Alternative Pathways to Complexity

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Recently Richard Blanton, Lane Fargher, and Verenice Heredia Espinosa wrote a seminal piece on Mesoamerican commodities and their economic lives (Blanton et al. 2005). Phrasing their formulation as “a goods-based approach to world-systems,” they analyzed the economic dimensions, dynamics and contexts of five important commodities: obsidian, salt, cacao, cotton cloth, and pottery. For each of these commodities, they addressed penetrating questions concerning labor and time allocation bottlenecks, relationships between the good and dynamic distribution systems, the good’s impact on secondary industries or markets, and broader impacts of increased production of the commodity (ibid.:262). I find their empirical treatment of these commodity issues especially attractive.

Their approach and these questions have stimulated the formulation of this chapter, which focuses on the luxury craft of featherwork. Building on the goods-based approach, I examine the complex production, distribution, and consumption lives of the several different types of featherwork in the Aztec world. Practical considerations root this discussion firmly in the Late Postclassic, although Blanton and his colleagues spend considerable time and energy on issues of change. Another time.

Much as Blanton, Fargher, and Heredia Espinosa selected a small sample of goods for their study, I limit my discussion here to just one constellation of complex manufactured products: various types of feathered
adornments (luxuries, and “key commodities” in M. E. Smith 2003c). These types of objects had complicated production histories: their manufacture depended on the acquisition of a relatively wide range of raw materials from varied ecological regions, the use of a variety of tools, the application of highly specialized knowledge and techniques, and appropriate and effective organizational arrangements. The fashioning of these objects required that specific materials and human skills converge at the same time and place, some of the materials deriving from distant and specialized regions. How was all this orchestrated, with a reasonable degree of predictability?

COMMODITIES IN AZTEC-PERIOD MESOAMERICA

Aztec times in Mesoamerica were materially exuberant times. Households of all types and scales required and acquired utilitarian objects ranging from cookware to weaving implements to brooms to hoes, and there were more households, and more people, in Late Postclassic times than during any other time in Mesoamerican prehistory. There was also an upsurge in the production and use of status-linked luxuries, often referred to as “prestige goods.” Shimmering tropical feathers, bright jewels, and shining gold ornaments bedecked gods and nobles alike, proclaiming their exalted status. Warriors entered battle adorned with symbolically laden feathered devices and costumes. State religious ceremonies, exhibiting a special flamboyance, claimed their share of luxurious materials and objects. In the prestige arena, a consumer-oriented and status-conscious elite enjoyed fairly restricted use of certain luxury objects made from materials such as fine jadeite and turquoise, precious metals (gold and silver), glamorous tropical feathers, jaguar skins, cotton, and cacao. That said, the designation of all luxuries as prestige goods is not entirely applicable to the highly commercialized Aztec world: some high-grade materials and the splendid objects produced from them also made their way into other levels of society, leading to an increased demand beyond royal feasting, noble fashion, battle displays, and periodic rituals. As “bulk luxuries,” goods such as fine salt, green obsidian, cacao, and decorated clothing (Blanton et al. 2005) traveled long distances and enjoyed considerable popularity despite their relatively high values.

There apparently was quite a bit of wiggle room in Aztec-period consumerism. A royal household needed brooms, baskets, and graters as much as a farmer—indeed, probably many more. Women in all types of households produced cotton cloth—therefore cotton fibers and the textiles woven from them were present virtually everywhere. Jade(ite), bronze, and other imported
luxuries have been found in humble as well as elite contexts, “indicating that commoners and elites had ready access to valuable goods,” as found in excavations in Late Postclassic sites in Morelos (M. E. Smith 2003c:250). Nonetheless, elite households enjoyed greater quantities of these types of goods. In addition, there is some suspicion that drinking cacao may not have been an exclusively noble perquisite—a sixteenth-century colonial document from Tlaxcallan refers to uppity native commoners dumping “watered-down” cacao on the ground when offered such a beverage by native nobles of the time. In this case the commoners had begun to gain some wealth through their production of cochineal and, in the eyes of the local nobles, were becoming altogether too pretentious and haughty (Lockhart et al. 1986). The disdain with which the newly prosperous commoners treated the thin cacao suggests the possibility that they may have consumed diluted cacao in the past, but that they felt that their increased wealth now placed them above this.2

All of this goes to say that the lines of social status, materially defined, were somewhat blurry among the Late Postclassic Aztecs. But only somewhat blurry. Social positions were unquestionably hierarchical and political power was well entrenched in the hands of a small number of individuals. Distinctions in social station were accentuated, indeed announced, by highly visible displays—especially the wearing of ornate clothing and adornments that carried specific symbolic meanings. For example, only rulers and high-ranking noblemen (perhaps only judges) wore turquoise diadems as symbols of power, and only achieved warriors were entitled to wear specifically designed martial attire in battle and rituals (Berdan 2012, 2014). The imported luxuries encountered archaeologically in commoner households (see M. E. Smith 2003b) were expensive, but not so symbolically charged.

It has been suggested that the presence of valuable goods up and down the social scale is indicative of an active and pervasive marketplace exchange system (see Hirth 1998; Smith 1998). We know that these materials and goods were available in marketplaces, and this would be a convenient and customary avenue through which both noble and commoner families, for a price, could obtain goods beyond their basic necessities. It was the most widespread means by which raw materials and finished goods, as commodities, moved from region to region, community to community, and hand to hand. These movements were effected by individual producers/retailers and regional traders, and also by long-distance professional merchants (pochteca), who specialized in trading relatively high-value/low-bulk commodities such as precious feathers and decorated cotton cloth. These professional merchants served their rulers directly by embarking on trading expeditions on their behalf, moving fancy
goods across considerable distances and establishing or cementing diplomatic relations with foreign polities.

But long-distance trade and markets were not the only avenues and venues for the distribution of goods, whether precious or ordinary, costly or cheap. There was the well-documented tribute/taxation system imposed by conquering city-states on their subjects, and, in its largest manifestation, by the Aztec empire on its vanquished polities. Imperial tribute was demanded in food staples, utilitarian goods, and precious raw materials and manufactured objects; payments were expected on a preset schedule (usually quarterly, semi-annually, and annually), or delivered on demand for the celebration of special events such as a royal coronation or funeral (Berdan 1986, 1992). In contrast to the products and goods moving through the marketplace system, tributes were delivered directly to city-state or imperial rulers for distribution according to established rules and, to a large extent, at their discretion. Rulers were expected to be generous. At specified monthly ceremonies they distributed food to their commoners from their palatial coffers, and at other ceremonies they bestowed glorious honors, such as feathered costumes and devices, on courageous warriors (see Berdan 2014:260–268). Tributes would have been available to supply these foods and regalia at least to some extent. In general, a great deal of tribute income was directed to the maintenance of the ruler’s extravagant lifestyle, military expansion, trading expeditions, and the establishment of alliances (Berdan 2005).

Markets, long-distance trade, and tribute provided the most pervasive contexts for the movements of goods through the Aztec world. But there was also elite exchange, most notably through extravagant feasting whereby very fancy goods were gifted from ruler to ruler, or noble to noble, to cement friendly political relations (or, in some cases, to intimidate by flamboyance). One particularly well-documented case involved the dedication of the Mexica great temple in Tenochtitlan in 1487. The Mexica ruler Ahuitzotl invited powerful rulers (friends and foes) to this extraordinary ceremony. As host, Ahuitzotl offered his august guests extravagant gifts of elegant clothing, exquisite jewelry (golden diadems and leg ornaments, and lip plugs, nose plugs and ear plugs of gold and precious gems), finely made weapons and shields, jaguar and puma skins, and sandals (Durán 1994:340). These material luxuries unabashedly proclaimed the extent of control that Ahuitzotl exercised over his imperial domain: Ahuitzotl reminded his guests, especially his enemy-guests, that “These presents . . . are won by the strength and valor of our powerful arm,” astonishing them with the magnitude of his wealth and power (Durán 1994:340). High-level events such as this moved specific gifted luxuries across
regions: Ahuitzotl’s awe-struck guests took their luxurious gifts home to be admired, used, and perhaps emulated in their own lands. On the flip side, there is the case of the Chichimec ruler of the city-state of Cuauhtitlan, conquered by the Mexica. When the Mexica ruler offered him gifts consisting of the costume and insignia of a Mexica warrior in reward for his loyalty, this stalwart ruler flatly refused. Instead, he preferred and accepted gifts symbolic of his own Chichimec heritage (Hodge 1984:60).

With these commercial and political exchange systems in mind, how did the materials necessary for the manufacture of feathered adornments move from their places of origin to arrive in the hands of skilled artisans? What were the manufacturing requirements? And then, how did the finished products end up in the hands of appropriate consumers?

THE CASE OF FEATHERED ADORNMENTS

We can easily speak of feathered adornments as luxuries in the Aztec world. For the most part they ended up in the hands and houses of the aristocracy, they announced the achievements of courageous warriors, and they decorated the sanctuaries and idols of the many deities. In such settings and on such persons and gods, these objects carried considerable social, political, and religious importance. But this does not mean that they were economically superfluous. Indeed, objects such as these not only reflected changing social and political dynamics, they also stimulated production and exchanges in their own and ancillary areas of the economy. Secondary industries such as woodworking, glue-making, hide-curing, twine-making, and blade-production gained from flourishing production of these fine luxury objects, which required these materials. Luxuries were prominent in many marketplaces; the great Tlatelolco market of course comes to mind. As another example, the market at Tepeacac on the eastern imperial borderlands was expressly ordered by its Aztec conquerors to welcome merchants carrying exotic materials and plying precious wares (Durán 1994:159). And long-distance professional merchants made their living (and a good living it was) from trading in the most valuable raw materials and objects throughout the land. The idea that high-end goods played dynamic and significant roles in preindustrial economies is not a novel idea (e.g., see Schneider 1977; Blanton and Feinman 1984; Kepecs and Kohl 2003). It is an idea worthy of closer examination specifically in the Aztec world, for which I have selected this category of expensive, esteemed, and complicated luxuries.

The production, distribution, and consumption of fancy feathered objects are particularly well-documented in the ethnohistorical sources. In the Florentine
Codex, Sahagún’s native collaborators on the luxury crafts were particularly well informed about the featherworking enterprise and may themselves have been featherworkers (Sahagún 1950–1982, book 9). This and a wide array of other ethnohistorical sources (e.g., Alva Ixtlilxochitl 1965; Anderson et al. 1976; Berdan and Anawalt 1992; Boone 2000; Durán 1971, 1994; Quiñones Keber 1995) frequently mention the presence of feathers in markets, trading expeditions, and tribute, and their use in social, political, and ceremonial events. Unfortunately, to date no featherworking workshop has been uncovered archaeologically, and only seven preconquest Aztec/Mixtec featherwork objects sit in museums today.3

There were two types of featherworkers: those who worked at palaces for royal or noble patrons and those who worked independently and lived in exclusive calpolli or urban neighborhoods. The most notable of these latter were from the calpolli of Amantlan—such was their fame that all fine featherworkers became known as amanteca. I propose that the basic units of production for fine featherworking were households, especially among the independent featherworkers and probably among those attached to palaces.

Featherworkers produced ornate objects in three ways: (1) feathers were tied together into long, flowing objects such as back devices, headdresses, feathered bracelets, fans, and banners; (2) small feathers were glued to solid backings to produce intricate mosaics such as shields; and (3) feathers were spun and woven into textiles. At the present time there is nothing to indicate that individual households specialized in just one type of featherworking; conversely, there is nothing to indicate that they did not so specialize. Each of these processes required somewhat different materials, tools, and skills, although there was considerable overlap. I give some weight to that overlap, and for the present discussion I assume that any given featherworking household was capable of producing, and did produce, all three types of feathered objects.

Acquisition of Raw Materials

Raw materials required for the production of exquisite feathered objects are listed in table 6.1. They included both costly and inexpensive materials and relatively inexpensive tools.

The most expensive materials required in any featherworking enterprise were the feathers—especially the shimmering, colorful, “exotic” ones. These feathers were attached to tropical birds such as scarlet macaws, lovely cotingas, roseate spoonbills, blue honeycreepers, troupials, several types of parrots, and of course the resplendent quetzal. Hummingbirds and their iridescent feathers,
<table>
<thead>
<tr>
<th>Materials</th>
<th>Type of Object</th>
<th>Found in Markets</th>
<th>Sent in Tribute</th>
<th>Carried by Long-Distance Merchants</th>
</tr>
</thead>
<tbody>
<tr>
<td>costly feathers</td>
<td>tied, mosaics, textiles</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>“ordinary” feathers</td>
<td>tied, mosaics, textiles</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Textiles&lt;sup&gt;a&lt;/sup&gt;</td>
<td>tied</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>cloth: cotton&lt;sup&gt;b&lt;/sup&gt;</td>
<td>textiles</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>cloth: maguey</td>
<td>textiles</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>animal hides&lt;sup&gt;c&lt;/sup&gt;</td>
<td>tied, mosaics</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>paper&lt;sup&gt;d&lt;/sup&gt;</td>
<td>tied, mosaics</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>cotton thread&lt;sup&gt;e&lt;/sup&gt;</td>
<td>textiles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maguey twine</td>
<td>tied</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>wood&lt;sup&gt;f&lt;/sup&gt;</td>
<td>tied, mosaics</td>
<td></td>
<td></td>
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</tbody>
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continued on next page

a Textiles have been identified on “Moctezuma’s” headdress, seemingly woven of different materials and in different patterns (Moreno Guzmán and Korn 2012: 73).

b Both cotton and maguey cloth were already manufactured, not raw materials. Their production required raw cotton or maguey fibers, spindles, spindle whorls, looms (wooden pieces and fibers for the backstrap), and picks. The production of cloth was the domain of women; in theory at least, all women were expected to spin and weave cloth. A featherworking household would contain one or more such women.

c These are seen on “Moctezuma’s” headdress, although the animal used is not known (Moreno Guzmán and Korn 2012: 73). Deer skins were paid in tribute by Tepeacac and jaguar skins by Xoconochco (Berdan and Anawalt 1992, vol. 3: folios 42r, 47r). “Cured leather” appears in Sahagún’s market list (Sahagún 1950–1982, book 8:68).

d Two types of paper have been identified on “Moctezuma’s” headdress (Moreno Guzmán and Korn 2012:73). *Amatl* (*amate*) and maguey paper were both used in the manufacture of feather mosaics. Both are mentioned as present in the Tlatelolco marketplace (see Sahagún 1950–1982, book 10:78).

e Cotton thread was most likely used to attach feathers to cotton cloth or to interweave the feathers with threads. We do not know if maguey thread was used in a similar manner with maguey cloth. Maguey fiber, but not cotton thread, is mentioned as present in the Tlatelolco marketplace (Sahagún 1950–1982, book 8:68).

f Wood was found in markets, and beams, planks, and pillars were given in tribute (Berdan and Anawalt 1992, vol. 3: folio 32r). But the wood pieces required for backings (mosaics) or supports (tied objects) were none of this sort. A possible reference to the types of woods used here is “fine wood for carving” paid from one province in the present-day state of Guerrero (Berdan 1986:127). I suspect that the carpenters or woodcutters listed in Sahagún (1950–1982, book 10:81) could have provided the featherworkers with their necessary pieces. Also, Cortés (1928:77) mentions that “wood of all kinds and in all stages of preparation” were available in the Tlatelolco marketplace.
Table 6.1—continued

<table>
<thead>
<tr>
<th>Materials</th>
<th>Type of Object</th>
<th>Found in Markets</th>
<th>Sent in Tribute</th>
<th>Carried by Long-Distance Merchants</th>
</tr>
</thead>
<tbody>
<tr>
<td>thin reeds(^g)</td>
<td>mosaics</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>stout canes(^h)</td>
<td>tied</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cutting boards(^i)</td>
<td>tied, mosaics, textiles</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>knives (obsidian?)</td>
<td>tied, mosaics, textiles</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dyes(^j)</td>
<td>tied, mosaics, textiles</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>glues</td>
<td>tied, mosaics</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bone blades</td>
<td>mosaics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>maguey leaves</td>
<td>mosaics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>spindles/whorls</td>
<td>textiles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>loom parts(^k)</td>
<td>textiles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>baskets</td>
<td>tied, mosaics, textiles</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bowls/pots</td>
<td>mosaics, textiles</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

\(^g\) Reeds are mentioned as possessed by the reed mat seller in the Tlatelolco marketplace (Sahagún 1950–1982, book 10:86).

\(^h\) While a market presence of stout canes is not mentioned specifically in the sources, stout-cane carrying baskets are—the seller of stout cane carrying baskets also wove them (Sahagún 1950–1982, book 10:86).

\(^i\) According to Sahagún (1950–1982, book 9:90), these boards, on which feathers were cut, were made of ahuehuetl (bald cypress) wood.

\(^j\) The Aztecs used a wide array of dyes—at this point it is not clear which dyes were used in coloring feathers, although Sahagún (1950–1982, book 9:95) mentions zacatlaxcalli, a yellow climbing plant. Many dyes were present in the Tlatelolco marketplace, and some dyes (especially cochineal and yellow ochre) were paid in tribute to Tenochtitlan (see Berdan 1986:127–129).

\(^k\) The backstrap loom is essentially a bundle of sticks with straps attached at each end, the part encircling the weaver’s back being interwoven cordage. These elements may have been found in the marketplace, but the loom as a whole may have been the weaver’s own construction—it is a rather personal implement.

also popular, were found widely throughout Mesoamerica; some were migratory and would have been available seasonally. To reach the centers of Aztec power in the central Mexican highlands, most of these feathers needed to be transported long distances on foot or by canoe where possible. They arrived primarily through three of the exchange mechanisms already mentioned: markets, long-distance trade, and tribute.
Well-heeled merchants offered fine feathers for sale in the Tlatelolco marketplace, and precious feathers were available in other regional marketplaces such as Tepeacac and Coaixtlahuacan (Berdan et al. 1996; Durán 1994:159, 182). Some of these long-distance merchants carried bundles and bunches of costly feathers from regions south of the Aztec imperial boundaries, essentially engaging in foreign trade (see figure 6.1). Some apparently also carried the birds themselves, as seen in the Codex Fejérváry-Mayer (León-Portilla 1985).

Costly feathers were delivered in tribute, on an annual basis, to the imperial capitals. These included bunches of quetzal feathers and probably handfuls\(^4\) of roseate spoonbill, lovely cotinga, green or Pacific parakeet, and Montezuma oropendula (Berdan and Anawalt 1992, vol. 2:102–104, 110–111, 112–114, 116–118, 122–124). The feathers delivered in tribute would have been appropriate to the manufacture of tied and mosaic objects. In addition, the province of Tochpan paid an annual tribute of 20 bags of small white feathers, used to “trim” cloaks (Berdan and Anawalt 1992, vol. 4:108). Helpfully, Alva Ixtlixochitl (1965, 2:197) tells us that the Gulf coastal province of Tzicoac (a neighbor of Tochpan) paid tribute in 20 bags of white feathers with which they made cloth. Both of these...
descriptions strongly suggest that these feathers were intended to be spun into textiles, and white down feathers are also mentioned by Sahagún (1950–1982, book 9:97) as elements in tied-feather adornments. Therefore, feathers for all three types of feathered productions were available through one or more exchange avenues: in markets on daily, weekly (5-day), or 20-day bases; in the caravans of long-distance merchants; and through the annual arrival of tributes from distant provinces.5

Other feathers, less than exotic, were locally available and widely used in the featherworking enterprise. “Ordinary” feathers such as those of ducks, crows, turkeys, and local/migratory waterbirds were used as underlayers in feather mosaics and as feathered objects in their own right. For instance, the Codex Mendoza distinguishes warrior costumes fashioned of “ordinary” feathers from those manufactured of “precious” feathers (Berdan and Anawalt 1992, vol. 4). Some of the less-expensive feathers may have included those from turkeys and crows (Sahagún 1993:270, 271, 274, 275). Rulers went about in cloaks made from duck feathers, and noblewomen similarly wore tunics (huipilli) of duck feathers (Sahagún 1950–1982, book 8:24, 47), the lowly duck perhaps not being so lowly after all.6 The “feather seller” in the Tlatelolco marketplace reportedly owned the birds herself, plucking the small back and breast feathers of turkeys, geese, and ducks; she split and spun these tiny feathers into nice even threads with a spindle (Sahagún 1950–1982, book 10:92). These cozy threads could have been available in that marketplace all year long, the turkeys and ducks omnipresent in the Basin of Mexico setting.

Beyond their possible use in some warrior costumes, “ordinary” feathers do not appear in the tribute lists, nor do they seem to have interested the long-distance merchants. Feather artisans working with such feathers would have relied on the marketplaces for their supplies, with the one possible exception of the little white feathers paid by the provinces of Tochpan and Tzicoac (see above).

Other materials required in the manufacture of costly feathered adornments were maguey twine, knives, wood, baskets, animal hides, paper, glues, textiles, baskets, and possibly dyes for the tied objects; maguey leaves, knives, glues, bone blades or picks, dyes, paper, wood, ceramic vats/bowls, and baskets for the mosaics; and cloth, cotton and/or maguey thread, knives, spindles and spindle whorls, twine, baskets, a loom, and possibly dyes for the feathered textiles (see table 6.1). Any given household, whether working independently or attached to an elite palace, would have had little difficulty obtaining these materials through marketplace channels. At the very least, almost all of them are recorded for the Tlatelolco marketplace; it is not
known to what extent other marketplaces might have had occasional or regular deficiencies in these materials. Very little arrived through tribute (most notably paper, bowls, cloth, and possibly the right kinds of dyes), so even the palace-attached artisans would have depended on marketplace vendors on a regular basis. The only materials not mentioned for the Tlatelolco marketplace are the maguey leaves and bone blades or picks used by the mosaic artisans; and the spindles/whorls, cotton thread, and loom parts needed to produce feathered textiles. Thin reeds and stout canes were probably available in the marketplace as part of the wares sold by the mat and basket vendors, respectively (Sahagún 1950–1982, book 10:86). Maguey, reeds, and canes were widely available in the highlands of central Mexico and could have been obtained informally. Bone blades or picks could have been acquired and regularly renewed from a recent meal: glyphs associated with featherworking images in the Florentine Codex (Sahagún 1950–1982, book 9:ill. 90) suggest that these were shin bones—although exactly whose shin is meant is not clear. Spinning was a household activity everywhere so the cotton thread would have been spun in-house. The sources of the spindles and their whorls has not been clearly established: the spindles are sticks and could have been simply fashioned by household members or been available in the marketplaces along with other wood products. Some spindles may have been made of bone (see McCafferty and McCafferty 2000). Ceramic whorls may well have graced marketplaces, but our reports of marketplace inventories largely derive from Spanish male (nonweaver) sources—these individuals may not have been able to identify such implements and therefore failed to mention them. Sahagún's informants would have certainly recognized them, but nonetheless did not mention them.

These listings of materials derive from ethnohistoric sources and inspections of existing featherwork pieces. Detailed examinations of these objects have been especially enlightening since some materials not mentioned in the documents appear on these pieces. For example, on “Motecuhzoma’s” head-dress, a quintessential tied object, paper and cotton backings are present, along with glues used to secure some of the feathers (Moreno Guzmán and Korn 2012). The coyote shield, a mosaic, required twine to attach the many gold pieces. And the shield in Mexico City, another mosaic, is decorated with animal skins and embellished with dangling maguey fiber tassels; its backing consists of thin reeds tied together with maguey or cotton threads (Rueda Smithers 2009:108). So, for instance, if a featherworking household focused on mosaics, it still would have required supplies of twine; if the household worked mainly on tied objects, it still would have needed to stock glues, paper,
and cloth. With all of this overlap of materials, it is entirely possible, even likely that the production output of featherworking households encompassed most if not the full range of featherworking activities.

In addition to the materials listed in table 6.1, ornate feathered adornments also frequently incorporated other costly materials such as gold and precious stones. The inventories of objects sent from Mexico to Spain in the early sixteenth century attest to these additions: for example, “three shields, one the field green with some serpents of gold and blue in the center; the other, the field green with the head of an owl in the middle; the other, the field red with some fancy work of gold” and a “feather-piece, the center blue with stone mosaic-work, with other colored feathers, the border of green feathers, and lined with a tiger-skin” (Saville 1920:62, 72). Of the extant feathered objects in museums today, two especially exhibit the addition of gold ornaments: the coyote shield and “Motecuhzoma’s” headdress, both in Vienna. Their distinctive and integral incorporation into the objects’ designs strongly suggest that either the featherworkers themselves attached the gold pieces, or they worked in close collaboration with goldworkers (see below).

Tools and Procedures

For all the glamour and ornateness of these feathered adornments, the tool kit that produced them was singularly simple. Sharp knives, probably obsidian, trimmed feathers with an exquisite purity of line, and split tiny feathers for spinning. Maguey twines attached feathers to backings which sometimes were themselves networks of maguey twine (Moreno Guzmán and Korn 2012). Glues applied to feathers were derived from various orchid roots and pseudobulbs, and from beeswax (see Berdan 2007; Filloy Nadal, Solís Olguín, and Navario 2006). Flat maguey leaves, abuehuete wooden boards, and bone picks were used primarily in mosaic manufacture: the maguey leaves as a surface for preparing proper backings, the wooden boards as feather-cutting surfaces, and the bone picks as an essential tool in straightening and aligning already-glued feathers. Baskets contained, constrained, and organized sometimes-unruly masses of feathers, and ceramic bowls and pots of different sizes were used in the preparation of mosaics. And spun feathers required the use of spindles/whorls and looms for the production of feathered textiles. With the possible exception of ultra-small spindles/whorls, these latter tools were women’s essential equipment for the production of cloth generally and would have been found in any and all households regardless of social status, occupation, or residence.

To read Sahagún’s (1950–1982, book 9:96–97) account, one might conclude
that the fashioning of tied feather objects was fairly straightforward. Briefly, a frame was constructed and strengthened (with cloth and/or paper, perhaps). Quetzal feathers were laid out on the frame, their bases reinforced with pieces of cane. These feathers, neatly lined up, were bound together with maguey fiber nooses, shaken out to straighten them, and sewn to the frame. The same procedure was followed with other types of feathers (such as troupial or roseate spoonbill, and eagle down) to complete the device (Sahagún 1950–1982, book 9:96–97). However, if “Motecuhzoma’s” headdress is considered, there was more to the process than that reported by Sahagún’s informants. This headdress also exhibits glued feathers, a network of maguey fiber netting to which feathers were lashed, and animal hide. The object was further embellished with numerous round and half-moon gold pieces tied to the backings (Moreno Guzmán and Korn 2012).

Another set of procedures involved the protracted and painstaking process of producing feather mosaics. The creation of these elegant objects entailed several stages and operations, some of them necessarily sequential, some ongoing, and some on-call. The most detailed account of these procedures is provided by Sahagún’s native associates (Sahagún 1950–1982, book 9:93–96). First, a scribe was enlisted (hired?) to draw the desired pattern. The feather-workers then carefully prepared a backing of wood or reeds, painted designs, glue-reinforced cotton, and paper supports. Thin strips of black and other colored feathers were glued to the backing to provide outlines or borders. Layers of inexpensive and expensive feathers were then applied, the ordinary feathers providing a bed for the costly ones. The bottom-most layer consisted of glue-hardened feathers (feathers dipped entirely in glue) whose colors matched the costly feathers to be placed on top of them. The expensive, precious feathers were then arranged and glued on top of the glue-hardened ones to finish the object. Examination of existing feathered mosaics reveals that pattern segments were often cut out separately and added to the whole design somewhat in the manner of a jigsaw puzzle, probably by a master artisan. For example, this is the case with the coyote shield, with its numerous pieces of blue feathers bordered in gold. On this object, the gold pieces were carefully folded under, and the underside parts were then sewn to the backing. During this entire process, the carefully selected feathers were repeatedly laid out in trial designs, matched or replaced, trimmed as necessary, arranged, rearranged, and rearranged again until the master artisan was satisfied. Painstaking workmanship was a hallmark of this enterprise at every stage of manufacture. It was also complex: the fashioning of feathered mosaics involved sequential activities, each stage depending on the prior completion of other stages. But there were
also ongoing activities which could be undertaken at any time, especially the trimming and dying of feathers. Still other activities, notably the making of glues, were sporadic and situational, essentially on-call.  

The third manner of manufacturing feathered adornments was the adding of feathers to cloth, reportedly by spinning. Sahagún (1950–1982, book 10:92) identifies the marketplace feather seller as not only an owner of birds but also a spinner of feathers. He also describes women’s spinning and weaving duties, using “shallow” spindle whorls for spinning feathers (1950–1982, book 8:49); McCafferty and McCafferty (2000:47) suggest that some small spindle whorls unearthed in Cholula may have been used for spinning feathers. No feathered textiles exist from precolumbian times, but a colonial piece from Mexico is highly suggestive of these production techniques. This object, in the Cooper-Hewitt Design Museum, Smithsonian Institution, is composed of cotton warp yarns and two types of weft yarns: “The unusual white yarn consists of downy feathers and cotton spun together in a two-ply yarn” and the other variously colored yarns were “composed of a very fine animal hair.” The feathers have been identified as goose, and the animal hair as rabbit (Phipps and Commoner 2006:486). Particularly interesting is the fact that downy feathers and cotton thread were spun together, which would make the spinning of feathers a manageable task. The use of white downy feathers in this type of operation is consistent with the other descriptions of white down already discussed.

**The Production Process: Labor Needs and Arrangements**

Luxury-feather artisans worked in three separate recorded contexts. As tecpan amanteca, they resided at the ruler’s palace and created the feathered capes for the god Huitzilopochtli. These were intricately fashioned of quetzal, hummingbird, and blue cotinga feathers (Sahagún 1950–1982, book 9:91). Durán (1971:73 and plate 3) describes this god’s green feathered headdress and feathered cape embellished with gold. His shield featured five tufts of white feathers and a border of yellow feathers (also see Sahagún 1950–1982, book 12:52–53). Yellow feathers and white down were given in tribute by conquered provinces, although hummingbird feathers were not. The production of these adornments would have been the domain of the tecpan amanteca, and would have required all of the featherworking skills: tying, mosaic-making, and textile production. These featherworkers also made other exquisite feathered objects that were bestowed on guests as royal gifts. Among them were probably the “three loads of cloaks of rich feather work” presented by Motecuhzoma to each
of Cortés’s captains (Díaz del Castillo 1963:221). Sahagún (1950–1982, book 9:91) emphasizes that at least by the time of Motecuhzoma Xoxoyotzin, the ruler settled these featherworkers at his palace, providing them with a house (centetl calli) of their own. There must have been several of these artisans, as the good friar goes on to say that those of “Tenochtitlan and Tlatelolco mingled with one another.” The meaning of centetl calli is unclear. Were all the featherworking artisans housed in a single dwelling or, more likely, in rooms around a single patio workspace? Were these complete households with husbands, wives, and children (as I suspect)? Or was each artisan family housed in its own house in or near the palace? Or perhaps what was meant was the totocalli (bird house), an aviary with an array of captive birds including eagles, quetzals, parrots, ducks, and other waterbirds (Díaz del Castillo 1963:228–229); it contained designated workspace for artisans including featherworkers, goldsmiths, wood carvers, and stone mosaic-makers (Sahagún 1950–1982, book 8:45). The proximity of these several crafts would have provided an enhanced degree of overall productive collaboration and efficiency.

Other types of featherworkers, calpixcan amanteca, apparently also lived at the palace and created the finery of the ruler when he danced. This included quetzal-feather headdresses, fans, and banners (some embellished with gold); a feather arm band with gold; and a headdress of red spoonbill and quetzal feathers with gold (Sahagún 1950–1982, book 8:27–28). These featherworkers had access to Motecuhzoma’s storehouse—they could use materials obtained through tribute or other royal means, and each object they made was stored and guarded in the ruler’s storehouse (Sahagún 1950–1982, book 9:91). Their association with the palace and its resources suggests that their labor relations probably resembled those of the tecpan amanteca.

It has already been observed that women, bird-owners, spun feathers in the marketplace. These were probably commoner women. In addition, we have indications that women attached to the royal palace (who could be either commoners or nobles) engaged in weaving feathered textiles. Bernal Díaz del Castillo (1963:230), in speaking of Motecuhzoma’s palace, mentions that women there produced “a huge quantity of fine robes with very elaborate feather designs.” This same observer states that “chieftains’ daughters” and “daughters of other dignitaries,” housed near the Templo Mayor in Tenochtitlan, wore robes “entirely of featherwork.” They may have woven these garments themselves, a suspicion supported by Sahagún (1950–1982, book 8:49) when he speaks of women spinning feathers while entertained by hunchbacks and dwarfs who sang and played music for them. It is difficult to conceive of commoner women being so entertained.
Other luxury featherworkers, called \textit{calla amanteca}, worked more independently in specialized \textit{calpolli}, or neighborhoods, producing feathered objects and adornments for sale in the marketplace. This is recorded for Tenochtitlan/Tlatelolco, and it is likely that similar arrangements, both palatial and private, occurred in other city-states. It is not clear how much the \textit{calpolli} was involved in the portioning of jobs, for example, or the regulation of standards, or the training of neophytes. The independent featherworkers would have obtained their precious feathers and other materials from the neighboring \textit{pochteca} merchants (at least in Tlatelolco) or in the bustling marketplaces (see table 6.1).

As was usual for most Aztec specializations, featherworking parents taught their children the skills of their trade. Girls were expected to develop a keen eye for feather color variations, and boys served as apprentices, one of their duties being the making of glues. But once again, things may not be as clear-cut as they seem. Did all sons of featherworkers become featherworkers themselves? Perhaps not, as some could be dedicated to schooling in a priestly school or \textit{calmecac}; while this education was intended to instill lofty artisanal values, it might nonetheless lead to a different life-path altogether (Sahagún 1950–1982, book 9:88; Durand-Forest 1994:173). And then, were the only apprentices necessarily sons of featherworkers? Might a featherworking father send his son to apprentice with another featherworker? We do not have definitive answers to these questions, although one might suspect that for the most part these specialized households and \textit{calpolli} tended to be fairly insular and focus on training their own progeny to perpetuate the craft and protect their accumulated resources (including specialized knowledge and skills).

Descriptions of featherworking procedures, touched on above, indicate that the manufacture of any feathered item required a complex interplay of separate but related activities. Ongoing tasks, performed by girls and women, consisted of selecting, dyeing and trimming feathers in preparation for their use. Sequential tasks, performed by the master artisan but also surely by various associates, included commissioning the design, preparing the several types of backings, creating the many design pieces, and arranging the different layers of feathers. On-call tasks, especially the making of glues by apprentice boys, were sporadic and situational, dependent on the immediate needs of those assembling the feathered piece. All of this suggests a household division and coordination of labor drawing on men and women, boys and girls. Some of the activities, especially those performed by women, could be readily interspersed with other household duties. Most if not all of these activities undoubtedly
took place out-of-doors in a patio setting, where there was sufficient space and the emerging piece could be judged in the light in which it would be admired. However, inclement conditions such as rain and wind may have periodically disrupted these daily activities.

Not all featherworking took place in-house: cooperation extended beyond the household. Much as scribes provided designs for the feathered pieces, the featherworkers made designs for the gold workers; these latter artisans “join with [and] are instructed by the feather workers,” their collaboration coming as no surprise, given the nature of the multimaterial objects produced (Sahagún 1950–1982, book 9:76).

Such a household system may have worked well for the independent featherworkers, but was it the only possible form of organization to get the job done? The documentary passages describing palace artisans suggest a single “house” for several artisans but say nothing about the division of labor within that “house.” It is my sense that when the settlement of artisans at a palace is mentioned, it refers to the entire household work force. It may well be that the “house” at the palace, like the totocalli, was large indeed, with many individual rooms, a large patio working area, and ready access to the raw materials of the trade. Also like the totocalli, it may be that different types of artisans were housed together in this manner, making their necessary interactions relatively easy and convenient.

It may have been that several feather artisans worked on a single piece simultaneously. Speaking of featherworking in the Colonial period, Juan de Torquemada (1969) wrote that

if there are twenty artisans, they all make an image together, and dividing among themselves the figure of the image, into so many parts, however many there are, each [artisan] takes his piece to make it at his house, and afterwards each one returns with it [the finished piece], and they all join together, and in this way the perfect and completed image results, as if one artisan had done the work. (1969, vol. III: 210; translation and brackets, FB)

With so much continuity in this craft from pre columbian times on into the Spanish colonial world, it is interesting to entertain the idea that this might have been a strategy used in Aztec times. It assumes the action of some centralized commissioning “agent,” whether a king, a noble, an overarching calpolli authority, or a respected master featherworker. The results of this system can be seen in a sixteenth-century colonial feathered triptych at the Metropolitan Museum of Art in New York City. The three segments of this religious piece were clearly executed by three different featherworkers:
the difficult, detailed, and meticulous work in the central section was probably completed by an accomplished master featherworker, and the artisan of the left panel was more proficient than his colleague on the right. Each of these artisans also had slightly different ways of executing similar motifs, and the finished item is not quite as ideally perfect as Torquemada describes. It is intriguing to consider that the many different pieces of the precolombian coyote shield could have been doled out in such a fashion—in this case, Torquemada would have been proud of their perfect harmony. The consistent colors, orderly directions of the feathers, and homogeneous feather and gold sizes all point to uniform training and a high degree of quality control over the work of all of the participants.

THE BIGGER PICTURE

I have been emboldened to undertake this study of Aztec-period featherworking by the framework proposed by Richard Blanton and his colleagues in their goods-based approach (2005). That framework is fleshed out by four questions that are designed to clarify the role of commodities in their broader economic, social, political, and religious milieu. Where do those questions lead us in the matter of Aztec-Period featherworking?

1. The presence and impact of labor and time allocation bottlenecks: Bottlenecks in the featherworking industry could derive primarily from labor imbalances and resource availability, as well as varying consumer demand. All of these potential problems were relatively easily addressed in the Late Postclassic Aztec world. Featherworking households required trained labor of appropriate age and gender composition. One can imagine any given household, during its “usual” life cycle, lacking either male or female children, or sufficiently available or trained adults of either gender. Nonetheless, strategies were available to offset possible imbalances: households could be enlarged (as joint or compound families), and children could be apprenticed to a neighboring master featherworker. Both possibilities are suggested in the documentary record. Guild-like arrangements among the independent featherworkers, and the grouping of featherworkers and other luxury artisans in palaces, offered opportunities for shared labor among the artisan households.

Availability of raw materials, especially costly tropical feathers, was an ever-present issue with the featherworkers. Those working in royal palaces had access to the ruler’s tribute stores and, at least in
the case of the Tenochtitlan ruler, a well-stocked aviary. Independent featherworkers relied on long-distant merchants, their neighbors, for supplies of exotic feathers. Both types of featherworkers could draw on markets for their supplies. Yet none of these sources was flawless. For the palace featherworkers, a rebellion in a tribute-paying province or a miscalculation (or misappropriation) on the part of a tribute collector or overseer could affect supplies of essential feathers. For the independent feather artisans, a merchant caravan might be ambushed in distant lands (a not uncommon occurrence), or the merchants may have returned from their long and perilous journeys with inadequate supplies. Ubiquitous markets with their wide range of commodities may well have offset some of these possible issues. Other materials used regularly in the manufacture of feathered objects were readily obtained in the many marketplaces throughout the imperial domain.

In addition, featherworkers relied on consumers who needed, could afford, and were allowed to acquire their fancy array. Some consumers purchased their featherwork in the marketplaces, while others, rulers and other high-ranking nobles, were directly supplied from attached artisans. Some consumers received feathered adornments as gifts or rewards (Berdan 2014:260–268). Inasmuch as a ruler supported the activities and success of his city-state, he would have provided any necessary colorful array from his storehouse to enhance his polity’s image and status; this finery was stocked from tribute payments and in-house production. Consumer demand would have fluctuated with the regular or spontaneous occurrences of political, military and ceremonial activities, which benefited from the flamboyant display of feathered adornments.

2. Relationships between the commodity and dynamic distribution systems: Precious feathers and other materials and tools used in featherworking all moved variously through tribute, trade, and market channels (see table 6.1). A relatively small amount of the featherworkers’ production needs were supplied through either tribute (for palace featherworkers) or long-distance merchants. Principal among these materials were the costly feathers native to regions distant from the imperial capitals. Nonetheless, quantities of these feathers also appeared in marketplaces throughout the realm, as did the many additional materials and tools of the featherworkers’ trade. These included such mundane (but essential) objects as maguey twine, obsidian blades, glues, dyes, and baskets. Going full circle, some featherworkers took advantage of the great Tlatelolco market to sell their finished feathered objects there. The increasing
commercialization of the Late Postclassic economy paralleled the increasing demand of luxuries, including featherwork, among noble consumers. Marketplaces were especially prominent in filling the featherworkers’ material needs, and also provided at least some of them with promising outlets for their labors.

3. *The good’s impact on secondary industries or markets:* The complex featherwork production system drew on a large variety of producers and served a demanding cadre of consumers. Relatively low-status households manufactured many necessary components of the featherworking enterprise: obsidian blades, wooden boards and backings, glues, dyes, animal hides, paper, twine, baskets, and bowls were produced in part or in full throughout the imperial realm by households on part-time or full-time bases. Some of this production may have engaged households as intermittent crafting and/or multicrafting activities (Hirth 2009), and served the featherworkers and others as secondary industries. Such households could boost their income by selling these materials and objects in the many marketplaces throughout the realm. The output of these households would have served more than just the featherworkers, since most of these materials and objects were used in many industries, and demand in the markets may well have been quite brisk. These materials and objects hold up well. Although a few of them (such as some glues and dyestuffs) responded to seasonal rhythms, they were also eminently storable—seasonal variations in availability would not be an issue with these adjuncts to the featherworking industry. And it perhaps is a testimony to the vitality of the market system that a crucial high-end industry such as featherworking came to depend on marketplace availability of so many essential materials and tools.

4. *Broader impacts of increased production of the commodity:* With increasing numbers of nobles came increasing demands for sumptuous display objects. Among the finest, most extravagant of these, were objects made with feathers. Blanton and his colleagues speak of the “solidification of aesthetic labor” whereby decoration comes to take precedence over form to give meaning to objects, and that this process was more common in the Late Postclassic than in earlier periods (Blanton et al. 2005:280). It is worth noting that the color, texture, vibrancy, and variation of feathers provide a particularly attractive and effective medium to achieve such embellishments and convey detailed, socially charged meanings.
Throughout this discussion I have taken the position that the production of luxurious feathered objects took place in the context of individual households. This position is supported by documentary evidence for the craft’s labor requirements and the style of training used in the profession. But we have seen that other slightly variable styles of production, in palace settings, may have offered enhanced conditions for the efficient and masterful production of at least some of these complex objects: the palace setting provided a stage for the collaboration of a variety of interdependent artisans, and these artisans enjoyed access to the palace’s (or city-state’s, or empire’s) tribute stores. As the empire expanded into areas of luxury commodity availability (especially lowlands), more and more fancy feathers became available to the palace featherworkers.

This leads us to a final consideration. While much exquisite featherwork was produced in the Basin of Mexico, in city-states central to imperial expansion and commercial enterprises, much was not. Featherworking was a deep-seated craft throughout the Aztec imperial domain and beyond; feather-adorned Aztec warriors met similar warriors on distant battlefields, tired and dusty merchants encountered exquisite featherwork in “foreign” lands, and a bewildering array of feathers and feathered objects appeared in market after market throughout the realm. Many manufactured feathered items, largely in the form of headgear, back devices, warrior costumes, and shields entered Tenochtitlan through tribute. These facts indicate that such objects were being produced widely and that access to the necessary productive materials as well as the skills to manufacture them was well established in broad geographic regions. This is highlighted by the example of imperial tribute in quetzal feathers and quetzal feather devices: the feathers were derived from a few restricted areas, while the fancy devices were demanded from polities throughout the empire where they were probably manufactured (figures 6.2 and 6.3). In addition, their demand in tribute by the imperial powers suggests a need that might not have been sufficiently met by local artisans. In the end, we are left to wonder just what the lofty and demanding Mexica, Acolhua, and other Basin of Mexico nobility thought of the featherwork arriving from the provinces. After all, as Richard Blanton, Lane Fargher, and Verenice Heredia Espinosa so cogently say, the Aztec elite displayed “little evidence of consumer reticence” (2005:280), and undoubtedly set high standards for their personal, stately, and godly adornments.
Figure 6.2. Aztec tribute demands in quetzal feathers. (Drawing by Jennifer B. Lozano.)

Figure 6.3. Aztec tribute demands in quetzal-feathered devices. (Drawing by Jennifer B. Lozano.)
NOTES

1. Michael Smith (2003c:123) distinguishes the different roles of luxuries in commercialized economies and prestige-goods economies. In the former, acquisition of fine goods was open to all consumers (who could afford them) with few status restrictions; in the latter, the production, distribution, and consumption of exotic goods were controlled by and restricted to elites.

2. If cacao were indeed available to commoners in preconquest times, the watering down may have been an economic as much as a social response: with less wealth, commoners could make their supplies of cacao go further, sacrificing richness.

3. There are two in Mexico City (a mosaic shield and a mosaic disk), two in Stuttgart (two mosaic shields), and three in Vienna (a mosaic shield, a headdress, and a fan). Some questions have been raised about precolumbian origins for the disk in Mexico City and the fan in Vienna. However, I believe that both of them derived from pre-Spanish times.

4. These are glossed as handfuls in the Codex Mendoza but just as feathers in the Matrícula de Tributos. I used to prefer the interpretation that these came in units of 8,000 feathers (from Tochtepec and Xoconochco provinces), but now am more inclined to think of these as the very small, soft feathers from the necks, backs, and breasts of the birds, in which case deliveries by handfuls would make more sense. These are the types of feathers used in fashioning feather mosaics.

5. Tributes reportedly arrived on a quarterly, semiannual, or annual basis. With the possible exception of distant Xoconochco, feathers were always paid annually.


7. Carded cotton (thin as a “cobweb”) was stiffened with glue, the procedure taking place on the maguey leaf. Experiments have revealed that the glue does not stick to the maguey leaf, and the stiffened cotton piece peels off easily (Laboratory for Ancient Materials Analysis, California State University San Bernardino).

8. Sahagún (1950–1982, book 9:95) identifies the black outline feathers as those of the grackle. From even a short distance, these borders are so finely executed that they appear to be painted.

9. Sahagún (1950–1982, book 9:97) additionally describes the manufacture of small animals from wood, dried maize stalks or paper, glue, cotton, and feathers. Rivero Weber and Feest (2012:48) offer the intriguing suggestion that these figures may have been toys made for sale in colonial Mexican markets.

10. These statements are made in the context of discussions of palace life.