CONVERGING STREAMS

ART OF THE HISPANIC AND NATIVE AMERICAN SOUTHWEST

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Frontispiece: Los Comanches dancers. Taos area, New Mexico,
early twentieth century. Courtesy of the Kit Carson Museum, Taos.

CONTENTS

6

THREE SOUTHWESTERN TEXTILE TRADITIONS

ANN LANE HEDLUND

The American Southwest has a rich heritage of fabric making. Native weavers have actively plied their craft, clothed their families, and produced handwoven trade goods for more than two thousand years. In this chapter I look at three principal ethnic weaving traditions in the region—those of the indigenous Pueblo Indians, the Navajo Indians, and the Hispanic Americans, whose weaving is also called Spanish colonial or Spanish American and is sometimes referred to more specifically as Rio Grande. Whereas other contributors to this book are concerned primarily with the seventeenth through the nineteenth centuries, in order to present an overall sense of these three cultures' textile traditions I begin the story of weaving in prehistoric times.

THREE WEAVING TRADITIONS

Prehistoric textiles and tools recovered from arid archaeological sites dating from about A.D. 200 to 1100 attest that skilled weavers and other specialized artisans lived in what are now present-day New Mexico, Arizona, Colorado, Utah, Sonora, and Chihuahua. They used native fibers to create useful artifacts and garments, and they represented communities including, in the U.S. Southwest, the ancestral Pueblos (formerly known as Anasazi; the Hopis now term their ancestors Hisatsinom), the Mogollon (including the Mimbres, Salado, and Sinagua cultures), and the Patayan, Hohokam, and Trincheras cultures, as well as groups from Casas Grandes and the Sierra Madre regions of the "extended Southwest" in northwestern Mexico. Completely intact fabrics are rare, but several thousand remnants of braided, twined, and woven sandals, belts, bags, interlaced garments and mats, and woven blankets reveal significant textile industries (pl. 68). Despite this diversity, only a portion of these textile types survived into historic times, principally among the Pueblos. Aboriginal tools, fiber processing, and textile construction, however, not only persisted but also greatly influenced later neighboring groups such as the Navajos.

Pueblo Indians in historic times, with settlements from the Hopi Mesas in northern Arizona to the Rio Grande Valley in present-day New Mexico, perpetuated select textile styles inherited from their ancestors. During initial Spanish domination (before the Pueblo Revolt of 1680), the Pueblos added sheep's wool and new dyes to their native repertoire of traditional garments for everyday and ceremonial use. Textile scholar Laurie D. Webster has described significant changes that took place with Spanish contact, among them a decline in textile making in the eastern pueblos, an intensification of production in the western pueblos, an increase in regional textile exchange, and the emergence of the Hopi villages as major suppliers of Pueblo ceremonial textiles.[1] During the nineteenth century, commercial cloth and mill-woven blankets further replaced handwoven goods for almost all but ritual purposes.

To the south, weavers in Mexico worked on Spanish-style treadle looms and produced elaborately patterned, multicolored sarapes and ponchos (pl. 71).[2] By at least the early nineteenth century these became known as Saltillo sarapes—named for the city of Saltillo, capital of the state of Coahuila and a major

marketing center in northern Mexico—although similar blankets were also produced in other parts of the country. The serrate concentric diamond and medallion patterns of the finely woven and widely traded blankets later influenced Hispanic and Navajo weavers profoundly.

The Navajos were relative newcomers to the Southwest, arriving in the Four Corners region from their northern Athabascan homeland sometime during or after the fourteenth century. They apparently learned much from Pueblo peoples—their new neighbors, trading partners, prospective kinfolk, and potential rivals. From the Pueblo culture Navajos absorbed and adapted religious and secular ideas, activities, and artifacts. In 1706 New Mexico governor Cuervo y Valdez wrote, "They make their clothes of wool and cotton, sowing the latter and obtaining the former from the flocks which they raise."[3] Direct observations by Spanish travelers through Navajo country from 1706 to 1743 strengthen the picture of active trade in Navajo textiles to Pueblo and Hispanic settlements.[4] From these eighteenth-century Spanish reports of well-established weaving practices, scholars have surmised that some Navajos must have learned to weave at least one or two generations before—therefore, by the mid-seventeenth century.[5]

A few early historic-period fragments from protected cave sites help us understand early Navajo materials, techniques, and designs and their connections to earlier Pueblo and later Navajo fabrics. Cloths and clothing found at sites dating from about 1750 to 1804 in Canyons de Chelly and del Muerto, Arizona, provide prime evidence.[6] Although not well documented, the earliest extant whole Navajo textiles, "blue border mantas," probably date to the late eighteenth century and are patterned after Pueblo-style, one-piece manta dresses. Navajo lifeways shifted from nomadic hunting and gathering to sheep herding and transhumant subsistence and eventually to the present mixed economy, including farming, ranching, local wage labor, urban employment, and government assistance, plus craft and other esoteric occupations. Of the three ethnic groups, the Navajos are probably the most eclectic in their present-day weaving—much has changed and continues to evolve as outside ideas exert strong influence and as individuals incorporate innovations into their traditions.

Since the seventeenth century, Hispanic families have settled along the Rio Grande Valley from the river's headwaters in the San Luis Valley of Colorado, throughout the length of New Mexico, and south to El Paso del Rio on the Texas border. Early Hispanic weaving in New Mexico developed around organized workshops and less formal, household-level operations. Museums and private collections contain examples of early tools to illustrate Southwestern fiber, yarn, and fabric processing. Few if any museum examples of Hispanic weaving exist from before 1800, and there are very few examples of weaving done in the Rio Abajo area, south of Santa Fe, from any period. Examples from mid-nineteenth-century northern New Mexico, in contrast, abound. Earlier craft practices can be extrapolated from these and the written records. Fortunately, weaving continues in modern form around the Rio Grande Valley today. Studies by Helen Lucero and Suzanne Baizerman and by Mary Terence McKay and Lisa Trujillo address twentieth-century trends. As in the 1920s and 1930s, a revival of Hispanic New Mexican weaving has flourished since the 1970s.[7]

COMPARING THE THREE TRADITIONS

In Puebloan villages from prehistoric to modern times, men were the weavers (table 6.1, pl. 64). Weaving was taught within religious societies, was practiced in the communities' kivas, and apparently followed specific requirements for format and designs. (More recently, textile skills have been taught in school programs, community craft centers, and historic preservation workshops.) From an early age, many community members were generally knowledgeable in at least making plain manta cloth and knitting stockings, and they produced these when not farming or otherwise occupied with subsistence tasks. Judging from the quality and complexity of prehistoric and early historic textiles, other Pueblo weaving was probably practiced as a semi-specialized craft in its early days.

In the Navajo tradition, women were the predominant weavers, although other family members helped with wool processing and auxiliary tasks. Since the 1880s more than several dozen men have also been weavers. Weaving took place in individual homes and always fit into the women's round of household, child-rearing, field-tending, and flock-herding activities. Traditionally, weaving was considered every woman's responsibility and role, without apparent labor or craft specialization (pl. 65).

Men were traditionally the weavers in the Hispanic communities of New Mexico and southern Colorado, although family members and household servants contributed and sometimes played major roles in

TABLE 6.1

Differences and similarities between Pueblo, Navajo, and Hispanic weaving traditions

ATTRIBUTE	PUEBLO	NAVAJO	HISPANIC
WEAVERS	Male, in kiva, associated with men's religious societies	Female, in household, part of each Navajo woman's roles	Male, in household or workshop or store, semi-specialized craft-profession, with family help. Women increasingly involved in the twentieth century
MATERIALS			
Fibers	Native and commercial cotton; native and commercial sheep's wool	Native and commercial sheep's wool (churro and other breeds); many imported yarns and fabrics; cotton (rare except in string warp); commercial silk (rare)	Native and commercial sheep's wool; imported yarns; cotton (rare, grown in Rio Abajo); some linen or other bast fibers (rare, for warp)
Warp yarns	Single-ply (Z) handspun wool; cotton string	Single-ply (Z) handspun wool; cotton string; commercial plied yarns	Two-ply (2zS) handspun wool; cotton string; commercial plied yarns
Weft yarns	Handspun (spindle); commercial (mill spun); raveled (re-plied for embroidery)	Handspun (spindle); commercial (mill spun); raveled (common); raveled, recarded and respun (often overlooked)	Handspun (spindle and/or spinning wheel); commercial (mill spun); raveled and sometimes respun (less common); handspun cotton (rare)
Dyestuffs	Native, natural, aniline (red, green, black)	Native, natural, aniline	Native, natural, aniline
CHARACTERISTIC COLORS	Blue, black, white, and brown predominate, with red and green accents	Widely varied; red often predominant; blue, black, brown, white common, with green and yellow accents	Blue, brown, black, and white; pastels (pinks, purples, greens, oranges, yellows)
LOOMS	Weaver seated, upright frame anchored to kiva floor, walls, and ceiling, string heddles, wooden batten, hole + slot heddle (Zuni)	Weaver seated, upright frame anchored to house, trees, or freestanding, string heddles, wooden batten and comb, yarn "butterflies," weft wrapped on stick	Weaver standing, European-style horizontal floor loom, suspended harnesses, swinging beater and reed, shuttle
TECHNIQUES	Variety of weft-faced and balanced plain and twill weaves; supplementary weft patterning (brocade); embroidery; single-ply warps; warp-float belt weave	Weft-faced tapestry weave (predominant), closely spaced warps; weft-faced twill weaves; wedge weave; single-ply warps; warp-float belt weave	Weft-faced stripes and tapestry weave, widely spaced warps; balanced twill weaves (jerga); embroidery; two-ply warps
FORMAT AND PROPORTIONS	Wider than long; longer than wide (in later blankets/rugs); four complete selvages	Wider than long; longer than wide; four complete selvages	Longer than wide; sometimes quite long; side selvages with paired warps; cut warp ends; knotted warp fringes
AVERAGE WARP, WEFT COUNT	5–8 warps/inch, 20–35 wefts/inch	7–12 warps/inch, 25–60 wefts/inch	5–7 warps/inch, 25–35 wefts/inch
CORNERS	Loosely knotted selvage cord tassels; braided tassels (occasional)	Tightly worked selvage cord tassels; braided tassels (uncommon)	No special corner treatments
SELVAGES	Continuous warp, knotted warp ends rare (except Zuni), three-strand twining with two-ply cords on ends and sides (most common)	Continuous warp; knotted warp ends rare; two-strand twining with three-ply cords on ends and sides (most common)	No twining on ends or sides; warps trebled or doubled along sides; warp ends knotted, sometimes fringed
DETAILS	No lazy lines (Hopi); some lazy lines (Zuni); no poncho slits or Spider Woman's Holes	Lazy lines common; loom stitch-down lines; evidence of loom turns; Spider Woman's Holes (rare)	No lazy lines; poncho neck holes do not persist from Mexico
STYLE	Traditional and conservative	Eclectic, borrowing from many sources, ever changing	Relatively traditional repertoire, showing some outside influences
DESIGN MOTIFS, ELEMENTS, LAYOUT	Bands, geometric motifs and pictographic symbols, horizontal dominance, limited patterning, selective pictorial motifs and scenes	Bands, terraced motifs with addition of serrate elements later, horizontal dominance changing to vertical dominance later, all-over patterning, occasional stylized pictorial motifs changing to neorealism in twentieth century	Bands, serrate motifs, vertical dominance, center-oriented patterning
PURPOSE	Native use: bedding and clothing, both secular and religious; interpueblo trade; seventeenth-century tribute to Spanish government; limited tourist trade	Native use: bedding and clothing, primarily secular; intertribal, Spanish and Anglo trade; later tourist trade	Spanish American use: bedding, home furnishings, outer garments; internal commerce; extensive commerce with eighteenth-century Mexican trade centers; later tourist trade
INTERETHNIC INFLUENCES	Prehistoric continuity; Spanish wool; Mexican indigo dye; Navajo motifs (occasional)	Pueblo loom, techniques, and early garment formats; Spanish wool; Mexican indigo dye; Mexican Saltillo sarape style (central serrate diamond), layout (central and vertical), and motifs (serrations); Spanish American Vallero star pattern (six-pointed, segmented)	Navajo terraced motifs

SOURCES: Author's data and Wheat, *Blanket Weaving in the Southwest,* table 1.
NOTE: Only the predominant traits and tendencies during the last half of the nineteenth century are summarized here. Considerable variations exist among individual textiles and at different times.

preparing fibers and weaving. Male weavers in the Santa Fe area worked commercially on treadle looms by the early seventeenth century (pl. 67).[8] For Hispanos, weaving appears to have been a specialized (although generally part-time) occupation more than it was in the Indian societies. The structure of the New Mexico weaving industry was less formalized than the European guild system, in which weavers, dyers, and other specialists belonged to exclusive and separately organized groups that supervised training, regulated production methods, and asserted strict economic controls. In New Mexico, formal apprenticeships, official testing of workmen, and trade unions for cloth workers did not exist. Nevertheless, specialized labor for carding, spinning, dyeing, and weaving, sometimes falling along ethnic and gender lines, reflected a loose patterning after both European and Mexican antecedents.[9]

In 1807 the arrival in Santa Fe of brothers Juan and Ignacio Ricardo Bazán, master weavers from Mexico City, signaled the colony's efforts to establish a weaving workshop with imported looms, formal apprentices, and an invigorated program of design and technique. The Bazán brothers remained in Santa Fe only from 1807 to 1809, but with long-lasting effects.[10] They brought equipment from Mexico and had more constructed in New Mexico, thus passing on loom-building skills to new generations. Presumably, men were the main targets for the Bazán brothers' training, and men continued the tradition of weaving in New Mexican workshops outside of the home.

Inside Hispanic households, carding, spinning, dyeing, and weaving generally remained separate activities accomplished by women. During the nineteenth century, Hispanic women in southern Colorado wove lightweight yard goods for their families' use, while men retained the more commercial job of weaving heavier blankets and rugs.[11] By at least the mid-twentieth century, a number of women had also become skilled and creative weavers in New Mexico.[12]

In addition to the three relatively distinct traditions, crossovers took place in both workshop and household contexts. By the late 1630s, Governor Luis de Rosas operated a Santa Fe weaving workshop, or *obraje,* which has been described as "a prison-like affair" in which the labor force worked "under conditions of virtual servitude."[13] The textile workers "included both Christian (presumably Pueblo) and unconverted Indians, the latter including captives taken in war, as well as Mexican Indians and lower-class Spaniards."[14] Women were set to work preparing wool yarns while men and women (and perhaps children) apparently wove and knitted. Men worked on treadle looms, and women in the workshop, if they wove, apparently worked on native upright looms (perhaps these were Navajo, not Pueblo, women). Women also embroidered and did other needlework for the workshop.[15]

Following the Pueblo Revolt of 1680, the organized conscripting of Indian labor by government officials phased into a more informal, social practice. According to scholar Marianne Stoller:

> Taking its place was the practice of adopting Indian captives, preferably children, into Hispanic families, Christianizing them, and using them as servants; this custom resulted in a class of people called Genízaros, Hispanicized Indians mainly from the nomadic tribes but also from the sedentary Pueblos. Very frequently there was intermarriage, and also interbreeding, between Españoles and Genízaros with the resulting children being absorbed into the Spanish family and given inheritance rights as well as full social and cultural Spanish suffrage. . . . The term Indian "slaves" is really a misnomer for Anglo minds because the southwest Spanish system never conceived of or treated these people as chattel. The word most commonly used for them in the San Luis Valley, *criado (-a),* meaning one who has been reared or educated as a servant, groom, or godchild, should be used in preference to "slave."[16]

New Mexico and southern Colorado census materials for the nineteenth century show the presence of *criadas* in many Hispanic households. The majority of servants were Navajos, with smaller numbers from other tribes and mixed affiliations. Although Navajos also raided for "slaves," apparently five times the number of Navajos lived with Hispanic families as there were Hispanos or Mexicans living with Navajos. Beyond general household obligations, these Navajo women were also known for washing, carding, and spinning wool and for some weaving.[17]

Materials and Colors

Locally collected yucca, apocynum, and other wild plants and native-grown cotton, originally from Mexico, were the Pueblos' major fiber sources in prehis-

toric times. These were augmented with dog and wild animal hairs, fur strips, human hair, and turkey feathers. By A.D. 1100, domestically cultivated cotton had almost entirely supplanted wild materials. Early in the Spanish colonial period, Pueblo spinners began using wool from sheep imported by the Spaniards for yarns destined to become blankets and fine garments. By the nineteenth century, imported wool yarns and cotton string were integrated into Pueblo embroidered, brocaded, and handwoven garments, although native cotton spinning remained important for certain garments and ceremonial items.

Handspun wool has predominated in Navajo weaving since its inception. (Only one exceptional Navajo blanket with handspun cotton is currently known, although surely others were made.)[18] The *churro* sheep, acquired originally from the Spaniards for both food and fiber, rapidly became a mainstay of the Navajo economy (Fig. 6.1). Once trade goods became available via the Santa Fe Trail, beginning in 1821, Navajos readily incorporated other foreign materials—new yarns, dyes, and raveled cloth—into their blankets and garments. These came from a greater number of sources than were used by Pueblo and Hispanic weavers.

In one remarkable ploy, Navajos cut imported wool cloth, generically called *bayeta,* into long strips and unraveled them as a source of colorful yarns. Red predominated, but Navajos also obtained yellow, green, and a few brown bayeta cloths. The original fabrics of varied types came from European, Mexican, and American mills.[19] Most often, raveled yarns were used in groups of two to four; occasionally, an intact strip of fabric was used; and at times these raveled materials were recarded and respun into entirely new yarns, with or without the addition of native white wool to lighten the color. Pueblo and Hispanic weavers sometimes adopted this practice of unraveling whole cloth to recycle the yarns.

Navajo weavers also used three- and four-ply commercial yarns from European (for example, Saxony, Germany) and American (for example, Germantown, Pennsylvania) mills to great advantage.[20] These were available to Navajos through government annuities during the mid-nineteenth century, and the railroad's arrival in 1880–1881 only increased their volume and variety. Lesser quantities of the same raveled and commercial wool yarns appear in some Pueblo weaving and embroidery of the period and in a small number of Hispanic blankets.

The Spaniards, of course, brought sheep and wool processing with them to New Mexico, beginning with Juan de Oñate's expedition in 1598. There are records of handspun cotton being used in only a handful of Hispanic New Mexican textiles—especially from the Rio Abajo, with its suitable climate for growing cotton.[21] By at least the mid-seventeenth century, indigo and brazilwood dyes were in use.[22] These and other dyes expanded the repertoire of colors used. During the nineteenth century a variety of imported commercial yarns and both natural and synthetic dyes appeared in Hispanic woven goods. Some of these continue to color Hispanic textiles into the present.[23]

All three groups, Hispanic, Navajo, and Pueblo, took advantage of the natural colors of wool, using the sheep's white, grays, browns, and black alone and carding them with natural white and raveled red wools to achieve further shades. Indigo was imported from Mexico in aboriginal times, later controlled by Spanish and Mexican trade, and used in all three cultures. Dye woods such as brazilwood imported from Mexico and sappan wood from India were used in Spanish American communities of New Mexico but were not applied independently by Pueblo or Navajo dyers. Local Rio Grande plants, including a native madder, produced dyes with hues from soft reds and red-browns through browns and oranges to yellows and yellow-green.[24] Red dyes from the insects cochineal and lac, and their combination, are found in textiles produced by all three cultural groups. There is, however, little evidence that any Southwestern dyers applied cochineal—from insects either cultivated in Mexico and Central America or gathered locally in the wild—to their own wool yarns in historic or earlier times.[25] The primary means of obtaining insect-dyed yarns appears to have been through using commercial three-ply yarns and unraveling imported cloths from Mexico and abroad. Further research on Southwestern uses of insect dyes and the red pigment dye called *vermellón* (vermillion or cinnabar, composed of mercuric sulfide) is needed. By the last quarter of the nineteenth century, synthetic dyes became popular in the Southwest and around the world. These were available first on imported yarns and fabric and later in packet form for local application to handspun wool.[26]

Looms and Other Tools

In all three traditions, people prepared raw wool for spinning by first picking it apart with their fingers

Figure 6.2. Navajo woman carding wool. A hand spindle lies beside her on the blanket, and her upright loom stands in the background. Photograph by Simeon Schwemberger, about 1906. Courtesy of the Museum of Northern Arizona, MS-168-6-14.

and then cleaning and straightening the fibers either with native teasels (the prickly flower head from certain plants) or imported, metal-toothed carders (Fig. 6.2). The resulting roll of wool, ready to spin, was known colloquially among some Spanish speakers as *colitas de borregitos,* "little lambs' tails."[27]

Although Pueblo spinners were predominantly men and Navajo spinners women, they used a similar, simple, hand spindle—a wooden spindle whorl (disk) on a long straight stick—to make their handspun yarns (Fig. 6.3). Each group supported and rolled its spindle somewhat differently, but the basics were otherwise similar, resulting in a Z-spun, single-ply yarn. Until the early twentieth century, Hispanic handspun yarns were made with a variety of tools: the simple hand spindle (*malacate*) or drop spindle (pl. 63),[28] the tall Euro-American walking wheel with a straight spindle, a Mexican-style wheel with an iron hand crank, and the European-style spinning wheel with a treadle and flyer (with auto-winding bobbin) mechanism. Bobbins for weaving were loaded with yarn by hand or with the use of a spinning wheel's turning spindle (Fig. 6.4).

Pueblo and Navajo weavers have always woven on the aboriginal upright loom. This native loom is a simple structure of horizontally positioned sticks held in place either by a wooden frame or simply by the web of warps and cloth stretched between two loom bars. The frameless Pueblo loom was often anchored into the floor, walls, or ceiling of a room; they were originally built and used inside the ceremonial kivas. Navajo looms present a variety of solutions to achieving stability—from the use of trees for steadying outdoor looms to portable free-standing frames and heavy structures of metal pipes and lumber. The warps were strung vertically, and the cloth grew upward as weaving progressed (pls. 64, 65).

Native weavers sit in front of their looms, sometimes on progressively higher seats in order to reach the active weaving area. Before the twentieth century, Pueblo and Navajo weavers often wove a portion of

Figure 6.3. Navajo woman spinning wool into yarn. Photograph by Merl LaVoy, 1930, Charles L. Bernheimer Expedition of the American Museum of Natural History. Wetherill Collection, Arizona State Museum, University of Arizona, Tucson.

Figure 6.4. Isabelle Trujillo, of Chimayo, New Mexico, using a European-style spinning wheel converted into a bobbin winder. Photograph by Ann Lane Hedlund, 1985.

their fabric and then turned the entire web around, still attached to the loom bars, so that the completed part moved to the top of the loom and the bars were lashed in opposite positions. Then weaving proceeded from the bottom up to the finished cloth line.[29] Once out of reach, the woven web could also be adjusted or lowered in various ways: lowering and lashing the cloth to the bottom loom beam, which left rows of permanent stitch marks in the fabric ("tie-down" stitches); wrapping the warps and cloth to the back of the loom frame; and unwinding the warps from an upper revolving beam.

The design of the Spanish horizontal floor loom, also called a treadle loom, probably originated in the Near East and traveled to Europe around A.D. 1000.

There it transformed women's cottage work into a widespread, male-dominated, urban industry. In the late sixteenth and seventeenth centuries Spaniards brought the knowledge for constructing this loom with freestanding wooden timber frames to North America.

In contrast to the upright native Southwestern looms, Spanish looms are larger, less portable, and more mechanized. An overhead system of semi-permanent heddles strung onto wooden harnesses is controlled by foot-powered treadles. Warps are wound around a large beam at the back of the loom. The cloth is woven in a horizontal position rather than vertically, and the completed fabric is wound progressively around a front beam near the weaver's knees. Most Hispanic weavers "stand to" their loom, rather than sitting down (pl. 67).

Although Pueblo men were using European-style looms in Governor Rosas's workshop in the 1630s, there is no evidence that this horizontal floor loom was ever introduced into the Pueblo villages.[30] Except in cases of enforced use, Hispanos and Indians did not exchange tools for spinning and weaving as readily as they did raw materials and motifs. This apparent reluctance to share tools may reflect the Spaniards' protection of their economically valuable equipment, but it might also reveal the strong cultural identification that Navajo and Pueblo weavers invested in their highly valued tools and processes. At least in the Navajos' case, this attachment to their implements and procedures continues to contrast with their ready incorporation of designs, which hold less cultural significance.[31]

The differences in these tools have material consequences for the finished woven products, as is seen in the following discussion of weaving techniques.

Weaving Techniques

All three traditions employ variations of the same plain, tapestry, and twill weaves, but their individual variations and distinctive finishing touches distinguish one from another. Pueblo plain and twill weaves are generally the most open—the warp and weft yarns are "balanced," meaning that equal amounts of both show in the fabric. In Pueblo weft-faced, or tapestry-woven, blankets, the warps are widely set, with approximately three to five threads to the inch, and wefts number ten to twenty per inch. Supplementary weft-wrap brocading appears on Pueblo dance sashes. Embroidery, usually regular and often with subtle negative patterning, is found on Pueblo kilts and mantas (pl. 69). Although some scholars may attribute the modified back stitch used in these pieces to European influence, most assert that it was strictly an aboriginal development.[32]

Navajo plain weave and tapestry-woven blankets are certainly the most compactly woven, with warps entirely hidden by the colored weft yarns used for patterning. Thread counts usually range from six to twelve warps and twenty to ninety warps to the inch. Navajo plain, twill, and tapestry weaves are all weft-faced.

Navajo weavers use distinctive "lazy lines" in their work—subtle diagonal breaks in solid color areas of the weave that allow a weaver to focus on one segment of work without creating a vertical slit in the weave (Fig. 6.5). (Hopi blanket weavers never use lazy lines, and Zuni weavers used them only occasionally.)

Because both Pueblo and Navajo fabrics are woven on the upright loom, all four edges (ends and sides) are completely finished without cutting the warps. Usually the four selvages are neatly finished with supplementary twined edging cords, often with a knotted or braided tassel at each corner.

By at least the seventeenth century, the principal products of local Hispanic looms were utilitarian yard goods made of wool, often in long lengths possible only on a European-style treadle loom. These goods included *sayal,* a coarse gray sackcloth; *bayeta,* a flannel-like fabric known in English as baize; *bayetón,* a thicker, blanketlike fabric, and *sabanilla,* a thinner fabric used for clothing, mattress ticks, and the backing for embroidered *colchas.*[33] These plain weave cloths had balanced warps and wefts, both showing equally in the finished product. *Jerga,* another fabric with a balanced weave, was made either in twill or plain weaves with bold checked or plaid patterns and was used for floor coverings and sacking material (pl. 80).

In contrast, rectangular Hispanic blankets, known as *fresadas,* sarapes, and *tilmas,* were made in weft-faced plain or tapestry weave. These are generally intermediate between Pueblo and Navajo blankets in their density—approximately five to seven warps and twenty-five to fifty wefts to the inch. They never have four complete selvages with edge twining; the sides often have a doubled or paired warp system, and the warps along each end are cut and knotted. Because of the limited weaving width on the Spanish floor loom, many wide blankets were actually made of two narrower pieces sewn together, a trait not seen in either Pueblo or Navajo blankets. Others were made as double cloth—two layers woven at the same time with a

fold along one side and two separated selvages along the other side. Once off the loom, the double cloth was unfolded, revealing its double-wide nature, usually with several paired warps in the center. Hispanic weavers never used lazy lines as Navajo and some Pueblo weavers did. Free-form colcha embroidery is done with handspun wool yarns on the woolen plain weave cloth called sabanilla.

Designs and Styles

The Pueblo design system for woven blankets and garments intended for native use is conservative and little-changing. An oft-repeated repertoire of bands, triangles, diamonds, frets, and small pictographic elements appears on plain- and twill-woven fabrics, along with brocaded (supplementary weft float), painted, appliquéd, and embroidered designs. These patterns and the textiles' overall format were effectively limited by traditional religious practices, which continue today.

Pueblo blankets are usually thick, rectangular cloths, handwoven with a series of alternating colored bands on a solid ground (pl. 74). As in all Pueblo and Navajo textiles, all four selvages are finished on the loom, usually with a twined selvage and corner tassels. Banded rhythms in Pueblo blankets are generally quite regular, without variation across the entire space, whereas Navajo banded blanket designs frequently emphasize the center and ends, and Hispanic banding is the most complex, with inclusion of more small geometric elements within a series of compound bands (pl. 79).

One particularly distinctive garment style in the Pueblo repertoire is the Hopi man's or boy's plaid blanket, in which the pattern is controlled specifically by the loom setup—warps in stripes of alternating colors are interwoven with wefts in the same colors to create a checkerboard or plaid pattern (pl. 81). This type and the Hispanic jerga resemble each other strongly, except that the Hopi version has four complete uncut selvages produced on the upright loom, and the jerga is a long narrow fabric, usually looser in texture and made on the floor loom (pl. 80).

In contrast to generally conservative Pueblo styling, Navajo blanket designs appear more flexible and less culturally controlled over time. Some early designs—simple bands and bars, stepped and terraced motifs, and crosses—came from the indigenous basketry tradition and from Pueblo sources (Fig. 6.6). Often, Navajo weavers chose to use horizontal bands and to accentuate the middle, ends, and especially the corners of their longer-than-wide blankets.[34] In the later nineteenth century Navajos incorporated the vertical emphasis of Hispanic and Mexican blanket styles and produced textiles with serrate concentric diamonds and other motifs that show definite Saltillo influence (pl. 72). Although some actual Saltillo sarapes may have provided models, Rio Grande blankets (pl. 73) were more likely sources, given the distribution of a thousand or more such blankets to Navajos during their forced exile at Fort Sumner, New Mexico (Bosque Redondo), in the 1860s.[35] With widely ranging colors available in commercial yarns, Navajo weavers during the late nineteenth century began cre-

Figure 6.5. Detail showing a "lazy line" in a late-nineteenth-century Navajo blanket. Photograph by Helga Teiwes. Arizona State Museum, University of Arizona, Tucson, E-4620.

Figure 6.6. Navajo chief-style blanket, late nineteenth century. Photograph by Helga Teiwes. Arizona State Museum, University of Arizona, Tucson, E-1643.

ating eye-dazzling zigzag imagery and fanciful pictorials. By the early twentieth century, Middle Eastern carpet elements and multiple borders became popular inspirations for Navajo weavers.

Even with such an eclectic taste, a uniquely Navajo aesthetic—favoring strong symmetry, sharp color contrasts, avoidance of empty spaces, and delight in optical illusions—has persisted throughout the past two centuries. The diversity of weaving continues today in a proliferation of geometric and figurative styles. The same aesthetic principles are maintained except in the most avant garde work today.

In addition to the Hispanic yard goods described earlier, historic Hispanic weaving reflects a relatively standardized repertoire of blanket styles. Textiles with compound bands and simple geometric patterns such as chevrons, leaf forms, and diamonds are known today as the Rio Grande style (Fig. 6.7). More elaborate designs that incorporate influences from Mexican Saltillo sarapes are typically called Rio Grande Saltillos and sometimes "eye dazzlers" (pl. 73). These may have become cemented into the Hispanic weaving repertoire in the early 1800s when the Bazán brothers brought their expertise from Mexico City to Santa Fe.[36] The Vallero star pattern, possibly suggested by American quilt patterns, was likely developed first in the Trampas and El Valle area of northern New Mexico in the mid-nineteenth century (Fig. 6.8).[37] The style was borrowed by some Navajo weavers, who incorporated the eight-pointed star motif into their own blanket styles. Hispanic embroidered colchas, often used as coverlets, were adorned with free-flowing patterns using floral and other naturalistic motifs, pictorial elements, and geometric patterns.

Just as Navajos incorporated serrate Saltillo and star motifs from the Hispanic tradition, so Spanish American weavers adopted characteristically Navajo terraced

Figure 6.7. Detail of "Rio Grande style" blanket showing "Leaf" motifs, late nineteenth century. Arizona State Museum, University of Arizona, Tucson, 86-75-2.

Figure 6.8. Detail showing the "Vallero star" in a Hispanic blanket, late nineteenth century. Arizona State Museum, University of Arizona, Tucson, 91-57-34.

elements into some of their blankets. In the 1830s the merchant and explorer Josiah Gregg described this "serape Navajo" style, complete with terraced central diamonds and corner elements.[38] In addition, the late-nineteenth- and early-twentieth-century evolution of weaving in the Hispanic village of Chimayo, principally for the curio trade, introduced simplified Rio Grande and Indian designs, almost all executed in four-ply commercial wool yarn. One of the popular pictorial elements was the fanciful "thunderbird," adapted from Great Lakes Indians (Fig. 6.9).[39]

With design ideas in ready circulation, some designs may have traveled around more than once. For instance, the Saltillo style likely traveled from Hispanic to Navajo looms but then perhaps returned from Navajo to Hispano in the form of eye dazzler inspirations. Certainly that is true today as Pueblo, Navajo, and Rio Grande weavers actively exchange ideas with each other.

Beyond general aesthetic and technical influences, occasions of outright acculturation of different peo-

Figure 6.9. Chimayo runner with thunderbird motif, early twentieth century. Photograph by Helga Teiwes. Arizona State Museum, University of Arizona, Tucson, E-3933.

Figure 6.10. Detail from the mid-section of a "servant" blanket woven with Navajo techniques and Hispanic colors and patterns, 1870–1890. Arizona State Museum, University of Arizona, Tucson, 86-83-45.

Figure 6.11. Detail from the mid-section of a "servant" blanket woven with Hispanic techniques and Navajo colors and motifs, 1870–1890. Arizona State Museum, University of Arizona, Tucson, E-2727.

ples and their material culture are notable. Of the fifteen hundred–plus Southwestern textiles in his analysis files, the scholar Joe Ben Wheat acknowledged thirty-four as possible "servant blankets." That is, they showed hybrid traits to such a degree that Wheat suggested they might have been woven by Indian servants, or *criadas,* living in Hispanic households or by other people influenced strongly by both traditions. All date to around the middle of the nineteenth century; only two have clear documentation as having been woven by Navajo servants in Hispanic households (pls. 82, 83).[40] Of these thirty-four, Wheat designated fourteen as predominantly Navajo (woven on a native upright loom but incorporating pastel colors, motifs, and proportions from the Spanish American repertoire), eleven as Navajo–Spanish American (including odd technical traits such as doubled center or side warps although woven on an upright loom), and the remaining nine as mostly Spanish American (with stronger Saltillo traits and more evidence of horizontal loom production) (Figs. 6.10, 6.11). All represent hybrids of standard cultural traits, each with its own quirks and distinctions.

Purposes and Functions of Weaving

Internal use and external exchange are dynamically balanced in each of the three cultural groups, although these activities differ in emphasis. Prehistoric and early historic Pueblo woven products served as everyday clothing for weavers and their families and furnished ritual garb for local and regional ceremonial events. In the Rio Grande Valley during the seventeenth century, Pueblo cloth—especially large quantities of white cotton mantas, woolen blankets, and knitted woolen stockings—served as required tribute to the Spanish colonists, governors, and missions. This drew Pueblo textiles forcibly into a larger system of commerce, albeit with little or no profit to the Indians, for many native woven and knitted garments were exported to Mexico, filling the Spaniards' coffers.[41]

Following Spanish domination, weaving disappeared in many of the Rio Grande pueblos, but it survived at the western pueblos of Zuni and Acoma and in the Hopi villages of Arizona. Strong interpueblo trade customs persisted between Hopi and the New Mexico pueblos. Because weaving in the kivas has strong religious connotations, and because many Pueblo garments serve as ceremonial dance attire, Hopi weaving has remained more isolated from outside influences and external (non-Pueblo) exchange than any other weaving tradition in the Southwest.

Navajo blankets and garments fulfilled many domestic functions, but widespread trade of Navajo textiles existed as early as 1706, when Spanish documents report that Navajos were bartering wool and cotton cloth with Pueblos and Spaniards. Navajos participated actively in regional trade fairs such as those held at Taos Pueblo and the Comanche trade fair at Pecos, and their handwoven blankets reached far into the northern Great Plains (Fig. 6.12).

By the turn of nineteenth century, Navajo weaving, unlike its Pueblo and Hispanic counterparts, had become almost entirely commerce oriented, with only two-piece dresses, sash belts, saddle blankets, and other occasional items retained for native use. Many designs were tailor-made for local traders such as J. L. Hubbell and for wholesale distributors like C. N. Cotton and Herman Schweizer.

Many Hispanic bed blankets, jergas, sabanillas, and embroidered colchas (pls. 84, 85) were used for decorative and utilitarian purposes in the Spanish American households where they were produced. Far more, however, became market items, as is indicated by the thriving trade of woven goods and other *efectos del país*—"local products"—from New Mexico to Mexico. Before and during the Mexican period, from 1821 to 1846, this involved annual shipments of dozens of different kinds of handwoven textiles in huge quantities, as well as thousands of sheep.[42] Later, American commerce in textiles included those from Chimayo, where blankets, wall hangings, pillow tops, runners, vests, and jackets were produced for the curio trade.[43]

CONCLUDING REMARKS

The Pueblo, Navajo, and Hispanic weaving traditions were far from isolated, and although each had distinctive traits, they were never entirely discrete entities. To summarize some of the material cross-currents between these three traditions during the past several centuries: The Spaniards brought both sheep's wool and indigo dye into the Southwest, and all three groups made ready use of both. Navajos borrowed the Pueblo-style loom and adapted many of the Pueblos' garment formats. Using Spanish sheep's wool, imported and native dyes, and their own aesthetic sensibilities, Navajos created textiles that became renowned for their beauty and technical proficiency.

Figure 6.12. Sioux Indian woman and child from the Great Plains, wearing Navajo-woven, second phase chief-style blanket, 1896. Enno Meyer Collection, Cincinnati Museum Center, Ohio, photograph AI 119.001.

The earliest Pueblo and Navajo textiles were generally woven wider than long, but Indian weavers began making the longer than wide sarape-type blanket after Spanish settlers arrived.[44] All three groups employed the simple black and brown "Moki"-pattern banding in some of their blankets.[45] Despite the Spanish command of Pueblo textile labor and the large numbers

of Hopi and other Pueblo mantas demanded in tribute, indigenous Pueblo weaving appears to have exerted little or no influence on the Spanish American weaving tradition.[46] Navajos and Hispanos incorporated elements and layouts from the Mexican Saltillo sarape tradition, including vertical arrangements of finely serrated, concentric diamonds with tiny filler elements and fancy borders. As well, Navajo terraced motifs and certain design layouts were incorporated into the Hispanic weaving system (pl. 75) and, more rarely, into that of the Pueblos.

Direct evidence of these combined traditions comes in the form of "servant blankets," woven by Navajo and other Indians living in Hispanic households and perhaps by Hispanic, Mexican, and other Indian people living among the Navajos. Technical traits of a Navajo loom (such as twined selvages and lazy lines) but Rio Grande dyes and banded designs; Spanish-style two-ply warps but Navajo stepped motifs—these are signs of crossings over between the different weaving traditions. This amalgamation of traits has often confused researchers. As descriptions of the respective traditions indicate, technical and aesthetic tools exist for distinguishing three distinctive weaving systems and discerning their influences on one another. Nevertheless, the origins of some complex examples in museums and private collections remain elusive.

What are even more enigmatic and potentially enlightening are the social relations and personal connections that fostered such convergences of material traits. How did Navajo women learn from the Pueblos, among whom men were primarily the textile producers? In their early history, Navajo women might have learned much from members of one of the few pueblos—Zuni and perhaps Jemez and Tesuque—where native women were also weavers.[47] Somewhat later, they might have learned more from Pueblos who sought refuge near Navajo communities after the Pueblo Revolt of 1680. Navajo women must also have learned from Pueblo men through cross-cultural marriages and intertribal exchanges of "slaves." Likewise, Hispanic households with Indian servants gained not just maids and cooks but also experienced spinners, weavers, and cultural interlocutors. It is perhaps surprising that Hispanic weaving, as it was forced on New Mexican Indian populations, had little lasting effect on indigenous production (other than to curtail it entirely in certain areas). And the curator H. P. Mera raised the fascinating question of why Navajos did not borrow Spanish elements such as serrated diamonds and other Saltillo features until relatively late in the nineteenth century, although they had been exposed to them much earlier.[48]

In all, these social, technical, and aesthetic relationships reflect the dynamism and resilience of three cultures whose streams converged in the American Southwest.

Notes

I am indebted to the late Joe Ben Wheat for his thorough research and inspired teaching on Southwestern weaving, to his widow, Barbara K. Wheat, for her collaboration in editing Joe Ben's volume on this subject (Joe Ben Wheat, *Blanket Weaving in the Southwest,* ed. Ann Lane Hedlund [Tucson: University of Arizona Press, 2003]), and to the late Kate Peck Kent for her generous suggestions and advice on a much(!) earlier version of this chapter. My thanks to Stanley M. Hordes, who organized the session "Textile Traditions" at the annual meeting of the Historical Society of New Mexico held in Las Cruces, New Mexico, on April 18–21, 1985, where my earlier paper was presented along with others by Richard Salvucci and Ward Alan Minge. I adapted and revised the chapter from that paper. Thanks also to Jannelle Weakley of Arizona State Museum for her assistance with illustrations from the museum's photographic collections.

1. Laurie D. Webster, "Effects of European Contact on Textile Production and Exchange in the North American Southwest: A Pueblo Case Study" (Ph.D. dissertation, Department of Anthropology, University of Arizona, Tucson, 1997), 54–55.

2. Museo Franz Mayer, *Sarape de Saltillo,* with essays by Mark Winter, Paula Marie Juelke, and Marta Turok (Mexico City: Museo Franz Mayer, 2008); William Wroth, "The Mexican Sarape: A History," in *Sarape Textiles from Historic Mexico* (St. Louis, Mo.: St. Louis Art Museum, 1999), 7–37; James Jeter and Paula Marie Juelke, *The Saltillo Sarape* (Santa Barbara, Calif.: Santa Barbara Museum of Art, 1978).

3. Charles Wilson Hackett, *Historical Documents Relating to New Mexico, Nueva Vizcaya, and Approaches Thereto, to 1773, collected by Adolph F. A. Bandelier and Fanny R. Bandelier* (Washington, D.C.: Carnegie Institution of Washington, 1937), vol. 3, 382.

4. David M. Brugge, "Navajo Prehistory and History to 1850," in *Handbook of North American Indians,* vol. 10, *Southwest,* ed. Alfonso Ortiz (Washington, D.C.: Smithsonian Institution, 1983), 491. Note that all Spanish observers were male and not textile specialists. Their views were necessarily limited by this vantage point. For further discussion of gender bias in Southwestern textile history, see Ann Lane Hedlund, "'More of Survival than an Art': Comparing Late Nineteenth- and Late Twentieth-Century Lifeways and Weaving," in *Woven by the Grandmothers: Nineteenth-Century Navajo Textiles from the National Museum of the American Indian,* ed. Eulalie Bonar (Washington, D.C.: Smithsonian Institution), 48–49.

5. Joe Ben Wheat, *Blanket Weaving in the Southwest,* ed. Ann Lane Hedlund (Tucson: University of Arizona Press, 2003), 345.

6. Ibid., 131, 135.

7. See Helen R. Lucero and Suzanne Baizerman, *Chimayó Weaving: The Transformation of a Tradition* (Albuquerque: University of New Mexico Press, 1999); Mary Terence McKay and Lisa Trujillo, *The Centinela Weavers of Chimayó: Unfolding Tradition* (Chimayo, N.M.: Centinela Traditional Arts, 1999); William Wroth, ed., *Hispanic Crafts of the Southwest* (Colorado Springs, Colo.: Taylor Museum of the Colorado Springs Fine Arts Center, 1977), 4–7; and Kate Peck Kent, "Introduction," in *Spanish-American Blanketry: Its Relationship to Aboriginal Weaving in the Southwest,* by H. P. Mera (Santa Fe, N.M.: School of American Research Press, 1987), 3.

8. Dorothy Boyd Bowen, "Handspun Cotton Blankets," in *Spanish Textile Tradition of New Mexico and Colorado,* ed. Nora Fisher (Santa Fe: Museum of New Mexico Press, 1979), 5; Webster, "Effects of European Contact," 149.

9. Ward Alan Minge, "Some Economic Concerns of the Weaving Trade in New Mexico during the Colonial Period" (paper presented at the annual conference of the Historical Society of New Mexico, Las Cruces, N.M., 1985), 7–8; Nora Fisher, "The Treadle Loom," in Fisher, *Spanish Textile Tradition,* 192–194.

10. Ward Alan Minge, "*Efectos del País:* A History of Weaving along the Rio Grande," in Fisher, *Spanish Textile Tradition,* 22; Joe Ben Wheat, "Rio Grande, Pueblo, and Navajo Weavers: Cross-Cultural Influence," in Fisher, *Spanish Textile Tradition,* 31–32. Wheat suggested that perhaps the arrival of the Bazán brothers in Santa Fe to improve Hispanic weaving was spurred by the need to compete with the superior quality of Navajo goods.

11. Marianne Stoller, "Spanish-Americans, Their Servants, and Sheep: A Culture History of Weaving in Southern Colorado," in Fisher, *Spanish Textile Tradition,* 49.

12. Lucero and Baizerman, *Chimayó Weaving;* McKay and Trujillo, *Centinela Weavers;* Douglas Kent Hall, *The Thread of New Mexico* (Albuquerque, N.M.: Albuquerque Museum, 2001).

13. Webster, "Effects of European Contact," 147.

14. Ibid.

15. Ibid., 146–150, 169.

16. Stoller, "Spanish Americans," 42.

17. Ibid., 42–44; Estevan Rael-Gálvez, personal communication, 2004.

18. That blanket, decorated with a modest series of terraced diamonds and chevrons in wool on a white cotton ground, dates to 1800–1850 and is now part of the Fred Harvey Collection at the Heard Museum (HM cat. no. 186BL; see Wheat, *Blanket Weaving,* plate 102).

19. Wheat, in *Blanket Weaving,* 69–89, describes many of these cloths and their sources. Furthermore, for Spain, see James Clayburn La Force Jr., *The Development of the Spanish Textile Industry, 1750–1800* (Berkeley: University of California Press, 1965); for Mexico, see Richard J. Salvucci, "Textiles in Spanish America: An Overview" (paper presented at the annual conference of the Historical Society of New Mexico, Las Cruces, N.M., 1985), 5; and Richard J. Salvucci, *Textiles and Capitalism in Mexico* (Princeton, N.J.: Princeton University Press, 1987).

20. Wheat, *Blanket Weaving,* 50–56; Ann Lane Hedlund, "Blanket Basics: Navajo Weaving of the Classic, Late Classic and Early Transitional Periods," *Hali* (London) 43 (2003): 55–60; Ann Lane Hedlund, "Wool Yarns in Late Classic Navajo Blankets," *American Indian Art* 28, no. 4 (2003): 78–85, 92–93.

21. Minge, "Some Economic Concerns," 2–5; Bowen, "Handspun Cotton Blankets," 140–143; Deborah C. Slaney, "Frazadas de Algodón: The 19th-Century Rio Grande Cotton Weaving Tradition" (manuscript, Albuquerque Museum, Albuquerque, N.M., 2008). Minge mentions "a Spanish cotton blanket made between 1800 and 1830 in Lémitar" (5), from his personal collection. Bowen describes six cotton blankets presumed also to have come from the Rio Abajo. A recent update by Slaney has confirmed at least nine extant blankets.

22. Webster, "Effects of European Contact," 149.

23. See Lucero and Baizerman, *Chimayó Weaving,* 166–172.

24. Dorothy Boyd Bowen and Trish Spillman, "Appendix D: Natural and Synthetic Dyes," in Fisher, *Spanish Textile Tradition,* 208–210; Slaney, "Frazadas de Algodón."

25. There are claims to the contrary, and apparently the use of cochineal was "revived" during the 1930s (see Bowen and Spillman, "Appendix D," 209). The few historic blankets described as having cochineal applied to local handspun wool may contain raveled and recarded, cochineal-dyed wool obtained from imported *bayeta* cloth rather than from locally dyed yarns. Reports of "pounds of *carmesí*" (cochineal) in Mexican shipping records support the use of cochineal in the Southwest (Minge, "*Efectos del País,*" 26), but the material records have not yet corroborated this, and more research should be conducted.

26. David Wenger, "Appendix E: Dye Analysis," in Wheat, *Blanket Weaving,* 359–369.

27. Juanita Jaramillo, "Rio Grande Weaving: A Continuing Tradition," in Wroth, *Hispanic Crafts,* 12.

28. Lucero and Baizerman, *Chimayó Weaving,* 167, fig. 6-18.

29. See Leslie Spier, "Zuñi Weaving Technique," *American Anthropologist* 26, no. 1 (1924): 69–71.

30. Webster, "Effects of European Contact," 146–147.

31. Jill Ahlberg Yohe, "The Social Life of Weaving in a Con-

temporary Navajo Community" (Ph.D. diss., Department of Anthropology, University of New Mexico, 2008).

32. H. P. Mera, *Pueblo Indian Embroidery* (Santa Fe, N.M.: Memoirs of the Laboratory of Anthropology 4, 1943; reprint, Santa Fe, N.M.: William Gannon, 1975), 1; Kent, *Prehistoric Textiles,* 190–191.

33. Nora Fisher, "Yardage," in Fisher, *Spanish Textile Tradition,* 144–145.

34. Joe Ben Wheat, in his *Blanket Weaving,* hoped to distinguish more definitively the three cultures' banded blanket patterns, which have what he called "zones of simple or compound bands" (131). He diagrammed (tables 8–10) and drew (pls. 188–191) the various rhythms and color sequences but did not complete this research (Appendix G, 383–397). His general conclusions were that Pueblo banded blankets are the simplest, with a format of regularly repeated bands in few colors; Navajo banded blankets have more compound banding than Pueblo ones and are often marked by wider or bolder bands across the middle and ends; and Spanish American blankets show the highest degree of complexity, with clustered compound bands alternating with plain bands in a regular rhythm. See also Trish Spillman, "Band and Stripes," in Fisher, *Spanish Textile Tradition,* 57–73.

35. Wheat, "Rio Grande, Pueblo, and Navajo Weavers," 36.

36. Ibid., 31–32.

37. See Nora Fisher, "Vallero Blankets," in Fisher, *Spanish Textile Tradition,* 124–132; McKay and Trujillo, *Centinela Weavers,* 45.

38. Josiah Gregg, *Commerce of the Prairies* (Norman: University of Oklahoma Press, 1954), 32.

39. Wheat, "Rio Grande, Pueblo, and Navajo Weavers," 36.

40. Wheat included a wedge weave blanket (University of Colorado Museum cat. no. 18088) in pastel aniline colors on soft-spun churro wool, which came from the family of Lauretta Bellamy, whose grandfather had it made in the late 1870s by Guadalupe, one of the Navajo slaves in his household. He was one of the first settlers of San Luis, Colorado, in the 1800s. Wheat also acknowledged a second blanket, without stylistic or material description, that was in a private collection in 1994 and had been registered as "L.A. Reg. Ser. 539." It was said to have been woven by Guadalupe Salaz, the Navajo wife of a Hispanic rancher at Punta de Agua, New Mexico, and acquired by the writer Joseph H. Toulouse (1890–1977) in 1939 from Manuelita Otero, the weaver's daughter. In addition, a blanket with a terraced diamond pattern in strong primary colors was woven about 1875 by Juliana, Navajo servant of the Jaramillo family in Abiquiu (pl. 82). And a blanket with simple zoned bands in aniline pastels was woven by Navajo slave Manuelita Sisneros, great-great-grandmother of the present owner (pl. 83).

41. Webster, "Effects of European Contact," 141–147, 158.

42. Minge, "*Efectos del País,*" 24–27.

43. Lucero and Baizerman, *Chimayó Weaving;* McKay and Trujillo, *Centinela Weavers;* Charlene Cerny and Christine Mather, "Textile Production in Twentieth-Century New Mexico," in Fisher, *Spanish Textile Tradition,* 168–190.

44. Wheat, "Rio Grande, Pueblo, and Navajo Weavers," 30.

45. Joe Ben Wheat, in *Blanket Weaving,* 139, and "Rio Grande, Pueblo, and Navajo Weavers," 30, asserted that the Spaniards introduced the Moki style into the American Southwest, likely by the 1630s. He also noted that although the Rio Grande and western Pueblos used it, ironically it was much less common among Hopi weavers, for whose archaic name the style was named.

46. Kent, "Introduction," 3; Mera, *Spanish-American Blanketry,* 19–20.

47. Joe Ben Wheat, personal communication, 1995.

48. Mera, *Spanish-American Blanketry,* 27.