attendants and sacrificers that are the intimates of the all-important staff deity-it seems safe to say that, at a minimum, the dualism upon which the tunics insist characterized important aspects of Wari cosmological belief, religion, and perhaps ritual, although how remains elusive. Other testimony in this regard is offered by the two staff deities that alternate with each other on the interiors of Wari feasting vessels from the south coast, one identified as male and the other as female based on differences in wardrobe (see figs. 5a, 5b).28

It is harder to know whether the Wari also put dualism to use in social and political domains in the manner of many late pre-Hispanic and contemporary Andean people. For instance, at the time of the Spaniards' arrival, the Aymara-speaking Lupaqa of the Lake Titicaca region divided their realm into two parts (moieties) that they described as upper (*alasaa*) and lower (*masaa*) and ranked hierarchically in relation to each other. Two paramount lords joined forces to govern the Lupaqa polity as a whole, Qari of the upper part and Qusi of the lower part, but Qari's status and wealth were greater, reflecting the ranking. Each Lupaqa province was similarly organized and ruled by subordinate paired lords who were subject to Qari and Qusi.<sup>29</sup> Inca society adopted the same kind of ranked, binary organization although there is no agreement about whether Inca rulers governed in pairs in which one partner held higher status.<sup>30</sup> If the Wari bird and camelid (or deer) tunics were in simultaneous use—a still-open question since the tunics' chronology is unsettled—it may be that they reflect such dual social organization and its concomitant paired, ranked political offices since the two tunic groups offer clear evidence of ranking through the very marked differences in their quality. Conceivably, those who wore other tunics with paired figures also carried out political functions in tandem, their complementary roles symbolized by their different staffs and accouterments. But further investigation, both archaeological and art historical, is needed before it can be said unequivocally that dualism premised the organization of Wari society in addition to the symbolic domain.<sup>31</sup>

# Other Tunic Types

In extant tunics other iconography occurs less frequently than the face-fret motif, winged attendants, and sacrificers. Among these scarcer images is a profile creature whose head varies in aspect between human and animal. Most often a tail-like angular scroll, sometimes tipped with a bird or animal head, curves behind its severely geometricized "body," but a handlike motif sometimes replaces the scroll (fig. 159). The most complex versions include other motifs, including plants (fig. 160).<sup>32</sup> Typically, this profile creature confronts a mirror image of itself, and the two profile visages merge into a single frontal face.<sup>33</sup> What it connotes is unknown. It appears on a tunic, rare in its small size, that may have clothed an important and treasured child or perhaps an object of some kind (fig. 159). An unusual small tapestrywoven panel that has the proportions of a mantle may be another child's garment (fig. 161).<sup>34</sup>

Figure 159 [125]. This small tunic may have been made for a child or for an object. Tunic; camelid fiber and cotton; 55 x 53.7 cm. Private collection. Photo: Maury Ford.





Figure 160 [126]. Tunic; camelid fiber and cotton; 100 x 106 cm. The Textile Museum, Washington, DC, Museum Exchange, 1962.5.1.

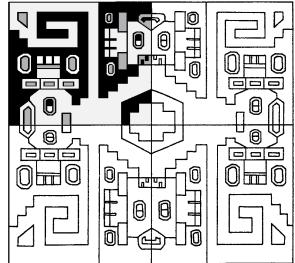


Figure 161 [98]. Panel; camelid fiber and cotton; 77 x 109.5 cm. Royal Ontario Museum, Toronto, 931.11.1. Photo: with permission of the Royal Ontario Museum © ROM.



Figure 162 [127]. Tunic with skulls; camelid fiber and cotton; 220 x 115 cm. Museo de Arte de Lima Collection, Prado Family Bequest, 2.1-1241-IV. Conserved with the support of the Southern Peru Copper Corporation 2001. Photo: Daniel Antonio Giannoni Succar.

Figure 163. The geometric motif with profile bird heads. After Sawyer 1963, type IIb; courtesy the Textile Museum, Washington, DC.



Another group of tunics features a meander motif disposed in horizontal fields, a radical departure from the far more typical vertical banding. Imagery is often superimposed on the meander and much of it seems strongly oriented toward death, usually skulls (fig. 162) but also columns of vertebra-like motifs and, in one instance, a stunning sacrificer that is among the most complex and monumental known.<sup>35</sup> In technical terms tunics of the final group, adorned with a sophisticated geometric motif that incorporates profile bird heads, are among the finest that Wari weavers created (fig. 163). Their iconography again indicates that the Wari associated birds with the highest status members of their society, who may have carried the title "mallku" (condor) or



Figure 164 [107]. Tunic with staff-bearing creature in profile; camelid fiber and cotton; 97 x 144.9 cm. Brooklyn Museum, New York, Gift of the Ernest Erickson Foundation, Inc., 86.244.109. "huamani" (falcon), as paramount rulers did in later Andean times.<sup>36</sup> Sadly, these tunics often survive only as fragments.<sup>37</sup> In addition to these discrete groups of tunics are several examples with imagery that is so far less usual (see fig. 81).

#### Sleeved Tunics

In Wari art the staff deity consistently appears in a garment that represents a tapestry-woven tunic, to judge from the vertical banding that stripes the chest. But this is no ordinary tunic. Rather, it appears to correspond to a special rare type that unlike all others has sleeves (fig. 164);<sup>38</sup> in artistic representations the sleeves, patterned with interlocked L-shaped motifs, fit snugly around the god's upper arms. There can be no doubt that sleeved tunics were the raiment of only the most exalted individuals in all likelihood, paramount rulers themselves—since they are among the most sublime achievements of ancient Andean tapestry weaving, standing at the apex of that long and bannered tradition in its entirety.<sup>39</sup> Several tunics with the bird-headed partner of the camelid (or deer) once were sleeved (fig. 152). Most other sleeved tunics also feature winged attendants or sacrificers, but a few feature other imagery.

Three technical features provide the gauge of these tunics' quality. In comparison to unsleeved examples, they routinely incorporate between four and eight more miles of yarn and flaunt many more than twice the

Figure 165 [102]. This fragment is from a tunic's side seam, a remnant of which runs up the fragment's center. The original tunic does not appear to have had sleeves, but the fragment is one of the best extant examples of the matching of half-figures across seams. The tunic shown in Figure 168 also had matched half-figures at the side seams. Tunic fragment with staff-bearing creatures in profile; camelid fiber and cotton; 54 x 15 cm. Ethnologisches Museum, Berlin, VA 66028. Image: bpk, Berlin/ Ethnologisches Museum/ Art Resource, NY. Photo: Claudia Obrocki.



number of figure repeats, which generally do not skimp on iconographic details even though they are smaller because the weavers fit them into a standard tunic size. Also, halffigures appear along the side seams of some sleeved tunics; when the seam was created, it united a front half with a back half to form a nearly perfectly matched whole (fig. 165). These figures demand very precise control of spacing and proportions among many other things and cause modern weavers to sigh in admiration. The industrialization of textile production has dulled our sensitivity to such refinements, but the original audience, deeply familiar with the hand-weaver's art, would have been alive to both them and the virtuosity and status that they represent. It is not surprising, then, that the sleeved tunic had a special ceremonial charge signaled not only by its association with the deity but also by the fact that the only known miniatures of Wari tapestry-woven tunics have sleeves (figs. 166, 167). These exquisite tunics, too small for even a human infant, likely had devotional purposes. Ceremony may also have motivated the ancients to slice the sleeves from some tunics, as though decommissioning them, an act that may have occurred before the tunics were pulled over mummy bundles and deposited in tombs. One of the very few tunics to have been scientifically recovered, from a grave at Ancón on Peru's central coast, has been so desleeved (figs. 168, 169).40

Why did the ancients endow the sleeved tunic with such high status? One possible reason is that sleeves were adopted as prestigious exotica from the Moche, among whom the sleeved tunic seems to have been a tradition.<sup>41</sup> The Moche dominated the north coast of Peru in the years just before the Wari came to power. If true, the emulation is one of several hints that at least some sleeved tunics were created very early, at the threshold of the Middle Horizon as elites scrambled to take advantage of shifting conditions provoked by the decline and transformation of earlier cultures and the ascendance of a new order. In these circumstances the sublime quality of sleeved tunics would have helped establish the prestige both of the humans who wore them and of the religion that the staff deity represents. That



Figure 166 [101]. Miniature tunic with weapon?bearing creature in profile; camelid fiber and cotton; 22.1 x 31.8 cm. Brooklyn Museum, New York, Gift of Mr. and Mrs. Alastair B. Martin, the Guennol Collection, 71.180.



Figure 167 [100]. Miniature tunic with staff-bearing creature in profile; camelid fiber and cotton; 16 x 26 cm. Private collection. Photo: Maury Ford.



Figure 168 [108]. This large fragment, excavated at Ancón, comes from a tunic that had sleeves. The shoulder line, toward the top of the fragment, is marked by a reversal in the orientation of the figures. Tunic fragment with figures; camelid fiber and cotton; 118.5 x 103.5 cm. Ethnologisches Museum, Berlin, VA 7468 (16). Image: bpk, Berlin/ Ethnologisches Museum/ Art Resource, NY. Photo: Dietrich Graf.

Figures 169a–c [110–112]. Mummy bundle from the necropolis at Ancón, a site on Peru's central coast, along with a rendering of the tomb in which the bundle was found. The bundle is dressed in the tunic shown in Figure 168; the work basket shown in Figure 170 was found at the side of the bundle. After Reiss and Stübel 1880–87, pls. 17, 16, and 10.

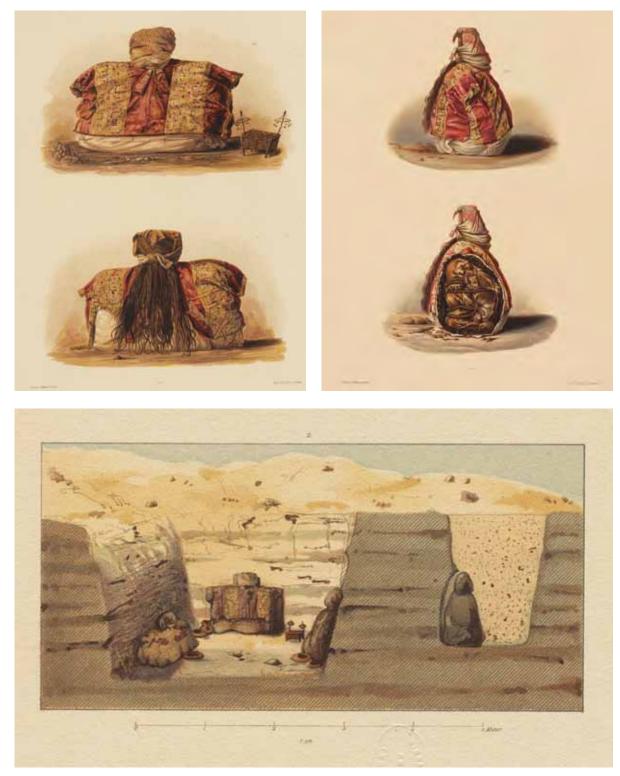


Figure 170 [109]. Weaver's work basket and contents, from Ancón; bone, camelid fiber, cotton, reeds, and wood; 20 x 26 x 18 cm. Ethnologisches Museum, Berlin, VA 5816a–t. Image: bpk, Berlin/Ethnologisches Museum/Art Resource, NY. Photo: Claudia Obrocki.



Figure 171 [132]. Glove; camelid fiber and cotton; 28.6 x 22.1 cm. Brooklyn Museum, New York, Charles Stewart Smith Memorial Fund and Museum Collection Fund, 58.204.



Figure 172 [119]. Tunic with face-fret motif; camelid fiber and cotton; 108.6 x 109.7 cm. The Textile Museum, Washington, DC, acquired by George Hewitt Myers in 1941, 91.343.



is, rather than simply reflecting a grandeur already achieved, sleeved tunics may have played an active role in conveying the appeal of the new cult and promoting its spread.<sup>42</sup> A unique glove-like tapestry testifies to continuing cross-fertilization between Moche and Wari weaving traditions later in the Middle Horizon (fig. 171). On it a weapons-bearing Moche warrior appears with small felines and profile zoomorphic heads of Wari derivation.

#### Distortion

The most fascinating and peculiar of the tunics' features is a deliberate, systematic, and rule-bound method of distorting form that is uniquely Wari; it occurs at no other time in the Andes or even in any other Wari medium.<sup>43</sup> The concept is simple but the aesthetic ramifications are complex: the portions of each motif closest to the tunic's center expand from side to side and the parts closest to the sides narrow and compress.<sup>44</sup> The system's operation may be easiest to grasp in face-fret tunics: Figure 144 illustrates a tunic with relatively undistorted imagery; Figure 172 shows severe distortion of the same imagery. But distortion also appears in most other tunic groups; since Alan Sawyer first defined it in 1963, it has been most celebrated for its effects on winged attendant and sacrificer imagery, which according to some anticipate twentiethcentury abstract art (see pp. 5-27, "The HistoFigure 173. Distortion in two tunics with birdheaded staff-bearing creatures in profile. Drawings: Milton Sonday, with minor modifications; courtesy the Textile Museum, Washington, DC.

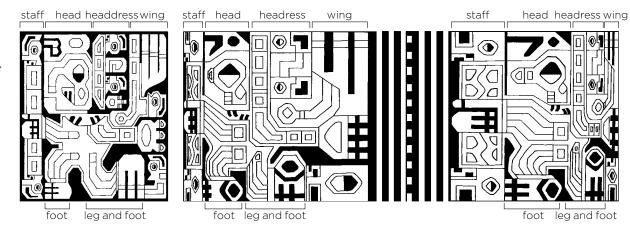
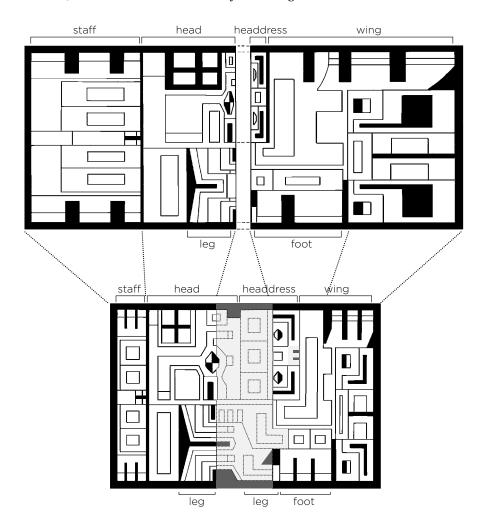


Figure 174 [105]. Tunic with camelid- or deerheaded staff-bearing creature in profile; camelid fiber and cotton; 100 x 92 cm. Museo Nacional de Arqueología, Antropología e Historia, Lima, RT-1650. Photo: Daniel Antonio Giannoni Succar.



ry of Inquiry into the Wari and Their Arts").45 Figure 173 compares undistorted and moderately distorted versions of the bird-headed winged attendant discussed earlier. On the left, the proportions of the attendant, which is rendered in a somewhat geometricized style, are normal except for an enlarged back foot. On the right, one repeat of the same figure appears on either side of the tunic's unusually striped center line. The staff of the rightmost figure has widened considerably while the headdress and three-feathered wing have narrowed. The reverse occurs in the leftmost figure in accord with its changed relationship to the tunic's center and side: the wing and headdress expand but the staff contracts. All other parts of the figure, now very geometricized, follow suit. In the most extreme application whole sections of the figure disappear and the remainder is reduced to a collection of geometric forms whose legibility is further compromised by color (figs. 174, 175). An added twist

Figure 175. Distortion in the tunic shown in Figure 174. Drawing: Milton Sonday, with minor modifications; courtesy the Textile Museum, Washington, DC.



affects the width of the vertical bands, which often narrow progressively toward the tunic's sides; in a few cases this narrowing creates the illusion of cylindrical volume as the central bands appear to advance and the sidemost bands to recede.<sup>46</sup>

Why did they do it? There is no final answer, but many believe that distortion is not iconographic-that is, it holds no symbolic or other meaning that can be interpreted. Rather, it is sheerly an aesthetic contrivance perhaps undertaken to relieve the tunics' repetitive simplicity,<sup>47</sup> to disguise and mystify their sacred imagery,<sup>48</sup> or as a delightful intellectual exercise with form that endows the tunics with a pleasing rhythmic syncopation and, by providing a glimpse into the workings of a lively, playful intelligence, gives them a human approachability.<sup>49</sup> The so-far unproven implication of some of these views is that distortion registers chronology, that its effects became more profound through time as weavers pushed the system to its extreme and logical conclusion.<sup>50</sup> Although nothing is known of the relationship that Wari artists had with their state patrons, aesthetic motivations must be given serious consideration since not doing so risks denying these ancient artists the creative genius accorded their counterparts in other parts of the world, especially the West.<sup>51</sup> If the wellspring was purely artistic invention, however, it is much harder to say whether its goal was abstraction, particularly in the sense that it is understood today in the West.

But in view of the tunics' presumed state sponsorship it is possible that artists developed this aesthetic innovation in concert with iconographic concerns-in other words, distortion has meaning, and this meaning does nothing to diminish the ingenuity with which artists chose to express it. It was explained above that the great majority of winged attendant and sacrificer tunics depict two figural variants: bird and camelid (or deer) as well as many others differentiated by the staffs they carry and a range of other traits both subtle and obvious. Distortion also results in figural variants that are both the same and different; as though in vacillating states of being, one expands at the front but contracts at the rear, while the other reverses its companion by narrowing at the front and widening at the back (fig. 173).<sup>52</sup> When these effects are combined with figures' directional orientations, the number of visually discrete figural variants doubles from two to four, the last comprising two right-facing versions (one with front expanded and the other with front collapsed) and two left-facing versions of the same kind. Reasons to believe that left-right directionality may have had significance come from the tunics themselves<sup>53</sup> as well as from many late pre-Hispanic and contemporary societies in the Andes, which, in line with habits of dualistic thought and social organization, routinely accord meaning to left and right by associating them with the members of complementary but opposed dialectical pairs, including male and female and the parts of dually partitioned communities.54

If this logic concerning distortion and motif orientation is applied to other kinds of tunics—such as those with the face-fret, the profile creature, or the geometric motif with bird heads-the number of variants doubles again to eight since the motifs in these groups appear not only in left-right orientations but also rightside-up and upside-down. The same is true of the skull and vertebra-like imagery that appears on tunics with the meander motif; all are rendered in at least two, often four, and sometimes eight distinct variants if the effects of distortion and orientation are taken into account. Thus, distortion may be involved in the exploration of a series of numbers that today is important to many realms of mathematical inquiry: a geometric progression (or geometric sequence) generated by multiplying successive terms by a fixed number, known as the common ratio. In the tunics' case the common ratio is two and the sequence is two, four, eight, and on. The tunics' format often shows a similar preoccupation.

#### Format

Two number systems seem to guide the tunics' compositional format, which in the great majority of cases is based on the alternation of plain and patterned vertical bands and, across the latter, the horizontal alignment of motifs in rows. Most commonly, the numbers of vertical bands, horizontal rows, and motifs are

founded on the geometric progression rooted in the number two. The tunic in Figure 155 offers an easy illustration: the two main patterned bands together contain a total of sixteen repeats of a winged attendant, eight on each side of the tunic, or two sets of four, one to either side of the center seam. Face-fret tunics extend the progression; for instance, the tunic in Figure 144 has four main patterned bands and eight rows that generate sets of sixteen, thirty-two, and sixty-four motifs on each of the tunic's sides. The same is true of profile creature, profile bird head, and even the oddly formatted meander tunics, which lack vertical bands but invariably repeat their additional imagery—the skulls, vertebra-like motifs, and others—in numbers that correspond to the progression. Pairs and quartets also seem to be emphasized in several other ways, such as the four-part mirroring of imagery over crosslike vertical and horizontal axes (figs. 159, 160, 163). The second most common progression embedded in the tunics' format seems to be based on the number five and doublings to ten, twenty, and forty. The incidence of the two types of progression varies among tunic groups; the first is by far the most common except in face-fret tunics, which split about evenly between the two. Other format-based progressions are rarer and often occur in tunics that are idiosyncratic in other ways.

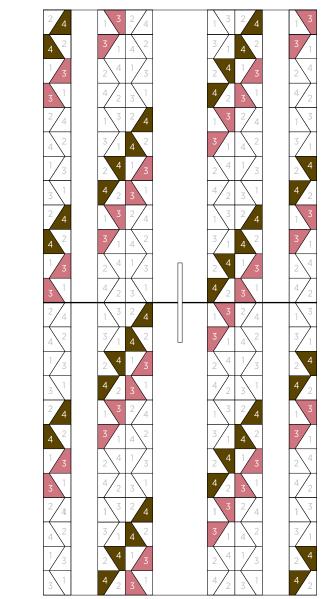
# Color

The tunics' complex color also often plays with the predominant set of numbers that seems to guide format and motif variation.<sup>55</sup> In most tunic groups the repeated imagery is woven in several standard color blocks or combinations that repeat in very regular sequences down the length of the vertical bands; the overwhelming majority of tunics feature a total of four blocks, although other numbers also occasionally occur. For instance, in face-fret tunics, the frets typically are either red with a gold surround or two shades of gold, and the faces are either gold on a brown "ground" or pink on tan (fig. 144); the bodies of winged attendants and sacrificers usually appear in red and three shades of gold to which the colors of details add further distinctive character (fig. 153). Blue and, less commonly, green sometimes substitute for

other colors, especially tan and related pale shades; this enhancement is one of the indications that, as during the Italian Renaissance, blue was a rare and prized exotic.<sup>56</sup>

When traced across the body of the tunic, the color blocks generate large-scale geometric patterns, most based on diagonals that continue from one vertical band of motifs to the next, skipping over the intervening solid band as though it does not exist.<sup>57</sup> In four-block tunics the most frequent pattern has two sets of diagonals, each a pair, that oppose or reverse one another in direction. One pair rises from right to left (fig. 176a) and interleaves with another pair that rises from left to right (fig. 176b). In some tunics, the colors of the diagonals traverse the seam without color change, while in others they shift at center seam and in doing so consistently work in pairs, as Mary Frame has phrased it.<sup>58</sup> This opposed diagonal pattern is best documented among face-fret tunics, one of which serves as illustration, but it also occurs in all other major groups. In some tunics, including several with the profile creature, the directions of the diagonals reverse for one step (motif) in the narrow band at each side of the tunic.<sup>59</sup>

Another common pattern again divides the four blocks into two pairs, but disposes the pairs in two horizontally extended checkerboards. The profile creature tunic in Figure 177 provides an example. Within each check-





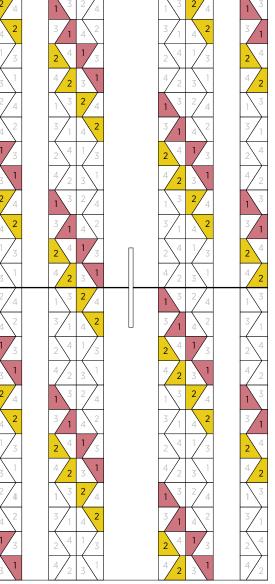


Figure 177. The paired checkerboard color pattern in a tunic with profile creatures similar to that shown in Figure 159. To improve clarity, not all checkerboards are colored. Graphic: Susan E. Bergh and Amanda Mikolic, based on a tunic at the Museo Nacional de Antropología, Arqueología e Historia del Perú, Lima, 03565.

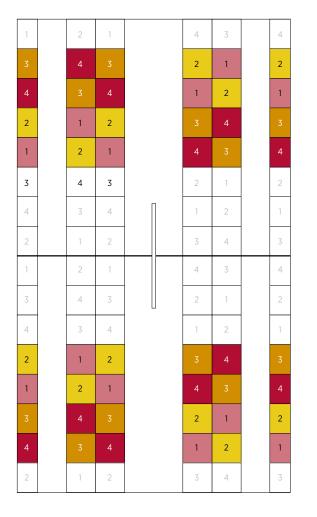
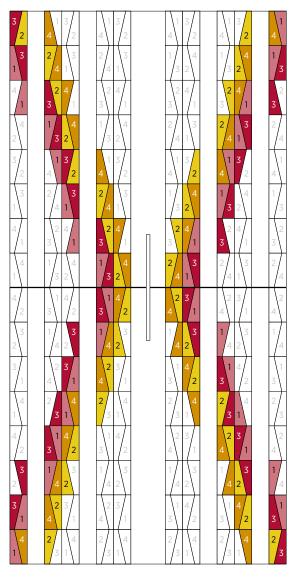


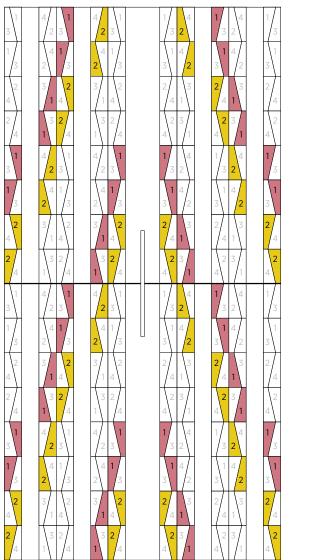
Figure 178. The X-shaped cross color pattern of the tunic with face-fret motif shown in Figure 144. To improve clarity, not all diagonals are colored. Graphic: Susan E. Bergh and Amanda Mikolic. erboard the diagonally aligned color blocks can be imagined to form two opposed chevrons that interlock with each other (one  $\land$  and the other  $\lor$ ). Here, too, the colors sometimes change at the center seam as they do in the illustrated example, but in other cases they do not. This pattern also occurs in winged attendant and meander garments.

The idea of opposed diagonals plays out in a different way in another distinctive pattern seen almost exclusively in face-fret tunics. Here the color diagonals divide the tunic into quarters by reversing direction at both the shoulder line and center seam; in doing so they create two sets of upward-oriented chevrons, one on either side of the tunic, that merge to form an X-shaped cross when the shoulder is unfolded (fig. 178). The colors usually shift at both axes, again working in pairs; in a few tunics, however, the same color continues across the center seam to form monochrome chevrons.

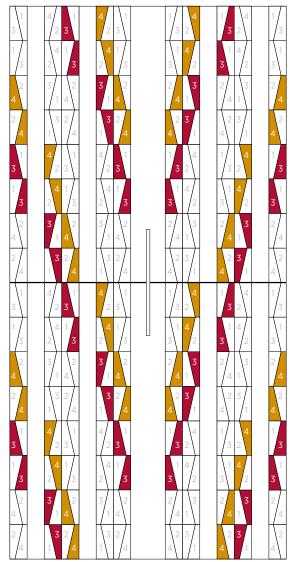
Three additional patterns are frequent enough among four-block tunics to warrant mention. One consists of opposed chevrons in which two sets of chevrons, each a pair, lay out in interleaved directional reversals, one pointing up and the other down (figs. 179a, 179b); almost invariably each chevron is monochrome. Two others are based either on single-direction diagonals (figs. 149, 164, 172) or single-direction chevrons.<sup>60</sup> In the former, the colors of two of the diagonals usually exchange at the center seam, while the other two pass over the center seam without color change; in the latter, both legs of each chevron are usually the same color. All three of these patterns are best represented in tunics with the face-fret and related motifs although the last two sometimes occur in other tunics as well.<sup>61</sup>



Figures 179a, 179b. The opposed chevron color pattern of the tunic with face-fret motif shown in Figure 55. The chevrons formed by the faces are shown on the left; the fret chevrons are on the right. To improve clarity, not all chevrons are colored. Graphic: Susan E. Bergh and Amanda Mikolic.



Whether the patterns have meaning is, again, an open question. It could be that the color variations have strictly aesthetic underpinnings. If so, they are akin to musical variations in which static, repeated, and threateningly wearisome formal elementshere, the diagonal, the color blocks, the motif, and format-take on satisfying complexity and beauty through improvisations with harmony, rhythm, counterpoint, and orchestration. Certainly several commentators have observed that the tunics' riotous color often dominates first impressions, as if attempting to divert attention from the imagery, which sometimes coalesces only slowly, especially when undermined by distortion. The art historian Rebecca Stone has pursued this argument in regard to



color with particular vigor though different emphasis.<sup>62</sup> Thus, as with distortion, to overlook aesthetic motivations as the source of this aspect of intricacy is to risk diminishing the creators' artistry and the sophistication with which they enlivened the tunics by investing them with visual puzzles.

Still, the tunics are the largest, most complex portable objects that the Wari made and those on which Wari elites may have most depended to convey their message. Also, although the tunics' color may strike our eye as riotous, we are a twenty-first century audience to whom pattern analysis, developed through lifelong immersion in textiles and the mathematically based process of weaving, is foreign. If my experience with the tunics and the visual skills of contemporary Andean people are any guide,<sup>63</sup> the ancients had little trouble sorting out the tunics' color and seeing great order in it. To some, this order suggests that the color patterns have content,<sup>64</sup> although interpreting that content is perforce risky because of the figural austerity of the patterns and the relative nascency of Wari studies, among other things.

Nevertheless, the textile specialist Mary Frame has offered a provocative opening salvo in interpretation by suggesting that the color patterns represent a systematized code that reflects a form of cultural knowledge and that the patterns may embody schema or formulas that had potential application to a wide range of experience.<sup>65</sup> More specifically, she suggests that emphasis on four-color blocks may reflect an ideal of four-part division and that, collectively, the patterns might constitute a kind of catalogue of social geometries that structured human interaction in different settings or regions: as alternating, opposed dyads (opposed diagonals), twinned, alternating pairs (checkerboards), linear sequences (single-direction diagonals), and so forth. It is true that similar kinds of geometries structure many kinds of activities in the Andes today and also in antiquity. The Inca habit of dual social organization comes to mind, made relevant by the fact that they divided their bipartite society into four, after which they named their empire (Tawantinsuyu, "The Four Parts Together"), and that they mapped both bipartite and quadripartite divisions onto the plan of Cuzco, their capital. Quadripartite division also characterized other conquest-period Andean societies, some of which subdivided their populations or lands into eight and sixteen parts in further expression of dual organization.<sup>66</sup>

Of course, any suggestion of equivalent social organization among the Wari remains speculative and, if the color patterns do hold meaning, it could well be anchored in other realms. In this regard an interesting albeit contemporary example comes from the folk astronomy of natives who today live in the environs of Cuzco. These Quechua-speakers recognize several X-shaped crosses in the Southern Hemisphere sky. These include the Southern Cross, the annual motions of which bracket the agricultural season, as well as two others traced by the solstitial risings and settings of the sun and by the movements of the Milky Way, conceived as a river of stars that streams through the night firmament. They also identify other types of starry celestial formations, some of them chevron-shaped.<sup>67</sup>

## Past and the Present

It has been proposed elsewhere in this volume that Wari's success-gauged by its impressive building projects, its transformative impact in many areas of the Andes, and the cachet that it and its artworks seem to have acquired—came in part from the belief that Wari lords possessed the ability to mediate human and cosmic affairs, to act both as intercessors in crucial matters that shaped the lives of men and women and as masters of the intersections that those matters had with the realm of unseen forces that sway them profoundly. If so, many of the tapestry-woven tunics that these men wore surely helped them to instantiate these powers, particularly those thronged by hosts of winged attendants and sacrificers, the staff deity's numinous companions. These tunics imply that to a very great degree Wari elites' authority derived from trust in their privileged access to the sacred realm and its denizens. Indeed, by donning such tunics Wari lords may have identified themselves with or even transformed into these figures. Or, since the deity itself seems to wear a tapestry-woven tunic, perhaps these elites, so-clothed and standing before audiences with a potent staff of sovereignty in each hand, fulfilled the role not of the faithful vassal but of the deity itself, its acolytes swarming in ordered registers on either side of the body. The divine group may even have provided a model for a hierarchically ordered human society,68 its apex defined by the deity's human associates.<sup>69</sup>

Beyond this broad affiliation with the supernatural may have lain more specific assertions embedded in the pairs of figures routinely depicted in the tunics, which likely testify to a creed of dualism. If this creed has echoes in the thought of contemporary Andean people, it was based on the conviction that the world achieves existence through the ongoing dialectical balance and fusion of two competing but complementary principles. In highland Andean communities today, harmony between the two is achieved through the give-and-take of reciprocity and the bonds of mutual obligation that it generates. The concept structures social relations, with both assistance and injury calling forth measured repayment, as well as interactions with the natural world and with the deities of the mountains and the earth, which through offerings are induced to behave according to rules of reciprocity.<sup>70</sup> In the words of the anthropologist Catherine Allen,<sup>71</sup> reciprocity is the essence of modern indigenous Andean life, and the same seems to have been true among the Inca.<sup>72</sup> The insistent dualism of some tunics, then, may testify to a belief in Wari lords' power to bring conflicting forces, both cosmic and human, into synthesis and harmony and thus to guarantee health, prosperity, and a foothold in the future, matters that would have been lent special urgency and force by droughts that plagued the Andes just before Wari rose to power.73 The tunics' color patterns, which so strongly emphasize the even, balanced distribution of paired directional oppositions or paired alternations, may have amplified this message whether or not they carried other meanings.74 We do not know the rituals of reciprocity with which Wari lords sought to influence the forces of nature, but in the world of human affairs they focused on feasting, the exchange of food and drink, a crucial Andean tradition that reminded participants of the mutual obligations that in later times allowed family, community,

Figure 180 [156]. Khipu; cotton; L. 190 cm (primary cord), 36 cm (longest secondary cord). Private collection.

province, and polity to survive and thrive (see pp. 82–101, "The Art of Feasting").

The number systems that the tunics may persistently explore-most prominently the geometric progression moored on two and doublings to four, eight, and beyond—also bespeak an interest in mathematical concepts as do the various symmetries of the plane that guide motif distribution across the body of the tunic, a fascinating aspect of composition that has not been explored in these pages.<sup>75</sup> Although the state of research does not now allow the argument to be developed in detail, this concern with numbers and their interrelations suggests that, as others have observed,<sup>76</sup> there is an evolutionary continuum between textiles and the *khipu*, a fiber recording device comprised of cords that is the Andes' closest approach to writing. The khipu (fig. 180) is best documented among the Inca, who used it to record many kinds of numerically based information-statistics including censuses and tribute accounts as well as such narratives as histories and genealogies—via knots and distinctions of cord color, construction, and attachment.<sup>77</sup> The code of the Inca khipu has been cracked insofar as its numbers and their hierarchies can be read, but the memory of what the numbers refer to died with the ancient khipucamayogs (khipu makers).

Examples of a distinctive kind of khipu, its cords' upper reaches wrapped with colored yarns, have been radiocarbon dated to the Middle Horizon (fig. 180; see also [155], p. 276).<sup>78</sup> Although cultural attribution cannot



be confirmed for those without archaeological context, a few have been found with Wari ceramics and may be Wari.<sup>79</sup> In comparison to Inca examples, much less is known about the ways in which these earlier khipu encipher information but it is likely that they are also concerned with recording numbers. If in the tunics distortion redundantly joins other systems of composition in expressing a concern with numbers and their sequences, it holds important implications for the understanding of the indigenous roots of abstraction, which has sometimes been explained in a way that takes inspiration from one strand of twentiethcentury modernism: as an artist's experiment with form undertaken for its own sake. It may be that the tunics' great aesthetic complexity instead has its source in the realm of mathematics—an interest in numbers and geometry ingeniously translated into form and color by fiber artists who are among the world's most inventive.

#### NOTES

1. Wari and its contemporary Tiwanaku made remarkably similar tapestry-woven tunics. Amy Oakland Rodman identifies a number of technical features that distinguish the two (Oakland 1986a; Oakland 1986b, 31-41, 230–31; Rodman and Cassman 1995; Rodman and Fernández Lopez 2001). This dichotomy, today widely accepted, has guided the selection of tunics for this project, although I will not be surprised if future research forces some refinement of current understanding. See Bergh forthcoming; Bergh 1999, 6–7, 72-100.

2. Conklin 1978.

3. See Phipps (2004b, 21–25) and J. Rowe (1979, 239–41) for cumbi, a category that may have consisted entirely of tapestry-woven cloth but may also have encompassed other kinds of fine fabric, such as feathered cloth.

- 4. Murra 1962, 711.
- 5. A. Rowe 1996, 330.
- 6. Kidwell 1976, 28.
- 7. Murra 1962, 722.

8. See A. Rowe (1978) and J. Rowe (1979) for Inca tunics. Tiwanaku tapestry-woven tunics also form part of the background of the Inca successors; see Cummins (2002, 59–68) for the general importance of Tiwanaku to the Inca. 9. See Emery 1966, 76–90, for more about the tapestry weave.

10. The averaged thread counts on which this rough, conservative calculation is based are, for a routine Wari tapestry-woven tunic, 50 wefts and 12 warps per centimeter and, for the finest example, today in a private collection, 124 wefts and 24 warps per centimeter.

- 11. Phipps 2004b, 24.
- 12. Zuidema 1992, 179.
- 13. Frame 1990.
- 14. Sawyer 1963, 3.

15. Menzel (1968; 1964) refers to the face-fret motif as the split face.

16. Ochatoma Paravicino and Cabrera Romero 2001, 202.

17. For these tunics, see Bergh (1999, cat. 309, 310); the latter has been radiocarbon dated to cal. AD 685–770 (Haeberli forthcoming).

18. But see Frame forthcoming; Frame 2005, 9–11; Frame 2001, 120, 128–30; Posnansky, cited in Goldstein 1989, 154; Stone-Miller 1995, 125, 132.

19. Conklin 1996, 383–89; Menzel 1968, 79.

20. See Cook 1996 for a contrasting opinion.

21. Bergh 1999, 510-60.

22. Ibid., 117–44, 446–509. The tunics also feature several hybrids of these two types as well as a few apparently human figures. See Bergh 1999.

23. Bergh 2009.

24. Bergh 1999, 117-44.

25. See A. Rowe 1979 for musician iconography in Wari tapestry-woven tunics.

26. The literature on dualism in ancient and contemporary Andean societies is very extensive. See Bergh 1999, chap. 3, for a partial review and bibliography.

27. For instance, Lévy-Strauss, cited in Moore 1995, 176; Urton 1993.

28. Lyon 1978, 108–13; Menzel 1977, 54; Menzel 1964, 19, 26; see also A. Rowe 1991, 116–18; A. Rowe 1979, 11.

29. Murra 1968.

30. Duviols 1979; Pärssinen 1992, 200–27; J. Rowe 1946, 202; Zuidema 1964.

31. But see Anders (1986, chap. 11) for a speculative reconstruction of Wari as a dual and quadripartite empire and J. Topic and T. Topic (1992; 2001) for their opinion that dual organization was endemic to Wari.

32. Bergh 1999, 561-84.

33. See Conklin (1996, 398; 2004c) and Sawyer (1963, 2) for their speculations concerning the identity of the motif and its components.

34. If the panel is a mantle, the orientation of the imagery in its borders indicates that it was not worn with the upper edge folded down; this contrasts to custom in later Andean times. It is difficult to establish Wari practice because bordered, tapestrywoven constructions that could have served as mantles are not very common. In those that exist, the imagery's orientation would have accommodated folding. The small panel may well have served another purpose.

35. Knobloch 2010, fig. 21; see also Bergh 1999, fig. 86.

36. Gose 1993.

37. Bergh 1999, 606–12.

38. Rather than being stitched onto the body of the tunic, the sleeves were woven as extensions that are continuous with it.

39. Bergh 1999, 585–605; Bergh forthcoming.

40. See Young-Sánchez (2000) for an analysis of the Ancón tomb. As she points out, the tunic had been recycled into this context.

41. Other routes of transmission are possible, especially via the coastal Nasca culture. See Bergh forthcoming.

42. See Richard Burger (1988, 130–31) for his suggestion that the same was true of the awe-inspiring arts of the earlier Chavín culture.

43. However, distortion occurs in a few Tiwanaku tapestries, perhaps as a consequence of contact with Wari (Rodman and Fernandéz Lopez 2001, 125).

44. Technically stated, the rules of the system call for expansion of those parts of the motif closest to the long edge of the panel at which weaving began; this edge normally falls along the tunic's center seam. It follows that contraction affects the elements closest to the panel's finishing edge, generally at the side seams. A handful of tunics reverse the positions of these edges and, therefore, the direction of distortion. See Bergh 1999, 47–48. 45. Paternosto 1996, 227.

46. Sawyer 1963, 37.

47. Ibid.

48. Stone-Miller 1995, 148.

49. Pasztory 2010, 133-34.

50. A. Rowe 1996, 402; A. Rowe 1979, 18n28; Sawyer 1963, 8, 11. Those who agree with a formalist interpretation include Bird and Skinner (1974, 11), Rodman and Fernandéz Lopez (2001, 121), and Tulchin (1997). For other interpretations, see Frame (2001, 130), Gayton (1961, 127), and Conklin (2004c, 179), whose analysis W. Isbell (2002, 456) critiques.

51. See Pasztory 1990–91.

52. Stone-Miller (1995, 147) makes a similar observation.

53. Bergh 1999, 144-48.

54. The literature in this regard is very large. See Bergh 1999, chap. 3, for a partial review.

55. Bergh 1999, 54–66.

56. Baxandall 1989, 11–15; Bergh 2009; Stone 1987; Stone-Miller 1995, 148; Stone-Miller 1992b.

57. Bergh 1999, 54–66; Frame forthcoming. The following patterns can be classified in more than one way.

58. Frame forthcoming.

59. See Bergh 1999, fig. 9.3.

60. Ibid., figs. 11, 12.

61. There are other rare color patterns, including several found in tunics with two-color blocks; see Frame forthcoming for several of them.

62. Stone 1987; Stone 1986; Stone-Miller 1995; Stone-Miller 1992b. 63. For instance, Franquemont et al. 1992; Franquemont and Franquemont 1987.

64. Bergh 1999; Frame forthcoming. 65. Frame 2005, 9–12; Frame forthcoming.

66. The literature on Inca and other late pre-Hispanic socio-political organization is extensive. See Bergh (1999, 203–15) for a partial review and bibliography, to which D'Altroy (2002), Morris and von Hagen (2011), and Pärssinen (1992) can be added.

67. Silverman-Proust 1988, 226; Urton 1981. See Zuidema (1977) and Martinez (1987) for calendrical interpretations of a Wari tapestrywoven mantle.

68. Cook 1984–85; W. Isbell 1984–85. 69. See Knobloch (2010) and

Makowski Hanula (2009) for dissenting opinions. 70. Allen 1988, 93–94, 187; Earls and Silverblatt 1978, 310; Mannheim 1991, 90–93.

71. Allen 1988, 91, 93, 208.

72. Cummins 2002.

73. Williams 2002, 365.

74. Bergh 1999.

75. See Frame (forthcoming) for charts of some of these symmetries and her ideas about how they relate to fiber technologies.

76. See Bergh 1999, 3–4, 34; Conklin 1986, 126; Conklin 1982, fig. 3; Frame 2005, 8–9; Frame 2001, 123; Frame 1991, 145–47; Stone-Miller 1992a, 337.

77. See, for instance, Ascher and Ascher 1981; Mackey et al. 1990; Quilter and Urton 2002; Urton 2003a; Urton 2003b.

78. For instance, one khipu returned the date AD 719–981 (fig. 180) and another, cal. AD 690–900 ([155], p. 276). My thanks to Gary Urton for sharing the dates of the khipu in [155] and several other wrappedcord khipus at the American Museum of Natural History, all of which belong to the Middle Horizon.

79. William Conklin describes the khipu that appears in Figure 180 in detail, mentioning that Yoshitaro Amano found similar wrapped-cord khipu fragments in a tomb at Pampa Blanca in the Nasca drainage, with Wari ceramics of the Middle Horizon's second epoch (Conklin 1982). Another example was found in architectural fill at the Huaca San Marcos in Lima in association with Pachacamac, Lima 9, and Nievería style ceramics; the context suggests that the khipu was manufactured before or during the second epoch of the Middle Horizon (Shady Solís et al. 2000). Ruales (2001, 371–72) reports the find of a khipu-like object, apparently without wrapped cords, in a Middle Horizon context at Cerro de Oro in the Cañete Valley. See Conklin 2011 for reflections on wrapping.

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Figure 251 (detail of fig. 161). Panel; camelid fiber and cotton; 77 x 109.5 cm. Royal Ontario Museum, Toronto, 931.11.1.

