Hopi Weaving and the Colonial Encounter

A Study of Persistence through Change

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INTRODUCTION

The Spanish colonization of New Mexico initiated numerous changes in the production of indigenous textiles and the use of native dress in Pueblo communities. In Pueblo communities in and around the Rio Grande Valley, Spanish tribute demands and the diversion of Pueblo labor and land to colonial projects led to changes in the sexual division of weaving labor, the contexts and scheduling of textile production, and regional patterns of textile exchange (Webster 1997, 2000, 2001). Far to the west of Spanish settlement, people in the remote Hopi villages were also impacted by colonial tribute and labor demands, but they were able to maintain their traditional organization of textile production and manufacture and use of precontact styles of clothing through the colonial period and into modern times.

What historical and social processes account for the persistence of Hopi weaving during the turbulent years of the Spanish colonial period? How did Hopi people negotiate the adversities and opportunities of colonialism to ensure the production of textiles into the postcolonial era? As noted by Leo Panich...
Laurie D. Webster in his discussion of “archaeologies of persistence,” processes of continuity and change are not only entwined in many postcontact indigenous histories, but often the social changes that arose from colonial interactions are what enabled or facilitated continuity, resulting in what Neal Ferris (2009) and Stephen Silliman (2009) refer to as “changing continuities,” or processes of continuity through change.

In this chapter, I use multiple lines of evidence from archaeological data, Spanish documentary accounts, and Hopi narratives to explore the trajectory of Hopi weaving during the Spanish colonial period and how it was reinterpreted and transformed, even as it was perpetuated (Panich 2013:106–7). After providing an overview of the major Spanish colonial impacts on Pueblo weaving in general, and on Hopi weaving in particular, I explore the major changes and continuities in Hopi textile production in the wake of Spanish contact and the ways in which Hopi resistance, cultural practices, and cultural values contributed to the persistence of this ancient craft. Archaeological data from the Hopi villages of Awat’ovi and Wälpi serve as the main source of archaeological information for this study (Figure 4.1). Located at the eastern edge of the Hopi Mesas on Antelope Mesa, Awat’ovi was the largest of the Hopi villages at the time of European contact and a trade and communications portal with the outside world (Dongoske and Dongoske 2002:116; see also Thomas E. Sheridan and Stewart B. Koyiyumptewa, chapter 9 in this volume). After the establishment of the Awat’ovi Mission in 1629, Awat’ovi was also the base of Franciscan operations at Hopi (Montgomery et al. 1949). Originally situated at the base of First Mesa, Wälpi village was the site of a visita during the mission period. After the Pueblo Revolt of 1680, it was relocated to the top of First Mesa for increased security. The documentary evidence used in this study comes primarily from published Spanish colonial narratives and records (e.g., Hackett 1937; Kessell 1979; Scholes 1930, 1935, 1937, 1942), but because these data strongly privilege the colonial viewpoint, I also consider more recent Hopi accounts derived from oral tradition (Courlander 1971; Preucel 2002:7; Wiget 1982; Yava 1978; see also chapter by Sheridan and Koyiyumptewa [4], this volume).

COLONIAL IMPACTS ON PUEBLO WEAVING LABOR: A BRIEF OVERVIEW

When the first Spaniards arrived in the northern Southwest, Pueblo weaving was a rich and flourishing craft tradition. Precontact Southwestern weaving is well represented by an extensive and diverse archaeological textile record (Kent 1983a; Teague 1998). These textiles are supplemented by fourteenth- through seventeenth-century kiva murals that illustrate the use of similar garments in ceremonies (Dutton 1963; Hibben 1975; Smith 1952; Webster 2007). Early Spanish accounts from the period 1540–1610 describe the Piro and Tiguex (Tiwa) villages
in the Rio Grande Valley and the Hopi villages to the west as the major producers of cotton fiber and textiles among the Pueblos (Bolton [1908] 1963:146–47; Hammond and Rey 1953:1014; Winship 1896:587). They also describe the spinning and weaving of cotton textiles in kivas, identify Pueblo men as the principal loom-weavers, and discuss the winter months, or the agricultural off-season, as the time of year when most weaving activities took place (Hammond and Rey 1953:610, 627, 636, 645, 660; 1966:82–83; Winship 1896:521, 575).

After Spanish colonization, the *encomienda* and *repartimiento* systems (colonial systems of forced tribute and labor) were imposed upon the Pueblos, as in other parts of New Spain, to channel tribute and labor to colonial purposes (see John G. Douglass and William M. Graves, chapter 1 in this volume). Under the encomienda, Pueblo households were forced to make twice-yearly payments of woven cotton *mantas* (blankets), hides, or corn to their *encomenderos* (Hackett 1937:120; Snow 1983:350–351). Colonial governors also forced Pueblo people living in and near the Rio Grande Valley to produce large quantities of woven and knitted textiles on their behalf (Kessell 1979:156; Scholes 1937:106). The vast majority of these textiles were shipped south to markets in New Spain in exchange for imported goods. During the late 1630s, one governor, Luis de Rosas, operated an *obraje*, or weaving workshop, in Santa Fe staffed with Indian and Spanish labor (Scholes 1937:117, 143–44, n. 6). A surviving 1638 trade invoice from this workshop documents the shipment of more than 500 textiles to the mining and economic center of Parral in southern Chihuahua, Mexico (Bloom 1935). The invoice lists many types of fabrics, including nineteen pieces of *sayal* (coarse woolen sackcloth), each a hundred *varas* (approximately one yard) long, that could only have been produced on the European treadle loom.¹

Another governor, Bernardo López de Mendizábal, collected large quantities of woven blankets and hand-knitted stockings, an estimated 1,400 pairs in 1661 alone, from the eastern Pueblos for export (Hackett 1937:153; Kessell 1979:177; Scholes 1942:48). Assisted by his *alcaldes mayores* (provincial magistrates), Mendizábal distributed woolen fleeces from his flocks to various Rio Grande Pueblo villages, returning within a specified period of time for the finished goods. Most of this “production on demand” was scheduled to coincide with the spring and fall shearing of the governor’s sheep (Kessell 1979:178; Webster 1997:153). Unlike precontact Pueblo textile production, which was performed primarily by men in extramural kivas during the winter, at least some of this tribute textile production was conducted by women, and probably children, within households during the warmer months.² The use of the upright loom technology by women for tribute blanket production, if this was the apparatus used, would have required not only a shift in male attitudes toward the use of this technology by women, but also changes in the settings of this work and the scheduling of female labor.
Similar forced labor practices were engaged in by some Franciscan missionaries, who shipped Pueblo-made textiles south to Mexico in exchange for new furnishings for their missions (Scholes 1930, 1935). By 1660, if not before, missionaries were exporting Pueblo-woven blankets and knitted stockings to Parral, with much of the spinning, weaving, and knitting of these textiles performed by Pueblo women (Bloom 1927:229). Pueblo men were also involved in these activities, and in at least one mission (Isleta), were engaged in producing long lengths of yardage on European treadle looms in weaving workshops (Hackett 1937:144, 213).

Although Pueblo people tended large flocks of sheep for the missionaries prior to the Pueblo Revolt (see Phillip O. Leckman, chapter 3 in this volume), these sheep were considered mission property, and their wool was doled out sparingly (Hackett 1937:113, 191). Some Pueblo converts wore woolen cloth made in the missions, but most mission-made woolen fabrics were intended for export. All this changed after the Pueblo Revolt, when the Pueblos appropriated large numbers of Spanish sheep, and their use of wool skyrocketed (Webster 1997). Although Pueblo people increased their personal flocks after the reconquest, they were also once again forced to produce textiles for the missions and the Spanish civil authorities without compensation (Hackett 1937:448; Kelly 1941:66–67). Only the Hopi villages, which permanently expelled Spanish authority in 1700, were exempt from these pressures (see chapters by Matthew Liebmann and colleagues [5], this volume). Most of this eighteenth-century tribute production occurred at Acoma, Laguna, Zuni, Jemez, and in the southern Tiwa and Rio Grande Keres villages in the southern and western portion of the New Mexico Colony, where sheep and cotton were most plentiful (Hackett 1937:427, 471; Kelly 1941:76). Except for in a few middle Rio Grande Pueblo villages, weaving for internal use dramatically declined among the eastern Pueblos by the mid-1700s, and by the early 1800s many Rio Grande Pueblo people were wearing woolen clothing imported from Acoma, Laguna, Zuni, and Hopi (Minge [1976] 1991:36; Kessell 1980:246). Of all the Pueblos, only the Hopi villages were entirely self-sufficient in their use of both cotton and woolen textiles and producing both types of fabrics for exchange by this time (Webster 1997:637–39).

**COLONIAL IMPACTS ON HOPI WEAVING**

Although the remote Hopi villages were shielded from many seventeenth-century Spanish colonial pressures, they were not exempt from tribute demands on weaving labor. In 1629, a church and convent were established at Awat’ovi and a visita was constructed at Wälpi. Soon after, additional churches and convents were built at Oraibi and Shongopovi and another visita at Mishongnovi. By the mid-1630s, the missionized Hopi villages had been given in encomienda and were subject to the same textile tribute demands as Pueblo villages farther east. For
example, a 1664 document describes the collection of an unspecified number of mantas from Awat’ovi by its encomendera, Elena Gómez (Hackett 1937:243).

Another Spanish account describes the forced production of textiles for one Hopi missionary during the 1650s. In a 1655 complaint registered by several Hopi individuals before the custodián Antonio de Ibargaray, the administrative leader (prelate) of the New Mexico Franciscan mission program, the guardián at Jongopabi (Shongopovi), Salvador de Guerra, the guardian at Jongopabi (Shongopovi), was charged with forcing residents to weave mantas of cotton and wool and demanding “a stipulated number of finished pieces, regardless of whether he gave them sufficient raw material, and stated that failure to produce the required number within a certain time was punished by whipping” (Scholes 1942:12). Although Guerra subsequently admitted to using Hopi labor for the weaving of mantas, he claimed not to have known that the quantities of raw materials were inadequate, blaming “those who apportion it.” He also denied setting time limits for the completion of the weavings. In a 1663 document, the alcalde mayor of the Salinas Province, Nicolás de Aguilar, who had spent some time at the Hopi Mesas, supported the Hopi claims, adding that the Hopi individuals who had lodged the complaint had been severely punished, one later dying from his wounds (Hackett 1937:141). This testimony reveals that at least one friar at Hopi requisitioned textiles from Hopi workers, imposed short-term quotas on the completion of the finished textiles, and had mission representatives working on his behalf to distribute the raw materials, a strategy reminiscent of that used by Governor Mendizábal and some Franciscan missionaries among the Rio Grande Pueblo villages. The Guerra testimony also indicates that at least some fiber supplies (i.e., those that were apportioned) were under the control of mission personnel. It is reasonable to assume that if this activity was occurring at one Hopi mission, it probably occurred at others. This testimony fails to specify what kinds of looms were being used to make these tribute mantas, but no documentary or archaeological evidence has come to light to indicate the use of European treadle looms at the Hopi missions.

The level of tribute textile production at Hopi probably was not constant, but ebbed during lulls in missionary activity. For example, missionary activity is known to have waned during the 1630s in response to violent uprisings and to have relaxed again during the 1670s as a result of the drought, disease, famine, and civil unrest that plagued most of the colony (Scholes and Adams 1952:28). In 1680, the Hopi villages joined with other Pueblo communities in a regionwide revolt that resulted in the local destruction of the Hopi missions and the death of the resident Franciscan priests and some converts (see chapter by Liebmann and colleagues, this volume, for discussion of the Puebloan perspective on its aftermath in other portions of the eastern Pueblo communities). Subsequent Spanish attempts to reestablish the mission at Awat’ovi led to the destruction of
the village in 1700–1701 by neighboring communities with the tacit support of a traditional Awat’ovi faction (Whiteley 2002; Yava 1978:91–93). After this time, the Hopi villages were free of direct Spanish administrative and religious control (but see chapter by Sheridan and Koyiyumptewa [4], this volume) and any additional Spanish tribute demands.

**CONTINUITY AND CHANGE IN HOPI TEXTILE PRODUCTION**

I now examine the major changes and continuities in Hopi textile production during the first century of colonization, from the establishment of the missions in 1629 through the early decades of the post–Pueblo Revolt period. The major changes were the adoption of wool, the knitting technique, and one or two imported dyes; the adoption or expansion of embroidery; and shifts in the organization of weaving labor for tribute production, whereas the major continuities were the continued production of cotton textiles and the use of traditional styles of dress, and the perpetuation of a traditional organization of production for the manufacture of native textiles (Webster 1997).

Most of the information about Hopi weaving for this period derives from the archaeological excavations conducted at Awat’ovi and Wàlpi Villages (E. C. Adams 1982; Montgomery et al. 1949; Smith 1972). The Awat’ovi data provide information for the Franciscan, Pueblo Revolt, and early postrevolt periods (1629–1700), the Wàlpi data for the eighteenth century (1700–1790). Awat’ovi and its mission establishment were extensively excavated by the Peabody Museum of Harvard in the 1930s (Montgomery et al. 1949; Smith 1952, 1972). Four decades later, excavations were conducted in several closed-off rooms at present-day Wàlpi Village (E. C. Adams 1982). Both excavations yielded abundant evidence of textiles and other weaving-related information in the form of loom holes, weaving tools, and sheep faunal remains (J. Adams and Larson 1979; Kent 1979; Olsen 1978; Webster 1997, 2000; Wheeler 1978). The adobe bricks used to build the 1630s Awat’ovi Mission were another important source of information about the early use of introduced fibers and dyes. Dissolved and then analyzed, the bricks were found to contain cotton seeds, plant and animal fibers, cordage, and other perishable materials that had been incorporated into the bricks as a binder (Jones 1939; see also Webster 1997:270–71, appendix D).

**The Adoption of Wool**

The Hopi probably regarded wool as a precious commodity from the start. Not only is it easier to raise a flock of sheep then to cultivate a cotton field, but wool is easier to process, has greater warmth, and has a stronger affinity for dyes than cotton. It also occurs in a variety of natural shades. Sheep were introduced to the Hopi Mesas in 1629 with the establishment of the missions (Scholes 1930:100).
When the Hopi missions were actively staffed, the mission sheep and their wool probably came under Franciscan authority. But during those rare periods when mission activity waned and the friars were absent, the Hopi would have had direct access to these resources. Although the leaders of the Pueblo Revolt urged their followers to reject all Spanish introductions after the Pueblo Revolt, the Hopi, as well as all of the other Pueblos, seized control of the sheep left behind after the expulsion of the Spaniards and never let go. Sheep raising was an important economic activity at Hopi after the revolt and into the following centuries (E. C. Adams 1989:87; E. B. Adams and Chavez 1956:303; Bolton 1950:246; Coues 1900:361).

The main archaeological sources of information about the use of sheep and wool at Hopi all come from Awat’ovi: Stanley Olsen’s (1978) faunal study of the domestic sheep and goat remains (difficult to distinguish) in the Hopi village and Franciscan mission complex, my reanalysis of the fibers in the mission bricks that were used to construct the main church during the 1630s, and my analysis of the textiles from the mission burials, which largely postdate the Pueblo Revolt, though some could have been casualties of that conflict (Montgomery et al. 1949:97; Webster 1997). Domestic sheep/goat bones were recovered in significant quantities from both mission and village contexts. Olsen identified 17 percent of the faunal bone from the Awat’ovi Village as sheep or goat, much of it butchered, and interpreted this to mean that, with the Franciscans’ permission, the Hopi were able to supplement their native diet with the meat of these animals. In contrast, sheep/goat were found to constitute almost 40 percent of the faunal bone from postrevolt contexts in the mission, which suggested to Olsen that the Hopi’s use of these animals more than doubled after the Pueblo Revolt (Olsen 1978:29–30). Elsewhere, I have argued that Olsen’s interpretation of the use of sheep/goat within the Awat’ovi Village prior to the revolt may be inflated because most of the butchered sheep/goat bone from the seventeenth-century Hopi village came from the uppermost levels of fill and thus could also be post-revolt in age (Webster 1997:330–32).

Although cotton was more common than wool fiber in the mission bricks, three were found to contain evidence of sheep manure or wool fiber, documenting the early presence of sheep at Awat’ovi (Webster 1997:317, appendix D). Of the probable 27 native burials in the church, most of which are thought to date to or postdate the Pueblo Revolt, 19 were associated with woolen plain-weave cloth, warp-faced or warp-float belts, 2/2 (over 2, under 2) twill fabric, or embroidery (Webster 1997:278–305, appendix C; 2000). Wool blankets served as the customary burial shrouds. In contrast, excavations in the seventeenth-century Awat’ovi Village yielded only one example of a wool textile, a knitted legging, from a structure that probably burned during the destruction of the village in 1700–1701 (Webster 1997:201). Because conditions in the burned sections of the village
favored the preservation of cotton (which carbonizes when burned), and conditions in the unburned mission favored the preservation of wool (which survives better in open, unburned contexts than does cotton), it is not possible to compare the use of wool and cotton in the village and mission during the colonial period from these data alone.

Several conclusions can be drawn about the use of wool at Awat’ovi from the mission burials, however. First, by the time of the Pueblo Revolt, the people of Awat’ovi were already using wool to produce traditional styles of garments. Second, these woolen garments were being made by the same spinning and weaving techniques used to weave cotton. Third, based on the diverse range of woolen textiles recovered from the postrevolt burials, the Awat’ovi inhabitants had probably been using wool for some time to meet their clothing needs.

The archaeological textile evidence from Wàlpi further corroborates the extensive use of wool at Hopi during the postrevolt period. Most eighteenth-century native textiles from Wàlpi are also made of wool. They include such precontact types of fabrics as plain weaves, diagonal and twill weaves, and plaids, and such precontact styles of garments as blankets, kilts, mantas, and warp-faced belts, as well as at least one Spanish-introduced style, weft-faced blankets (Kent 1979). These patterns led Kate Peck Kent (1979:16, 38) to conclude that by the early eighteenth century, wool had largely replaced cotton for textile use at Hopi and was used for most articles of every dress, with cotton reserved primarily for articles of ceremonial significance.

**The Adoption of New Dyes**

At least one and possibly two new imported dyes, both associated with the use of wool, were used at Awat’ovi during the seventeenth century. A bright blue wool yarn probably dyed with indigo was recovered from a postrevolt mission burial, and an orange wool yarn possibly dyed with brazilwood was recovered from one of the mission bricks (Webster 1997:288–89). Whereas the blue yarn is almost certainly indigo-dyed, the source of the orange dye is more questionable. (The dyes have not been chemically tested.) The fact that both yarns are z-spun (slant from upper right to lower left like the middle of the letter Z) and appear to have been spun with a native stick-and-whorl spindle suggests that the people of Awat’ovi had direct access to the dyestuffs used to color them, even though no archaeological evidence of preprocessed lump indigo or brazilwood sticks were found. Because most of the woven textiles from Awat’ovi have discolored to a deteriorated brown or a carbonized black, it is unknown whether any of these fabrics were originally dyed.

Indigo and brazilwood were traded north from Mexico and brought to the Southwest as part of the Spanish wool-weaving tradition, where they were
widely used by New Mexican Hispanic blanket weavers. Reportedly, indigo was
the most common dyestuff imported into the colony, followed by brazilwood
(Bowen and Spillman 1979:208–9). Both dyes were used almost exclusively on
wool fiber (Webster 1997:576, 585–86). The earliest reference I have found to
their presence in New Mexico relates to Governor Mendizábal’s importation of
indigo and brazilwood for his commissioned weavers during the 1660s (Hackett
1937:254). It is reasonable to assume, however, that indigo was brought north
decades earlier by early colonists or via the mission supply service for coloring
the wool of Spanish sheep.

Although brazilwood is not known to have played an important role in Hopi
weaving, indigo was considered by the Hopi to be their most precious dye for
producing the symbolically important colors of blue and green (Colton 1965:50).
By the early 1700s, indigo was being regularly imported into the New Mexico
Colony (e.g., Ahlborn 1983:39, 47). By then, it was probably also traded to Hopi
via the Rio Grande Pueblos, a practice that continued into the early twentieth
century (e.g., Parsons 1936:1015). Eighteenth-century woolen fabrics from Wàlpi
indicate the extensive use of indigo by Hopi weavers by the early 1700s (Kent
1979:5). Cochineal, the important and expensive red dye derived from insects, was
apparently never used by the Pueblos to dye cloth. Instead, most Pueblo use of
cochineal involved the unraveling of commercially dyed imported wool fabrics to
acquire red yarns for embroidery or woven blankets (Kent 1983b:29). No raveled
red yarns were identified in the Awat’ovi or Wàlpi assemblages.

The Adoption of Knitting

Knitting is the only Spanish-introduced textile technique, with the possible
exception of embroidery, which is known to have replaced a precontact tech-
nique. Before Spanish contact, the Pueblos made their leggings by a process
known as looping. The transfer of knitting to the Pueblos is undocumented,
but it was most likely introduced by the missionaries or other Spanish authori-
ties early on during the colonial period for the purpose of tribute production.
By the mid-1600s, Pueblo-made knitted wool stockings were among the most
common tribute products exacted from the Pueblos. By the time of the Pueblo
Revolt, knitting had largely replaced looping for the Pueblos’ own needs as well,
with most Pueblo leggings now made of wool rather than cotton (Webster

The Awat’ovi excavations yielded two examples of woolen knitting, both
probably the remains of leggings, one from a probable postrevolt funerary
context in the mission and the other from a late seventeenth-century room in
the Awat’ovi Village that also yielded an example of cotton looping (Webster
1997:301). The recovery of cotton looping and wool knitting from the same late
seventeenth-century context suggests that the Hopi initially maintained strict fiber associations with these techniques, working the introduced technique of knitting with the introduced fiber of wool and the precontact technique of looping with the precontact fiber of cotton. All eighteenth-century leggings from Wàlpi are knitted and made of wool (Kent 1979:32).

**The Adoption or Expansion of Embroidery**

The timing of the appearance of embroidery in the Southwest is still open to question. Embroidery involves the application of decorative yarns, usually through the use of a needle, to a finished piece of cloth. Although Kent (1983a:183–91) considered some late prehistoric textiles to be embroidered, others have argued that these fabrics were decorated by a supplementary-weft technique ("brocade") in which decorative yarns were added during the weaving process (Teague 1998:87–88; Webster 2000:194–200). If Kent’s scenario is correct, then cotton embroidery was largely replaced by wool embroidery sometime during the seventeenth century. If the other scenario is correct, then embroidery was probably introduced by the Spaniards through the missions, and replaced supplementary weft early on as a method for decorating the borders of native ceremonial textiles. Regardless of its origins, wool embroidery was practiced by the Pueblos during the seventeenth century, and it soon became the most important technique for expressing Pueblo iconography on cloth (Kent 1983b) (Figure 4.2).

The archaeological remains of embroidered textiles were recovered from seventeenth-century mission burials at Awat’ovi, Zuni, and Jemez (Webster 1997:601–2; 2000:194–95, 198–200). All examples consist of the remains of woolen embroidery yarns, sometimes associated with deteriorated background fabrics. The garments are very fragmentary but probably represent the remains of embroidered kilts or mantas. At Awat’ovi, the remains of embroidered textiles were recovered from four mission burials (Webster 1997:290–92, appendix C; 2000:194–95). Now a deteriorated brown color that may not represent their original shade, the woolen embroidery yarns consist of parallel strands worked back and forth in a running stitch, some retaining the crimp of their original geometric designs. In all cases, the background fabrics to which these embroidery yarns were applied either are highly degraded or have completely disintegrated, making it impossible to determine whether the embroidery was inserted parallel to the warp or the weft. Microscopic examination of fiber samples from the creases of the embroidery yarns suggests that most of these ground fabrics were cotton, though at least one may have been wool. At Wàlpi, a well-preserved example of brown wool embroidery on a white wool fabric was recovered from an eighteenth-century context, indicating that white wool was sometimes
FIGURE 4.2. Excerpt of map by Don Bernardo de Miera y Pacheco, ca. 1760, illustrating the “Dress and Dance of the Indians of New Mexico.” Situated on map near Zuni and “Moqui” (Hopi), this illustration appears to show women wearing embroidered manta dresses and men in embroidered shirts and kilts. From John Kessell, Kiva, Cross, and Crown: The Pecos Indians and New Mexico 1540–1840, National Park Service, US. Department of the Interior, Washington, DC, 1979.

substituted for white cotton as a background for early embroidered Hopi textiles. Other eighteenth-century examples of wool embroidery from Wàlpi were applied to cotton cloth (Kent 1979:9–12, 17).

Mission-period Hopi textiles exhibit none of the Spanish stylistic changes reported for some other types of material culture, such as pottery (E. C. Adams 1989:85; Mills 2008:256–57). While poor textile preservation undoubtedly provides an incomplete picture, seventeenth-century Awat’ovi textiles appear to be devoid of Spanish symbols, designs, or forms. The embroidery examples are too deteriorated to determine their specific designs, but they are clearly geometric, not curvilinear
or naturalistic like most mission-period Spanish designs (e.g., Montgomery et al. 1949:figs. 59–62). The floral motifs found on some later Acoma and Zuni women’s embroidered wool mantas were never used on Hopi embroidered fabrics (Kent 1983b:pls. 12–15). The triangle-and-hook motif embroidered on an eighteenth-century fabric from Walpi (Kent 1979:9–10) is the exact same motif used to decorate kilt borders in the late precontact Awat’ovi murals (Smith 1952:fig. 25) and used on Hopi kilts and mantas today (Webster and Loma’omvaya 2004:84–87). Closely tied to rain, clouds, and fertility in Hopi cosmology, the symbolism of these embroidered designs may have gone unrecognized by the missionaries and other Spaniards, who may have viewed them only as pleasant geometric decorations.

Changes in the Tools and Organization of Textile Production

Except for two minor additions—knitting needles and metal sewing needles—the Pueblo loom and tool kit remained unchanged throughout the Spanish period. Two possible metal knitting needles were identified in the Awat’ovi assemblage, but the high value and relative scarcity of metal during the mission period suggests that most knitting needles used by the Pueblos were made of wood (Webster 1997:313, 696). The only eyed metal (copper) needle found at Awat’ovi, associated with a mission burial, bore traces of wool cloth or yarn on its corroded surface, suggesting its use for wool embroidery (Webster 1997:313, 695). Despite the presence of metal needles at Awat’ovi, nearly all eyed needles recovered at Awat’ovi, as well as Walpi, were made of bone (J. Adams and Larson 1979:8; Wheeler 1978:56).

Spanish documentary sources do not address the organization of textile production at Hopi during the mission period, but I suggest that several changes occurred, the first supported by archaeological evidence, the others inferred. The first involves the transfer or expansion of traditional weaving practices from kivas to houseblock religious rooms during the seventeenth century. Excavations at Awat’ovi revealed the presence of loom holes in the paved floors of five Pueblo V–period kivas (Smith 1972). One was immediately decommissioned when the church was built over it, leaving four known kivas where weaving could have taken place at Awat’ovi during the mission period. The extent to which these kivas were in use during the mission period is still debated, however. Watson Smith (1972:67, 75) suggested they were abandoned between 1630 and 1680 under missionary pressure, whereas Hopi oral traditions indicate their continued use (Courlander 1971:160). Although two of these kivas were in use when the village was destroyed in 1700–1701, this could represent postrevolt reoccupation (Smith 1972:70, 75).

At this point, it is not possible to demonstrate the practice of weaving in kivas during the mission period. However, loom holes were also identified in two nonkiva settings at seventeenth-century Awat’ovi: Room 611, a large interior
houseblock room with a paved floor in the seventeenth-century Hopi village, and Room 463, a Hopi room within the mission complex that is considered to postdate the revolt. Other than kivas, Room 611 is the only nonkiva context at Awat’ovi where loom holes and pairs of loom blocks cooccurred. Elsewhere, I have suggested that this room may have functioned as a religious room analogous to a kiva where communal activities, including weaving, were practiced after missionary pressures forced the transfer of such activities from kivas to less visible areas of the village (Webster 1997:310–11, 321–24). Two similar rooms were identified at Hawikuh (Webster 1997:246, 310–11, 324). The presence of loom holes with intact loom anchors in Hopi Room 463 in the postrevolt mission indicates that weaving was also being performed in nonkiva settings at Hopi by this time. At Wàlpi, loom anchors set into the floors of eighteenth-century religious rooms further substantiate that loom weaving was not confined to kivas after the revolt, but was being performed in both kivas and other ritual settings (J. Adams and Larson 1979:43–53).

The inferred changes in textile production during the mission period relate to the production of textiles for tribute purposes. Elsewhere I have argued that tribute production required changes in the gender composition of the weaving labor pool and the settings of textile production (Webster 1997). Given the lack of strong evidence for the use of the upright loom in houseblock rooms (except for aforementioned Room 611) during the mission period, or in the mission complex except after the revolt, the most parsimonious interpretation for the production of tribute textiles on upright looms is that these fabrics were being woven in kivas, if their use was permitted by the missionaries, in outdoor settings such as plazas, or both. If most loom weaving for tribute production occurred in kivas, then men may have been the primary weavers of tribute textiles at Hopi. If this production was also occurring in households or outside, then any or all members of the household could have been involved, and women may have played a greater role in their production. Since most tribute production in colonial New Mexico reportedly took place during the warmer months after the spring shearing (Kessell 1979:178; Webster 1997:153, 616), weaving easily could have been performed in outdoor settings, where looms would leave little archaeological trace. Other aspects of tribute textile production, including the processing of wool fleeces into yarn and the knitting of stockings, were probably performed by all household members, working outdoors or in households. Such activities also would have left few archaeological traces.

**Continuity in Weaving and Spinning Practices**

Precontact weaving and spinning technologies appear to have been maintained at Hopi throughout the mission period. Only a few weaving tools survived at
Awat’ovi, but they include a long weaving batten probably associated with the use of the traditional upright loom, and several bone weaving tools, including the serrated rib from a Spanish-introduced mule that could have served as a batten for a narrow loom (Webster 1997:311–12; Wheeler 1978:57, fig. 16a). No tools associated with the use of European spinning wheels or treadle looms were identified in the Awat’ovi or Wálpi assemblages.

Excavations in eighteenth-century religious rooms at Wálpi yielded a wide assortment of weaving tools, including wooden battens, weaving combs, temples, and shuttles associated with the use of the traditional upright loom (J. Adams and Larson 1979:43–53). The assemblage also produced several spindle whorls, including a wooden whorl still attached to a spindle. All of these tools show continuity with precontact Pueblo weaving and spinning practices as well as those employed by more recent Hopi weavers (Kent 1983b:27–29).

**Continuity in Cotton Cultivation**

Although the cultivation and weaving of cotton declined throughout the Pueblo world during the Spanish period (Webster 1997), it managed to persist at Hopi. Early Spanish visitors to Hopi emphasized the intensive cultivation of cotton in the Hopi villages and the extensive production of cotton textiles (Hammond and Rey 1940:286; 1953:327, 1014; 1966:137, 190–93, 226). Fray Perea, writing in 1629, observed that the Hopi “harvested much cotton” (Hodge et al. 1945:217), and his observation is corroborated by the considerable quantities of cotton lint, fiber, and seeds incorporated into the Awat’ovi mission bricks during the 1630s (Webster 1997:345). As elsewhere in the Pueblo world, cotton cultivation probably declined at Hopi during the seventeenth century as a result of tribute production, the diversion of labor, and drought and crop failures (Webster 1997:565–68). Yet, the archaeological record from Awat’ovi and Wálpi confirms the continued production of cotton textiles at Hopi during the mission period.

Preservation issues make it impossible to quantitatively determine the extent to which cotton was woven into textiles at Awat’ovi during the mission period. Cotton and wool tend to preserve under very different conditions at open sites (burned conditions favoring cotton, unburned conditions favoring wool), so the cotton and wool data are irreparably skewed. Because preservation conditions in the unburned mission strongly favored the preservation of wool, even if cotton were present with the mission burials, it was unlikely to be preserved. Indeed, microscopic cotton fibers were identified in the creases of several woolen embroidery yarns, suggesting the use of cotton for the base fabrics, but the cotton textiles themselves did not survive. Only two unburned cotton textiles were recovered from the mission, both associated with metallic pigments. Because
metal acts as a fungicide on cellulosic materials, these pigments were directly responsible for the cotton preservation.

The most diverse assortment of cotton textiles and raw materials from Awat’ovi—carbonized plain-weave and looped fabrics as well as two dozen carbonized cotton seeds—came from the still-occupied eastern section of the Hopi village (Test 46, Rooms 1 and 3), believed to have burned during the destruction of Awat’ovi (Webster 1997:296–302, 316, 347–48, 691–92, 698). Although the use of cotton and wool at Awat’ovi cannot be directly compared, this important late seventeenth-century assemblage reveals the continued use of cotton textiles at Awat’ovi seven decades after the introduction of sheep and wool (Webster 1997:347).

In contrast to conditions at Awat’ovi, most of the Wàlpi textile assemblage was recovered from the innermost, dry rooms of the village where cotton, wool, and other perishable materials were equally likely to survive. Therefore, it is highly significant that only a few cotton cloth fragments were identified in the entire eighteenth-century Wàlpi assemblage (Kent 1979), and only eleven cotton seeds were recovered from pre-1840 contexts (Gasser and Scott 1981:130). Most native textiles and yarns from eighteenth-century contexts at Wàlpi were made of wool. Even though cotton continued to be grown and woven at Hopi during the seventeenth, eighteenth, and nineteenth centuries, Hopi cultivation of the crop began its decline in the 1600s (Bolton 1950:246; Brooks 1944; Thomas 1932:151). With this decline came the reservation of cotton for ceremonial textiles, with wool becoming the primary fiber for everyday Hopi dress.

Continuity in the Organization of Textile Production for Native Consumption

As discussed at the beginning of this chapter, early Spanish chroniclers writing during the sixteenth and early seventeenth centuries identified Pueblo men as the primary weavers and spinners in Pueblo society and reported that most of this work took place in kivas during the winter months (Hammond and Rey 1953:610, 627, 636, 645, 660; 1966:82–83; Winship 1896:521, 575). Although Hopi women undoubtedly played a role in tribute textile production during the mission period, the strong cooccurrence of loom holes with what are assumed to be male-related ritual settings (kivas, religious rooms) at Awat’ovi and Wàlpi suggests that Hopi men resumed their highly gendered system of textile production after the Pueblo Revolt, if it had ever changed at all. After that time, Hopi men continued to dominate all aspects of textile production at Hopi except for the manufacture of rabbit-fur blankets (Kent 1983b:90).

Archaeological loom-hole distributions at sites near the Hopi Mesas indicate that loom weaving was primarily a kiva-based activity prior to European contact (Hargrave 1931; Smith 1972). A similar coassociation of loom holes with
kivas is found at sites in the Rio Grande Valley and on the eastern periphery of the Pueblo world after AD 1300. Archaeological and ethnological data suggest that this close association of loom holes with kivas persisted only at Hopi and perhaps Pecos Pueblo after the Pueblo Revolt (Webster 1997). When the first Anglo-Americans visited the Hopi villages in the nineteenth century, kivas were still the focus of most cotton spinning, embroidery, and weaving activities, and most of these activities were being performed by men during the winter months (Parsons 1936:372, 515, 967; see also Beaglehole 1937:23–31). This organization of textile production persisted well into the twentieth century at Hopi and is still practiced today with some modifications (Figure 4.3).

**Continuity in the Demand for Hopi Textiles and the Intensification of Exchange**

A demand for Hopi-made textiles was perpetuated during the mission period in a number of ways. Both Hopi oral traditions and Spanish accounts relate that
the Hopi performed their native dances periodically during the mission period. Although the Franciscans apparently suppressed the kiva religion for a time, Hopi oral traditions indicate the continued practice of kiva-based ceremonies intermittently during this period (Courlander 1971:160). An undated comment by France Scholes in the J. O. Brew papers at the Peabody Museum relates that Diego Romero testified that the people of Awat’ovi were still openly performing their ceremonial dances at the time of his visit with Governor Peñalosa, which, according to Ross Montgomery et al. (1949:187), occurred in the spring of 1662. Presumably, these ceremonies included the use of ritual regalia, which would have maintained the demand for ceremonial textiles and encouraged their continued production.

Furthermore, the Awat’ovi mortuary evidence indicates that traditional burial practices, which included the placing of feathered prayer sticks, food, and native baskets with the deceased, continued to be observed during this period. Native-woven textiles were the customary shrouds for most of the mission burials, and at least four individuals were buried in decorated embroidered clothing, possibly their ceremonial kilts or mantas (Webster 1997:344). By removing these items from active use, the inclusion of these native textiles in mortuary practice contributed to their continued demand (Webster 1997:548–49). Although Hopi men adopted Western styles of daily dress earlier than women, especially when away from their villages, traditional handwoven clothing derived from precontact garment styles was worn on a daily basis by both Hopi men and women well into the late nineteenth century and early twentieth century and is still worn in traditional ceremonies today (Kent 1983b; Webster 1997:534).

After the Spaniards were expelled and tribute demands lifted, Hopi weavers were free to produce textiles not only for local consumers but for trade to outside communities. Much of this production was accomplished through the use of newly controlled supplies of wool. After the reconquest, Hopi woolen textiles—and to a lesser extent, cotton ones—probably began entering the New Mexico Pueblo villages in greater quantities. The Hopi also resumed the trade of textiles to their nomadic neighbors (Beaglehole 1937:84). By the mid-nineteenth century, Hopi was the principal supplier of cotton textiles and women’s woolen manta dresses to the Rio Grande Pueblos, and by the end of the century, to Zuni and Acoma as well (Webster 1997:639–43). This intensification of textile production ensured Hopi not only a pivotal place in the Rio Grande economic sphere, but also regular access to desirable imports such as trade cloth and indigo dye that entered New Mexico via the Camino Real and the Santa Fe Trail, as well as imported goods from other pueblos, which served to maintain contacts in times of stress (see also Lomawaima 1989:93).
DISCUSSION

The geographical remoteness and marginal environment of the Hopi Mesas played a pivotal role in shielding the Hopi people from many of the Spanish labor demands experienced by Pueblo villages closer to the Rio Grande Valley. Because of its considerable distance from the Rio Grande, Hopi was relatively free of mission activity until 1629. The threat of Navajo and Apache raids in the region further buffered the Hopi villages from frequent long-term contacts with Spaniards (E. B. Adams 1954:4). Because the Hopi people, as a whole, were never subject to major population relocations, forced to work on Spanish farms, or encroached upon by Spanish settlements, they were able to maintain their traditional territory and residence patterns, critical factors for the maintenance of native identities during the colonial era (Gasco 2005:104; Lightfoot 2005:214; Spicer 1962:576–77; Van Buren 2010:178).

The changes and continuities in Hopi weaving after European contact provide insights into some of the dynamic social processes through which the Hopi negotiated the constraints and opportunities of the colonial period to insure the persistence of this ancient craft (see Panich 2013). Like other Pueblo villagers, the Hopi were not merely passive observers to the social disruptions and labor demands wrought by Spanish colonization (see Liebmann 2010:200; Preucel 2002:22), but employed various actions and strategies, offensive and defensive, to resist and ameliorate these conditions. Many of these responses directly affected the trajectory of Hopi weaving during the Spanish period.

For example, documentary sources indicate that in 1655, several Hopi individuals made the long-distance journey to the provincial capital in Santa Fe to lodge a formal complaint before the then-head of the New Mexico Franciscan program, Custodian Ibargaray, in regards to the forced textile labor practices of Fray Guerra at Shongopovi discussed earlier in this chapter. This Hopi action led to the removal of Guerra from his position later that year (Scholes 1942). Presumably, it also resulted in a lessening of textile tribute demands at Hopi, at least for a time.

Two other offensive actions—the Pueblo Revolt and the destruction of Awat’ovi—affected the trajectory of Hopi weaving by returning autonomy to the Hopi people and inaugurating a period of cultural revival (Whiteley 2002). By essentially terminating the Franciscan mission program at Hopi, the Pueblo Revolt gave the Hopi people unrestricted access to mission sheep and wool for their weaving. Two decades later, the destruction of Awat’ovi brought an end to Spanish authority at Hopi, and, as Whiteley (2002:161) has argued, issued in “a full-blown revitalization and transformation of Hopi society,” which would have included a renewed interest in the visible symbols of Hopi social identity, including daily and ritual dress.

Less violent strategies such as passive resistance and skilled diplomacy were used by the Hopi and other Pueblo people to avoid direct confrontation with the
missionaries and other Spanish authorities (E. C. Adams 1989; Mobley-Tanaka 2002). For example, the feigning of conversion would have enabled Pueblo people to mask their secret observance of traditional rites and to conceal their ritual paraphernalia (Knaut 1995). Participation in the mission program also provided native people with regular access to favorable material goods—such as metal needles, wool, and imported dyes—and the information needed to process them.

By taking a flexible approach toward Spanish material introductions, Hopi weavers were able to integrate advantageous new raw materials, such as wool and imported indigo dye, into the traditional textile repertoire without compromising ancient textile traditions or Hopi cultural values. Through a process that Hartman Lomawaima (1989:97) has called “Hopification,” Hopi weavers incorporated advantageous Spanish introductions into Hopi life, imbued them with Hopi values, and made them Hopi while maintaining the foundational elements of Hopi weaving practice, just one way in which Hopi people used existing cultural values to negotiate the challenges of the Spanish colonial period (see further discussion of the concepts of Hopification [Lomawaima 1989] and Pueblofication [Brown 2013] in the chapter by Douglass and Graves, chapter 1 in this volume).

CONCLUSIONS

The primary changes to Hopi weaving during the mission period were the adoption of wool and the knitting technique. There is no evidence in the Awat’ovi assemblage for the use of introduced garment forms or the incorporation of Spanish decorative symbols, except for the imported ecclesiastical garments used by the friars and other church leaders. The Awat’ovi assemblage indicates that by the time of the Pueblo Revolt, most weave structures and garments made of cotton prior to Spanish contact were now made primarily of wool.

Sometime during the 1700s, Spanish-style weft-faced woolen blankets appeared in the Wàlpi archaeological record (Kent 1979:13–14). Emulating a Spanish long, narrow, banded blanket made on a European treadle loom, these Hopi-made versions were woven on the traditional Pueblo upright loom and continued to be made in this way into the twentieth century (Kent 1983b:42–44). All other native-woven textiles in the eighteenth-century Wàlpi assemblage perpetuate weave structures and clothing styles popular in the northern Southwest prior to European contact. Similar textiles were made by Hopi weavers well into the twentieth century, and many of these garments are still woven at Hopi for ceremonial use today.

Men are still the primary weavers in Hopi society, though women have begun to play a greater role. Today, much of the weaving at Hopi takes place not in kivas, but in households, classrooms, or other nonritual settings. No longer an integral part of the Hopi male role, weaving is now practiced by fewer men, some of whom specialize in the production of traditional textiles for sale to
other Hopis or to people in other Pueblo communities. These changes in Hopi weaving were not imposed from the outside, but are internal changes that began in the early twentieth century as more men became involved in outside wage work and, more recently, as young people have moved to the cities for educational and employment opportunities.

Despite these changes in the organization of textile production at Hopi, locally made textiles continue to be woven and to play a critical role in the performance of religious ceremonies, in the fulfillment of social obligations, and for marking rites of passage such as initiations and weddings (Webster and Loma’omvaya 2004). Hopi weavers still use the same weaving technologies and weaving tools developed a millennium ago by their ancestors. Because the raw materials have changed and certain styles are no longer produced, the products now look a bit different, but the process has endured. The trajectory of Hopi weaving after European contact is a prime example of “changing continuities,” the persistence of a native craft through the negotiation, reinterpretation, and integration of cultural knowledge and outside introductions to ensure the survival of an ancient craft tradition.

NOTES

1. The treadle loom is an industrial weaving machine capable of producing very long lengths of fabric. During the sixteenth and early seventeenth centuries, it was introduced to many areas of New Spain, including Peru, Ecuador, Guatemala, Mexico, New Mexico, and California, for the purpose of providing cloth for the Spanish colonies, much of it supplied through tribute. Equipped with reed heddles, wide shedding devices (harnesses), foot pedals (treadles), and a rigid horizontal frame, the treadle loom is typically wound with long lengths of warp, enabling weavers to produce significant lengths of cloth within a relatively short period of time (Fisher 1979). In contrast, the traditional Pueblo loom produces fabrics of a relatively short, fixed length, and its string-heddle apparatus requires the expenditure of considerable time and effort (Kent 1983b:fig. 19).

2. In contrast to textile production in the Valley of Mexico during the Aztec and early colonial periods, where women were the principal weavers of loom-woven textiles in households for both domestic and tribute production (Brumfiel 1991), men are considered to have been the primary loom weavers in late pre-Hispanic times and at the time of European contact on the Colorado Plateau, based on the ritual nature of many loom-woven fabrics, the presence of loom holes in ritual structures (kivas), and early Spanish accounts about Pueblo male loom weavers.

3. For a revealing account of how these woolen textiles were requisitioned by the governors and the impact of these activities on the Pueblos, see Charles Hackett 1937:484.

4. If the embroidery yarns were inserted parallel to the warp, as in more recent Pueblo embroidered textiles, we could rule out any historical connection to the supplementary-weft technique.
5. Information about these rooms comes from the artifact and room cards in the Awat’ovi archives at the Peabody Museum, Harvard University.

6. The only settings at Awat’ovi where loom holes were identified were kivas, Room 611 in the Hopi village, and Room 463 in the mission. Another archaeological correlate of weaving on the upright loom, the loom block (sometimes referred to as a warping block), is a large stone block equipped with a hole or socket for accommodating a wooden bar. Historically, loom blocks were used in groups of two or four to prepare the warp for weaving or to frame-braid a sash. Therefore, at least two are required for textile production (Woodbury 1954:155–157). Loom blocks have a wider distribution at Awat’ovi than loom holes, recovered from seventeen postcontact settings in the village and mission (Webster 1997:308–11). Most of these features contained only one loom block, suggesting their secondary use as seats or for other nonweaving purposes. Multiple loom blocks were confined to seven seventeenth-century settings at Awat’ovi: three kivas and three nonkiva rooms in the seventeenth-century Hopi village, the kiva under Church 2, and a postrevolt room in the mission. All of the kivas that contained loom blocks also contained loom holes in their paved floors. In addition, Room 611 also contained both loom blocks and loom holes. In contrast, none of the nonkiva domestic rooms that contained two or more loom blocks also contained loom holes. Although Richard Woodbury (1954:55) suggested that most loom blocks found in storage or living rooms at Awat’ovi represented a secondary use of these objects, the possibility cannot be ruled out that the single and multiple occurrences of loom blocks in domestic rooms of the seventeenth-century Hopi village were related to the preparation of warp for textile production, including the production of tribute textiles.

7. Jesse Walter Fewkes (1898:606, 619) and Smith (1972:69–73) suggest that these eastern rooms burned during the destruction of Awat’ovi. The Awat’ovi room cards at the Peabody Museum indicate that the rooms that yielded the burned cotton remains (Test 46, Rooms 1 and 3) were domestic rooms.

8. My interpretation of Hopi kivas and religious rooms as male-related extrahousehold ritual settings for textile production is based on early ethnographic accounts that describe such settings as the focus of most communal cotton spinning, embroidery, weaving, and ceremonial preparation activities by Hopi men (e.g., Brooks 1944; Parsons 1936).

REFERENCES CITED

Flagstaff: Museum of Northern Arizona.

Washington, DC: Smithsonian Institution.

Adams, Eleanor B., and Fray Angelico Chavez, translators and annotators. 1956. The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Dominguez, with Other Contemporary Documents. Albuquerque: University of New Mexico Press.


Hodge, Frederick W., George P. Hammond, and Agapito Rey, eds. 1945. *Fray Alonso de Benavides’ Revised Memorial of 1634*. Albuquerque: University of New Mexico Press.


