Engendering Social Dynamics: The Archaeology of Maintenance Activities

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BAR International Series 1862 2008 This title published by

Archaeopress Publishers of British Archaeological Reports Gordon House 276 Banbury Road Oxford OX2 7ED England bar@archaeopress.com www.archaeopress.com

BAR S1862

Engendering Social Dynamics: The Archaeology of Maintenance Activities

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ISBN 978 1 4073 0345 1

Printed in England by CMP (UK) Ltd

All BAR titles are available from:

Hadrian Books Ltd 122 Banbury Road Oxford OX2 7BP England bar@hadrianbooks.co.uk

The current BAR catalogue with details of all titles in print, prices and means of payment is available free from Hadrian Books or may be downloaded from www.archaeopress.com

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Solar Disks and Solar Cycles: The Domestic Origins of Aztec Art

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Aztec ideology and art

Aztec state religion linked warfare to the natural cycles that sustained human life. The Aztecs recognized that human life depended on the orderly alternation of natural cycles: day and night, summer and winter, rainy season and dry season, growth, death, decay, and regeneration. But while we see these cycles as natural and inevitable, the Aztec state asserted that they were the uncertain outcome of cosmic struggle. For example, the sun rose victorious each morning, driving off the moon and stars to capture the daytime sky. But the sun's victory was only provisional, for each afternoon and evening, the sun sank in weary defeat and the moon and stars took back the heavens. The sun's success in this daily struggle depended upon its being nourished with the hearts and blood of sacrificial victims, preferably vigorous young men taken captive in battle. To underscore the uncertainly of human survival, the Aztecs postulated the existence of four previous orderly creations that had been overwhelmed by destructive chaos. The present creation persisted only because it was maintained by sacrifice¹.

To communicate this world view, the Aztec ruler commissioned works of monumental sculpture. For example, the Aztec calendar stone is filled with symbols that refer to cosmic cycles:

- near the center of the stone, the four previous cycles of orderly creation that had been destroyed disorder are named by the forces that destroyed them: jaguars, wind, a rain of fire and floods;
- these are surrounded by a ring containing the 20 signs of the Aztec 260-day ritual almanac, related to the life cycle and personal destiny;
- outside of this ring is another, the solar disk, referring to the cycles of day and night and the 365-day solar calendar;
- the entire design is encircled by the sky and the starry heavens;
- and at the center, as if to underscore the need for human sacrifice is a central deity, with a sacrificial knife protruding from his mouth and talons on either side of his face grasping human hearts.

This magnificent sculpture belongs to what George Kubler (1943) termed the Metropolitan School of Aztec art. These monuments are distinguished by their large size, complex iconography, fine design and craftsmanship (Kubler 1943, Nicholson 1971, Pasztory 1983; Umberger 1996). The style coalesced during the mid-fifteenth century, shortly after the Aztecs established their regional dominance, and it ended less than a century later with the Spanish conquest in 1521. Despite its short duration, the number of pieces belonging to this style is "prodigious" (Nicholson and Keber 1983:26), and stylistic development within the tradition was rapid (Pasztory 1983:143).

However, the origin of Aztec imagery is something of a mystery. While Aztec sculptors duplicated certain sculptural forms from the ancient city of Tula (where the Aztecs carried out excavations to recover Toltec remains), Tula's sculpture is little concerned with solar imagery, which is so important in Aztec art. However, archaeological research at Xaltocan, a provincial town 20 miles north of Mexico City/Tenochtitlan has yielded many images that express solar and cyclical themes with compositional forms and symbols that closely resemble Aztec art. These images appear on small decorated spindle whorls recovered from domestic contexts at Xaltocan. This evidence suggests that Aztec imagery did not originate in the state-sponsored art of large urban centers of central Mexico; rather, its composition and symbolic language were developed in everyday household contexts, probably by women pursuing their craft of cloth production.

Cloth production and spindle whorls at Xaltocan

Cloth was woven from two fibers in Aztec Mexico. One was fiber extracted from the leaves of the maguey, a plant that was extensively cultivated in the cold, high plateau surrounding Tenochtitlan, the Aztec capital. The other was cotton, which does not grow in the highlands but which could be obtained from warmer lands in Morelos and Puebla. The maguey or cotton fibers had to be spun into thread they were woven. The spinner worked by hand, drawing the fibers out and twisting them into thread using a wooden spindle. The spindles were weighted with perforated ceramic disks that prolonged the spindle's rotation. These perforated ceramic disks are called spindle whorls. Spinning thread by hand was very time-consuming; spinning requires two or three times the hours of effort for each hour devoted to weaving (Berlo 1991:451). Large,

¹ In accord with Western science, the Aztecs perceived that entropy is that natural state of things, and order requires energy.

heavy spindle whorls were used to speed the production of maguey fiber thread, but smaller, lighter spindle whorls were used to twist shorter cotton fibers (Parsons 1972; McCafferty and McCafferty 2000). In Xaltocan, both large and small spindle whorls are present, suggesting that both fibers were spun².

The spinners were probably women. Cloth production in Aztec Mexico was strongly gendered female. New born baby girls were presented with the symbols of womanhood: "the spinning whorl, the batten, the reed basket [for unspun cotton], the spinning bowls, the skeins, the shuttle, her little skirt, her little blouse" (Sahagún 1950-82 bk. 6, ch.37, p.201). And a woman's weaving equipment was placed with her when she died (Sahagún 1950-82 bk. 2, ch.33, p.138). Spinning and weaving served as metaphors for women's experiences with pregnancy and childbirth, and female deities were depicted with spinning and weaving tools (Klein 1982; Sullivan 1982; McCafferty and McCafferty 1991). We have very little information about who produced cloth in the pre-Aztec era at Xaltocan, but spindle whorls and needles appear in some infant burials and women's graves, suggesting that cloth production was a female activity (De Lucia 2004).

A careful consideration of spindle whorl decoration at Xaltocan suggests that the composition and design motifs of pre-Aztec spindle whorls anticipate the style and themes of Aztec Metropolitan art. On this basis, I suggest that the Aztec state drew heavily upon these domestic conventions to develop its own striking artistic style.

Xaltocan—A Pre-Aztec Center

Xaltocan lies in the Northern Valley of Mexico (Fig. 1). It has been occupied from 900 CE to the present, including occupational remains dating to the Early, Middle, and Late Postclassic, and the colonial and republican periods. Sixteenth-century documents state that during the Early and Middle Postclassic (900-1350 CE) Xaltocan was an important regional center, the capital of Otomí-speaking people in southern Hidalgo and the northern Valley of Mexico. (Alva Ixtlilxóchitl 1975-77 I:423. II:299: see Carrasco 1950). In 1395. Xaltocan was conquered by its neighbor Cuauhtitlan, which received the help of its allies, Azcapotzalco and Tenochtitlan (Anales de Cuauhtitlan 1945:50). In 1395, Xaltocan fell under the control of the Aztec Triple Alliance and in 1521 Xaltocan was defeated by Cortés, his Spanish army and native allies, initiating the colonial period (Cortés 1971:118). Our archaeological

research has focused on the changes in daily life in Xaltocan which accompanied transformations of the regional political economy (Brumfiel 2005). The deep stratigraphy in Xaltocan, very rare in other parts of the Valley of Mexico, has helped us define those changes.



FIG. 1. The Valley of Mexico during the Aztec period, showing the locations of Xaltocan, Tenochtitlan and other important towns

Spindle whorl designs and solar cycles

I examined 96 decorated spindle whorls from Xaltocan. Most of these spindle whorls were recovered from the lower, pre-Aztec strata at Xaltocan, with dates of AD 900-1430. In higher strata representing the Aztec empire (AD 1430-1521), more than three-quarters of the spindle whorls were undecorated, a point to which I will return. Decorated spindle whorls were found in houses on living floors, in domestic refuse, and in five cases, in burials. The decorations were mold-made impressions, and they sometimes bear traces of the paint that must have covered their molded designs.

To define the possible meaning of these designs, I considered two aspects of spindle whorl decoration: design composition and design motifs. Texts and pictorial documents from the early colonial Mexico provide guidance for the meaning of these symbols.

With regard to composition, two-thirds of spindle whorls have a design divided in four parts, with motifs distributed symmetrically in the four quarters of the disk. Archaeologist Constanza Vega Sosa (1984) has

 $^{^2}$ Seventy-one of these decorated spindle whorls (74%) are large, that is, they weigh 20 g or more and have diameters of at least 38 mm. They would have been used for maguey fibers. Twenty-five of the decorated spindle whorls (26%) are small, that is, they weigh 16 g or less, with diameters of 34 mm or less. They would have been used for cotton.

suggested that quadripartite divisions in Aztec art represent the four quarters of the universe, the conventional way of imagining space in Mesoamerica (see Gossen 1974; Tedlock and Tedlock 1985). Vega Sosa argues that the four quarters were defined by lines emanating from the inter-cardinal directions, defined by the points on the horizon where the sun rises and sets at the summer and winter solstices. Vega Sosa concluded that these quadripartite compositions demonstrated an interest in and a concern for the daily and annual cycles of the sun.

Probably, the quadripartite composition of spindle whorls also indicates an interest in the sun and its movements. Two-thirds (71 cases) of the spindle whorls in the Xaltocan sample are divided into four or eight parts which might refer to the cardinal and intercardinal directions with their solar associations. The other spindle whorls either have undivided design motifs (5 cases), or a dual division (4 cases), or a division in three or six parts (8 cases), or in five parts (2 cases), or in seven parts (1 case), or in ten or more parts (9 cases). The spindle whorls with undivided design motifs bear animal motifs (vultures, frogs, the mythical *cipactli*, and a plumed serpent). The spindle whorls with five parts are decorated with pentagrams (what we would call stars, but in ancient Mesoamerica, a circular symbol was used to represent stars). The spindle whorls with seven or ten or more parts bore designs that consisted of a series of dots or swirls or flower petals. Spindle whorls with three or six parts had the same motifs as spindle whorls with four or eight parts. It is to these motifs that we now turn.

The design motifs seem to cluster according to four themes: (1) solar energy, (2) the spatial and temporal order of the universe, (3) the creation of this order, and (4) cyclical or rotary movement.

Flowers constitute one common motif, present on 16 of the decorated spindle whorls (Fig. 2a). Flowers have been associated with the Xochiquetzal (whose name means flowery quetzal feather). Xochiquetzal was the goddess of spring, flowers, love, feminine sexuality and the patron of embroiderers (Díaz Cíntora 1990; McCafferty and McCafferty 1999; Lopéz Hernández 2005). Thus, we might conclude that the spindle whorl designs were focused on women's sexual and reproductive powers.

But this interpretation would be too narrow. Flowers had very broad symbolic meanings in prehispanic thought. Specifically, flowers referred to the sun, heat, light, fire, and life (Velasco and Nagao 2006). Flowers had the many associations because they were associated with *tonalli*, the divine energy that sparked life in all living things: plants, animals, and human beings (Hill 1992). In defense of an interpretation of flowers as manifestations of *tonalli*, we might cite the many other spindle whorl designs that refer to the sun. For example, six spindle whorls are decorated with flowers and sun rays (Fig. 2b), making a design that resembles the glyph *ollin*, which refers both to the movement of the sun and to the era of the fifth sun, the present creation (Vega Sosa 1984:153).



FIG. 2A-B. Spindle whorls with flowers, above a simple flower, below a flower adorned with sun rays (drawings by Laura Jordan).

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Another spindle whorl is decorated with only sun rays, another with the symbol *ihuitl* (Fig. 3a), a symbol of the day, and a third spindle whorl is decorated with a four-petal flower, the Maya glyph *k'in*, also a symbol of the sun (Fig. 3b).



FIG. 3A-B. Spindle whorls with sun symbols, above an *ihuitl*, a day symbol (drawn by Laura Jordan), below a spindle whorl with a k'in, the Maya sun glyph (drawn by Elizabeth Brumfiel).

Two spindle whorls are decorated with a complicated sun disk motif, surrounded by a ring of what might be the petals of flowers or feathers of the solar eagle (Fig. 4). Two other spindle whorls lack the sun disk but have a ring of petals or feathers.



FIG. 4. Spindle whorl decorated with possible flower petals or plumes of the solar eagle (drawn by Laura Jordan).

A second grouping of motifs is related to the spatial and temporal order of the universe. For example, six spindle whorls are decorated with a quincunx motif (Fig. 5a), crossed diagonal lines that connected the four inter-cardinal points of the universe, the points defined by the rising and setting of the sun during the summer and winter solstices. In eight other cases, two lines cross the central perforation of the spindle whorl, dividing it into four parts that represent the four quarters of the universe (Fig. 5b).





FIG. 5A -B. Spindle whorls with four-part divisions, above the quincunx, below the four quarters of the universe (drawings by Laura Jordan).

A third grouping of spindle whorls refers to the creation of the universe, of time, and of the sun. For example, one spindle whorl is decorated with portraits of Quetzalcoatl and Tezcatlipoca, the creators of the five successive suns. Two spindle whorls are decorated with the *cipactli* symbol, the first day of the *tonalpohualli*, the 260-day ritual calendar (Fig. 6). On the day *cipactli*, the sun began to move, initiating the sequence of days of the *tonalpohualli* (Sahagún 1950-82 bk.7, ch.2). Seven other spindle whorls are decorated with dots or concentric circles which might represent the succession of days, that is, daily suns. The number of dots or circles varies between four and twelve.



FIG. 6. Spindle whorl with a cipactli, the first day of the ritual almanac (after Enciso 1971:19).

Finally, the most common motif in the spindle whorls from Xaltocan is the *xicalcoliuhqui*, the step-fret spiral (Fig. 7). The *xicalcoliuhqui* occurs on 27 decorated spindle whorls $(31\% \text{ of the decorated whorls})^3$. In

almost all cases, they occur in groups of four. Both Zelia Nuttal (1901) and Constanza Vega Sosa (1984) suggest that the *xicalcoliuhqui* refers to movement, and the groupings of four suggest that they might have referred to annual cycle of the sun through its summer and winter solstices. Perhaps we should accept a very generalized interpretation of the *xicalcoliuhqui* as representing movements and cycles of all types, including the rotation of the spindle whorl, itself, as it produced its thread. Both the spiral motif and the rotating spindle whorl might have represented all the cycles of the current universe, all the patterns of movement and change that sustained life in all its varied forms.



FIG. 7. Spindle whorl with the xicalcoliuhqui, step-fret spiral with rectangular sides, a symbol of cyclical movement (drawn by Laura Jordan).

Discussion

Spindle whorl designs can be interpreted in a series of ways, some narrow and concrete, others broad and abstract. For example, there are important associations between flowers, sexuality, and the acts of spinning and weaving (McCafferty and McCafferty 1991; Sullivan 1982). Very likely, the women of Xaltocan were aware of these associations and the act of

³ Zelia Nuttal (1901) noted the presence of two types of step-fret spirals in ancient Mexico, spirals with round sides and spirals with

straight sides. She believed that the spirals with round sides were associated with the above, with moving air and water, while spirals with straight sides were associated with the earth, night, and darkness. Vega Sosa (1984) accepts this interpretation but suggests that both types of spirals were related to the movement of the sun: the day-time sun in the case of spirals with round sides and the nighttime sun (passing through the bowels of the earth) in the case of spirals with straight sides. But this interpretation is not entirely consistent with the characteristics of the motif as it occurs on the Xaltocan spindle whorls. On these spindle whorls, all the spirals have straight sides, that is, there is no alteration of day and night signaled by spirals with round sides and spirals with straight sides.

spinning with spindle whorls decorated with flowers evoked reflections on their sexuality. Flowers were also connected with an array of symbols representing *tonalli*, divine energy (Hill 1992, Taube 2006). Currently, some residents of traditional Mesoamerican communities believe that *tonalli* is an essential component of successful craft production. They believe that this energy is necessary in order to produce several products transformed by heat, including fired ceramics, slaked lime, and the proper maturation of an *in utero* fetus (Monaghan 2001). In addition, *tonalli* also makes possible artistic achievement. For example, Huichol women offer sacrifices to the son in order to acquire the force that allows them to produce high-quality textiles (Schaefer 2002).

At a more abstract level, spindle whorls referred to the energy that drove the regular cycles of the universe and thus sustained life. The most important were the sun's cycles which showered the earth with tonalli and defined the limits of the cosmos and marked the passage of time (Gosden 1974:22). We have seen that the designs on spindle whorls were related to various aspects of the sun and its energy: orderly cyclical movement, divine energy, the four-quarters of the universe, and the creation of the spatial-temporal order. The popularity of these themes suggests that the women of Xaltocan were interested in abstract and large scale cosmological concepts. In addition, the motives which appear on spindle whorls (for example the *xicalcoliuhque*, the *ihuitl*, the *k'in*, the quincunx) indicate that the women of Xaltocan possessed substantial knowledge of Mesoamerica's symbolic vocabulary.

We don't expect prehispanic women to have such cosmological interests. Western tradition assumes that women's thought and action is confined to the hearth and patio, that is, the domestic sphere. Evidently, our Western expectations are mistaken with respect to the Early and Middle Postclassic women of Xaltocan. These cosmological interests were probably nourished by the uncertain markets and unstable politics of central Mexico prior to Aztec dominance. This economic and political instability encouraged households forge inter-household alliances to even out fluctuations in household well-being. The preferred mechanism for doing so was inter-household feasting, as guided by the 260-day ritual calendar, which linked household affairs with cosmic processes, but that is another story (Brumfiel 2004, 2007).

From the Home to the State

Many artistic conventions that appear on the spindle whorls of pre-Aztec Xaltocan are duplicated on sculptures later produced under the patronage of the Aztec state. This suggests that women were an important source of the symbols and ideology used by the Aztec state to construct its legitimacy.

The Aztec state sponsored two types of circular sculptures. The simpler of the two was the ring of the ball court, the *tlachtemalácatl* (Matos 2002). Its circular form duplicates the circular form of spindle whorls. Like the central perforation in a spindle whorl, the ball court ring had a central perforation through which the rubber ball passed to score a goal. A tenon on the edge of the ring permitted its suspension from the wall of the ball court. Among the surviving ball court rings, one is carved with the motif of an eightpetal flower which more or less duplicates on a grand scale the spindle whorls with flowers that we see in Xaltocan. Another bears a series of 16 dots surrounding its central hole. Others are engraved with sun rays. Since the Mesoamerican ballgame had sacred meanings linked to life and death, the sky and the underworld, the presence of celestial and solar motifs on these rings is not surprising. What is surprising are the similar motifs and composition shared by the ballgame rings and the spindle whorls.

Another form of sculpture produced under the patronage of the Aztec state was the *temalacatl*, a monumental sculpture that supported the enemy warrior during the gladiatorial sacrifice (Matos and Solís 2004). In some cases, the center of the sacrificial stone was perforated to permit the passage of a cord used to tie the captive to the stone during his ritual battle. In other cases, the sacrificial stone had a central hollow to collect the blood of the sacrificial victim after his battle. The central perforation or hollow of the sacrificial stone was analogous to the central perforation of a spindle whorl. The upper face of the sacrificial stone was engraved with the sun disk, a multi-part composition. Around the central hole, the sacrificial stone bore several concentric circles, many times enclosing a row of dots that symbolized the succession of days. Outside the concentric circles, eight solar rays marked the cardinal and inter-cardinal directions. Outside of this, engraved eagle plumes adorned the border.

The central perforations, rows of dots, sun rays, and eagle plumes are all found on spindle whorls. The only motif that is present on these sculptures and ball court rings that does not appear on spindle whorls is the handles of blood-letters used in self-sacrifice (Matos and Solís 2004). The handles of blood-letters are positioned between the solar rays of the cardinal directions.

The solar disk was also present on the *cuauhxicalli*, stone bowls that were receptacles for the hearts of sacrificed captives. The solar disk also appeared ceremonial seats and sculptures of the *xiuhmolpilli*, the bundle of 52 sticks that commemorated the completion

of a calendrical cycle of 52 years (Matos and Solís 2004). All these objects played important roles in ritual activities that communicated the themes of state ideology, that is, cosmic struggle, war, sacrifice, and imperial expansion.

Thus, the official art of the Aztec state shared several motifs and rules of composition with the spindle whorls of Xaltocan, but the spindle whorls are older than all the Aztec sculptures. Some of the spindle whorls in our sample antedate the Aztec monuments by four centuries. Therefore, we have to consider the possibility that sun symbolism and some related concepts were developed by Postclassic women and later appropriated by the Aztec rulers⁴. This is not supposed to happen.

Since the time of Robert Redfield, anthropologists have argued that ideas and ideology diffuse from the upper classes to the lower classes. Redfield (1940) believed that Great and Little Traditions existed in agrarian class societies, and he envisioned ideas flowing from the Great Tradition of the urban elite toward the Little Tradition of the rural peasants. But, with regard to the culture of Madagascar, Susan Kus and Victor Raharijaona (2000) argue that the state sometimes finds it useful to appropriate ideas from the family and the home. By appropriating household symbols, state rulers can hope to transfer to themselves the deep sentiments and familiar ideas of domestic life. In this way, Kus and Raharijaona suggest, rulers strengthen their legitimacy.

Kus and Raharijaona do not consider the difficulties of appropriating the already familiar symbols of everyday life for use by the state, but such difficulties might be anticipated. The process might be especially difficult when the symbols must be regendered in the process, say from female-associated spindle whorls to maleassociated warfare. How was this accomplished? Marie Louise Sørensen (2000) observes that performances are the key to endowing material objects with cultural meaning. The repetitive association of objects with females or males, acting out narratives of female or male action, supplies the context for engendering objects.

The two sculptural forms we have just examined, ballcourt rings and sacrificial stones, were the center of attention in just such a narrative. The ball game featured two opposing teams of male warriors (the forces of light and darkness) battling for control over the ball (a symbolic sun), a metaphoric reprise of the battle for a life-sustaining cosmos. The gladiatorial sacrifice was a contest between an enemy captive and an Aztec warrior, the latter fighting with a sword edged with obsidian blades and the former fighting with a sword edged with feathers. Again, this was a metaphoric battle between male warriors, but in this case the outcome was predestined, as was the destiny of the Aztec people, to triumph as imperial rulers and protectors of cosmic order.

Conclusion

The case of Aztec Mexico seems to conform to the model provided by Kus and Raharijaona. Solar symbolism, originating in household contexts in the familiar act of spinning thread for clothing, was transformed into state art. The small scale of the spindle whorl with its intimate symbolic idiom was magnified on monumental sculpture in order to proclaim the necessity of war ad sacrifice, activities that resulted in conquest, tribute, and the perpetuation of the class system. We see in the case of Postclassic Mexico that activities dominated by state elites were justified with symbols and ideas rooted in the daily routines of women. In the process, the symbols and ideas changed their meaning, but at the same time, they were enriched by the meanings and sentiments of their native soil.

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⁴ Of course, this idea would be more credible if it were possible to demonstrate that women were the ones who decorated the spindle whorls with solar motifs. It is unlikely that the women who used the spindle whorls that we find in Xaltocan were actually the ones who produced them because we have recovered very few molds for spindle whorls at the site. In contrast, Nichols et al. (2000) report a concentration of almost 100 molds for large spindle whorls in a limited area of Otumba, a Late Postclassic site in the northeast corner of the Valley of Mexico. In Otumba, the molds were associated with basalt scrapers used to extract maguey fibers from fleshy leaves, which implies that those who produced the spindle whorls also participated in the preparation of the maguey fibers, including spinning the fibers. In addition a complete assemblage of domestic ceramics was found in this area, suggesting that the production of spindle whorls and spinning maguey fibers occurred in a household setting. Thus, it is probable that the women who lived in these domestic units participated in the design of the spindle whorls. This also suggests that although the majority of women did not engage in spindle whorl production, they nevertheless determined spindle whorl design in an indirect way through these purchase of spindle whorls with one design or another.

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