Exploring Social Organization Through the Built Environment: Cosmological
Foundations for Power at Paquimé, Chihuahua, Mexico

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ABSTRACT

The Cosmological Foundations of Power in Northern Mexico: Ritual Dynamics at
Paquimé, Chihuahua, Mexico

By
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This research asks how cosmology informs hierarchical relations in non-state

societies. I investigate how hierarchy was constituted during the Medio Period at

Paquimé, in northern Mexico, and how we might move archaeological interpretations of

hierarchy away from wealth-based models. In this work hierarchy is conceptualized as

different levels of encompassment. I suggest that hierarchy is based on ritual knowledge

and the ability to mobilize important ritual symbols. To answer these questions I conduct

cross-cultural comparisons with Mesoamerica and the U.S. Southwest, and an intra-site

spatial and contextual analysis of artifacts and architectural features from the late

prehistoric site of Paquimé in Chihuahua, Mexico. During the time period of A.D. 1200-

1400/1450, known as the Medio Period, Paquimé became one of the largest settlements

in northwest Mexico. Despite this fact, the social systems that operated at this time are

still largely unknown. Based on theories that demonstrate the house is both a flexible

social group and as well as a physical structure, I argue that architecture and the

associated material is representative and constitutive of social differentiation. The central

hypothesis being, social hierarchy at Paquimé will be reflected in intra-site spatial

patterns of key elements of ritual knowledge and practice. Based on cross-cultural

comparisons with Mesoamerica and the U.S. Southwest, five variables were identified

that would yield information on both social groups and cosmology. Analyses were

conducted on distributions of macaws, shell, turquoise, raised platform hearths, and

central posts using Global Information Systems (GIS) software. My research

demonstrates the presence of the broad cosmological principle of color/directional

symbolism was used to express hierarchical difference. Three levels of intrasite

hierarchy were identified. By making ritual central to political negotiations, this

dissertation seeks to contribute to the ongoing discussion of the role ritual played in the

broad-scale changes seen across the U.S. Southwest/Mexican Northwest during late

prehistoric times, as well as broader discussions of how archaeologists view ritual in the

prehistoric past.

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Introduction: The Cosmological Foundations of Power in Northern Mexico: Ritual Dynamics at Paquimé, Chihuahua, Mexico

The late prehistoric era in northern Mexico saw the growth of one of the largest settlements in the area. Along with areas to the north in the U.S. Southwest and to the south in Mesoamerica, in northern Mexico the late prehistoric time was an era of rapid change, with new forms of social organization and ritual practices. In addition to a shift in architecture and material culture patterns, people began to occupy settlements that were much larger than in previous time periods. These changes culminated in the building of the site of Paquimé, the largest settlement in the area. In the course of understanding the role Paquimé played in the larger region and beyond, I assess the role ritual played in these changing social dynamics. I use alternative theories to evaluate the evidence of ritual at Paquimé and the role it played in hierarchy at the site.

In societies across the ancient world, incipient leadership and centralization were founded on connections to the cosmological through ancestors, origins, and other ritual practices (Chang 1983; Freidel and Schele 1988; Freidel et al. 1993; Helma 1998; Kolb 1994; Richards 1996; Stanton and Freidel 2005). I argue that this was part of the foundation for the centralization we see at Paquimé during the Medio Period. Further, based on ideas from house theory and discussions of inalienable goods, I suggest that this process involved inscribing those links to the supernatural onto the architecture, thereby making built space a cosmogram or microcosm of the broader cosmology (Errington 1989; Lok 1987; Weiner 1992).

This study not only addresses the interrelation of cosmology and hierarchy at Paquimé, but also contributes to the broader discussion in archaeology about the role of

ritual and cosmology in prehistoric social organization. Cosmology is the framework within which society is organized. To understand prehistoric indigenous societies, we must understand the cosmology of these societies, and, in turn, how that cosmology shaped social interaction. By taking a holistic approach and emphasizing the relationship between artifacts and architecture, rather than one over the other, I identify broad cosmological principles that shaped hierarchy at Paquimé society. Looking at particular artifacts, such as shells and turquoise, along with architectural features such as posts and hearths, I demonstrate how these items are ritually important, and how their use at Paquimé can speak to the role of ritual in hierarchical relations during the late prehistoric period.

First, some key terms need definition. Hierarchy as used here draws upon the work of Louis Dumont (1981). Dumont (1981:66) discusses hierarchy as "the principle by which the elements of a whole are ranked in relation to the whole." Dumont (1981:76) goes on to develop this part-whole relationship into the notion of encompassment: "that which encompasses is more important than that which is encompassed, just as a whole is more important than its parts." This is how hierarchy is conceptualized in this work—as the whole that encompasses smaller parts. This idea is echoed in Gillepie's (2000a) discussion of Mayan nested houses. The parts in this case can be smaller versions of the overarching whole, as in the Aztec concept of the cosmological city, in which each *calpolli*, or neighborhood, is a smaller manifestation of the sacred city center, and simultaneously mirrors the organization of the city as a whole (Carrasco 1981, 1990; Van Zantwijk 1981). One way to conceptualize this notion of

hierarchy is as a set of Russian nested dolls or Matryoshka dolls, each encompassing and holding within itself a smaller, complete version of itself.

Dumont's (1981) further discussion of hierarchy leads to another important term used throughout this dissertation: cosmological principles, which are broad, overarching ideas related to cosmology that structure supernatural beliefs or doctrines (Marcus 2007). These principles structure the whole. This term includes concepts of the supernatural as integral to a specific cultural worldview. As Dumont (1981:260) notes, "The essential 'function' of hierarchy [is that] it expresses the unity…whilst connecting it to what appears to it to be universal, namely a conception of the cosmic order." Cosmological principles are the expressions and material manifestations of the cosmic order. As used here, the term references ideas of ancestors, origins, and color/directional symbolism. This conception of hierarchy focuses on the cosmology as an avenue for understanding social relations. In terms of Dumont's (1981) discussion of hierarchy, understanding social organization requires understanding the part-whole relationship.

One last concept, the ritual attractor, is helpful for identifying important locations that mark hierarchical difference. A ritual attractor is an idea put forward by Fox (1993) to identify locations of repeated ritual offerings and, thus, ritual build-up over time. Fox (1993) suggests that a ritual attractor is a feature of a house that gets elaborated and becomes a source and representation of hierarchical relations. Often these features are the focus of multiple ritual activities and offerings over time, and thus build up layers of sacra. As a location of contact between worlds and a pathway of communication with the forces necessary for the continuation of life, these locations are powerful tools used to demonstrate difference. The members of society who have the knowledge to access, or

perform rituals associated with a ritual attractor thus have the perceived power associated with this symbol. A ritual attractor "encodes difference" between elite and non-elite, but also between different social groups in general (McKinnon 1991).

Helms does not specifically refer to a ritual attractor as such, but I suggest she does address a similar idea, and identifies items used and found at ritual attractors. Helms (1998:165-166) states that to establish permanence and demonstrate their ability to communicate with, and therefore harness, powerful outside forces, elites must cultivate durability with potent symbols. These symbols can establish the connection to the ancestors and thus demonstrate primogenitor status as well as establish durability, which ensures continuation. Potent symbols such as bones come to be curated and provide "tangible durability:"

> The manipulation of durable tangible objects that embody various mystical powers and, by their durability, keep these powers available, controlled, and harnessed for considerable periods of time…So it is that the skeletal remains, especially the long bones and skulls, of the dead,…are essential elements of many house rituals (Helms 1998:165).

Along with long bones and skulls, stones and other hard objects are often used to ensure continuity. Durable objects make durable houses. These concepts are useful in discussing hierarchy at Paquimé and other mid-range societies.

A New Approach to Ritual at Paquimé

Ritual in archaeological interpretations is an amorphous area of study. While studies focusing on ritual are becoming more common (Kirch 2000; Marcus 1978, 2007; Mock 1998; Plog 2003; Taube 1998; Walker 2002), it is difficult to find a clear trajectory from one body of theory about ritual to another. Unlike the clear move in archaeology

from cultural history approaches to processual and post-processual interpretations, ritual in archaeology has a less linear trajectory.

To address how ritual was used in non-state societies in northern Mexico and how ritual played a part in social organization, I use a body of theory that demonstrates how the ritual, economic, and political domains of society are intertwined (Gillespie 2000a, 2000b; Kirch 2000; Mills 2004). House theory and theories of inalienable goods help discern broad cosmological principles that structure ritual practices.

Cosmological Principles at Paquimé

The cosmological principles identified here are the concepts of color/directional symbolism, origins, and ancestors. These principles structure hierarchical relations by providing or creating authentication for a leader's power and position. Throughout the U.S. Southwest and Mesoamerica, the regions to the north and south of Paquimé, color/directional symbolism is a prevalent cosmological principle that structured all aspects of society and was intimately tied to leadership (DeBoer 2005; Marcus 2007; Ortiz 1969). This concept of a quadripartite universe with colors associated with the directions has been noted to be common to all members of the Uto-Aztecan language family:

> Within the Uto-Aztecan language family, for example, there were hunter
> -gatherers, egalitarian village societies, chiefdoms, and states. All believed in a
> rectangular universe divided into four quadrants, each associated with a different
> color. This cosmological principle can always be seen, whatever the complexity
> of the Uto-Aztecan society (Marcus 2007:50).

Unfortunately, we do not know what language was spoken at Paquimé, but all the cultures surrounding it today, including the Tararhumara (Rarámuri) to the south and east,

speak a Uto-Aztecan language. Thus, I consider this a useful structuring cosmological principle that can help explain prehistoric rituals in the area.

Ancestors and origins are basic cosmological ideas that are seen throughout the world (Barrett 1990; Freidel and Schele 1988; Freidel et al. 1993; Helms 1998). In many (if not most) non-Western societies, ancestors played an active part in daily life. They were invoked for crop prosperity and fecundity, imparted sacred knowledge, and were often consulted on important decisions that affected the whole group. The act of communicating with ancestors was usually a highly ritualized act, and one that was repeated in highly circumscribed contexts. This provides a context in which archaeologists are likely to find material markers of these events. If ancestors are links to sacred knowledge, then those who can communicate with the ancestors will have access to this knowledge. Therefore, these people will have the secrets of life itself.

In this study I use cross-cultural and ethnographic comparison to demonstrate how these concepts of color/directional symbolism, ancestors, and origins are used and expressed and how they inform social organization. I then discern these cosmological principles at Paquimé to ascertain how ritual was employed during the late prehistoric period at this seminal site.

Organization of Dissertation

This dissertation first contextualizes Paquimé through a discussion of the history of research. The theory chapter follows the history of research chapter and establishes a framework for analysis. The theory chapter thoroughly addresses the specifics of house theory and inalienable goods. I then set up a model of relevant cosmological principles based on ethnographic and cross-cultural comparisons. This is followed by analysis of

different classes of artifacts and architectural features at Paquimé that were identified in the ethnographic and cross-cultural analyses. The artifact analysis chapters are followed by an investigation of posts and raised platform hearths. Lastly, these chapters are further contextualized in a discussion and conclusions chapter.

Conclusion

Using the published and unpublished data provided by Di Peso and his colleagues, I attempt to (1) identify the material markers of the cosmological principles of color/directional symbolism, ancestors, and origins that were operative at Paquimé during the Medio Period; (2) identify locations of ritual events that may be evidence for ancestor communication and/or locations with connections to origins; and (3) identify how these ritual aspects shaped social organization at Paquimé.

Ritual is often difficult to assess in the archaeological record because of its multilayered nature. I would argue that is because ritual in non-Western societies, specifically among the indigenous peoples of the Americas, was fundamental to the fabric of society and thus difficult to parse. Ritual organized most activities and the world itself, and was thus ever-present. In these cultures, there was no separation of sacred and secular. Paradoxically, archaeologists have ample evidence of ritual in the archaeological record. Here I attempt to offer an example of a fruitful approach for interpreting ritual in archaeology—specifically, how cosmology and hierarchy are intertwined at the late prehistoric site of Paquimé.

Chapter 2: Paquimé and the History of Research

The site of Paquimé has been of interest since the first Spanish explorers came

across its large ruins in the sixteenth century. The massive walls and mounds were the

subject of intermittent exploration until the late 1950s, when Charles C. Di Peso of the

Amerind Foundation and Eduardo Contreras of the Instituto Nacional de Antropología e

Historia (INAH) conducted full-scale excavations. Since then, work in the region has

been conducted in bursts followed by several years of inactivity. This is due in part to the

fact that much of the work done by archaeologists in Mexico has focused on the larger

Mesoamerican sites far to the south. The amount of work being done in this region has

increased in recent years, helping us to understand the broader regional picture. In this

chapter I will first provide a description of Paquimé, including a discussion of important

issues related to the dating of Paquimé, I then outline the work conducted at this

preeminent site.

Paquimé and the Surrounding Environs

Paquimé is located in the northwestern portion of Chihuahua, Mexico (Figure 2.1)

in the basin and range topography of the Chihuahua desert. Immediately to the west is

the Sierra Madre Occidental mountain range. Much of the rainfall for this semi-desert

grassland region occurs during the summer months of July through October (Hard et al.

1999).

Paquimé's location on the west side of the Río Casas Grandes, east of the Sierra

Madres, and just north of the confluence of the Río Palanganas and the Río Piedras

Verdes (which join to become the Río Casas Grandes), puts the site in the middle of

arable land and diverse resources. The agricultural conditions in this area supported
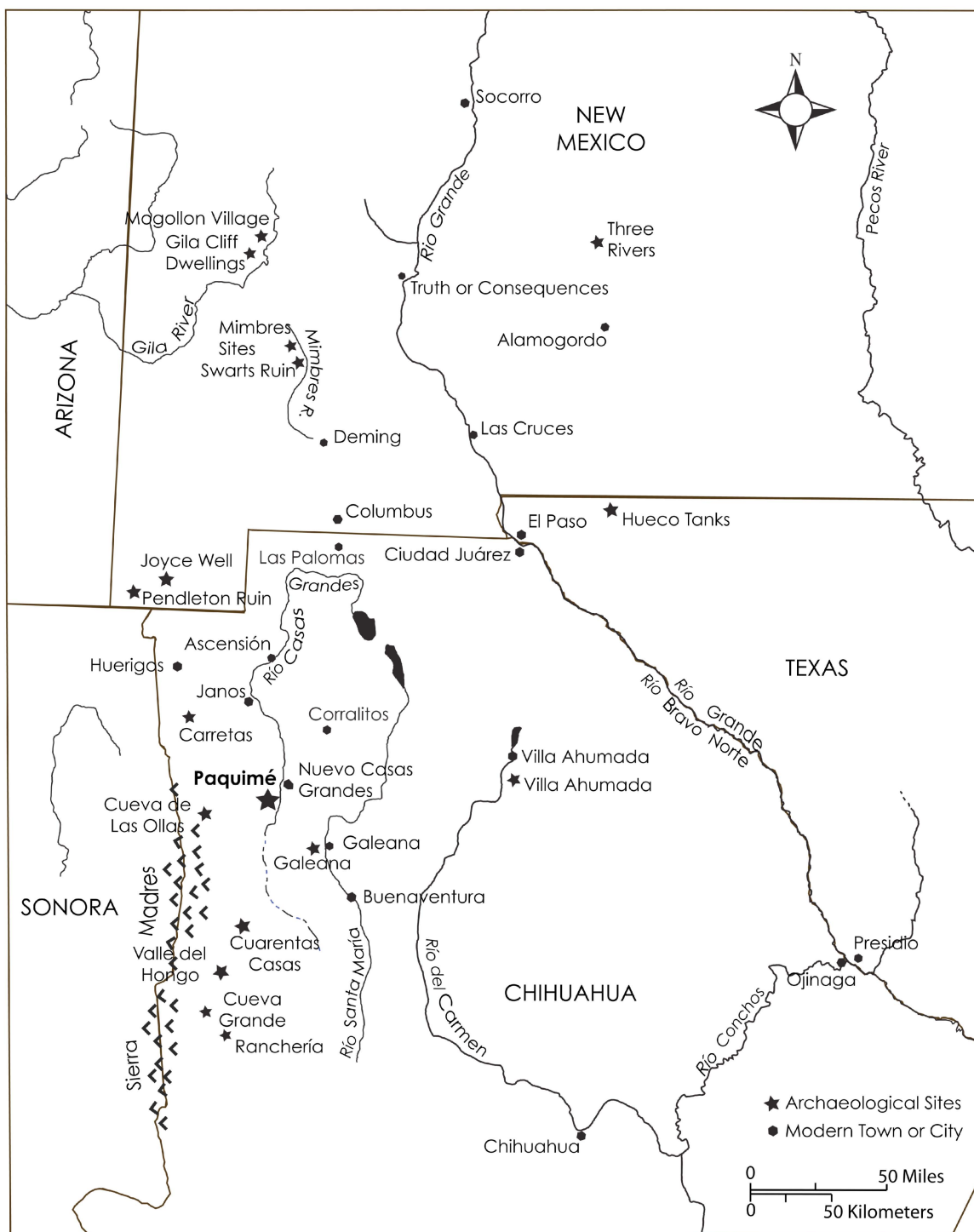
Figure 2.1: Map of the Casas Grandes region

maize crops, agave harvesting, and possibly cotton (Di Peso et al. 1974:2; Minnis et al.

2006). In the area surrounding Paquimé, such as site 242 and Cerro de Moctezuma, there

is extensive evidence of agricultural terraces used to increase the soil depth and
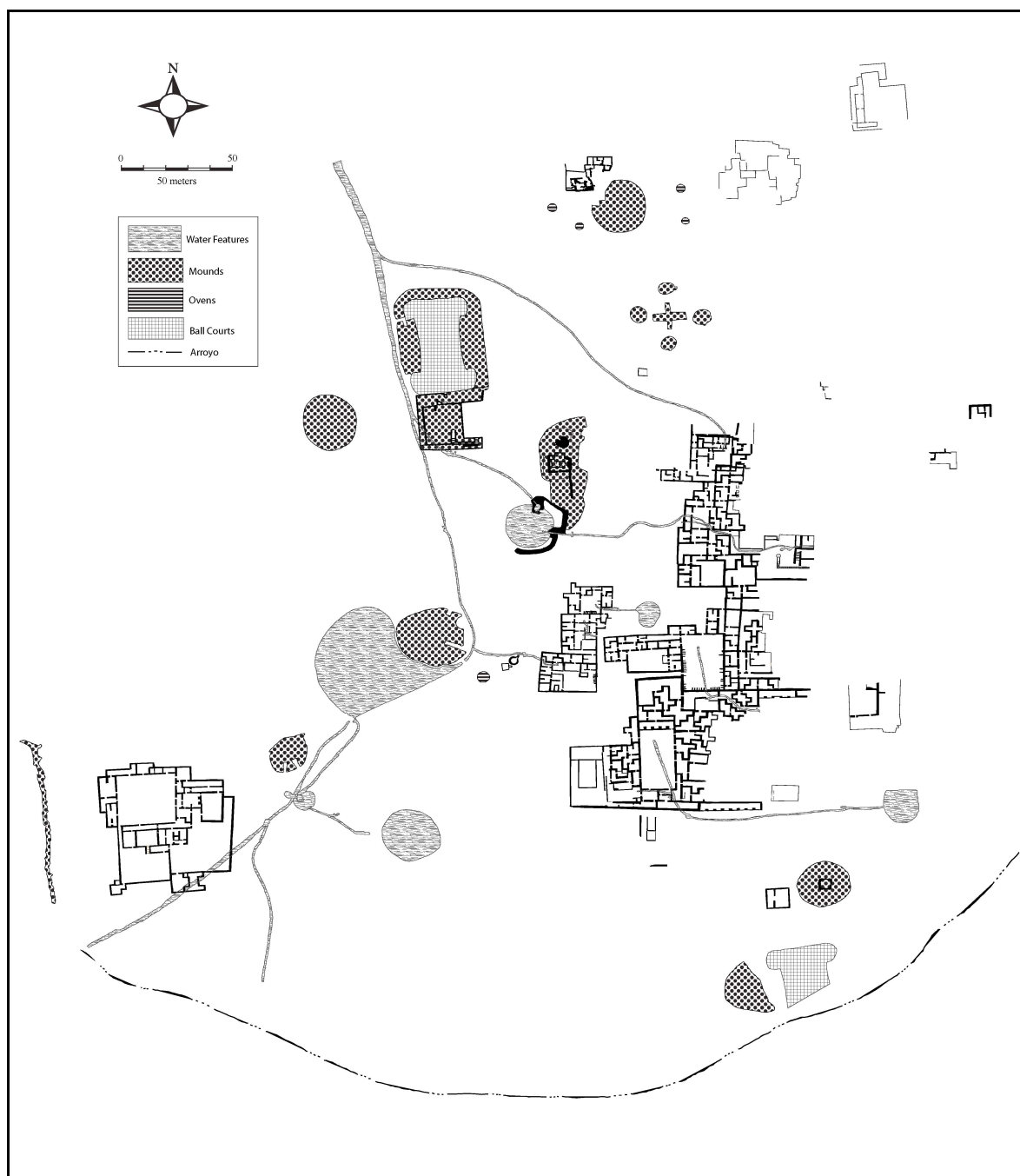
Figure 2.2: Paquimé, redrawn from Di Peso (Figure 285-5)

quality (Minnis et al. 2006; Pitezel 2007, 2011). In addition to agriculture, subsistence was augmented by hunting deer, bison, rabbits, and other mammals and birds, as well as gathering wild plant materials (Di Peso et al. 1974:2).

In this region, Paquimé is the largest site by an order of magnitude of ten (Whalen and Minnis 2001a). However, this site is most likely not as large as Di Peso originally suggested, as several researchers have questioned the existence of a multistory roomblock on the eastern side of the site (Phillips and Bagwell 2001; Whalen et al. 2010). Size is not the only thing that sets Paquimé apart. The diversity of the architecture, both public and private, and the artifacts found distinguish it from other sites in the region. This diversity of architecture, especially the quantity of public architecture, is unique in the region and suggests that leaders were able to organize labor to build these features (Whalen and Minnis 2001b). Public architecture at Paquimé was found in the form of platform mounds, large roasting ovens, public water reservoirs, and ball courts (Figure 2.2). Most of the public architecture is on the west side of the site, with the habitation rooms on the east side.

The array of public architecture at Paquimé has been noted since Di Peso excavated the site. Paquimé is unusual for the number and diversity of forms of public architecture, which included platform mounds, plazas, ball courts, and large ovens. There were multiple instances of each of these forms of public architecture of varying sizes and elaboration.

The platform mounds are the most prominent form of public architecture at Paquimé. Most were found on the west side of the site (Figure 2.2), with some on the north end. There were eighteen platform mounds altogether, in various shapes and sizes.

All of the mounds together used 11,924^{3}m of earth and rubble building material (Di Peso et al. 1974:4:270). The mounds were built using a solid dirt core with a stone retaining wall around the outer edges, which was then plastered (Di Peso et al. 1974:4:270). These mounds were effigy mounds of various shapes, ranging from the serpent mound to simple circular mounds. While most of the mounds were simple platforms with no architecture on top, the Mound of Offerings, or Unit 4, had structures that had been built into the southern part of the mound.

The Mound of the Offerings (also called Unit 4) was an oddly shaped mound that was almost a half-circle, with the flat side facing east. This mound is an important feature and will play a role in the interpretations set forward here. Built into the side of this mound were six rooms within an enclosed chamber. These rooms are unique not only because of their location within a platform mound, but also because of their contents: five burials, three of which were secondary urn burials in large Ramos polychrome jars, in addition to long, shallow pits dug into the floor containing many offerings and other evidence of ritual activity.

In addition to the platform mounds, Paquimé has at least five large roasting ovens, most of which are more than two meters in diameter (Figure 2.3). Given the size and volume of these ovens, they were most likely used to prepare food for large groups of people for feasting events (Minnis and Whalen 2005). Di Peso and his colleagues found charred logs along with burnt agave leaves in these ovens, demonstrating that they were used to prepare agave on a sizeable scale. These ovens suggest feasting on at least a site-level scale, if not a larger regional scale (Minnis and Whalen 2005). These ovens also

suggest that the sharing of food was a key aspect in creating and maintaining social

relations of various kinds on a large scale.
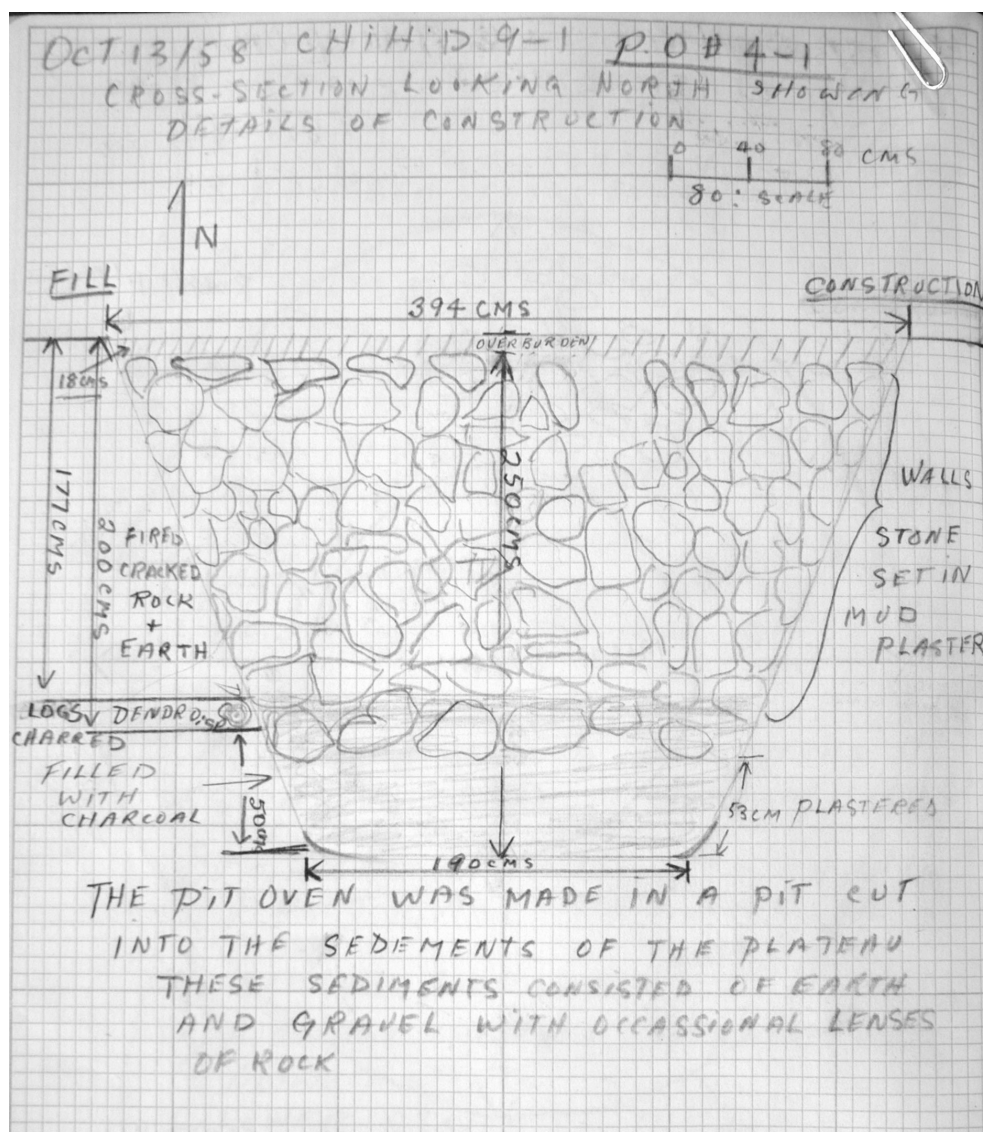
Figure 2.3: Profile drawing of one of the large roasting (pit) ovens (Field notebook 3, p. 30. Courtesy of the Amerind Foundation INC).

Along with the ovens and platform mounds, Paquimé had an extensive water

control/distribution system that included canals, internal channels, reservoirs, settling

tanks, and a walk-in well. This system brought water in from the Ojo Vareleño spring

three kilometers from the site. Water from this natural spring was brought to the site via

a long canal, and was then held in two separate reservoirs. From these reservoirs, the water traveled out through the site by small stone-lined channels that passed under the room floors. The water features were often accompanied by offerings of turquoise, shell, and, in some cases, human bones.

Another important form of public architecture are the formal, I-shaped ball courts. The largest and best example of this kind of architecture at Paquimé is on the northwestern side of the large central plaza. The second clear example is at the southern edge of the site. Unfortunately, the arroyo that borders the southern side of the site has eroded at least half of the ball court away.

In addition to the diverse architecture and unique artifact assemblage, Paquimé may be best known for its avian burial assemblage. Paquimé had extensive evidence of aviculture that involved turkeys, scarlet macaws, and military macaws. Turkeys were the most abundant, with 344 remains. What is most interesting about these birds is that more than 85% of the remains were in prepared burials, and 220 of the turkeys were buried headless (Di Peso et al. 1974:8:269). Additionally, while turkey was considered a food source in other areas of the Southwest, at Paquimé the faunal remains of these birds suggest that they were not used as a food source (Di Peso et al. 1974:8:273). Thus, ritual use at Paquimé centered on their feathers and using the birds themselves as sacrifices. One of the other most abundant bird species found was the scarlet macaw or *Ara macao,* with 322 birds found. This species is not indigenous to the area and comes from regions 500 km to the south. Like the turkey, the majority of the macaws were found in prepared burials—usually multiple burials—and often included a military macaw.

These birds were not just captured or traded; they were also raised at the site. Evidence in the form of eggshells, skeletal bird remains from all age ranges, and bird pens indicate that these birds were raised at the site. Paquimé is the only site in the U.S. Southwest/Mexican Northwest with such extensive evidence of avian husbandry. Although macaws and turkeys have been found throughout the U.S. Southwest (Breitburg 1993; Hargrave 1970), no other site has the quantity found at Paquimé, or the extensive evidence for raising them. Facilities for raising these birds were found in internal plaza spaces and, to a smaller degree, scattered throughout the habitation rooms.

The habitation architecture at Paquimé has an almost dizzying array of variety. There is a great diversity of shapes and sizes in the habitation rooms at Paquimé (Figure 2.4). The average room size is 21.88 m^2, with a standard deviation of 18.18 m^2. Rooms range in size from 1.18 m^2 to 121.12 m^2. The habitation rooms are found in four discontinuous groups across the site (Figures 2.2 and 2.4). Within the separate room blocks are several enclosed plazas of varying size.

Paquimé is also widely known for the contents of a few of the rooms in the main room block. The large quantity of trade items such as shell, macaws, and Salado polychromes has drawn much attention to this site. The presence and quantity of these trade items (for example, more than four million pieces of shell) have been used to suggest Paquimé was a trading depot, moving materials both north and south (Di Peso et al. 1974:2). Other studies have adopted a more nuanced interpretation of the economic importance of Paquimé by focusing on the specialized production of certain items (Minnis 1988; VanPool and Leonard 2002).

Figure 2.4: Aerial view of Paquimé (Di Peso 1974:2:291, Figure 1-2).

Here I hope to add to previous studies by identifying the ritual importance of certain items and demonstrating that the control of ritual was as important as the economic control of production (Minnis et al. 2006). I focus on the later occupation of the site, or the Medio Period; however, the site's chronology has long been debated, due to Di Peso's (1974:4) initial and controversial temporal interpretations.

Chronology

Currently accepted dating in northern Mexico puts the Viejo Period at around A.D. 700-1150/1200 and the Medio Period at A.D. 1150/1200-1450 (Figure 2.5). This is a departure from Di Peso's original dates for the site. Di Peso dated the occupation of Paquimé from around A.D. 1060-1400s, with the main occupation being in the 1000-1100s (Di Peso et al. 1974:4). This was in direct opposition to well-documented ceramic cross-dating of Salado polychromes found at the site (see below). Di Peso's chronology was based mainly on tree-ring dates from in situ beams found in several rooms. Uncertainty about these tree-ring dates arises from the nature of the samples. All of Di Peso's samples, except for two, consisted of only heartwood, which means that all of the sapwood or outer rings (i.e., cutting dates) were missing (Dean and Ravesloot 1993) due to the processing and shaping of the beams by the Paquimé inhabitants. Therefore, almost no cutting dates were available from the samples. Dean and Ravesloot (1993) and Dean et al. (1995) have reevaluated and recalculated Di Peso's samples and shifted the main occupation to 140 years later than Di Peso suggested. Dean and others put the beginning of the Medio Period at around A.D. 1200 and lasting until A.D. 1450 (Dean and Ravesloot 1993; Dean et al. 1995).

Di Peso also broke the Medio Period down into three shorter internal phases. Dean and Ravesloot (1993), in addition to shifting the entire Medio Period 140 years later than Di Peso, argue that Di Peso's phase distinctions *within* the Medio Period cannot be supported. They state that

> the revised tree-ring dating of Casas Grandes has certain inescapable implications for the dating of the Medio period and its constituent phases. The degree of overlap in estimated felling dates assigned to Buena Fe (A.D.1253-1306 to A.D.

1359-1413) and Paquimé (A.D. 1224-1277 to A.D. 1419-1473) contexts, and the range of dates from Buena Fe- Paquimé contexts (A.D. 1218-1271 to A.D. 1390-1444) suggest that we may be dealing with a single unit rather than sequential phases. This inference is supported by the lack of patterning in the ceramics and tree-ring dates from contexts whose phase assignments were determined primarily on the basis of architectural evidence. Therefore, it may be more realistic to ascribe the dates only to the Medio period and not attempt a phase breakdown. (Dean and Ravesloot 1993:96)

Therefore, I address the Medio Period as whole rather than continuing to use Di Peso's internal phase designations. Additionally, it is likely that much of the building at Paquimé happened later in its occupation sequence, possibly reaching a peak around A.D. 1300 (Whalen and Minnis 2001a).

Di Peso's Chronology		Revised Chronology
Plainware	A.D. 200 – 700	A.D. 300 – 700
Viejo		Viejo
Convento Phase	A.D. 700 – 900	A.D. 700 – 1150
Pilon Phase	A.D. 900 – 950	
Perros Bravos Phase	A.D. 950 – 1060	
Medio Period		Medio Period
Buena Fe Phase	A.D. 1060 – 1205	
Paquimé Phase	A.D. 1205 – 1261	A.D. 1150/1200 - 1450
Diablo Phase	A.D. 1261 – 1340	
Tardio Period		
Tardio Period	A.D. 1340 – 1656	

Figure 2.5: Chronology of Casas Grandes Region, from Hendrickson 2003:5

One of the main pieces of evidence that put Di Peso's original chronological assignments into question from the start was the presence of a fairly large number of Salado polychrome bowls. These bowls were found in room 18, Unit 8, on the middle

and bottom stories. The presence of these ceramics is important, as they have been

fairly securely dated to the late 1200s through the 1300s at other locations in the

American Southwest (Crown 1994:18-20). Salado polychrome is a ceramic design style

that appeared and rapidly spread throughout much of the U.S. Southwest/Mexican

Northwest (SW/NW, from this point forward) during the late thirteenth century (Adams

1991; Crown 1994; Simon 1998).

The label Salado polychrome includes three main variants of slightly differing

design styles: Pinto, Gila, and Tonto polychromes. The most common vessel form for all

three variants is the bowl. They are most often slipped red on the outside and white on

the inside, with black designs painted on the white interior surface. Some variants have

black designs on the red-slipped exterior as well. The Salado style crosscut many

cultural boundaries in the Southwest, which made it a unique phenomenon. Additionally,

sourcing studies have shown that this style was made at many locations throughout the

Southwest, and therefore was not exclusively a trade item (Crown 1994). Thus, the ideas

and knowledge about the designs were being traded in addition to the pots themselves

(Adams 1991; Crown 1994).

The recalibrated dates from Paquimé posited by Dean and Ravesloot (1993) and

Dean et al. (1995) correlate with dated samples of Salado polychrome from other sites,

and are now the accepted date range for the Medio Period. Due to the apparent

consistency in internal Medio Period dates and the lack of support for smaller phase

distinctions, I treat the Medio Period as a whole.

Although Di Peso's original internal Medio Period divisions have mostly been

rejected, new evidence from excavations in the region suggest that the Medio Period can

be broken down into Early Medio and Late Medio phases (Whalen and Minnis 2009).

Through survey and excavation, Whalen and Minnis have created the most extensive data

set for sites in the region immediately surrounding Paquimé. Using C^{14} dates from secure

floor contexts, Whalen and Minnis (2009:67-69) identify an Early Medio phase, which

begins slightly prior to A.D.1200 and ends around A.D.1300, and a Late Medio phase,

which begins around A.D. 1300 and ends around A.D. 1450. Adding ceramic evidence,

specifically frequencies of the Ramos polychrome ceramic type from stratified midden

deposits, Whalen and Minnis (2009:115-118) are able to refine the Late Medio phase into

tentative Late Medio I and Late Medio II phases. The Late Medio I phase is tentatively

placed in the late 1200s or early 1300s, ending in the middle 1300s, and the Late Medio

II phase begins in the middle of the 1300s and ends in the middle to late 1400s (Whalen

and Minnis 2009:118).

Before considering more detailed excavations in northern Mexico, it is important

to provide an overview of what constitutes the transition from the Viejo (old) Period,

approximately A.D.700-1150/1200, to the Medio Period, A.D. 1150/1200-1450, at

Paquimé and in the surrounding region. Thus, I will give a brief description of the

identified changes in architectural styles and ceramics that mark this temporal shift before

providing a detailed discussion of important work done at Paquimé.

Viejo to Medio Transition

The data for the older Viejo Period (A.D. 700-1150/1200) come almost

exclusively from the Joint Casas Grandes Project (JCGP) conducted by Di Peso and his

INAH colleagues. Although the main focus of the JCGP was Paquimé itself, they also

excavated Viejo Period settlements at the Convento site and the Reyes sites 1 and 2 in

addition to the Viejo occupation that underlies the later Medio occupation at Paquimé.

The most accepted indicators of Viejo Period occupation are round to semi-round,

pithouse-style architecture and Red-on-Brown bichrome ceramics.

Ceramics that are diagnostic of Viejo Period occupation consist of bichrome

ceramics of red paint on a light brown paste. The designs on these ceramics were almost

exclusively geometric, and sometimes the painted designs were accompanied by incised

designs (Di Peso et al. 1974:6; Van Pool 2003:91-102). The decrease in and eventual

disappearance of the Red-on-Brown bichrome ceramic style and rapid increase of

polychrome types is one marker of the shift to the Medio period (Di Peso et al. 1974:6).

The most common polychrome types, Ramos and Babicora, consist of red and black paint

on a white, or almost white, paste. In addition to the shift from bichromes to

polychromes, there is also an increase in anthropomorphic and zoomorphic designs and

effigy vessels (Di Peso et al. 1974:6; VanPool 2003:91-92).

The architectural shifts seem to have been as dramatic as the ceramic design

shifts. The Viejo Period is characterized by semi-subterranean pithouses. These houses

were roughly circular in shape and loosely organized around the site. At the Convento

site only there was a large, centrally located communal structure that was at least twice as

large as the other structures (Di Peso et al. 1974:4). The change to the Medio Period is

marked by a shift from these semi-subterranean structures to ground-level, adobe room-

block structures and a marked increase in public architecture in the form of ball courts,

platform mounds, and ovens. This is similar to the change seen throughout much of the

northern Southwest (Plog 1997; Rocek 1995). In addition to changes in ceramics and

architecture, it appears that Medio Period sites are larger than earlier Viejo sites, and

earlier Viejo Period sites often underlie larger, later Medio Period sites (Whalen and

Minnis 2001a, 2003).

Early Accounts

Early European and American explorers provided only sporadic observations

regarding Paquimé. Although the settlement had possibly been occupied as late as the

fifteenth century, the first European visitors to Paquimé saw only ruins. The first known

description of Paquimé comes from Balthazar de Obregón, who traveled with Francisco

de Ibarra around 1565 (Di Peso et al. 1974; Hammond and Rey 1928; Stuhr 2002).

Obregón's description is worth quoting at length, given it is one of the earliest

descriptions of the site and provides a sense of what remained as of 1565-1567:

> This large city….contains buildings that seemed to have been constructed by the
> ancient Romans. It is marvelous to look upon.…This city is located in some
> fertile and beautiful valleys surrounded by splendid and rich mountains and small
> mountain ridges. It is situated on the shores of the river, below Paquimé. This is
> the most useful and beneficial of all the rivers we found in those provinces. Its
> shores are covered with beautiful and tall poplars, willows, and savins. It can
> readily and at little cost be utilized for irrigating the fertile shores. There are
> many houses of great size, strength, and height. They are of six and seven stories,
> with towers and walls like fortresses for protection and defense against the
> enemies who undoubtedly used to make war on its inhabitants. The houses
> contain large and magnificent patios paved with enormous and beautiful stones
> resembling jasper. There are knife-shaped stones which supported the wonderful
> and big pillars of heavy timbers brought from far away. The walls of the houses
> were whitewashed and painted in many colors and shades with pictures of the
> building. The structure had a kind of adobe walls. However it was mixed with
> and interspersed with stone and wood, this combination being stronger and more
> durable than boards.
> There were great and wide canals which they used to carry water from the river to
> their houses. They have spacious and broad estufas under their houses and
> buildings to protect themselves from the cold weather which is greatly felt there,
> as it snows a large part of the year (Hammond and Rey 1928:205-206).

This description notes the fertile and verdant conditions of the Casas Grandes valley due

to the Rio Casas Grandes that flows just east of Paquimé. We can also get a sense of the

size of the site, although the statement of buildings that stood six and seven stories is undoubtedly an overestimation; there is no archaeological evidence of buildings this high. I also find it interesting to note the canals coming from the river. While these canals surely irrigated fields as well, Obregón noted that the canals ran all the way to the structures, probably to meet up with the complex of interior canals that ran under the room floors. However, the eastern portion of the site has not been excavated, so this cannot be substantiated. Additionally, the area along the river has been heavily occupied and farmed in modern times, thus making the discovery of prehistoric canals unlikely.

John R. Bartlett (1854) provided another early description of Paquimé during his time with the U.S./Mexico border commission between 1850 and 1853. His 1854 publication described his visit and minor excavations at the site (Bartlett 1854:347-365). Bartlett reported seeing three large mounds with walls standing, in some places, 20 feet above the mounds. The mounds were connected with low points that were either single-story sections or plazas in between single-story sections (Bartlett 1854:353). Bartlett also stated that the region immediately surrounding the site of Paquimé itself was covered with evidence of smaller sites:

> The plain for some distance south, I was told, was covered with traces of old buildings; but they were mere heaps, without a distinct form to show the nature of the original structure. In the valley they are also found. Garcia Conde also mentions a second class of ruins, which are very numerous along the margin of the Casas Grandes and Janos rivers, for a length of twenty leagues and a breadth of ten. (Bartlett 1854:359-360)

Following these early descriptions, researchers visited the area in the early 1900s (Blackiston 1906; Lumholtz 1973[1902]), and again in the mid-twentieth century with more systematic surveys. The earliest studies of the area took the cultural historical

approach of defining boundaries and chronology through ceramic identification (Blackiston 1906; Brand 1933, 1935; Carey 1931; Lister 1946; Noguera 1926; Sayles 1936). Often these projects, as well as more recent ones, focus on the origins of the regional Casas Grandes culture (Carey 1931; Lekson 1999; Noguera 1958, 1975; Sayles 1936; Whalen and Minnis 2003), and seek to determine whether the changes identified as the shift from the Viejo to Medio Period were a result of influence from the Pueblo area to the north, Mesoamerica to the south, or a local development. I ascribe to a point of view shared by many who work in the region, that Paquimé was a local development but had extensive ties to both the north and south. The nature of these connections is still open to debate.

The Joint Casas Grandes Project (JCGP)

When studying hierarchy in the U.S. Southwest/Mexican Northwest, one must include a discussion of Paquimé and the Joint Casas Grandes Project directed by Charles C. Di Peso of the Amerind Foundation and Eduardo Contreras of the INAH. This project included three full years of excavation at the site of Paquimé and several other sites in the surrounding area (Di Peso 1974:1-3; Di Peso et al. 1974:4-8). The data from these excavations were published in an eight-volume set and have been the foundation for many subsequent studies of the area (Di Peso 1974:1-3; Di Peso et al. 1974:4-8). The first three volumes consist of Di Peso's interpretations of Paquimé, and the last five contain the excavation data.

The excavators focused on the western portion of the site of Paquimé in order to uncover as much of the public architecture as possible. They unearthed 18 platform mounds; five large, public roasting ovens; at least two I-shaped ball courts; and more

than 300 habitation rooms (including all stories). The excavation areas were divided

up into large units. The larger unit designations are not culturally meaningful (Di Peso et

al. 1974:4:128), but helped maintain spatial control during excavations. These larger

units contained many habitation rooms; each room was excavated as a single excavation

space. Within each room the fill was divided into general room fill, floor fill, and floor.

The general room fill contained material from upper stories that had collapsed, along with

fill from the first-story room. The floor fill consisted of the 10 cm immediately above the

floor, and the floor level included material in direct contact with the floor (Di Peso et.al

1974:4:128). The current study uses only material in the floor fill and floor level, as

these were the only levels that had securely in situ artifacts.

For obvious reasons, Di Peso's interpretations of Paquimé are still influential in

studies of northern Mexico. His excavations were the largest ever undertaken in the area.

His sound excavation methodology provided detailed data with good provenience.

Several studies, including this one, have been able to use these data to arrive at new

interpretations. However, Di Peso's interpretations have not been so widely accepted.

Like many interpretive frameworks, Di Peso's ideas polarized the existing argument

about the origins of Paquimé.

The two ends of the spectrum of this argument propose that the growth of this

large site during the Medio Period was produced by influence either from the Pueblo

region to the north or Mesoamerica to the south. There are a limited number of scholars

who argue for a local development in part or in whole (Carey 1931; Whalen and Minnis

2003). Di Peso proposed a Mesoamerican origin for the site of Paquimé. Specifically, he

suggested that Toltec *pochteca* traders migrated north and settled in the area, causing a cultural renaissance of sorts (Di Peso 1974).

Based on the quantity of traded items uncovered at Paquimé during his excavations, such as shell, macaws, and foreign-style ceramics, Di Peso (1974:2:330-332) argued that Paquimé thrived as a trading depot under the tutelage of these Mesoamerican traders who sought to control northern resources. Thus, for Di Peso, the social changes that mark the transition from the Viejo Period to the Medio Period were caused by Mesoamerican cultural influence.

To legitimize this rapid cultural change, Di Peso suggests that the *pochteca* traders also imposed their belief system. Specifically, Di Peso argues for the presence of the religious complexes involving Quetzalcoatl, Xiuhtecutli (god of fire), Xipe Totec (fertility deity), and Tlaloc (god of rain; Di Peso 1974:2:548-569). However, outside of the plumed serpent images, the evidence for these deities is scarce. Plumed serpent images were common on the ceramics at Paquimé, however this image was also found throughout Mesoamerica and the American Southwest, where it had many different meanings. Thus, these images may not translate as a direct representation of the Mesoamerican deity Quetzalcoatl in the manner that Di Peso suggests.

While several researchers have worked to fill in the regional picture, other scholars have looked to different artifact and feature classes to understand the social dynamics at Paquimé. Here I continue to use Di Peso's data and undertake a study of often-overlooked features, and hope to add to our understanding of the ritual dynamics at Paquimé. Di Peso's excavations provide some of the most complete data on Paquimé, and continue to be valuable source of data for this region.

Beyond the Joint Casas Grandes Project (JCGP)

After Di Peso's original work, there was a long hiatus before further work was conducted in the area. Much of the recent work has focused on a regional approach to add to our knowledge of the region immediately surrounding Paquimé. Scholars who have conducted some of the most extensive studies in the area suggest that Paquimé is the primate site in a centralized, but only semi-hierarchical, polity (Whalen and Minnis 1996, 2001a, 2001b). Through survey and excavation work, Whalen and Minnis (1996, 2001a, 2001b, 2009) have shown that Paquimé is the largest site in what appears to be a four-tier site-size hierarchy. Their analysis suggests that the polity had direct influence over a fairly small area (within 30 km of the site), with diminishing intensity of interaction as one moves farther from the site (Whalen and Minnis 2001a, 2003).

Additional effort has been concentrated in river valleys to the east of Casas Grandes and in areas on the southern border of the Casas Grandes region (Cruz Antillón, et al. 2004; Kelley et al. 2004; Whalen and Minnis 2001a, 2003). Research in the river valleys to the east—the Río Santa María and Río del Carmen—undertaken by Cruz Antillón, Leonard, and others, has focused on the excavation of the sites of Galeana, Villa Ahumada, and Casa Chica. This research reinforces the idea that Paquimé is unique in the area (Cruz Antillón et al. 2004; Cruz Antillón and Maxwell 1999). The work of Cruz Antillón and others suggests that, similar to Whalen and Minnis's conclusions, Paquimé may not have exerted direct control over a large area (based on architectural and artifactual similarities). Additionally, their work suggests that there are few trade items at these sites compared to Paquimé; therefore, Paquimé does appear to be the final destination for much of the trade goods coming into the area (Cruz Antillón, et al. 2004).

As this work continues, discussions of the relation of Paquimé to sites in the nearby river valleys will do much to increase our understanding of the region.

These studies are beginning to elucidate the relations between Paquimé and the surrounding region, and they continue to support early interpretations of Paquimé as being central in the region. However, they do not address the internal dynamics of Paquimé itself. Several recent studies have examined Paquimé in detail in an attempt to understand this seminal site. For the remainder of this chapter, I concentrate on these studies to outline our present understanding.

Mortuary Treatment at Paquimé

The importance to my research of mortuary studies at Paquimé, in addition to the importance of particular mortuary remains, necessitates a brief description of the burial data. Di Peso and his colleges uncovered 576 burials at Paquimé, 477 of which were deliberate interments (Di Peso et al. 1974:8; Ravesloot 1988). Burial treatment at Paquimé was immensely variable. Burials included single and multiple primary inhumations, along with both single and multiple secondary burial treatments. There were also many body orientations and positions. Locations ranged from under room floors, under plaza floors, or in plaza drains, to a limited number of secondary burials in jar urns on top of platform mounds. Grave goods also varied widely, from no grave goods, to a single pot, to large quantities of ceramics, beads, and other goods. While it seems that the multiple burials tended to have the most grave goods associated with them, at first glance there do not appear to be other patterns.

Ravesloot (1988) conducted one important study on Paquimé mortuary remains using Di Peso's published data in an attempt to discern patterns in the immense burial

variability at Paquimé. Using Principle Components Analysis (PCA), Ravesloot

argues that ascribed hierarchy was operational at Paquimé during the Medio Period

(Ravesloot 1988). The base assumptions are (1) that grave goods are equivalent to social

status; (2) that children with grave goods (or if grave goods cross-cut age categories) will

be indicators of ascribed or inherited hierarchical positions, as they would not have had

time to earn or achieve the status indicated by the associated grave goods and (3) if grave

goods are found only with adults, status is achieved rather than inherited (Ravesloot

1988).

Ravesloot defined 43 burial variables in his study, and measured

presence/absence for 39 of them in his PCA (Ravesloot 1988:48, 58; see Table 5.8, p. 48

for a full list of variables). These 39 variables included several categories of body

position, primary versus secondary interment, location (plaza or room), sealed or

unsealed pit, orientation, single versus multiple interment, and nine kinds of associated

grave goods (Ravesloot 1988:48). Once the dimensions or groups of correlated variables

were identified, he then plotted them against age. Ravesloot generated principle

components for the 39 variables, and found that the first 10 components accounted for

80% of the variability between the graves with his defined variables. He isolated three

dimensions (dimensions one, two, and three), or groups of correlated variables, that were

significant (it is uncertain what percentage of variation the first two dimensions account

for; Ravesloot 1988:59-60). To give just one example (see Ravesloot 1988:60, Table

6.2), dimension one (the first axis of variability) was positively correlated with eight of

the original 39 variables: Ceramic hand drums with grave, burial vault, multiple burial,

room subfloor tomb, legs frogged, secondary burial, polychrome ceramics present, and

rare accompaniments. Only 2.9% of the burials in the total sample were positively

correlated with dimension-one variables (Ravesloot 1988:60, Table 6.4).

Using these three dimensions of variability, Ravesloot argues that status

distinctions were based on a combination of ascribed and achieved hierarchy. He plotted

the component scores of dimensions one, two, and three by age in Table 6.6 and argues

that dimension one variability was based on ascribed hierarchical difference and

dimension two variability on achieved hierarchical difference (Ravesloot 1988:64-67).

However, the frequency (and percentages) of infant, child, juvenile, or adolescent (i.e.,

basically all sub-adult age categories) burials that were positively associated with

components one and two were about even (Ravesloot 1988:64, table 6.6). Thus, if

assignment of ascribed hierarchy is based, in large part, on the number of sub-adult

burials with burial treatment that indicates status, Ravesloot's distinction between

ascribed and achieved hierarchy is uncertain. Overall, it appears that the concept of

achieved versus ascribed hierarchy may not be a useful way to characterize the nature of

hierarchy at Paquimé.

With Ravesloot's study, the immense variability of burial treatments becomes

apparent. We see that the burials in units 4 and some in unit 13 correlate with more grave

goods and unique treatment, but beyond that there seems to be too much variability to

discern clear patterns. Alternatively, the variables or burial traits that Ravesloot selected

for his analysis may not be indicators of status in the way he argues.

In his dissertation research, Rakita (2001) also used mortuary patterns to argue for

increased social differentiation from the Viejo to Medio Period transition. This argument

was based on what Rakita identified as an increasing number and diversity of grave

goods through time. He suggested that there was an emergence of elites during the

Medio Period, based on the existence of expensive graves. In Rakita's evolutionary

framework, these changing burial patterns mark a shift from shaman-based ritual

practices to a more institutionalized role for priest-leaders.

Rakita also identified changes in the location of burials through time. He noted

that during the Viejo Period, the most common location for burials was under plaza floors

or in abandoned rooms. Rakita stated that towards the end of the Viejo Period and the

beginning of the Medio Period, the preferred burial location had shifted to inside, under

room floors, then moved back to plazas in the later Medio Period (Rakita 2001:274-275).

Also, by the mid- to late Medio Period, there was a significant difference between the

grave goods associated with plaza burials and those associated with interior-room burials

(Rakita 2001:278). Rakita also found that burials inside structures had a greater number

and diversity of grave goods than burials in plazas.

As part of his argument for an increased hierarchy, Rakita contends that the shift

to interior burial locations indicates an increased concern with privacy or restricting

access to burial rituals. Thus, Rakita argues, elites were able to separate themselves from

others, and institutionalize their rank through ritual.

Two issues addressed by Rakita are of particular importance to this study. First,

he identified the secondary urn burials in the Mound of the Offerings as possible

ancestors, positing their ancestor status as the reason for both the secondary treatment and

the unique elaboration of the burial site. Second, Rakita identifies locations of ritual

revisitation, which appear to have had multiple offerings made over time. He noted that

the "tomb" burials, or wood-plank-covered graves that contain multiple burials, were

likely locations of multiple ritual visits and offerings, as well as the rooms on top of the Mound of Offerings associated with urn burials (Rakita 2001:311-313, 2006).

I agree with Rakita's interpretation of these locations as important sites that were ritually revisited; however, he disregards an important location that has long been known to be ritually important: a hand-dug well located in the central part of the site. Concerning the well in Unit 8, Rakita states: "Alternatively, the scatter of ceremonial items found along the stairway into the underground well below plaza 3 in unit 8 was probably strewn there accidentally sometime just prior to the abandonment of the site" (Rakita 2001:313). When Di Peso and his colleges excavated this feature, the stairway was covered with hundreds of ritual items such as turquoise inlaid conch shell trumpets, stone statues, bone awls, and more. Given the quantity of items in the stairwell of the well, I find it highly unlikely that this deposition was accidental, and would agree more with Walker's (Walker and Lucero 2000; Walker 2002) contention that this was an intentional ritual deposition.

Here I build on Rakita's work and expand the discussion of ancestors to include origins and other cosmological principles. I suggest the Paquimeans were cosmographers and demonstrate how built space became layered, extending beyond burials, to manifest difference and hierarchy.

Ceramics and Ideology

Additional evidence used to understand ritual and cosmology at Paquimé includes the design elements on the Ramos polychrome vessels. Using these vessels, VanPool (2003a, 2003b) has proposed that shaman-priests ruled Paquimé. Based on human effigy vessels and polychrome (mostly Ramos polychrome) design elements, VanPool (2003a)

suggests that these were shaman-priests who held positions of power in Paquimé society. The Ramos polychrome vessels were by far the most elaborately decorated vessels during the Medio Period in northern Mexico. The designs consisted of complex geometric, anthropomorphic, and zoomorphic designs laid out in clearly delineated panels (Figures 2.6 and 2.7). The geometric designs included elements of triangles, hooked triangles, steps/terraces, running circles with dots, and checkerboard bands, to name a few. VanPool used geometric zoomorphic, and anthropomorphic design elements in her study. Contrary to Rakita, VanPool does not see a shift from non-institutionalized, shaman-based ritual practices to more institutionalized priest-based practices, but rather sees a social position of leadership that combines the attributes of both shamans and priests—the shaman-priest.

VanPool argues that certain designs on Ramos polychrome vessels depict what can be construed as a shamanic journey: the passage to an altered state that allows a shaman access to the supernatural. This shamanic practice, VanPool argues, was depicted in Ramos polychrome designs of individuals with head dresses and in positions that would indicate dancing or flying (see Figure 2.7; VanPool 2003a, 2003b; VanPool and VanPool 2006). In addition, VanPool suggests that the human effigy vessels that depict men smoking represent shamans in the ritual process. Thus, the effigies and polychrome design elements are evidence for the presence of specialists in shaman ritual at Paquimé.
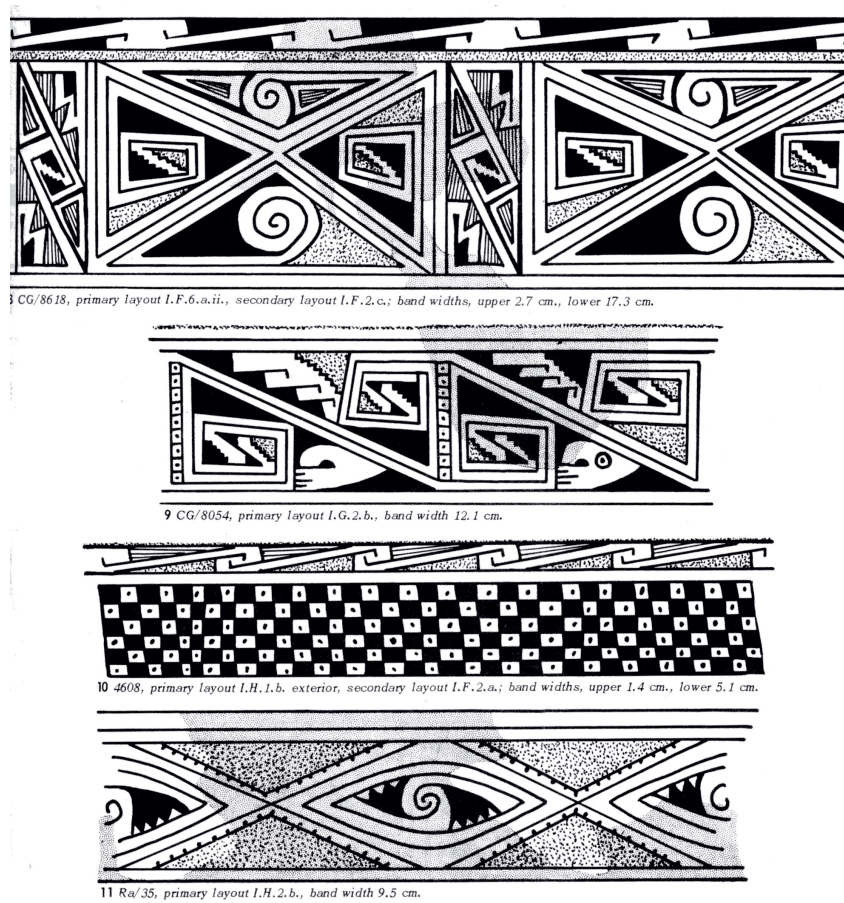
Figure 2.6: Examples of Ramos polychrome geometric designs, from Di Peso et al. 1974:6:263, Figure 290-6.

I would not necessarily argue that this is false, but rather that this view of a cosmology that involves upper and lower realms is so common—and VanPool's characterization so general that it is not helpful in understanding Paquimé society. VanPool interprets the paneled layout of the geometric designs and the dual-headed

53 *4002, primary layout I.J.1.a.ii., band width 13.9 cm.*

54 *CG/6137, primary layout I.J.2.b.ii.,* *band width 28.2 cm.*

55 *CG/3642, primary layout I.J.2.c., band width 11.4 cm.*
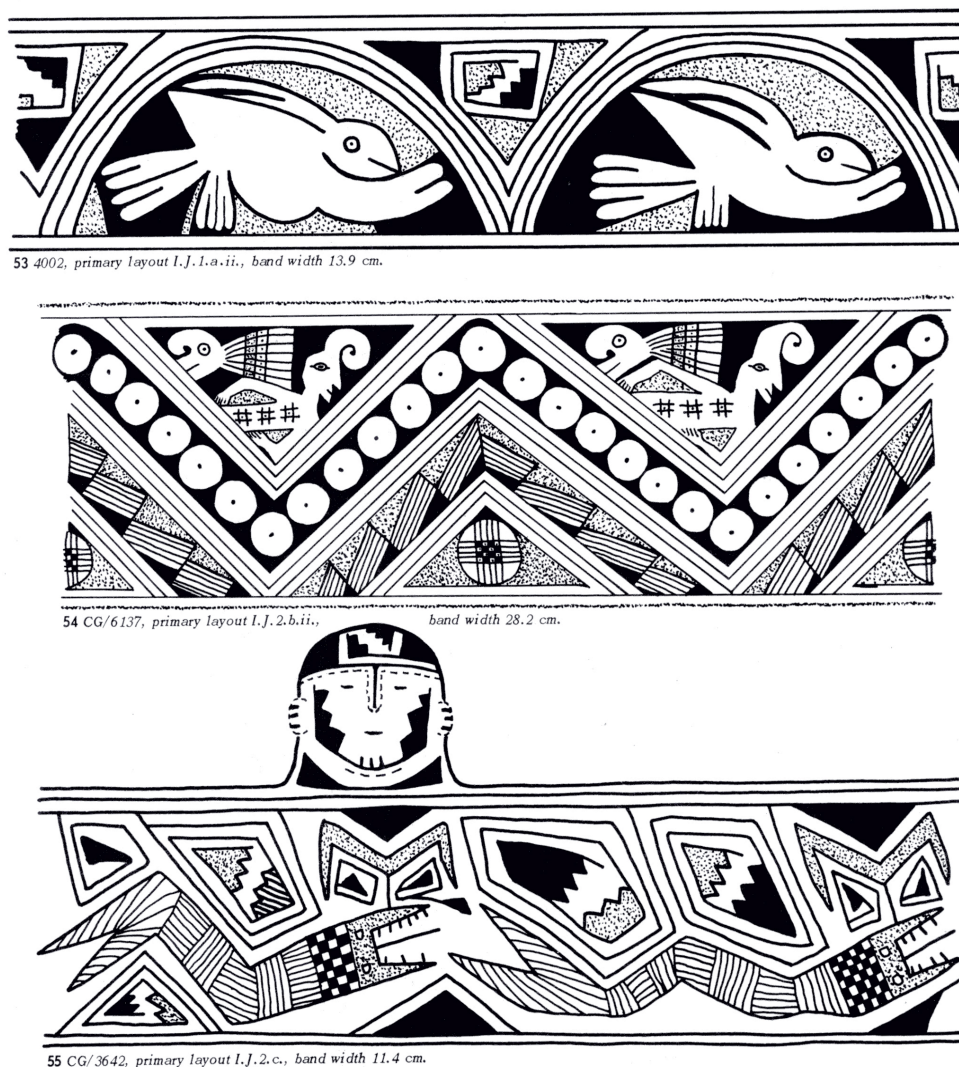
Figure 2.7: Examples of zoomorphic and anthropomorphic Ramos polychrome designs, from Di Peso et al 1974:6:272, Figure 290-6. The middle band shows the anthropomorphic figure with what is interpreted as a macaw headdress. The third band shows a plumed-serpent motif.

animal-effigy vessels as signs of dualism in Paquimé thought (VanPool 2003a). She does

not, however, use this to argue for a dual social organization such as a moiety system,

and instead simply says that dualism was important in shaping ceramic design patterns.

VanPool's (2003a, 2003b) study of the designs on Ramos vessels connects many

of the design elements to the practice of shamanism and the concept of duality. This is an

important step forward in our understanding of Paquimé culture. She uses this link to

make broad suggestions regarding ritual beliefs at Paquimé:

> The links in symbolism between the various pots and the specific iconic
> associations (e.g. snakes live on and in the ground) suggest that the Casas
> Grandes universe was organized by gender roles, the natural world, the spirit
> world, and the Upper and Lower Worlds (VanPool 2003a:353).

One could argue however, that these are broad societal categories that lose interpretive

usefulness at this level. The question then becomes, is it useful to ask a presence/absence

question regarding these categories, or would it tell us more about different cultures if we

asked *how* these categories get constituted differently? VanPool (2003a, 2003b) takes

steps in this direction through her identification of specific elements that appear to be

important in Paquimé beliefs, such as birds and serpents, which are ubiquitous in certain

polychrome designs.

Conclusion

Paquimé has been the focus of sporadic interest for almost 400 years. From the

studies described above, it is clear that researchers have recognized the importance ritual

in leadership at Paquimé. While these studies and others have contributed to our

understanding of both this site and its role in the region, there is much more to be done.

Previous work on the site of Paquimé has demonstrated that leadership was linked

to ritual. There has been little discussion, however, of how this belief system articulated

with social organization outside of a dichotomous elite versus non-elite format. Rather

than just looking for signs of hierarchy and then adding ritual to that, I suggest that we

look for broad cosmological patterns across the whole of Paquimé. Only then will we be

able to understand how cosmology articulates with society as a whole, into what groups

this cosmology divided the residents of Paquimé, and finally, where in the pattern the

leadership fit.

Chapter 3
Scaffolding: Theoretical and Methodological Frameworks

Rather than continue the argument as to whether or not societies in the U.S.

Southwest/Mexican Northwest were hierarchical, egalitarian, or heterarchical (Crumley

1979, 1995), I take the suggestion from Nelson (1995) and Rautman (1998) and ask *how*

these societies were complex. To move away from a presence/absence approach to

complexity (McGuire and Saitta 1996; Plog 1995), I pursue a different model for

understanding social organization. This model draws on notions from both house theory

and anthropological exchange theory. Aspects of both house and exchange theory

privilege the notion of ritual and ritual knowledge as the locus for both hierarchy and

culture change.

In this chapter, I discuss the theoretical framework that structures my argument

and methodology. First, I consider the roles of ritual, cosmology, and ritual knowledge in

social organization. I seek to position ritual and cosmology as the main forces in shaping

not only leadership and hierarchy, but many social divisions such as clans and sodalities.

I argue that we cannot understand the social organization of prehistoric societies without

understanding their cosmology and how they shaped their worlds. As Stevenson

(1894:14) put it in her Sia ethnography, "Their sociology and religion are so intricately

woven together that the study of one cannot be pursued without the other." I outline

specific theoretical approaches drawn from anthropological exchange theory and house

theory to indicate how these ideas bring ritual and hierarchy together, and how they

might be identified in the archaeological record.

One key fact that is often either overlooked or actually given a contrary interpretation is that Native American societies were not secular societies. In fact, secularism is not a relevant social concept applicable to Native American societies. There was no separation of "church" and "state" (Plog 2009:8). Secular political or governmental positions outside the ritual system were usually imposed colonial positions—individuals who acted as interlocutors between local groups and the colonial or national state powers (Chance 2000:489; Spicer 1962). Ritual was thus inseparable from politics.

The knowledge of rituals associated with such cosmological principles as ancestors, origins, and, more specifically in the American Southwest and Mesoamerica, color/directional symbolism has been shown to shape agricultural practices (Ford 1980; Scarborough 1998), village or city layout (Ashmore 1991; Cushing 1979; Freidel et al. 1993; Gillespie and Joyce 1998; Matthews and Garber 2004; Scarborough 1998; Taube 1998, 2000), and social organization (Cushing 1979; Freidel and Schele 1988; Stuart 2005; White 1935; Whiteley 1988). In several of these cases, ritual knowledge is invoked to ensure crops, construct a city, ensure enough potable water, and anoint kings and other leaders. Ritual is not just something that accompanies other economic or political acts in society, but rather is inextricably intertwined with any action and thus shapes political and economic fortunes (Whiteley 1988).

Ritual specialists must know what rituals to perform and when to ensure proper communication with—and offerings to—deities and, therefore, safeguard the efficacy of these ritual acts. Thus, ritual specialists have considerable power in many societies and

are almost always identified as the leaders. According to Brandt (1994:20) "Elite

status is based upon ceremonial knowledge and information, and maintained through

secrecy."

Secrecy is commonly one way that ritual specialists are able to establish, keep,

and, in some cases, institutionalize their power. Brandt's (1977, 1994) work on secrecy

in the pueblos demonstrates how secrecy about rituals at Taos pueblo was used not only

to keep that knowledge away from outsiders, but to negotiate power relations between

groups within the pueblo. Part of the ritual knowledge that is protected in Pueblo groups

is the knowledge of sacred items. This aspect of secrecy is a useful link to the idea of

inalienable goods that is central to this discussion.

Certain items often embody ritual knowledge or ritual power. These items must

be kept out of regular view as they are often too powerful for most people, and contact

with them would have deleterious effects (as the infinite literature on "taboo"

demonstrates). Equally important, however, is that using these items in the proper way is

critical for publicly demonstrating one's ritual knowledge and connections to such

powerful concepts as ancestors and origins. If no one knows about these items or who

has the power to work with them, then they have no power. Therefore, these items are

used and displayed publicly in highly proscribed ritual circumstances (these can range

from small, daily rituals to larger, more limited ritual events). As Weiner notes,

> secrecy also promotes authority… holding secret knowledge "gives one a position
> of exception" that increases when its "exclusive possession is outside public
> scrutiny" and therefore *authentication becomes more restricted*. (1992:106;
> emphasis mine)

In these circumstances, ritual knowledge is demonstrated and social difference created and maintained through restricted cosmological authentication. However, this depends on keeping that knowledge secret and keeping powerful items out of everyday sight.

To take the notion of ritual power seriously, we must acknowledge that it is effective in the world and will likely leave a material marker of some sort. Therefore, when archaeologists cannot find indications of hierarchy, yet are convinced that hierarchy exists, simply saying it rested in esoteric, immaterial, ritual power is not satisfactory.

The Power of Kept Things: Inalienable Goods and the Ritual Foundation of Power

Recent discussions of social differentiation in the U.S. Southwest have turned to the idea of ritual knowledge as one form of differentiation (Fish and Fish 1999; Mills 2004; Potter and Perry 2001; Upham 1982). One way to conceptualize markers of hierarchy based on ritual knowledge is through the concept of inalienable goods. I argue that inalienable items are one form of objectification of ritual knowledge. I further argue that this knowledge is not simply an intangible esoteric conception, but is also actively built and materialized in the world through inalienable objects.

Amidst the flurry of give and take involved in exchanges, inalienable items are immobile, held, sometimes at extreme costs, as a still center around which everything else moves. They therefore accumulate a history through various events both mythical and real (Appadurai 1988; Godelier 1999; Kopytoff 1988). Through this history and the value that is created, these items become symbols of a group or person's identity (Weiner 1992:43). The value that is concentrated in inalienable items is not a monetary value, but rather one created by being passed down through the generations; it is a value that is in

fact inalienable, or cannot be removed from the person or group whom the item comes to represent without some form of force.

In response to one of Mauss' (2002 [1925]:3) initial questions in *The Gift*, "What rule of legality and self-interest…compels the gift that has been received to be obligatorily reciprocated? What power resides in the object given that causes its recipient to pay it back?" Weiner (1992) suggests exploring items that do not circulate or that are removed from circulation. Weiner expands on the "spirit of the gift" or *hau* cited by Mauss and argues that this spirit emanates from what is withheld from exchange. Weiner (1992) and Godelier (1999) go on to show how these inalienable items become a source of social reproduction and change through the materialization of an individual's or group's identity and the struggle for authentication. Material items, which become part of, or a source of, a group's identity, are passed down from generation to generation, thus helping to promote continuity. I suggest that the existence of such materials gives archaeologists an avenue through which we can explore symbolic interpretations of material within their specific cultural milieu (Lesure 1999).

One must ask then, where does the power of such items come from? Weiner notes:

> An inalienable possession's uniqueness is inseparable from its place within traditions passed down from generation to generation….what gives these possessions their fame and power is their *authentication through an authority perceived to be outside the present. Connections to ancestors, gods, sacred sites, the legitimating force of divine rulers, or ideologies*, such as the reciprocal freedom of the marketplace, authenticate the authority that an inalienable possession attains. (1992:42; emphasis mine)

Thus, in addition to a particular history, connections to ancestors, deities, cosmological principles, and/or sacred places often create value concentrated in an inalienable item. If

value is determined through connections to the sacred, this implies that value is not

necessarily determined by either a labor theory of value or prestige/utilitarian

dichotomies. In order to assess or assign value, it is necessary to analyze the symbolic

system that creates that value.

The concept of inalienable items moves discussions out of the commodity realm

and forces a contextual and relational analysis. I suggest that scholars frequently speak in

implicit commodity terms. Two aspects of archaeological discussions suggest this

interpretation: first, many discussions of exchange explicitly speak in commodity terms

(Costin 1991; Earle 1997, 2002), and second, ritual knowledge is often characterized as a

strictly intangible form of power. The idea that material things do not embody aspects of

power, or that material does not become imbued with the identity of its creator and/or

owner, implicitly (or explicitly) conceptualizes these material items as commodities.

This is a fundamental distinction between a gift and a commodity (Gregory 1982; Mauss

1990 [1925]). In his discussion of the capitalist system, Marx (1976) first establishes that

a commodity is an item that is alienated from its producer, or is outside of the person.

In addition to being a source of social continuity or reproduction as an expression

of a group or personal identity, inalienable goods can be a source of social production,

change, and difference:

> Generations of anthropologists, not looking far enough into Western economic
> history, follow Malinowski and continue to discriminate between ceremonial and
> utilitarian gifts and countergifts. They continue to take for granted, as did Smith
> and others, that there is an innate, mystical, or natural autonomy in the workings
> of reciprocity. What motivates reciprocity is its reverse—the desire to keep
> something back from the pressures of give and take. *This something is a*
> *possession that speaks to and for an individual's or group's social identity and, in*
> *so doing, affirms the difference between one person or group and another.*
> (Weiner 1992:43; emphasis mine)

The negotiation for the possession of these material items is also a negotiation for power.

For a good example, I turn to Aztec practices during conquests. The point here is not to dismiss or minimize the importance of warfare or military power, but rather to draw attention to inalienable goods as a crucial part of the conquest. After a successful battle, Aztec warriors burned the local temple or shrine as a sign of victory. Equally important however, was the act of taking particular sacra from the temples before they were burnt and carrying these items back to Tenochtitlan, the Aztec capital city (Townsend 1992). These items were not destroyed, but instead placed in special rooms in the *Templo Mayor*, the sacred center of the Aztec world (Townsend 1992:108). Thus the perpetuation of a conquered group's identity, the power of their ancestors or deities now emanates from the center of the Aztec cosmos, and the Aztec center or *axis mundi* replaces their own. Here we see how inalienable items are a source of power and can only be taken with great force. Once they are taken, the power dynamics change.

This power often necessitates that these items be kept out of public view (Weiner 1992). Thus, we would expect at least some of these items to be found in nonvisible contexts. The Aztec conquest practices also demonstrate this point. The sacred items taken from the group conquered were put in an almost inaccessible room on top of the most sacred temple in the city. Only ritual leaders and kings had access to these sacred rooms (Townsend 1992). Although these items were an important part of the conquest, they were not displayed publicly. Locations similar to the sacred room(s) on top of *Templo Mayor* are areas that are imbued with significance.

Inalienable goods may be used to mark locations of ancestors, origins, and points of contact with various forces. These may be the objects found with house posts, caches, or locations otherwise elaborated. As an item becomes imbued with the identity of the owner through time, and possibly the identity of a whole group, it becomes very powerful. This is exactly the case with caches and post offerings. This concept of ritual items that represent or embody cultural identity can be useful to archaeologists seeking to understand the ritual foundations for social difference. One step in this process is to identify social groups.

The House as Social Unit: Reconfiguring Social Groups in the Archaeological Record

When archaeologists discuss non-state societies in the SW/NW, they typically characterize the household as either a nuclear or extended family, suggesting that the biological family was the basic social unit (Mathien 2001; Peregrine 2001, Rakita 2001). In such perspectives, important social networks stem from affinal and sanguine relations, or, in other words, from lineage relations. In a critique of traditional anthropological kinship theory, scholars have argued that underlying lineage discussions is an assumption of biological relatedness (McKinnon 2000a). In other words, those considered to be related to a person, and who make up his or her main network of relations, are related mainly through biological descent (and extended through marriage).

While I concur that discussions of kinship are vital to understanding social organization, from an archaeological standpoint it is important to critically evaluate what kind of material markers the lineage assumptions made by archaeologists would leave. This view that the main way to understand social organization outside of Western societies is through kinship, with its biological assumptions, is difficult at best to

understand through the material record. Short of DNA testing, there are few ways to discern biological or lineage descent archaeologically.

Some anthropologists have gone so far as to suggest that lineage theory is dead (Kuper 1982). While most do not take their critique that far, they do recognize that the concept of lineage, in some cases, can be an anthropological creation. Ethnographic fieldwork has demonstrated too many exceptions to the rules of traditional anthropological kinship categories to continue to accept these categories without question (McKinnon 2000a). Many do not abandon this concept altogether, but realize that it is not the dominant form of social organization, and is often only one of many ways of reckoning kinship or social group boundaries (Whiteley 2008).

Residence has long been recognized as important in anthropology and other disciplines, but often it was analyzed in terms of how it derived from or graphed onto descent or lineage groups (Kroeber 1938:307; Kuper 1982:78). However, even during the height of the development of the lineage/descent theories, some early anthropologists considered lineage to be subordinate to residence in many societies:

> Instead of considering the clan, moiety, totem, or formal unilateral descent group as primary in social structure and function, the present view conceives them as secondary and often unstable embroideries on the primary patterns of group residence and subsistence associations (Kroeber 1938:308).

There is a body of ethnographic work that has elaborated on the lineage critique and the emphasis on residence (Errington, 1989; Fox 1993; Gillespie 2000; McKinnon 1991, 1995, 2000a, 2000b; Ng 1993; Sather 1993; Waterson 1990; Whiteley 2008). This research, starting with a definition put forward by Levi-Strauss, has looked to the physical structure of the house as an indicator of social relatedness. Much of this

literature has focused on the physical structure of houses, but has also demonstrated how the "house" can be used as a concept that extends beyond the physical structure.

Based on initial work by Levi-Strauss, this body of ethnographic work has provided a new analytical category of "house society." Levi-Strauss provided the first definition of a house society as:

> a corporate body holding an estate made up of both material and immaterial wealth, which perpetuates itself through the transmission of its name, its goods, and its titles down a real or imaginary line, considered legitimate as long as this continuity can express itself in the language of kinship or of affinity and, most often, of both. (1988:174)

Researchers who explored this concept have applied it fruitfully to societies in many parts of the globe (Errington, 1989; Fox 1993; Gillespie 2000b; Kirch 2000; McKinnon 1991, 1995, 2000a, 2000b; Ng 1993; Sandstrom 2000; Sather 1993; Waterson 1990). Most scholars who have used this idea have noted that this definition is vague, but it does call attention to the possibility of alternate modes of relatedness or inheritance.

Levi-Strauss and others first scrutinized house theory when indigenous terminology did not fit anthropological categories. The problem of indigenous terminology has been revisited by recent scholars, and their findings support Levi-Strauss's assessment of the importance of the house in kin relations. For example, in a reanalysis of the classic ethnography by Evans-Pritchard of the Nuer in Africa, Susan McKinnon (2000a:47; see also Kuper 1982) states that the word translated by Evans-Pritchard as "lineage" more literally translates as "doorway to the hearth." This points to residence rather than lineage as the primary determinant of social group belonging. Other scholars have picked up this critique of traditional anthropological categories and found that the physical structure of the house is more than just a passive container of people, but

rather is actively constitutive of relations (Errington, 1989; Fox 1993; Gillespie 2000a, 2000b; McKinnon 1991, 1995, 2000a, 2000b; Ng 1993; Pearson and Richards 1994; Sandstrom 2000; Sather 1993; Waterson 1990; Whiteley 2008).

Another example of the emphasis on residence can be found in studies done with the Nahua descendants of the Mexica. Research among the Nahua argues that there is no direct equivalent for "family" (Chance 2000:497; Lockhart 1992:59, 72). Instead, the closest term would be *huanyolque,* which would translate as "those who live with one" (Chance 2000:497; Lockhart 1992:59, 72). Another Nahua term given by Sandstrom (1996:165) is *nocalpixcahuaj*, a term for the single domestic group that literally translates as "my house stewards." Thus, for Kroeber—and many to follow—residence took on important social implications as an indicator by itself of social groups, not just something grafted onto a deeper, more significant lineage system.

Literature on the house emphasizes that the notion of "house" organization is not strictly limited to the physical structure of the house itself. Rather, the house structure is the base of a larger corporate body (hierarchically organized internally as well as in relation to other groups) that seeks to preserve itself, its property, and its rank through the generations (Chance 2000; Fox 1993). A "house" is not just a physical structure, but a flexible social group organized around residence. One way to incorporate people into a residence group is by sharing food or work, and usually both (Sandstrom 2000). People do not just occupy the same space to become kin, but must also share substance.

The Hearth as a Marker of the "House"

The concept of the house as a social unit provides a more flexible processual, rather than categorical, analytical tool for the purposes of this study (Gillespie 2000a).

Focus on the *house* as representative and constitutive of social groups is useful to archaeologists because of the importance of the material objectification of relationships. However, Paquimé, at first glance, does not appear to be an appropriate location for use of this house-based theory. The site did not consist of individual houses that had clear boundaries, as in many of the ethnographic examples. Instead, Paquimé had contiguous, multistory apartment-style room blocks, without easily identifiable boundary markers between groups.

One particular feature of ethnographically described houses provides an archaeological basis for house identification at Paquimé. This feature is the hearth. Again and again, the hearth has been shown, in various forms from Africa to Indonesia and central Mexico, to be central to group formation and indicative of group identity. Hearths have been used archaeologically to identify social groups for some time (Windes 1984; Bernardini 1999). Here the focus on the hearth as a food production and sharing locus helps link certain features at Paquimé that will be discussed.

In addition to, or as an extension of, the focus on the house, anthropological literature on the symbolism of food and eating has shown that sharing food is a prevalent way to form social relations (Tambia 1969, Ng 1993, Sather 1993:72, Carsten 1995a, 1995b). Through prescribed ways of preparing, eating, and sharing food one becomes a social person, or part of a kin group. Examples from Malaysia, Indonesia, Mexico, and other locations indicate that the hearth, or locus of food preparation, is a feature that becomes central in defining house belonging (Carsten 1995a:225, Sather 1993:72-73, Sandstrom 2000:67). In her discussion of Malay culture, Carsten (1995a:225) notes that eating at the main hearth is considered "a prime focus of what it means to be of one

household." Farther south in Indonesia, Clifford Sather (1993:72-73) describes a

different case in which each family in a long house has a hearth, but must cook on the

common hearth at least twice each lunar month to be considered part of the larger long

house community. Janowski (1995:92) notes that in East Malaysia, "the hearth is what

makes a house possible and therefore may be seen actually to constitute the house."

Among the Aztec the hearth was also a central feature. A house was not complete

or considered habitable until a fire had been made in the hearth (Carrasco 1998). These

examples and others suggest that a vital part of any house is the hearth, the locus of food

sharing, or the locus where people become social beings. Being of one hearth has been

demonstrated, in the broadest of terms, to be equivalent to being of one house or one

social group.

Fortunately, we typically have clear evidence for hearth features in the

archaeological record. Thus, in the chapters that follow I seek to identify what I have

called "hearth groups" (Carsten 1995b; Janowski 1995; Sather 1993) at Paquimé.

Hearths previously have been used archaeologically for population estimations

(Bernardini 1999; Windes 1984), or room function (e.g., Hill 1966, 1968). Here I seek to

add a level of cosmological importance to this seemingly mundane feature, and show

how a hearth is a point of intersection between social groups and cosmology (Freidel et

al. 1993; Pearson and Richards 1994). Thus, I hypothesize that patterns in the

geographical distance between a particular kind of hearth at Paquimé will mark the

boundaries of social groups that were operative at this site during the Medio Period.

Cosmological Principles: Hearths as Houses, Origins, and Ancestors

For archaeologists, house theory and theories about inalienable goods provide examples of the architectural and material manifestations of cosmological authentication. One point of cosmological authentication is to demonstrate an ability to communicate with ancestors or deities related to origins. Groups materialize the concepts of ancestors and origins in many different ways, not just through burial practices. By recognizing the relationship between space and social relations, researchers have been able to see how such key concepts as origins and ancestors are involved in hierarchical relations and in delineating between groups. In particular, "access to origins" and being able to demonstrate connections to ancestors is one route to establishing hierarchical relationships (Bloch 1995; Freidel and Schele 1988; Helms 1998; McKinnon 1995, 2000a; Weiner 1992).

Origins, in the form of origin myths and locations (perceived or real) are in many societies the locus of power. Origin myths describe how a people came to be, along with the various divisions within society. Within origin myths we can often find the roots of many social groupings such as clans and moieties, in addition to explanations for the hierarchical ranking of these groups (Ortiz 1969; Parsons 1996). These social divisions are often bestowed or created by deities or other supernatural entities. Moreover, not only did these beings create social divisions, but by creating these divisions they also created the world as it is known by a particular group. Thus, these social divisions of origin also correspond to the order of the world at large. For example, among the Tewa pueblos, as the ancestors emerged from the underworld to the current world they encountered many problems (Ortiz 1969). Each time they had to return to the primordial

world below, and a society (such as the hunt society) was created to solve particular problems. In the present world, these societies are real social groups responsible for certain activities done for the well-being of all (Ortiz 1969).

Locations of origin are also vitally important to rank and hierarchy. These locations are either discussed in myth or, many times, identified or created as a real place. One superb example is the cave underneath the Pyramid of the Sun at Teotihuacan. This cave, possibly manmade or at least enhanced by people, was found in 1971 (Heyden 1975). The cave ended in a four-lobed chamber directly underneath the center of the pyramid, which has been interpreted as a version of the seven-chambered cave that was considered a locus of emergence for some Mesoamerican groups (Heyden 1975). Thus, here we have a sacred building on top of, and drawing power from—while simultaneously shielding from view—a literal locus of origin.

Ancestors are also part and parcel of cosmological authentication. Ancestors, either named specific personages or more generalized unnamed images, are sources of life-giving power through their connection to creation. Those who are able to demonstrate connections to ancestors through ritual knowledge, myth, or possession of important symbols are able to access their power and knowledge. Ancestors' power is considered to be generative; it can bestow life or take it away. Demonstrating an ability to wield this power demonstrates a power over life itself. Thus, ancestors become another route to ritual knowledge and hierarchy.

One useful concept is the idea of the "ritual attractor" (Fox 1993:1). A ritual attractor is an aspect of a house, village, or town that encapsulates, encompasses, or represents both the house and society as a whole and is a ritual focus for the house. The

ritual attractor is the material manifestation of the origin location or a relationship to

the ancestors. As the material or architectural embodiment of the supernatural, these

points are a source of power, places to demonstrate ritual knowledge through appropriate

ritual action. As such, groups elaborate these points through continued material offerings

and decoration (Fox 1993).

As an example of what might be considered a ritual attractor, I look at the case of

the Tanimbarese *tavu,* as described by McKinnon (2000b). The *tavu* is a central post

found in some Tanimbar houses that is often elaborately carved and houses the actual

bones of ancestors on offering plates above it. During important ritual occasions, the

leader of the ceremonies sits at the base of this post, as it becomes a pathway for

communication with the ancestors (McKinnon 2000b). The presence of the *tavu* is one

element that marks a "named house" or a highly ranked house (McKinnon 2000b).

On a much grander scale, we could turn to the main Aztec temple, *Templo*

Mayor, as an example of a state-level ritual attractor. This temple was essentially an

architectural metaphor for the Aztec origin myth, which will be discussed in more detail

in the next chapter. *Templo Mayor* was the stage for state-level rituals and was, on many

levels, considered the center of the Aztec universe. It encompassed all of society as a

model of the universe (Van Zantwijk 1981). By way of a brief example, the number of

levels in the pyramid replicates the number of levels (13) in the Aztec cosmos, and the

top of the temple is divided in two, with one side dedicated to *Tloloc* and the other to

Huitzilopochli. Along with architectural elaboration, extremely rich offerings were found

at each corner of the temple (along with hundreds of other offerings; López Luján 1994).

As the temple grew in stages, more offerings were made during each phase. These were

not just from people of the immediate area, but also from many of the territories

conquered by the Aztecs (López Luján 1994). Thus, this hyper-sacred space came to

encompass the entire Aztec empire, both within and beyond the main city's boundaries.

Using this theoretical concept of the "ritual attractor" (Fox 1993:1), we can

discern a different significance for posts, hearths, and other supposedly mundane

features. Such features can be seen as still center points, anchors, or origin points around

which all else moves. Important material components of multiple ritual events, such as

caches and offerings, may be deposited around a ritual attractor. This ritual importance is

another factor in why elements such as the hearth, as discussed earlier, are also indicators

of social groups. If a group traces its power and authentication of rank to a mythical

origin, then features such as hearths and posts that are tied to both social identity and

origin myths are intersections of these two ideas of social organization and cosmology.

The ritual attractor concept is a heuristic device that can be used to identify

locations of repeated ritual activity, such as the sacred temple room in the Aztec *Templo

Mayor* discussed above. Such locations can be interpreted as points of contact with

ancestors and origins, and therefore locations where hierarchy is materially expressed.

Expectations

Archaeologically, we can identify ritual attractors through the accumulation of

material in unique spaces in the archaeological record or particular material remains that

are unusually elaborated. If ancestors and origins are pathways to power, and ritual

attractors are markers of locations where these cosmological powers are manifest, I

would expect ritual attractors to be marked in unique ways. Thus, I would expect a ritual

attractor to be associated with a distinct artifact assemblage that includes important ritual items not found in an average residential assemblage.

Ritual attractors are one way to identify locations where ancestors and origins may be inscribed onto built space. Hearths may identify social groups. Given the importance of hearths in forming social groups, I have concentrated on the elaborated raised platform hearths, with the underlying assumption that the greater labor investment indicates heightened social significance. I would expect hearths to group across the site spatially, distinguishing one group from another.

Ideas from the discussion of secrecy and the power of inalienable goods suggest where archaeologists might expect to find important ritual items. Specifically, these ideas suggest that archaeologically, we can expect to find ritually important items in locations that may not be highly visible. These items were powerful and were not to be seen or used in everyday, non-ritual contexts. Thus the contexts in which we find some of the key ritual elements related to power negotiations may be contexts that are hidden from view on a regular basis.

Taking the idea of the house and linking it to Dumont's concept of hierarchy, we might expect indicators of social organization to exhibit a nested pattern, similar to the "nested houses" of the Mayan area (Gillepie 2000a). In this example and others, units of social organization are nested within ever-larger levels.

Methodology

The theoretical outline above framed the methods used in this study. The data had to be entered in a way that would, first, allow identification of materials and architectural features that acted as cosmological markers at Paquimé, and second, provide

a way to analyze the distributions and contexts of these features and materials across

the site individually and in comparison. It was necessary to be able to look at the

distribution of multiple artifact types. Therefore, the first stage was data entry of the

artifacts, as this comprised the largest data set. All artifacts in floor context were entered

into spreadsheets and exported to an ESRI ArcMap database to assess distributions.

The next step was entering all instances of architectural features identified as

important. Posts and hearths were entered into separate spreadsheets along with

important information such as context, frequency, and any associated offerings.

To build a spatial database, original field maps were used to create the digital

maps. The original field maps were made available courtesy of the Amerind Foundation

in Dragoon, Arizona. These maps were digitized, and the digital versions were

georeferenced and hand-traced in ArcMap GIS software (versions 9.3-10). Room

interiors were traced separately from walls and plaza interiors, mounds, and ovens. In

short, all relevant architectural elements were created as separate layers. Posts and

hearths were plotted based on the original field maps, then spreadsheets with additional

feature information were imported as attribute tables. Room area was calculated in

ArcMap, then exported for further analysis.

All artifacts were entered from Di Peso's published volumes into a spreadsheet

with the counts, types, and context recorded. Only artifacts in floor and floor-fill levels

were used for this analysis. Di Peso and his colleagues defined floor and floor fill levels

as artifacts in contact with the actual adobe floor pavement and 10 cm immediately

above:

Only the artifacts that were actually on the ground floor paving were termed floor

contact, while a 10 cm stratum located above this, which often contained such *in situ* objects as metates or large storage vessels, was termed the floor fill stratum. Together, these latter two levels were considered as significant and gave a clue to the associated material culture used in each room (Di Peso et al. 1974:4:128).

Artifacts from the fill were not necessarily in situ and thus not from reliable contexts. Upper level fill consisted of material from fallen upper stories. This material is thus mixed with fill from at least one, and sometimes two or three, upper-story rooms. Considering that much, if not all, of the room fill was displaced from its original position due to room collapse and other site-formation processes, the artifacts from these levels were not included in this analysis.

Artifact counts were added to different layers of the ArcMap document by material type, so shell artifacts were entered on one level, turquoise artifacts on another, and so on. This allowed me to analyze and display artifact categories individually and together for comparison, as well as to compare spatial distributions. The frequency of each artifact type was entered for each room space and then displayed visually on the map. This allowed assessment of artifact types individually and together in any combination.

Another important aspect of Di Peso's original excavations that should be noted here is his use of unit designations. Various groups of rooms were broken into larger spatial clusters of units, for example, "Unit 8." These unit designations do not have cultural meaning, but are rather an artifact of excavation only. As the excavations progressed, Di Peso (1974:4:128) notes, "it became obvious that unit designations sometimes were not as meaningful as they appeared prior to excavation." Thus, the unit

designation indicates a general area of the site and has become part of the room numbering convention, but does not have prehistoric cultural meaning.

Conclusions

Concepts found in exchange theory and house theory hold many benefits for archaeology. First, notions of the house and inalienable goods yield a conceptual structure that brings together ritual, economic, and political aspects of society by showing their interrelatedness. Reintegrating these aspects of society is accomplished through the cosmological authentication of hierarchical relations. Cosmological authentication is expressed through material that is passed on from generation to generation and constitutes a group's identity. Second, house theory presents a way to understand built space as a microcosm of a larger world view or cosmology by moving away from the concept of structures as passive containers (Carsten and Hugh-Jones 1995; Waterson 1990). As such, house theory becomes a different way to understand social organization. Finally, house theory and exchange theory bring into focus aspects of architecture and artifacts that are often ignored or interpreted only functionally, such as house posts and hearths.

Houses and the features within them are intersections of cosmological ideas and social divisions. The inalienable goods that come to constitute a group's identity and do not circulate are often the very artifacts that accumulate around a ritual attractor. These two theoretical approaches both bring focus to alternative modes of power.

Based on the theories laid out above, I seek to study the distribution of hearths, posts, caches, and key artifacts to find markers of certain cosmological principles and locations of ritual attractors as evidence for the ritual basis of power at Paquimé. Cross-

cultural and ethnographic comparison is used to show specific examples of how features and particular artifact classes are linked to the larger concepts of myth, origins, and ancestors. Using exchange and house theory as a guide, and looking through the ethnographic record and comparing that with the data from Paquimé, it became clear that certain architectural features had the potential to be "ritual attractors" and thus lead to information on hierarchy at this site. Ritual is an arena for political display. During the Late Medio Period at Paquimé, we see intense elaboration of ritual displays. I aim to identify the locations of these displays and demonstrate that ritual leaders were using local cosmological meanings to create permanency and therefore establish hierarchy.

Many archaeological interpretations of hierarchy emphasize inequalities in material, or wealth differences based on commodity assumptions of value. I have proposed a model of hierarchy based on knowledge of and access to the sacred, specifically cosmological symbols. I hope not only to contribute to our understanding of this seminal site, but also to test a new approach for archaeological interpretation. This approach combines two theoretical genres well known in sociocultural anthropology, but which have seen limited application in archaeology. I use these approaches to assess social organization through the creation of value and to interpret built space as a microcosm of a larger world view.

**Chapter 4: Ethnographic and Cross-cultural Comparisons: A Model for
Prehistoric Cosmology**

In this chapter I provide the ethnographic and cross-cultural data for the
cosmological principles I hypothesize were operative at Paquimé during the Medio
Period. These data underlie expectations that these cosmological principles will be
identified in the material remains from Paquimé. Several tightly interwoven
cosmological concepts create a tapestry of hierarchy and hierarchical relations.
Ancestors, origins, color/directions, and secrecy all play a part in creating and
maintaining hierarchical relations in non-state societies of SW/NW. Ancestors and
origins are two important cosmological principles that are intertwined with hierarchy in
many societies. Specifically, within the U.S. Southwest and Mesoamerica, these
concepts are embedded within an overarching principle of color/directional symbolism.
Here I lay out the ethnographic models exemplifying the importance of certain principles
and their material expressions.

As noted in the previous chapter, certain features and artifact types or classes are
points of contact or conduits for ancestral spirits and/or forces connected to origins. In
the U.S. Southwest and Mesoamerica and for many cultures in northern Mexico,
color/directional symbolism is a cosmological principle that connects ancestors and
origins. The notion of color/directional symbolism provides a framework for those
hierarchical relations, a common cosmological language as a backdrop for the creation,
manipulation, and maintenance of hierarchy.

The ethnographic, ethnohistoric, and cross-cultural archaeological data provide a
model of how hierarchy articulates with cosmology in the regions surrounding Paquimé,
and I argue for Paquimé itself. The framework of house theory and inalienable goods

moves us toward examining how houses are constitutive of social relations; the models discussed here move this toward the regional specifics of how that is done.

Along with others, I argue that the power to create and maintain a hierarchical position lay partly in the ability to control and mobilize ritual knowledge (Brandt 1977, 1994; Whiteley 1988, 1998), or as Peter Whiteley (1998:93-94) put it in reference to the Hopi, "Secret ritual knowledge serves as the…'currency' of power…[and] both configures the structuring of hierarchy and provides the idiom of political action." To be effective, this ritual knowledge must be displayed in highly controlled contexts; in other words, it must be displayed in rituals (Weiner 1992).

Secrecy in the archaeological record is indicated by sealed caches and restricted access. The act of placing a sealed cache may display ritual knowledge, yet the sacred material itself is hidden. It may be the case that when a location has restricted access, it is known that rituals take place there, but only a select few can participate. Cosmological principles structure these rituals. Archaeologists can see evidence of ritual behavior that spanned hundreds of years, yet only rarely can we see evidence of, and therefore identify, a single ritual event. Thus, the broader cosmological principles that organize rituals and provide a framework for social organization can be useful for identifying patterns archaeologically: Individual ritual practices may shift, but they often shift within a conservative cosmological framework.

Several cosmological principles have been identified in regions surrounding Paquimé, in both Mesoamerica and the U.S. Southwest. These principles have different expressions in each culture, but there are similar overarching themes. The purpose here is to discuss these principles as they show up in the ethnography and archaeology of the

surrounding regions, and how these ideas shape relations of hierarchy. The following chapters deal with how they are manifested at Paquimé specifically.

Color/Directional Symbolism: Framework for Hierarchy

Color/direction symbolism is a complex set of beliefs that affected every level of society in Mesoamerica and in the Pueblo Southwest. The study of color/directional symbolism is much more developed in Mesoamerican areas than in the U.S. Southwest (Ashmore 1991; Ashmore and Sabloff 2002; Freidel et al. 1993; Taube 1998), but its importance has been recorded in ethnographies and ethnohistories of both regions since the Spanish first arrived on the continent (DeBoer 2005; Duran 1971; Jones and MacGregor 2002). This idea is seen from southern Mesoamerica to the northern U.S. Southwest (and beyond), and some have argued it has great time depth (Taube 2000b). Color/directional symbolism is not just an abstract idea, but rather an organizing principle that creates a framework within which people accessed ancestors and origins, differentiating themselves from others.

Color/directional symbolism refers to the notion that each direction has a corresponding color, animal(s) (predator and prey), deity, and plant(s). At the most basic level, each direction (north, south, east, and west). as well as a center above and center below, is associated with a particular color. The same group of colors is used in all Mesoamerican and U.S. Southwest cultures, although there is variability in how these colors and directions are combined (Table 4.1). These colors are red, blue, or green or blue/green, yellow, black, white, and a mix of all colors.

	North	South	East	West	Center Above (Zenith)	Center Below (Nadir)	Citation
Yucatec Maya	White	Yellow	Red	Black	Blue/Green		Miller and Taube 1993
Classic Maya	White	Yellow	Red	Black	Blue/Green		Schaafsma and Taube 2006
Zuni	Yellow	Red	White	Blue	Many/All Colors	Black	Cushing 1883, 1979:186, 188;
	Evergreen	Tobacco	Deer	Spring Herb			
	Crane		Turkey		Sun	Frog	
Trees of the directions	Pine	Silver Spruce	Aspen	Spruce	Reed		Parsons 1996:218-219
	Grouse	Corn	Antelope		Sky	Water	
Predator of each direction	Mountain Lion	Badger/Wild Cat	Gray Wolf	Coyote	Eagle	Rattlesnake	
Season of each direction	Winter	Summer	Fall	Spring			
Tewa (San Juan)	Blue	Red	White	Yellow	Black	Many/All Colors	Ortiz 1969:18; Ford 1980:20
Zia Pueblo (Keresan speakers)	Yellow	Red	White	Blue	Slightly Yellow	Dark (black?)	Stevenson 1894:130
Tree of each direction	Spruce	Oak (*Quercus undulata*, variety Gamelii)	Aspen	Pine	Cedar	Oak (variety pungens)	Stevenson 1894:28
Animal of each direction	Lion	Badger	Wolf	Bear	Eagle	Shrew	Stevenson 1894:130
Santo Domingo (Keresan speaking))	Mountain Lion	Badger	Wolf	Bear	Eagle	Shrew	White 1935:32

	North	South	East	West	Center Above (Zenith)	Center Below (Nadir)	Citation
Hopi	Yellow (northwest)	Red (southeast)	White (northeast)	Blue/green (southwest)	Black	Many/All Colors	Voth 1905:157-158; Parsons 1996:365; Bradfield 1995
Bird of each direction	Oriole	Parrot or Macaw	Magpie	Mountain Bluebird	Swift or Swallow	Canyon wren	Bradfield 1995:92-93
Stone or Shell	Yellowish stone	Pink stone	White stone or Shell	Turquoise	Black stone	Grayish stone	Bradfield 1995:92-93
Plant	Corn	Squash	Cotton	Bean	Watermelon	All Plants	Bradfield 1995:92-93
Herb	*Shiwahpi* or Rabbit Brush (Bigelovia bigelovii)	*Hunwi* or Apache plume (Fallugia paradoxa)	*Massi Shiwahpi Rabbit Brush* or (Bigelovia bigelovii)	*Howakpi* or Sand Sagebrush (Artemisia filifolia)			Voth 1901:76
Prey Animal	Deer	Antelope	Elk	Mountain Sheep	Jack Rabbit	Cottontail	Bradfield 1995:92-93
Predator Animal	Mountain Lion	Gray Wolf	Wild Cat (Bob cat?)	Black Bear	Eagle	Badger	Bradfield 1995:92-93
Bird of Prey	Cooper's Hawk	Sharp-shinned Hawk	Sowitoaya (unidentified)	Prairie Falcon	Eagle	Gray Hawk	Bradfield 1995:92-93
Aztec	Red (or Yellow or White)	White (or Black)	Yellow (or Red)	Blue/Green	Blue/Green		Lopez and Lopez 2000:72
Birds of each direction	Hawk	Parrot	Quetzal	Humming-bird			There is a great deal of variation in the color/direction assignments for the Aztec

Table 4.1: Different color/directional associations with the corresponding animals, plants, and natural phenomena. There is a lot of variation in the documentation of Aztec color/direction symbolism. For example, Riley (1963) has six different versions of Aztec associations of color and direction.

The directions are not the cardinal points of the Western compass, but rather the position of the rising and setting of the sun during the summer and winter solstices. Rather than think of the directions as specific points, it is more appropriate to think of them as regions or broad areas in a particular direction.

Along with the association of color and direction, each set is often associated with a particular set of plants and animals (Table 4.1). This plant could be a tree, agricultural crop, or some other symbolically and functionally important plant. The animal sets are usually a predator animal, a prey animal, and a bird. The plants and animals associated with a color and direction were usually related to the season that corresponded to the direction (so north, winter, evergreens, and mountain lion would all be associated).

From Cushing in the 1800s to Parsons in the early twentieth century and Ortiz in the 1960s, ethnographers in the Pueblo Southwest have discussed the importance of these color and direction associations. They have also demonstrated how color and direction associations are not just abstract cosmological ideas, but organize village layout, social groups, labor, and resource distribution (Cushing 1979:185-186; Ortiz 1969:35, 40, 45, 75, 94, 105; Parsons 1996:366; White 1935). Among all Pueblo groups, the animals and plants associated with the colors and directions are also the animals or plants that represent different clan groups. For example, Cushing (1979:186-187) notes that for the Zuni, the clan groups of the crane, grouse, and evergreen are all associated with white, north, and winter.

A good example of how color/direction shaped social aspects of Pueblo society can be seen in early studies of Santo Domingo Pueblo. In his ethnographic study at the Keresan pueblo of Santo Domingo, White (1935:41) notes that houses in the pueblo are

divided up into five groups according to the four cardinal directions and the middle. Ten

war priest assistants (*Gowatcanyi*) are grouped into five pairs, also named according to

the five directions. These five pairs of war chief assistants then take turns herding the

pueblo horses. When a pair of men need help caring for the horses, they may enlist help

from people with houses in the same directional category as themselves. So if the

Gowatcanyi from the north are herding and they need additional help, they enlist people

who live in the part of the pueblo that is associated with north (White 1935:41). This is

one example of how the cosmological concept of color/directional symbolism organizes

daily labor within the pueblo hierarchy in the Pueblo Southwest.

Looking south of Paquimé, to the Aztec, color associations with a five-part division (four

quadrants plus the center) are repeated at many levels, from mythic creation to city

layout, social divisions, and the tribute system. A beautiful example of the association of

each direction and its association with specific flora and fauna comes from the Codex

Fejervary-Mayer (Figure 4.1). The first page of this ritual almanac has the god of fire,

Xiuhtecuhtli, in the center, surrounded by the four quadrants (Taube 1995:14; Townsend

1992:125). A line of the correct color sections off each quadrant (Carrasco 1998;

Townsend 1992:125). Within each bracket is a specific tree with a bird of that direction

sitting on top. Although there are many other calendric and symbolic aspects of this

codex page, it nicely demonstrates the importance of color/directional symbolism within

Aztec thought.
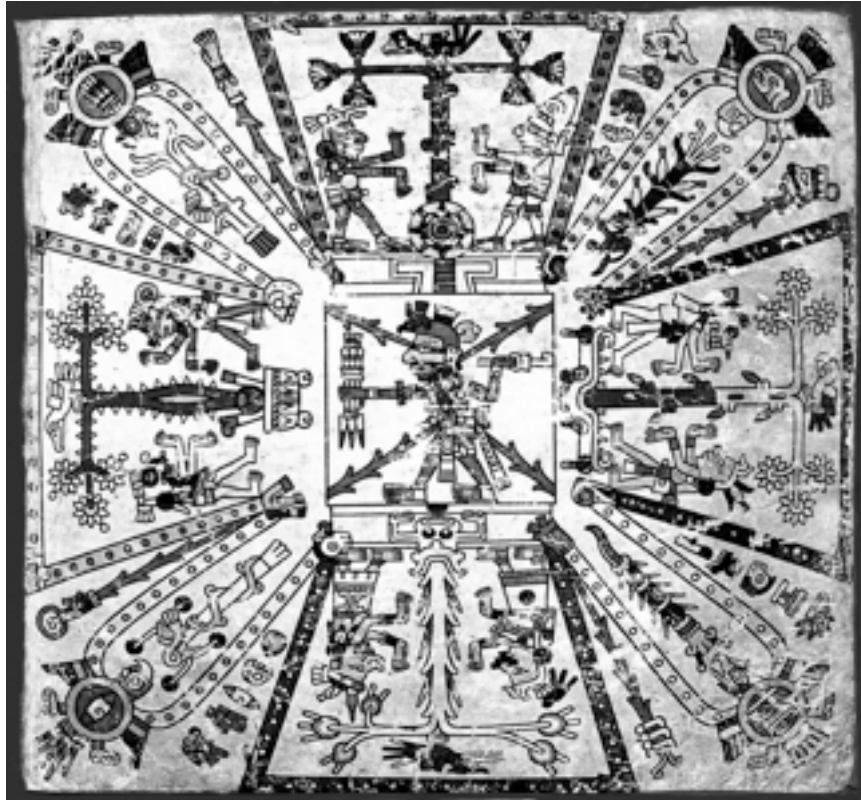
Figure 4.1: First page of the Codex Fejervary-Mayer. East (red) is on top, with the
Quetzal bird on top of the tree; West (blue/green) is on the bottom, with a hummingbird;
North (yellow), on the left, is accompanied by a hawk; and South (black?), on the right,
has a parrot on top of the tree. The diagonal or corner trees appear to be accompanied by
eagles and macaws
(http://www.famsi.org/research/graz/fejervary_mayer/img_page01.html)

Color associations also demarcate Aztec hierarchy. Color is often used as a

marker of rank. Among the Aztecs, jade earspools were only to be worn by nobles and

royalty (Townsend 1992). Moctezuma II instituted sumptuary laws that stated only a

certain class of elites could wear ornaments of green stone (Duran 1971:208-211). In

fact, the sacred ruler in Aztec society is sometimes referred to as "precious green stone"

(Carrasco 1998:135). Among both the Maya and the Aztec, blue/green is associated with

the center, the source of life and fertility (Freidel et al. 1993; Taube 1998, 2005).

The Aztec consider the place of origin—where the current earth, or the fifth sun,

was created—to be a "turquoise enclosure" (Taube 200:309-310). This center is

materialized with various green stones along with bird (quetzal) feathers and pigments. Jade lip plugs and earspools were reserved for the elite among the Maya as well. The bodily adornments of jade and other green stones effectively turned the ruler into the embodiment of the center and the origin of life-giving power (Taube 2005:25). In certain Mayan contexts, the ruler was depicted as the blue/green world tree, the ultimate *axis mundi* (Freidel et al. 1993; Stanton and Freidel 2005).

Some scholars have suggested that, despite the Pueblo groups to the north, Mesoamerican groups to the south, and many other indigenous Native American groups that adhere to some form of belief in color/direction associations, northern Mexico did not share this idea (Riley 1963). While this association may not be as pronounced among the Tarahumara, who occupy the mountain regions to the south and west of Paquimé, these groups do recognize some form of directional symbolism. In Merrill's (1988) discussion of Tarahumara (Rarámuri) ceremonies, libations were given to each direction before being given to the central cross. Among the Huichol to the west, the number five (five levels of the universe, five ritual circuits, etc.) is emphasized over and over in their myths, stories, and rituals (Franz 1996).

Color Pairs

One element of the color/directional complex is the pairing of certain colors. This is seen most clearly among the Pueblo cultures in the U.S. Southwest. "With the supernatural pair of male and female is associated color-turquoise and yellow. Alteration of these two colors, as well as alternation in the use of other colors and of white and black, is a constant principle in almost all uses of pigments" (Parsons 1996:102). Color pairings are another way of demarcating social divisions. Among the Tewa, Ortiz (1969)

discusses the dual moiety system organized into the summer and winter moieties. This moiety system is the fundamental mode of organization at the Tewa town of San Juan. The two moieties alternate leadership throughout the year. Each moiety has specific colors associated with it. The summer moiety is associated with the colors yellow, green, and black, representing sunshine, growing corn, and rain-laden clouds, respectively (Ortiz 1969:35, 40, 45, 75, 94, 105). The winter moiety is associated with the colors white and red which represent snow (or winter moisture) and hunting (Ortiz 1969:35, 40, 45, 75, 94, 105). The moieties (and their seasons) are also linked to particular directions, the winter moiety with north and the summer moiety with south. During rituals, members of each moiety enter the town or plaza from the appropriate direction (Ortiz 1969:75).

Color sets and associations can be seen in the regalia worn at Pueblo dances and other rituals, such as masks, headdresses, and various forms of jewelry. One example is Ortiz's (1969:74-75) description of the masks worn by the *Towa é* in preparation for the Turtle dance. In describing how the *Towa é* act as a check on the power of the Made People, Ortiz describes their duties before the Turtle dance. A *Towa é* from each moiety (summer and winter) visit the kiva during preparations to discipline the dancers as they practice for the ritual. The *Towa é* from the winter moiety wears a mask that is decorated with red and white paint, and the *Towa é* from the summer moiety wears a mask that is decorated with yellow and black paint. This is not to say that Paquimé had as clear a moiety system as that of the San Juan pueblo, but rather to demonstrate how colors and color sets can be used as markers of social groups and for the archaeologist, markers of a level of social organization.

Moiety associations are explicitly referenced through the use of items of the appropriate color. The color of the masks and ornaments used were specific to moiety colors (Ortiz 1969:75). When certain deities are impersonated in the Tewa town of San Juan, often only the colors emphasized on the costume differentiate deities representing separate moieties (Ortiz 1969:94). The San Juan example suggests not only single colors, but also color pairs that mark important social divisions.

Context is as important as material when looking at how cosmological principles get encoded. Before analyzing the material at Paquimé in the next chapter, I first discuss how certain contexts are used cross-culturally and ethnographically to inscribe cosmology into architecture.

Caches Among the Pueblo Peoples and in Mesoamerica: Creating a Cosmogram in the House

Caches are one location where we can see color/directional symbolism in the material record of Paquimé. Dedicatory caching was a common practice among both Mesoamerican cultures (the Aztec and the Maya) and Puebloan cultures (Freidel et al. 1993; Kunen et al. 2002; López Luján 1994; Parsons 1996; Voth 1905). These caches were placed at key points under, around, or in a building, such as in corners and under important features such as altars. These caches were placed just prior to construction, renovation, or immediately upon completion of a building.

Building caches are often interpreted as offerings to deities. Caches are gifts, an act of what one hopes will be an ongoing reciprocal exchange. A sacred offering given in return for fertility and growth of the house. As such, these obligations animated the house or structure with the spirits of these deities. As Parsons (1996:292) notes about Zuni offerings to the Sun, "We want *tekohana* [light, i.e., welfare] from Sun, therefore we

sprinkle meal [corn meal] for him." Offerings are explicitly placed in exchange terms. As acts of exchange, the hope is that deities and/or ancestors will bless the house and ensure both continuity and growth.

The metaphor of growth characterizes caches also thought to root or "plant" the building (McKinnon 1991, 2000; Saile 1977). These roots, it is hoped, will perpetuate the growth and health of the house or village. This notion of a house or building having roots was recorded in Hopi around the turn of the century:

> All Hopi houses are said to have imaginary *sihuata* (blossoms) and *ngayata* (roots) and on the eighth day of those Powamu celebrations…the Powamu priest buries four bahos [wooden prayer sticks], one on each side of the village…(one on the north, one on the west, one on the south and one on the east side)…These four bahos are called the *ngayata* (roots) of the village or of the houses. (Voth 1901:76n; see also Parsons 1996:295n)

Caches of sacred material give a soul or animate spirit to a structure, and thus place a building within the larger cosmos (Errington 1989; Saile 1977), essentially planting the house so it can grow. These caches are the material of cosmology and inscribe that cosmology onto the building. By placing the building itself within the larger cosmology and in an exchange relationship with the supernatural, caches animate a building or house. Among the Maya, placing a cache in buildings, whether temples or houses, is understood as a way to create a portal between worlds, a direct link between this world and that of the ancestors or deities (Brown 2004; Chase and Chase 1994; Freidel et al. 1993; Kunen et al. 2002; McKinnon 2000b). This is important, as ancestors and deities are conceived as active agents in everyday life.

Not only are buildings animate, but most all material is animate in both Mesoamerica and the Pueblo world. Rocks, plants, etc., all have spirits, or are "endowed with breath" (Brown 2004:44; see also Bradfield 1995; Cushing 1979; Marcus 2007;

Mills and Ferguson 2008; Parsons 1996:197-198; Tyler 1964; Voth 1905). In the

Mesoamerican and Pueblo worlds, everything is animate. Contrary to Western beliefs,

plants, animals, and even rocks are thought to have a spirit and agency (Brown 2004;

Carrasco 1998; Freidel et al. 1993). In one contemporary Mayan example, Brown (2004)

notes how a particular rock outcrop is a site of veneration and ritual because it is

considered to be the embodiment of ancestral spirits. Items given as offerings in caches

and otherwise do not simply represent the deities or sacred entities, but are actually

considered to be part of the spirit or deity they are associated with; turquoise, shell, and

other material are considered "the material manifestations of *ch'ulel*, the holy 'soul-force'

of the universe" (Freidel et al. 1993:244).

Freidel, Schele, and their colleagues (1993:234) note an interesting distinction

among the Maya between items made by gods and items made by man. They argue that

items made by gods (stones, shell, etc.) were imbued with sacred force at the time of

creation, while objects created by man (buildings etc.) had to have their inner souls put

into them:

> Beginnings were important because of the way the Maya thought of the material world. They believed that places and things made by the gods during Creation were imbued with sacred force and an inner soul from the beginning of time. In contrast, places, buildings, and objects made by human beings had to have their inner soul, their ch'ulel, put in them during dedication ceremonies (Freidel et al. 1992:234).

To place a cache in or around a building was to "make it proper" to, essentially, make it

fit for human occupation.

Both archaeological and ethnohistorical evidence in the U.S. Southwest and

Mesoamerica suggest that building caches were a fundamental part of building and house

construction, necessary not just to make them habitable, but also to ensure their

longevity:

> During the Zuni Molawia ceremonial of 1915, when the housetops were crowded, the roof of one of the houses enlarged that season caved in. The accident occurred, people began to say, because turquoise had not been deposited under the floor of the new chamber (Parsons 1996:105).

As this quote and others suggest, building caches are as fundamental to the construction

of a new building as the building plan and materials.

One of the best-known examples of dedicatory caches comes from the Aztec

Templo Mayor. The *Templo Mayor* is divided into two halves: the north half is dedicated

to Tlaloc, who is mainly characterized as the god of rain (although deities in

Mesoamerica are multifaceted), and the south half is dedicated to Huizilopochtli, the god

of warfare. At each stage in the various remodeling and expansion of this main temple,

elaborate offering caches were placed around the base and in the walls (López Luján

1994). These offerings reconstructed the cosmos by inscribing it into the main city

temple. It has been well documented that the *Templo Mayor* was the center of both the

city and the empire (Broda et al. 1987; Carrasco 1981, 1990, 2000; Townsend 1992). In

addition, most have interpreted the main temple as an architectural expression of the

cosmos and the Aztec origin myth (Carrasco 1981, 2000; Van Zantwijk 1981).

The Aztec *Templo Mayor* is one of the clearest and best-studied examples of the

use of architectural metaphor in North America. *Templo Mayor* was the main temple in

the Aztec capital city of Tenochtitlan. This temple was called Coatepec, or Serpent

Mountain, by the Aztecs and was considered to be a sacred hill (Carrasco 1990, 1998). It

was located under what is now the Metropolitan cathedral in Mexico City. *Templo*

Mayor had two stairways leading to the top of the temple. At the top were two shrines,

one dedicated to the deity Huitzilopochtli and the other dedicated to Tlaloc. The Huitzilopochtli side of the temple was an architectural rendering of the Aztec myth about the birth of this deity. According to this myth, when the "mother goddess" Coatlicue (a representation of the earth) was sweeping the temple, she became pregnant. This angered her 400 children (also called the 400 gods of the south; Carrasco 1990, 1998; Townsend 1992; Van Zantwijk 1981). One of her daughters, Coyolxauhqui, instigated anger among her siblings and worked them into a frenzy so that they would charge the temple where their mother was and kill her.

When the 400 gods reach the top of the temple, Huitzilopochtli is suddenly born and decapitates Coyolxauhqui, throwing her decapitated body down the steps and driving the angered gods south. In addition to the temple dedicated to Huitzilopochtli on the south side of the pyramid apex, at the base of the stairs on the south side a monolith carving was buried. This carving depicted a decapitated and dismembered Coyolxauhqui (López Luján 1994). Thus the myth of Huitzilopochtli's origin is built in stone represented in the most sacred building in the most sacred Aztec city.

This myth was also reenacted in ritual performance through ritual sacrifice, in which a warrior was sacrificed at the top of *Templo Mayor* and the victim was then thrown down the steps. We also see the archetype for Aztec relations with surrounding regions within this myth. The 400 gods are from areas to the south, and attempt to kill or destroy Coatlicue, who is a representation of the earth or terrestrial realm. Thus Huitzilopochtli must destroy them and drive them back. This can be seen as demonstrative of Aztec relations with surrounding regions, which were regularly conquered in war and required to pay tribute (and often had to be re-conquered).

Carrasco (2000:60-61) notes that the myth describes preparations for the attack in the outer regions of the Aztec empire. He suggests that the 400 gods of the south are a reference to the periphery of the Aztec kingdom—the regions that were conquered by, and paid tribute to, the Mexica in Tenochtitlan—thus linking center and periphery (Broda et al. 1987; Casrrasco 2000:60-61). Thus the temple becomes an architectural metaphor for myth and political relations.

The urban centers of Mesoamerica housed the rulers in central ceremonial precincts. These centers did not just represent the locus of political power, but were cosmological centers as well. Often, the cities and the buildings themselves were physical microcosms of cosmological beliefs. Cosmological power represented by these locations and those who occupy them was often the source of political power.

From offerings to Tlaloc, the god of rain, to different kinds of offerings to Huizilopochtli, the deposits at the base of the *Templo Mayor* display evidence of complex rituals that, for the Aztec, were required when dedicating such an important building. The Tlaloc oblations ranged from the sacrifice of more than 40 children (a standard part of Tlaloc rituals) to blue painted jars to greenstone beads (*chalchihuites)*. The offerings to Huizilopochtli consisted of cremated human remains, various stone beads, and ceramic vessels. Each of these groups of offerings was placed on the appropriate side of the temple (López Luján 1994). Here, among the Aztec—at the most symbolically important building of the empire—greenstone and shell are repeatedly used together with explicit reference to Tlaloc, rain, and fertility.

Caches inscribe cosmology into the architecture. Buildings in these regions were not viewed as hollow containers rather, they were considered to be living. They had

roots and spirits that came from and created an identity. A focus on caches at Paquimé leads one to look at the corner caches and what they were inscribing onto the architecture there.

Given the goal of this study to identify connections between social organization and cosmology, architectural features must be evaluated along with the artifacts. As demonstrated in the previous chapter, hearths and posts are important architectural features that often link members of a household to cosmological forces. To assess the importance of these features in the region, I discuss below the ethnographic evidence for the importance of hearths and posts. Following this discussion, I lay out the expectations based on these ethnographic and ethnohistoric models.

Posts in Myth

Cross-cultural ethnographic, ethnohistoric, and archaeological evidence demonstrate the significance of posts beyond their functional uses. Posts, as architectural features that extend from below ground to the roof or ceiling, are often seen as symbolic pathways or conduits between the underworld below and the cosmos above. In many cases, a central room post represents the central tree that was believed to span vertical levels of the cosmos, with its canopy in the upper world and roots in the lower world. In Mesoamerica and the U.S. Southwest, this conception stems from the role posts play in origin myths, although there are differences between the two regions. In both locations, posts represent features that are pathways between levels of the cosmos.

In Mesoamerica, posts played a fundamental part in shaping the universe. In the Mayan myth of creation, the earth was separated from the sky by the central world tree or "*wakah-chan*" rising up through the original hearth and out of a primordial offering plate

(Freidel et al. 1993:71; more on this aspect of the hearth below). This tree is associated with a central post. The world tree is explicitly identified as the Ceiba (*Ceiba pentandra*) tree, and the timing of the origin myth coincides with the life cycle of the tree (when it flowers and when it bears fruit; Freidel et al. 1993:396-397). The central tree is depicted at some Mayan sites as a cross or foliated cross associated with elite architecture such as tombs (Freidel et al. 1993). In fact, the tree and cross metaphors were deeply conflated, and some have argued that they determined the layout and organization of some Mayan sites (Stanton and Freidel 2005). Additionally, the tree and cross metaphors were intimately intertwined with concepts of leadership among the Maya.

Along with the central world tree post, the Mayans believed that the earth and sky were held up by a post in each of the four corners of the universe. These posts were also conceived of as trees (see Figure 4.1 for an explicit illustration of this). Thus, the world was perceived as a square with four corner posts and a central post. These simple architectural features took on more than simple functionality, as they were seen to hold up the very sky itself.

There is evidence that among the Maya, this concept of a square plain with a central and four corner posts was materialized at several levels of Mayan society, from origin myths to temples to the everyday house (Gillespie 2000a; Taube 1998; Vogt 1976). Mayans constructed their houses with four corner posts that are analogous to the cosmic posts (Freidel et al. 1993; Gillespie 2000; Taube 1998). At the time of construction, each of these posts receives offerings during the ritual circuit made around the house (Vogt 1976). These same offerings of chicken blood and liquor are made to the newly constructed rafter joints, which are considered to be analogous to the upper levels of the

cosmos (Vogt 1976). Offerings in holes at the center of the house reach into the lower realms of the cosmos (Vogt 1976). The offerings at these posts are given to the earth god, as the posts can be used as conduits for this deity to enter the house. Thus the Mayan house is a model of the larger cosmos, with posts framing the house as they do the larger Mayan universe, and acting as conduits for spirits and/or supernatural beings.

As with Mesoamerican cultures, among Pueblo cultures in the U.S. Southwest posts were a fundamental part of how the world was conceptualized. According to early ethnographies, many Pueblo myths depict the earth as a place with multiple levels. In the initial phases of emergence, the people climbed up from the wet lower worlds to the dry earth, where people live today (Parsons 1996:212, 218-219). To move from one world to the next higher, people planted and climbed up either a reed or a pine tree (Parsons 1996:210, 219, 237, 243). Trees and posts thus play a slightly different role in origin myths compared to Mesoamerica, but still act as conduits or pathways between worlds.

Another similarity between Mesoamerica and the Pueblo Southwest is the use of architecture as metaphors for origin myths. In Mesoamerica it was the temple that was often a cosmological metaphor, while in the Pueblo Southwest it was the kiva. The kiva is a ritual structure found in most pueblo societies from prehistoric times through modern times. Like the Aztec *Templo Mayor*, the pueblo kiva is an architectural metaphor for creation. The Pueblo act of emergence is acted out in rituals in which groups emerge from underground kivas or ritual structures. Kivas are also locations where secret rituals are enacted, demonstrating powerful ritual knowledge in a restricted space. The scale of these two examples is radically different, but the analogy holds on a structural level.

In societies where spirits of the dead, ancestors, and deities all play an important role in everyday life, posts act as a locus of communication between these worlds. In many Southwestern pueblo societies, death is not construed as an end but rather a "change of status" (Titiev 1992:171). These dead often continue to interfere with and influence the lives of the living. Posts are one way to materialize what Gillespie (2000a:139) calls the "conjunction of the concrete/visible and the immaterial/invisible components of life." Sather (1993:65) also notes that certain architectural features reflect "both the visible world and alternative unseen realities." Through this lens, posts become more that just structural supports. As points of contact, posts often get marked at the time of construction, or throughout their use-life, creating an architectural cosmogram.

The Hearth in Myth

So far the focus on hearths has been their role in distinguishing social groups. However, hearths, like posts, have more cosmological meaning than may meet the eye. The hearth in many Native American societies can be seen as the center of the cosmos, sometimes called an earth navel (Ortiz 1969, Pearson and Richards 1994:12, Freidel et al. 1993). One of the best-documented examples of this occurs in the Mayan area. The post aspect of the Mayan origin myth was discussed earlier in this chapter; here the same myth is briefly discussed, emphasizing the role of the hearth. In Mayan origin myths, hearths are considered to be the cosmological center of the universe, on a literal cosmic level in the stars, on a mythical level as a place of emergence, and on a symbolic level in the everyday house. Researchers have demonstrated convincingly that from the night stars to the Mayan pyramids to the everyday house, the hearth is a symbol of centrality and part of a multi-component *axis mundi*. By tapping into this powerful symbol, leaders made

themselves central to creation (Freidel and Schele 1988; Freidel et al. 1993; Taube 1998, 2000).

In Mayan origin myths, the world tree (wakah-chan, specifically the Ceiba tree) or *axis mundi* emerged through a cosmic hearth marked by three hearthstones to separate the earth from the sky (Freidel et al. 1993; Taube 1998; Tedlock 1996:236-237). The three hearthstones correspond to three specific stars, one of which is the bright star Rigel from the Orion constellation (Freidel et al. 1993). The world tree, or *axis mundi,* corresponds to the Milky Way in its north-to-south orientation (Freidel et al. 1993:97-100). At certain times of the year, the Milky Way moves through these three stars and reenacts, on a cosmic level, the Mayan myth of creation as the world tree rises up through the three-stone hearth to separate the earth from the sky (Freidel et al. 1993). Archaeological evidence reveals that non-elite Mayan households also use three-stone hearths, as well as more recent ethnographic documentation that suggests that a hearth with three stones remains a standard in Mayan homes (Taube 1998; Wauchope 1938:117). The Mayan world is centered through the hearth from the house to the palace to the cosmos. I use this example only to demonstrate how hearths can be central to both formation of social groups and understandings of the cosmos.

Expectations and Conclusions

Hearths, if mentioned at all, are often used as an indicator of room function or to estimate population (Bernardini 1999; Hill 1966, 1968; Windes 1984). I agree that hearths are useful for those studies, but here I aim to add a more cosmological meaning and underpinning as to *why* the hearth is so central to social groups. I do not disagree with these interpretations, but argue that there are additional layers of significance to

hearths in prehistory. Given the importance of hearths, I would expect each household group at Paquimé to be marked by a hearth.

The combination of architectural context and associated materials are the best lines of archaeological evidence for cosmological principles. While the ethnographic, ethnohistoric, and Mesoamerican archaeological records are replete with examples of the importance of color/directional symbolism, one factor remains a point of frustration for archaeological recovery of this concept in other areas: variability. While the overarching principle is similar over time and space, the specifics vary widely between cultures. This makes identifying clear archaeological expectations difficult. However, a few patterns emerge that can help set expectations for identifying cosmological principles such as ancestors, origins, and color/directional symbolism archaeologically.

I will start with the expectations for color/directional symbolism. One of the more challenging points throughout this research has been the fact that although color/directional symbolism has profound effects on social organization, and is clearly articulated in all ethnographic groups discussed, we rarely see an example of offerings or caches directly reflecting the color/directional schema in a one-to-one relation, where north=blue, red=south, white=east, and yellow=west is accompanied by blue material in the north, red material in the south, white material in the east, and yellow material in the west. Things are far more complicated. The only place I could identify this pattern in ethnographic data was on the altars made for specific ceremonies, where color was usually represented by ears of corn or corn meal. This kind of evidence is not likely to survive archaeologically.

What happens more often is the type of offering seen in the example from Voth (1901) given above: a general offering is explicitly referenced in the color/directional framework, but the material used may be variable, possibly including all important colors. In the example from Voth's study of Hopi, wooden pahos were used to mark the directions. Voth does not suggest that these wooden prayer sticks were painted, but the act was specifically referenced in terms of a color/directional system. What is important is that while the form may vary, the directions get marked. This is also true for Ortiz's discussion of the Tewa conceptions of the world. Mountains and shrines on the landscape mark directions within a specific framework of color and direction, but materials used to mark those directions vary. A similar pattern is seen in the ethnographic evidence from modern Mayan groups. While building a house, the same kind of offering is made in each corner. Again, participants reference this offering explicitly in a color/directional framework, while the material may reflect more specific aspects of the ritual. The expectation, then, is to see a marking of directions, while the form of that marking may vary slightly.

Expectations for color pairs are more straightforward. Color pairs are expressed by the use of particular colors together in different media, such as ceremonial masks, costume ornamentation, and offerings, as well as being paired in myths and origin stories (Ortiz 1969; Parsons 1996). Thus, if color pairs were an aspect of Medio Period cosmology at Paquimé, we would expect to find two colors of a pair associated, most likely across multiple media types.

For color/directional symbolism, therefore, we would expect the directions to be marked and emphasized, and color to occur in pairs in a variety of contexts.

Unfortunately, for color/directional symbolism I have to leave expectations at this broad level, for reasons related to the variability seen ethnographically and cross-culturally. First, the concept of color/directional symbolism permeates every level of society and is expressed in myriad and complicated ways. Additionally, between-group diversity adds another level of heterogeneity as each pueblo and the different Mesoamerican groups all have slight variations on the overarching color/directional scheme. No two cultures share an identical conception of this idea. Given that, it would be unreasonable to expect evidence at Paquimé to look exactly like the ethnographic or cross-cultural evidence in the U.S. Southwest or Mesoamerica. Because of this diversity, expectations for the archaeological record must remain flexible.

Cross-cultural and ethnographic comparisons provide a model of how ancestors and origins are linked to and expressed through color/directional symbolism. This model shapes all aspects of these societies, from subsistence practice to labor organization. However, both within and between these comparative regions there is immense variability in the concept of color/directional symbolism and how that articulates with ancestors and origins.

Chapter 5: The Material of Cosmology: Red and Blue/Green Color Symbolism at Paquimé

I hypothesize that color/directional symbolism was part of the Medio Period cosmology at Paquimé, and that this cosmological principle was reshaped during this period and used to create difference. Specifically I suggest that the color pair of red and blue/green (written as b/g from this point) was an important part of the macaw complex at Paquimé, and became a language through which difference and hierarchy were expressed. I identify the color pairing of red and b/g through multiple media types, from macaw burials of multiple species to painted ceramics and painted rooms.

Interestingly, many iconographic studies discuss macaw symbolism on the complex Ramos polychrome vessels found at Paquimé however, these discussions rarely look at the birds themselves, one of the things for which Paquimé is famous (Hendrickson 2003; Stuhr 2002; Van Pool 2003a, 2003b). When scarlet macaws are discussed, it is their economic importance as a trade item that is most often emphasized (Di Peso 1974:2; Minnis et al. 2003). I suggest this economic emphasis is at least partly responsible for this odd separation of the birds themselves and depictions of these birds on other media. It is not my intention here to minimize the economic importance of the scarlet macaw, but rather to add to that importance with local significance, specifically how the relation of both scarlet and military macaws can speak to wider cosmological ideas.

Macaws as Evidence of Red and Green

Red and green were found together across different media, but in a relatively concentrated area. Red and green combinations were identified in macaw burials of both scarlet and military macaws, on specific kind of ceramic vessel, and wall decorations.

Particularly, the intentional burials of scarlet - and the more locally available - military macaws are suggestive of the intentional pairing of red and b/g. Materials of these two colors were grouped around a limited area of the site, suggesting that these people could mobilize the appropriate ritual knowledge to use them.

Among the surprising finds at Paquimé was evidence of extensive aviculture. The remains of tropical macaws were found buried under plaza floors, under room floors, and in features identified as birdcages. These cages were located along a few plaza walls, mainly in Plaza 3-12. Birdcages at Paquimé had two adobe walls with a distinctive round "donut"-shaped stone in the front for access. Many of the bird remains were found in these features. Macaw remains in almost every stage of development, from eggshells to mature adults, as well as isotope analysis suggest that the scarlet macaws were bred on the site (Di Peso et al. 1974:531:5, 292-296:8; Somerville et al. 2010). The specific birds that appeared to have been raised at Paquimé include the scarlet macaw, or *Ara macao*, and the common turkey, or *Meleagris gallopavo*. The military macaw, or *Ara militaris,* does not appear to have been bred at Paquimé, as there are no eggshells or nestlings. The presence of only older birds suggests that military macaws were captured in the wild and brought to the site rather than raised there.

The two most abundant species of parrots found at Paquimé were the scarlet macaw and the military macaw. The scarlet macaw has bright red feathers along the back and chest, with blue and yellow wing tips and tail feathers. The scarlet macaw fledges between 72-79 days old (Myers and Vaughan 2004). The military macaw has bright green feathers along the back and chest with blue wing tips, and red tail feathers and a red patch immediately above the beak.

Of particular interest for this discussion are the scarlet and military macaws found intentionally buried together. The remains of these birds were, more often than not, found together in prepared burials. Scarlet macaws almost invariably occur in greater numbers than military macaws, both in the bird burials and in the overall bird population at Paquimé. These finds are unusual in the SW/NW region, and have shaped many interpretations of the site. Following McKusick (Di Peso et al. 1974:8:278, 290), I suggest that these birds were buried together due to their prominent green and red colors.

The trade in feathers and their ritual importance is well known in the U.S. Southwest/Mexican Northwest (Benson 1997; Creel and McKusick 1994; Cushing 1979; Minnis et al. 1993; Parsons 1939; Somerville et al. 2010). Scarlet macaws are native to the more tropical environments of southern Mexico and beyond. These birds were traded as far north as Pueblo Bonito in Chaco Canyon, New Mexico, much earlier than their first appearance at Paquimé (Creel and McKusick 1994; Hargrave 1970; Judd 1954). The military macaw is indigenous to the drier Sierra Madres just west of Paquimé, and thus has not been discussed as a trade item. In order to add to and understand the full importance of the scarlet macaw, they must be put into context with the local military macaw.

The prepared burials of multiple bird species made up 71.4% of the avian remains at Paquimé, with scarlet macaws comprising 34.5% of the total on their own (Figure 5.1; Di Peso et al. 1974:273:8). A total of 403 macaws were found that could be identified by species. Of these, 322 were scarlet macaws and 81 were military macaws. The prepared burials of macaws constituted a subset of these total avian remains. The prepared macaw burials included single birds and multiple birds, for a total of 136 burials containing 293

birds. Out of these 136 macaw burials, 89 were multiple bird burials containing 192

birds total (including both military and scarlet macaws). These multiple burials will be

the focus of the remaining discussion.
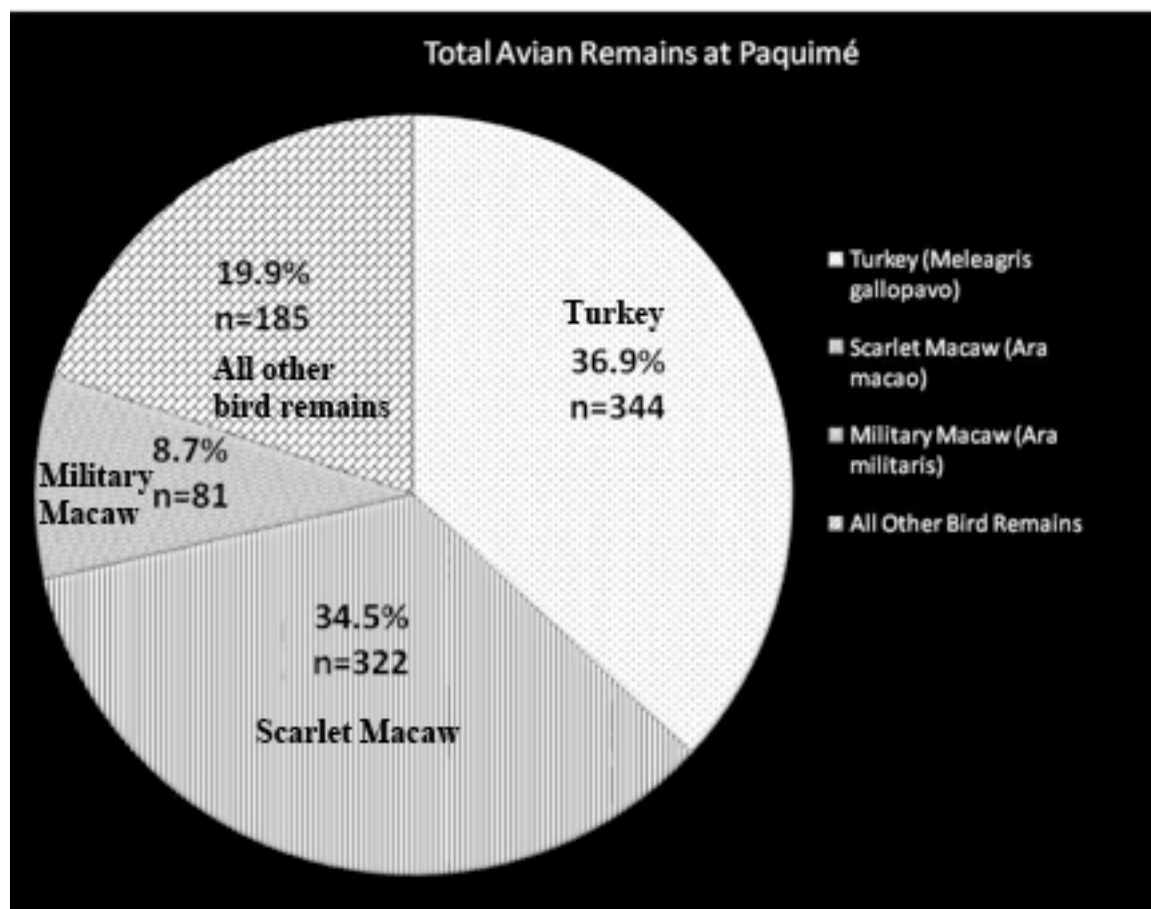
Figure 5.1: Percentages and frequencies of avian remains found at Paquimé

The overwhelming majority of these macaw remains were found in Plaza 3-12

(Figure 5.2). Most of the birdcages described earlier were located along the south wall in

Plaza 3-12. Plaza 3-12 was clearly a locus of scarlet macaw breeding, given the remains

of macaws in all stages of development from eggshells to nestlings to mature birds found

in the cages and under the plaza floor (Di Peso et al. 1974:vol. 8; Minnis 1988; Minnis et

al. 1993; Somerville et al. 2010). One bird burial (BB/8) in Plaza 3-12 was found with

252 shell beads (catalog numbers CG/5509 and CG/5510). This burial had two scarlet macaws and one military macaw.
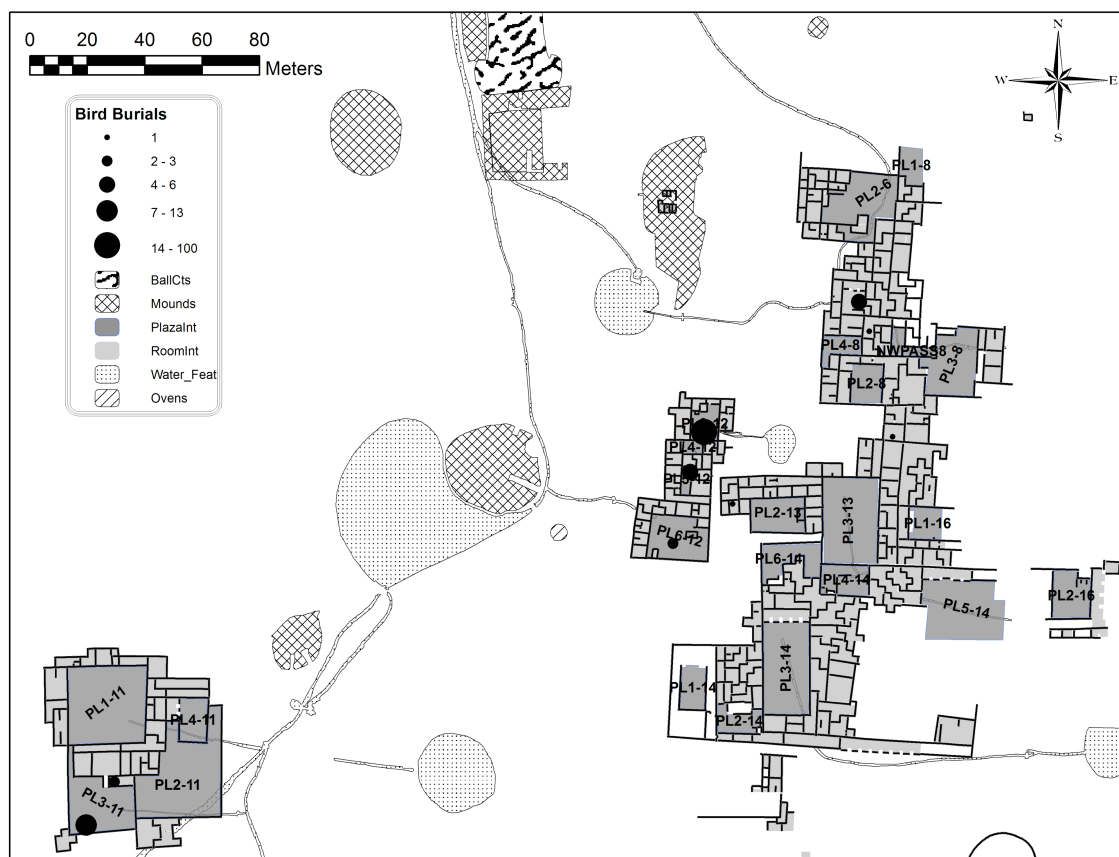
Figure 5.2: Paquimé: the main roomblock and SW roomblock. Black dots show the macaw burial distributions. The size of the dot indicates frequency of individual birds.

Although the overwhelming majority of macaw remains were found in Plaza 3-12 (67% of macaws in prepared burials), macaw burials were also found in a few other locations around the site (Figures 5.2 and 5.3). One large room (room 19-8) had an unusual concentration: 43 macaws (12% of the macaws in prepared burials), consisting of 34 scarlet macaws, seven military macaws, and two that could not be typed to species (*Ara sp.*). Of the 43 birds in this room, 34 were found in one group burial, while an additional seven (five scarlet and two military) macaws were found with a human burial. Very few humans were found with birds, the case in room 19-8 is unusual. In only two

other cases were humans buried with birds; in one, the individual was buried with a

turkey, and in the other the individual was buried with two turkeys and two scarlet

macaws.
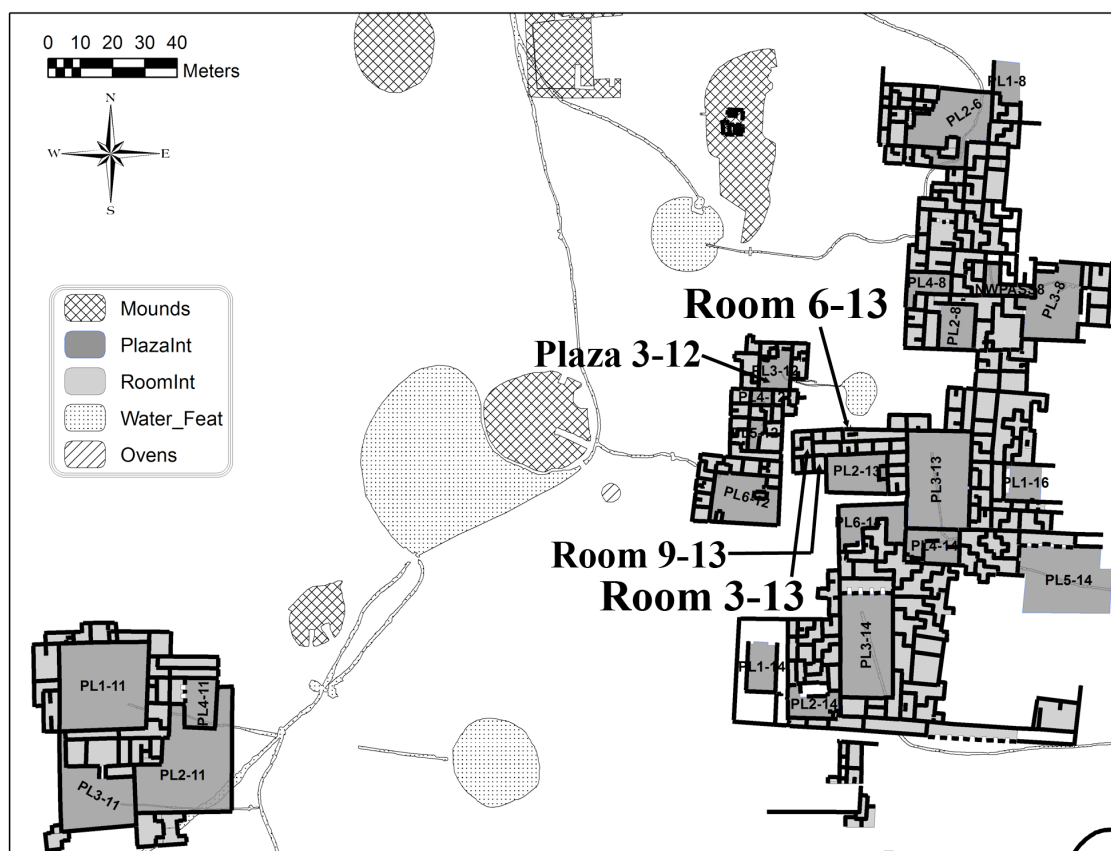
Figure 5.3: Plaza 3-12, the location of 67% of the macaw burials, and rooms 3-13, 6-13, and 9-13, where the majority of the ceramic hand drums were found.

Although the numbers suggest that the scarlet and military macaws buried

together are significant based on observation alone, a chi-squared test was run for

certainty (Table 5.1). This test was run on the counts of birds found in prepared burials.

With two degrees of freedom, the chi-square value is 20.95 (p<0.0001). There is an

extremely low probability that this distribution is random. A Cramer's V test of 0.264

suggests a strong relationship between the military and scarlet macaws found at Paquimé,

indicating that the presence of a military macaw will predict the presence of a scarlet

macaw, but not necessarily the other way around. This suggests that the military and

scarlet macaws were intentionally buried together.

Observed	Single Burials	Multiple burials of one species	Multiple burials of both species	Totals
Military Macaw	6	2	59	67
Scarlet Macaw	33	61	138	232
Totals	39	63	197	299

Table 5.1: Totals of scarlet and military macaws in prepared burials, both single and multiple. Numbers include only birds that could be identified by species; excludes *Ara sp*. and burials where an *Ara macao* or *Ara militaris* was buried *only* with an *Ara sp*. Also includes only macaw remains from contexts identified as intentional burials, not bird/faunal remains in other contexts.

I suggest that the Paquimeans intentionally placed these macaw species together

due, in part, to their prominent red and green colors. I further suggest that this color

pairing of birds is part of a larger ritual complex involving the actual macaws along with

the complex representations of macaws on ceramic vessels, as well as the pairing of other

material types. Macaw symbolism at Paquimé has been prominent in several studies of

the region, as well as studies of symbolism across Mesoamerica and the Southwest

(Mathiowetz 2008; Schaafsma 2001; Van Pool 2003a, 2003b). The intricate macaw

designs on Ramos polychrome jars, the effigy vessels of macaws, and the

anthropomorphic beings with macaw heads (shown in Chapter Two, Figure 2.3), have

been the focus of these studies(Hendrickson 2003; Schaafsma 2001; Van Pool 2003a,

2003b). Interestingly, the symbols painted on Ramos polychrome jars have dominated

discussions of ritual symbolism at Paquimé, while the birds themselves are mostly

discussed in economic terms. Here I put the birds themselves into the picture and argue

that they are part of this larger ritual complex, and more specifically, that they are part of the complex involving red and green.

Given the variability in meaning of specific deities across regions adjacent to Paquimé (not to mention within those regions as well), I do not venture to suggest a specific meaning for the macaw symbolism. I only suggest that the association of red and b/g was part of a ritual "package" of sorts that included complex iconography on the Ramos polychrome vessels, a macaw deity, transformational rituals suggested in the Ramos iconography (Van Pool 2003a, 2003b), and the transition or change of status associated with the burials in Unit 13. First, however, additional lines of evidence must be discussed for the association of red and b/g.

Red and Green Ceramic Hand Drums

There is additional evidence for the intentional association of red and green at Paquimé. A unique form of ceramic vessel was found to have red and green paint designs. In Unit 13, at the center of the site, excavators found a large number of ceramic hand drums, almost all of which were associated with human burials. Twenty-two of these vessels have red and green paint around the base **(**Figure 5.4**)**. These vessels have a wine glass shape with perforations around the top edge for attaching, presumably, a skin of some sort across the top (Figure 5.4). Around the base designs were painted in alternating red and green segments. No other vessel has this kind of paint or design. Within the ceramic assemblage of Paquimé, these vessels are unique not only for their form but also for their restricted distribution, which suggests highly restricted use. They are found almost exclusively in Unit 13, with most concentrated in a few rooms (Figure

5.3). They are found only in burial contexts, and only in eight rooms at the site. There is a concentration of these vessels in rooms 3-13 and 9-13 (Figures 5.5 and 5.6).
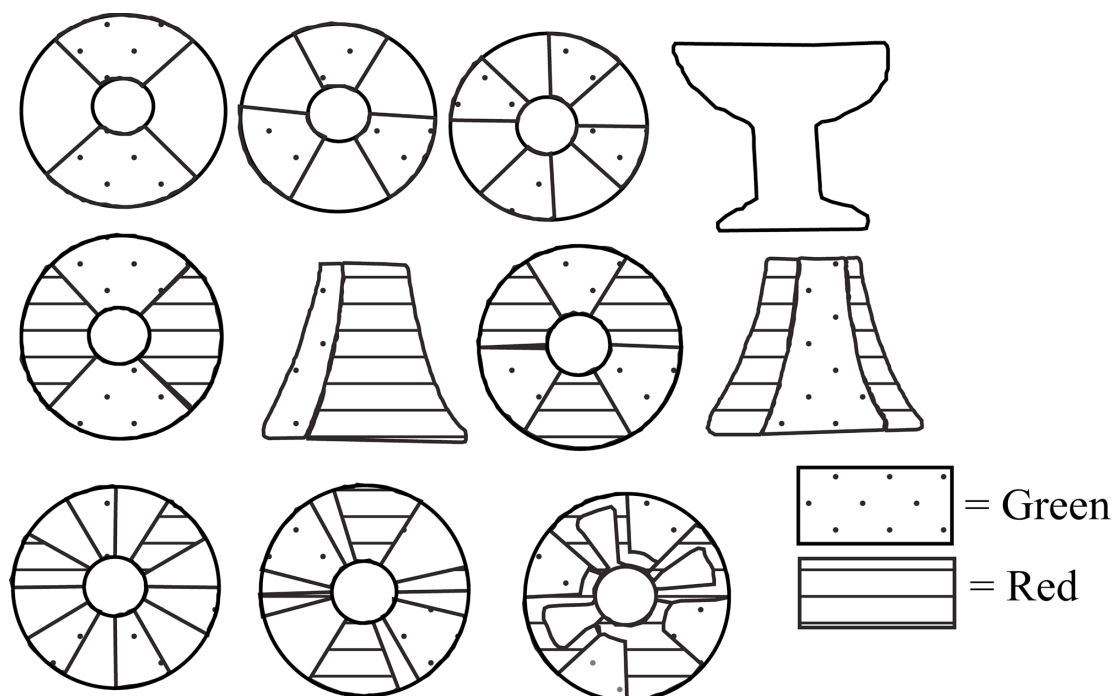
Figure 5.4: Paint designs on the base of the ceramic hand drums found in Unit 13.

Figure 5.5: Ceramic hand drums on top of burial in room 9-13. Courtesy of the Amerind Foundation Inc.

The excavators of Paquimé labeled Unit 13 as the House of the Dead due to the

large number of human burials in this unit. In addition to multiple ceramic hand drums,

rooms 3-13 and 9-13 (Figure 5.6), room 3-13 also had one of the most elaborate burials at

Paquimé outside of the Unit 4 burials on top of the Mound of Offerings, which will be

discussed later (Di Peso et al. 1974:8:389). Human burial 44-13 was what the original

excavators called a "tomb burial" (Di Peso et al. 1974:8).
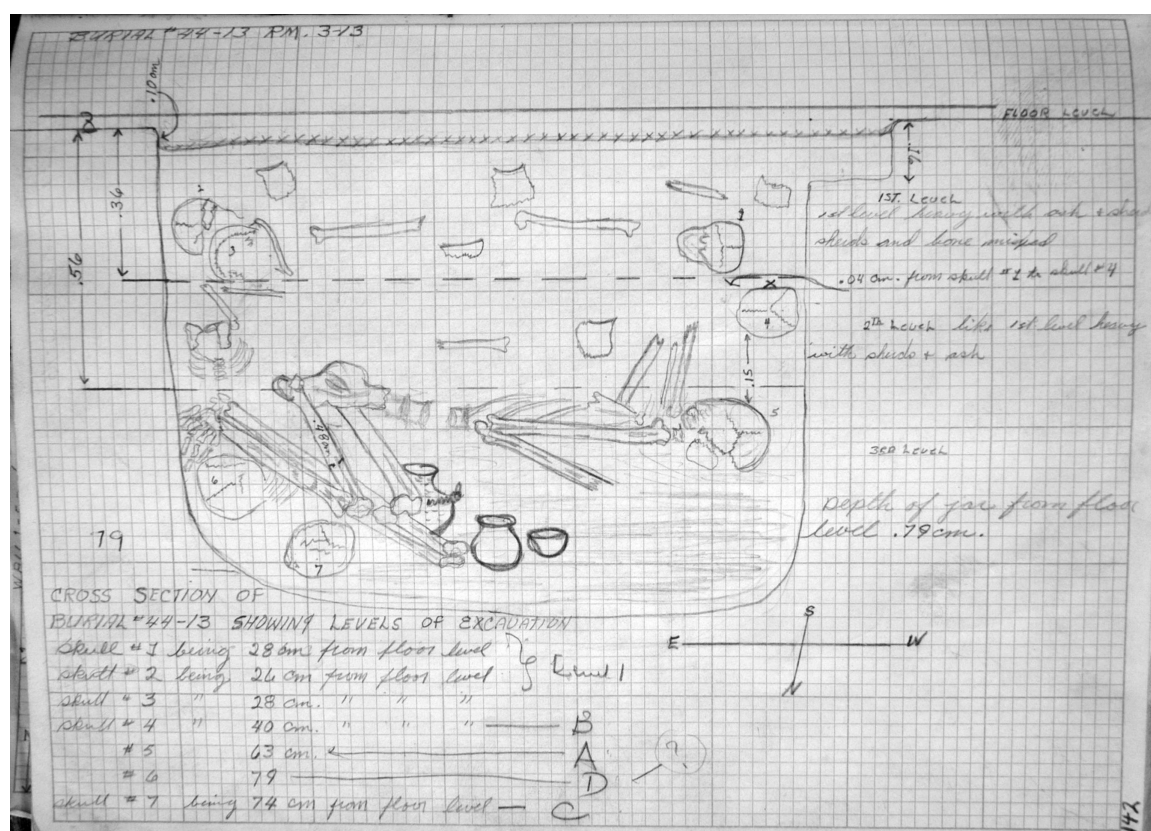
Figure 5.6: Original profile drawing of "tomb" burial number 44-13 in room 3-13 (Field
notebook 2, p. 142). Courtesy of the Amerind Foundation Inc.

Tomb burials were large burial pits, covered with wood planks that often (but not

always) had multiple individuals and a large number of grave goods. However, given the

diversity in mortuary practices at Paquimé, multiple individuals and grave goods are not

what made these burials different, what distinguished these burials was the grave

construction itself (Rakita 2001; Ravesloot 1988). These were large, plaster-lined pits with wooden planks covering the top as a lid of sorts, which were then plastered over at the floor level. The wood-plank covering was rare at Paquimé. Only a few burials were constructed in such a way. Rakita (2001, 2006, 2009) has suggested—correctly, I believe—that these graves were revisited and the bodies and offerings placed in the pits over time.

All of the ceramic hand drums found were broken. Given the state of the vessels and the context, it is possible these vessels were intentionally broken. Intentional breakage is suggested by the distribution of the pieces (Di Peso et al. 1974:5:596). Pieces of several vessels were found in multiple, noncontiguous rooms. For example, sherds from one vessel (catalog number CG/8531) were found in Plazas 2-13 and 3-13, as well as rooms 6-13, 1-13, 3-13 (Di Peso et al. 1974:5:596). This was the case for several of the ceramic hand drums. This distribution suggests intentional breakage. The distribution of vessel pieces may have happened during mortuary rituals.

There are other examples of ritual "killing" of an artifact. In the Mimbres area, ceramic vessels buried with individuals often have a "kill hole" in the bottom (Gilman 1990). Given the context of the red and green hand drums at Paquimé, it is not a stretch to suggest that these vessels were ritually destroyed during mortuary rituals.

Needham (1967) and Vogt (1977) have noted the association of percussion and transition during ritual ceremonies. Ethnographic evidence has noted the importance of drums in Pueblo ceremonies (Parsons 1996:382). If death in Native American societies is considered a "change of status" rather than an end point, I argue that these painted drums along with the association of red and b/g were associated with the concept of ritual

transition. The repeated ritual offerings at the gravesites in Unit 13, suggests a gradual transition of the people buried there to the status of ancestors.

If the ceramic hand drums were played during ceremonies involving the revisited "tomb" burials (with breakage possibly indicating a successful transition and the end of the ritual), then there are several connections to be made between red and green, macaws, and ceramic iconography. Red and green may be a common thread linking the birds themselves, the ceramic hand drums, and associated elaborate burial practices, with the complex macaw iconography on the famous Ramos polychrome vessels. While the vessels themselves are not red and green, they commonly depict macaws in various forms (Di Peso et al. 1974:6; Van Pool 2003a, 2003b).

Ritual has long been associated with life transitions (Van Gennep 1960). Van Pool (2003a, 2003b) has suggested that the anthropomorphic, macaw-headed figures on some Ramos polychrome vessels are depictions of shamans during a shamanistic transition to a supernatural realm. It might also be argued that these are depictions of an anthropomorphized version of a macaw deity. However, my point is not to argue what these representations might be, but rather to draw attention to the transition aspect, be it a shaman in transition or a deity in transition. Rituals involving red and b/g conducted at the central location around Units 12 and 13 may have been concerned with the proper transition of certain peoples into important ancestors.

In room 10-13 we see further evidence for the intentional pairing of red and green. In this room, next to the concentration of hand drums, red and green stripes were painted on the wall. The following was noted in the original field notes (Field notebook 2, p. 58): "Paint on west face of wing-wall—red and light green (same colors as on the

open-ended pots [ceramic hand drums] in Unit 13)." The published volume explicitly

states that the paint on the walls appears to be the same paint used on the ceramic hand

drums (Di Peso et al. 1974:5:602). Thus, red and green were used together across

multiple media.

A particular set of ritual practitioners were able to mobilize a complex suite of

ritual symbols to elaborate the burial locations of a subset of people at Paquimé. I would

argue that the group of people in Unit 13 may be considered a subset of ancestors, or a set

subsidiary to the main group on the Mound of Offerings. To distinguish themselves

and/or their ancestors, this group was able to use the macaw icon and associated symbols

in multifaceted ways. If one element of hierarchy is envisioned as encompassment, given

the size of Paquimé, one would expect there to be multiple levels of social groups.

Through the use of this symbolic complex, difference was instantiated—physically

manifested in complex ritual practices.

The association of red and green links macaws, elaborate burials in Unit 13, and

the complex macaw imagery on Ramos polychrome vessels. However, although Ramos

polychrome vessels are not restricted in their distribution, the red and green association

speaks to a spatially restricted set of ritual practices. Both of these examples of the

association of red and green were found in the center of the site, in close proximity to one

another (units 12 and 13). This suggests a highly localized ritual practice that involved

items of red and green. Red and green ceramic hand drums are not found in the burial

population outside unit 13, next to the plaza were the macaw burials were found. The

interment together of scarlet macaws and the more locally available military macaws was

clearly intentional and fairly systematic. I argue that these associations and restricted

distribution indicate an attempt to mark a set of ancestors who are hierarchically below those on the Mound of Offerings, but above others across the site. In other words, the red and green focus in this area may indicate the establishment of a "house" that was involved in complex ritual practices and may have been responsible for the care and raising of macaws.

Discussion and Conclusions

Archaeologically, we can see the remains of ritual events at Paquimé in various forms. Taken separately, these forms of ritual expression appear quite disparate, but if instead of seeing them as disconnected pieces, we look at them as part of a related system of meaning, connections can be seen. In the case discussed here, that larger system is the cosmological principle of color/directional symbolism. This principle provides a framework of meaning for several previously inexplicable items found at Paquimé.

The bird burials at Paquimé have long been a source of interest for scholars. Di Peso and his colleagues found various species of macaws buried at Paquimé. Scarlet macaws have attracted the most attention because of the distance to their natural habitat and the large number of these macaws found in formal burials. The number of scarlet macaws found at Paquimé is not seen in any other site in the U.S. Southwest. The focus on context in this study brought the military macaw into high relief as being equally important, if not as numerous, as the scarlet macaws. The natural habitat of the military macaw is in the Sierra Madre mountain range just west of Paquimé. This more local availability has led researchers to exclude the military macaw in discussions of the uses of macaws as prestige items at Paquimé (Minnis et al. 1993).

I have argued here that military and scarlet macaws are intentionally buried together due, at least in part, to their color. I argue that the burial of these two birds together is one example of the association of red and green. I demonstrate that the military macaw is almost always buried with a scarlet macaw. The greater number of scarlet macaws means that they are also found in single-species burials more frequently than are military macaws.

Another line of evidence that indicates the intentional pairing of red and green (green-blue) was found on the painted designs of the ceramic hand drums. All of these wine-glass-shaped vessels were broken and concentrated in a few rooms in Unit 13. The paint at the base of 22 of these vessels was an alternating red and green pattern. Ceramic hand drums were found exclusively with human burials in Unit 13. All of the vessels were found broken, most likely intentionally. Unit 13 had an unusually high number of burials compared to the rest of the site, and contained some of the more elaborate burials as well.

The rooms in Unit 13, where these vessels were found, are in the center of the site next to Unit 12, where the macaw burials were found (and where the macaw cages were located). Taken together, the association of red and green is concentrated at the center of the site and associated with a ritual complex involving red and green. However, the red and green painted ceramic hand drums only appear in a limited number of burials in a highly restricted location. No hand drums are associated with the population buried outside Unit 13. Ethnographically, the association of two colors as part of the color/directional suite of symbols has been shown to be an important marker of group identity among some groups in the U.S. Southwest. With the concentration of scarlet and

military macaw burials in Plazas 3 and 5-12 and the red and green painted ceramic hand drums next door in Unit 13, I argue that the association of red and green at Paquimé was a marker of one social group. These people had some of the more elaborate burials at the site (although not the most elaborate), and are buried in close spatial association with the macaws.

The other color set identified here was white and blue/green, seen in the consistent association of shell and turquoise. At Paquimé, white and blue/green are seen in the presence of shell and turquoise and other green stones in corner caches in several rooms, in caches that are less uniform than the corner caches, and in shell painted blue/green. The requirement of this color association was met through multiple stone types. While shell always made up the white portion, the blue/green color requirement was met through turquoise, malachite, and ricolite. This color combination is the subject of the following chapter.

At Paquimé, the evidence points to different contexts in which different symbols are used. However, we must keep their specific meanings on a slightly broad level. We see turquoise and shell used in various contexts across the site. The repeated contexts, however, consist of architectural and water features and burials, both human and avian.

All facets of the ethnographic record cannot be taken as direct examples of prehistoric society. However, there are aspects of Native American cosmology and social organization that have formed consistent threads over the course of time and remain important parts of indigenous identity (Cushing 1979; Freidel et al. 1993; Vogt 1998; Whiteley 1998). By taking indigenous ideas about cosmology seriously, we can understand how that worldview shaped the archaeological remains we see today.

Chapter 6: The Material of Cosmology: White and Blue/Green Color Symbolism at Paquimé

One of the features Paquimé is best known for is the vast quantities of marine shell found at the site. This shell was commonly found together with turquoise in various contexts, including corner caches and general room assemblages. I argue that these items were intentionally used together and inscribed color/directionality into the architecture of Paquimé, thus locating the buildings at Paquimé and the people who occupied them within the larger cosmology/worldview. Specifically, I argue that white and blue/green mark directional axes, bringing color and direction together in a unique manifestation of color/directional symbolism. First, I discuss shell and then turquoise at Paquimé overall, and finally, I discuss how these two materials were used together.

Shell at Paquimé

The combination of b/g and white had a broader distribution across Paquimé than the red and green. While shell is found in many rooms across the site, specific contexts suggest the intentional pairing of these two colors in a manner similar to red and green. Contexts that are repeated across the site, such as corner caches, and contexts in which there are unusual quantities of shell together with b/g stones suggest an important relationship between these two colors.

Shell was an important trade item in both Mesoamerica and the U.S. Southwest. In the U.S. Southwest marine shell was brought in from great distances along extensive trade routes (Bayman 1996; Bradley 1993, 1996; Mills and Ferguson 2008). These were likely the same routes that moved scarlet macaws, cacao, and other goods north from the southern Mesoamerican and western Mexico regions to the U.S. Southwest (Somerville et al. 2010; Crown and Hurst 2009; Mills and Ferguson 2008). Much of the shell at

Paquimé came from the western coast of Mexico (Bradley 1993, 1996). As one of the most numerous artifact material types found at Paquimé, there is a great deal of variability in the shell distribution across the site (Figure 6.1).
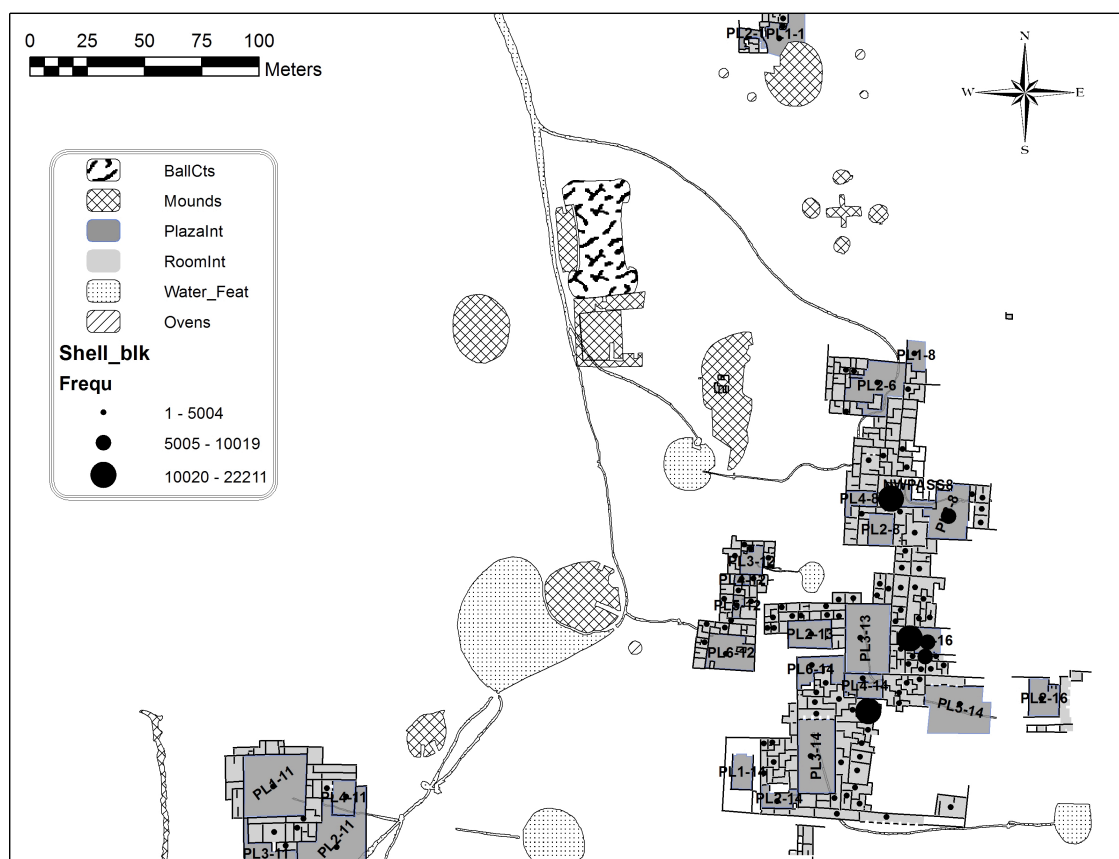
Figure 6.1: Distribution of shell across the site of Paquimé. The black dots display the frequency of shell in rooms where it was found.

The shell at Paquimé was worked into many forms, including beads, tinklers, armlets, rings, and trumpets from various species. Shell was found in very different contexts across Paquimé. (Figure 6.1)[1]. The majority of the shell found was in the form of small beads, using the *Nassarius* and *Chama* genera. Large armlets and trumpets were made from shells of the *Glycymeris* and *Laevicardium* genera. The armlets were often

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[1] Charts and maps showing shell frequencies and distributions do not include room 15-8, which had 1,741,298 pieces of shell in the ground floor room alone and would thus swamp any chart or map. Room 15-8 in all cases is an outlier and will be discussed separately.

carved with geometric designs, and some of the bracelets were inlaid with turquoise.

Shell trumpets are more common than bracelets or armlets, with 90 total shell trumpets in

floor context in various rooms and plazas. Like the bracelets and armlets, two of the

trumpets were sometimes inlaid with turquoise tesserae.

As the histogram below shows, shell was found throughout Paquimé in radically

uneven distributions, and some rooms contained remarkably high concentrations (Figure

6.2). The amount of shell in a room was not a factor of room size (Figure 6.3). In fact,

there is a slight inverse pattern, in which some of the highest concentrations of shell were

found in the smaller rooms. Shell frequencies, when plotted against room size, roughly

break into four groups: rooms with less than 2,000 pieces of shell, rooms with 3,000-

5,000, those with 5,000-10,000, and those with more than 15,000 (Figure 6.3). Five

groups can be identified if room 15-8, which had more than 1,700,000 pieces of shell, is

included.

Both rooms in which large quantities of shell occur and those with smaller

quantities, but in distinct contexts, are important for understanding the relation of shell

and turquoise. Thus, I break the discussion of this pattern into two sections, first, the

three groups with large quantities of shell, and second, the groups with smaller quantities

but unique contexts. First, let us contextualize the rooms in the three groups that have the

largest quantities—groups 2, 3, and 4. Within these groups of rooms with high quantities

of shell, comparison of the general room assemblages and architecture suggests a further

breakdown: those rooms/plazas that appear to be locations of shell ornament production

(rooms 10-16 and possibly room 42-8 and Plaza 1-16), those
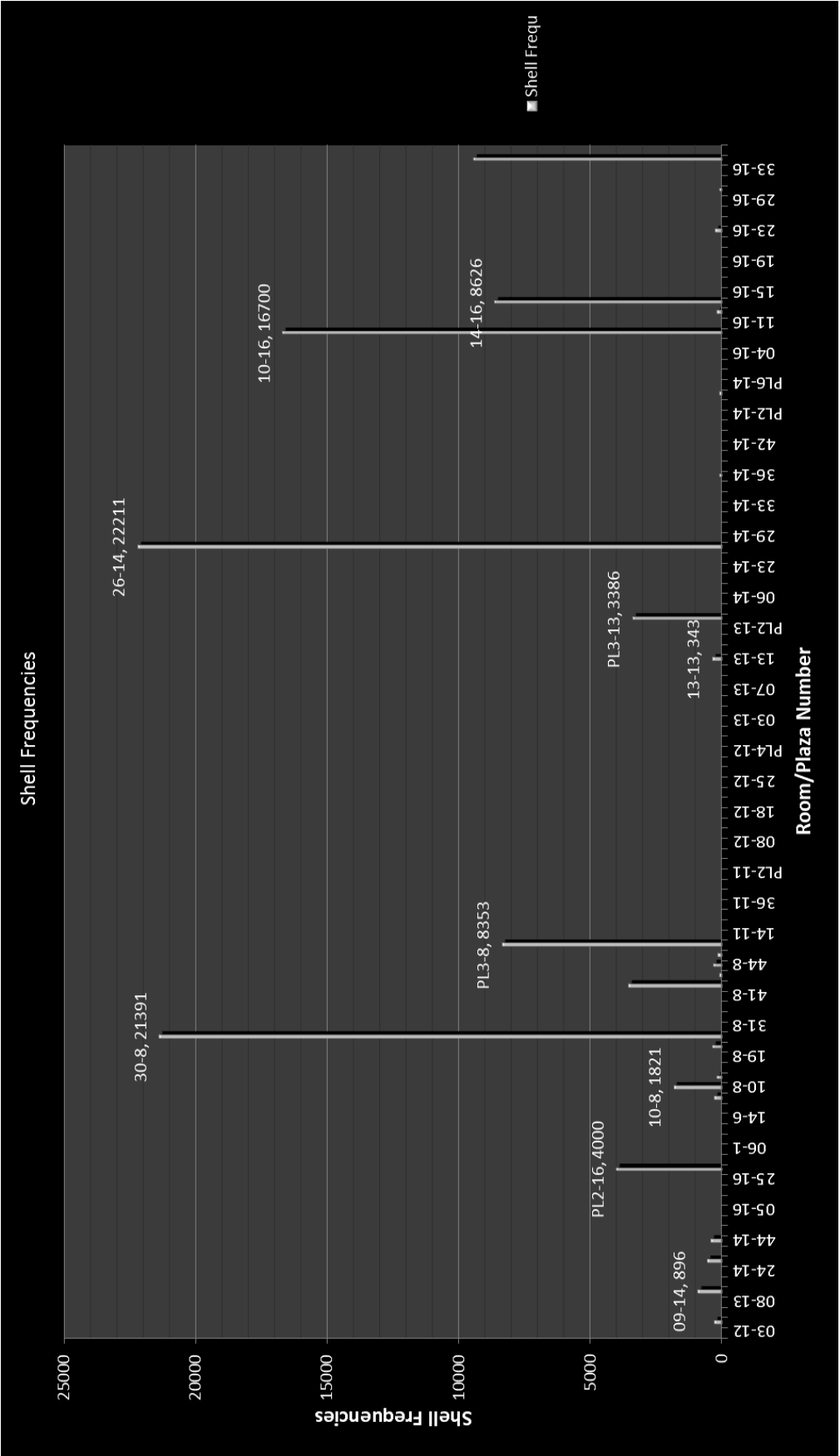
Figure 6.2: Total shell counts in floor context by room. The labels are in a room number, frequency format (excluding room 15-8).
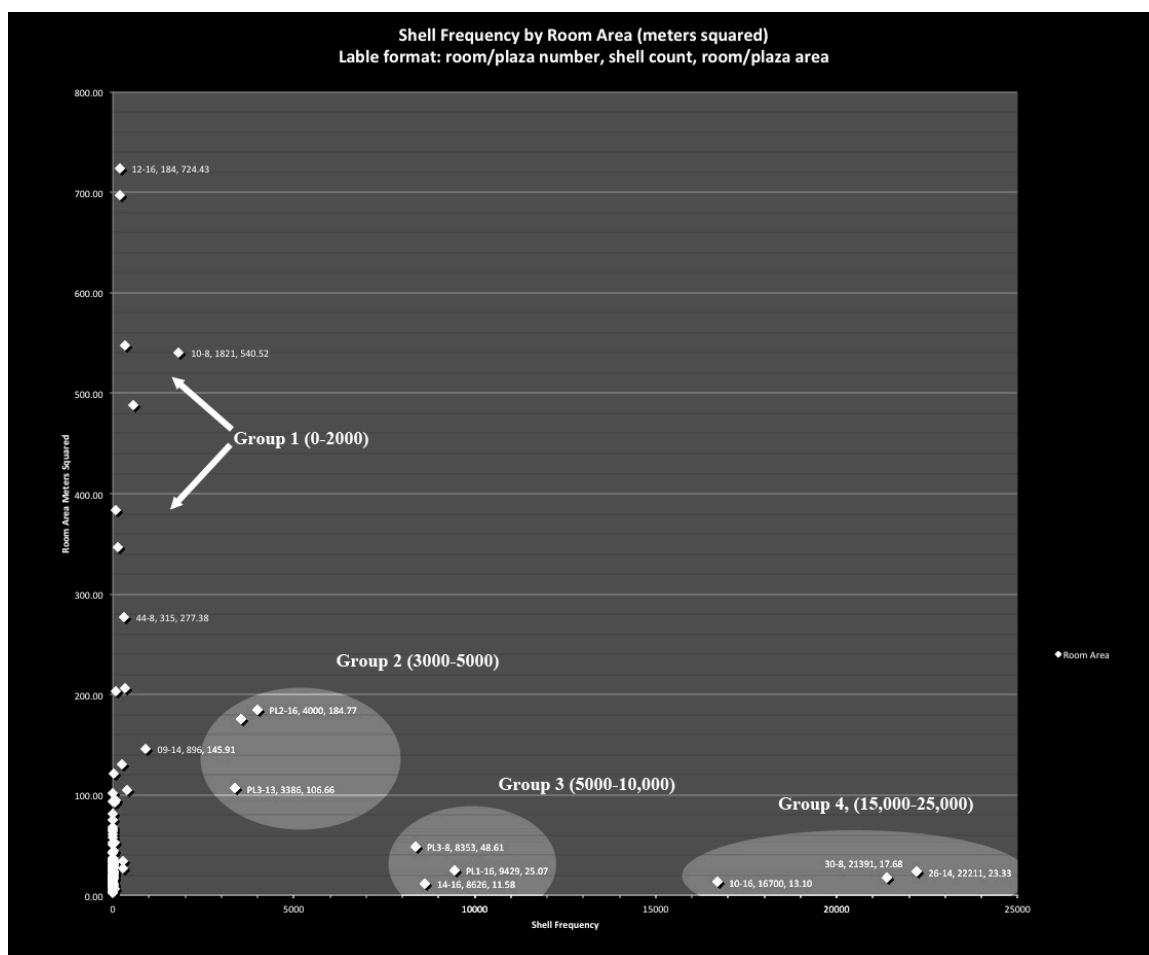
Figure 6.3: Scatter plot of shell frequency by room size. Highlighted areas show room groups with 3,000-5,000, 5000-10,000, and 15,000-25,000 pieces of shell (0-2,000 group not highlighted).

room/plazas that appear to be an end point for finished artifacts (rooms 30-8, 14-16, Plazas 3-13, and 3-8), and those assemblages that are more ambiguous (rooms 26-14 and 42-8). I analyze the rooms in Group 4, with the most shell to demonstrate how each room falls into one of these categories: production locus, end point (consumption) locus, or ambiguous assemblage. The remaining rooms and plazas have unique attributes that warrant delaying their analysis until their assemblages can be contextualized with the turquoise analyzed below.

Group 4 consists of rooms 10-16, 30-8, and 26-14. The architecture in room 26-14 makes it distinct from the other rooms in the Group 4 shell-frequency cluster, and

more similar to room 15-8, which had more than four million pieces of shell (Minnis and

Whalen 2005). The ceiling of the lower story of room 26-14 was only one meter above

the floor (Di Peso et al. 1974:5:665). A hatchway was located at the corner of wall W13

(west 13) and N14 (north 14) that offered access to the lower level. This is remarkably

similar to room 15-8, where the lowest level was only one meter below the ceiling and

access to the shallow level was gained through a hatchway at the corner of the N4 (north

4) and E5 (east 5) walls (Di Peso et al. 1974:4:426). Other rooms at the site do not have

this shallow lower level accessed by a hatchway. Also, these two rooms, rooms 26-14

and 15-8, have the largest quantity of shell at Paquimé; room 15-8 has 80 times more

shell than room 26-14.

One important point of context is the room assemblage as a whole. Did these

rooms with high quantities of shell also contain a large number of stone tools, and was

unworked shell present? If so, this might indicate a workshop or location of shell

ornament production. Based on the room assemblage, room 10-16 appears to have been a

locus of shell ornament production (Table 6.1), with a large number of stone tools and

108 pieces of unworked shell. This assemblage contrasts with room 30-8, where the

large amount of stone and shell consisted of finished beads and other ornaments, with

only 11 stone tools and no unworked shell (see Table 6.3, below, for room 30-8

assemblage).

The assemblage in room 26-14 falls between those of 30-8 and 10-16, with only

two stone tools (not including ground stone), with the majority of the stone consisting of

finished stone beads, while 82% of the shell, or 18,300 pieces, consisting of unworked

Room 10-16 Assemblage	
Worked Shell	16,592
Unworked Shell	108
Stone Ornaments (Pendants and Beads)	4
Stone Tools (Hammerstone, Polishing, Rubbing Stone, and Pestle)	40
Lithics (Debitage, Core, Knife)	6
Ground stone	35
Axe/Ceremonial Axe	6
Mined Deposit Material	8
Ceramics (Vessels and Worked Sherds)	9
Worked Bone	7

Table 6.1: Room 10-16 floor assemblage

Room 26-14 Assemblage	
Worked Shell	3911
Unworked Shell	18,300
Stone Ornaments (Pendants and Beads)	165
Stone Bowl	1
Ground Stone	2
Lithics (Debitage and Scraper)	2
Mined Deposit Material	2430
Pigments	2
Worked Bone	1
Bone Bead	15
Ceramic Vessels	2

Table 6.2: Room 26-14 floor assemblage

shell or unfinished shell ornaments (Table 6.2). Thus, room 10-16 has an assemblage

that indicates production, room 30-8 has an assemblage that suggests it was an end point

or consumer of finished products, and room 26-14 does not have the stone tool

assemblage to indicate production, but does have a large quantity of unworked shell.

Beyond the shell and stone tools, the majority of artifacts in room 26-14 consisted of finished stone beads and "mined deposit material" of various kinds (Table 6.2). This assemblage does not include large amounts of ground stone (only two pieces) and only two ceramic vessels. Rather than a workshop, room 26-14 looks like the locus of final deposition for shell and certain kinds of finished items. This is not to say that no ornaments were produced in in this room, just that production does not appear to have been the main focus of activity. I suggest that room 26-14 was similar to room 15-8, and that both these assemblages were ritual deposits. That the shell, worked or unworked, along with other stone material, constituted one form of inalienable goods taken out of circulation in this room and room 30-8. However, as will be discussed later, room 15-8 was several orders of magnitude more complex in its assemblage.

Based on the artifact assemblages, it appears that at least one room with a high shell frequency, room 10-16, was the locus of ornament production, but that something qualitatively different was going on in rooms 30-8 and 26-14. By broadening our view out from just stone tools and shell, however, further differences and similarities can be identified. The shell and stone tools made up the majority of the assemblage in room 10-16, along with a few ceramic vessels and animal bones. Room 30-8 on the other hand was an end point for finished artifacts, or the people who occupied this room used the finished goods, rather than producing the finished ornaments on the scale suggested by the assemblages in other rooms (Table 6.3). Room 30-8 had few stone tools, large numbers of finished stone beads, and the third highest amount of shell at the site, none of which was unworked. In addition to the finished shell and stone ornaments,

Room 30-8 Assemblage	
Worked Shell	21,391
Stone Ornaments (Pendants and Beads including Green Stones)	1807
Other Ornamental Stone (Strand Divider and Tesserae)	29
Ground Stone	12
Stone Tools (Abrading, Polishing, Rubbing Stone)	11
Axe/Ceremonial Axe	6
Mined Deposit Material	11
Worked Bone	1
Copper Bead/Pendant	14
Ceramic Vessels	2

Table 6.3: Room 30-8 floor assemblage

room 30-8 had fourteen copper beads/pendants and a large quantity of turquoise and

green stone beads. This is a relatively high concentration of copper ornaments. In fact

room 30-8 had few other artifacts besides finished ornaments of stone, shell, and copper;

only one piece of bone and two ceramic vessels are noted. Thus, room 30-8 appears to be

an end point for finished ornaments.

Shell frequency Group 4, therefore, has rooms that tend to fall into different

categories: producers of ornaments, end points for finished ornaments, and more

ambiguous rooms. The rooms that are end points for finished ornaments and those that

are more ambiguous have large amounts of turquoise and green stone in addition to the

shell, while the hypothesized production rooms do not. While the role of production is an

extremely important question at Paquimé, it is not central to this discussion. Thus, I will

mainly focus on rooms that have shell and turquoise together.

Shell was not only found in large quantities in isolated locations, but was ubiquitous throughout the site.   In many of these contexts, turquoise was also found. While the focus of this discussion is turquoise, other green stones are almost always present with turquoise, suggesting that the color b/g was the important factor.

Turquoise at Paquimé

Turquoise, like shell, is used throughout the U.S. Southwest and Mesoamerica in ritual activities. This is seen in Chaco Canyon, where the overwhelming majority of turquoise was found with two of fourteen burials in one room at the largest site in the canyon, Pueblo Bonito (Pepper 1920; Plog and Heitman 2010). However, at Paquimé turquoise was not routinely associated with burials. While some turquoise is found in burial contexts, it is a very small amount compared to other, architectural contexts (Di Peso et al. 1974:8:187). If turquoise was used as a prestige item at Paquimé, it was done so largely outside of mortuary contexts.

With 3,350 pieces of turquoise found across the site, far less turquoise was found at Paquimé than shell. Turquoise, like shell, is a long-distance trade item at Paquimé. Unfortunately, sourcing studies have not been undertaken to ascertain the location of origin for much of the turquoise at Paquimé, but no known source is close by.

Turquoise was also found in radically uneven distributions across Paquimé in various contexts (Figures 6.4 and 6.5). Interestingly, the four locations with the highest amounts of turquoise are some of the most unique contexts at the site, and are clearly locations of ritual importance. Each of these—room 42-8, with 675 pieces of turquoise;
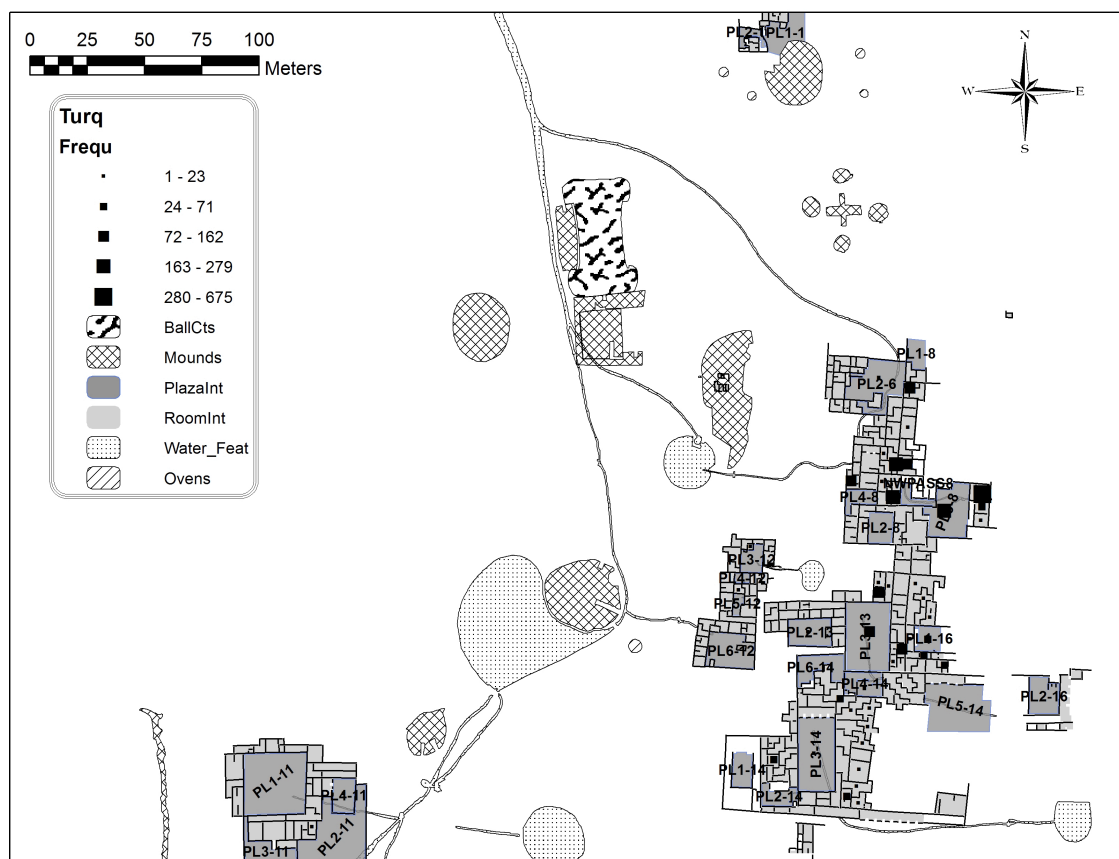
Figure 6.4: Distribution of turquoise throughout Paquimé. The size of the black square indicates the frequency of turquoise in the room.

room 15-8, with 218 pieces of turquoise; plaza 3-8, with 279 pieces of turquoise: and Reservoir 2, with 633 pieces of turquoise—warrants further discussion (Figure 6.4).

The histogram below (Figure 6.5) demonstrates that room 42-8 is an outlier. Room 42-8 is unique for reasons other than the concentration of turquoise found. Given that this room is part of a larger complex around the walk-in-well, it will be further contextualized in Chapter 8. Similar to the case with shell, room size does not appear to be a determining factor for turquoise amounts (Figure 6.6); even with the plazas removed, room size does not correlate with turquoise frequency. However, unlike
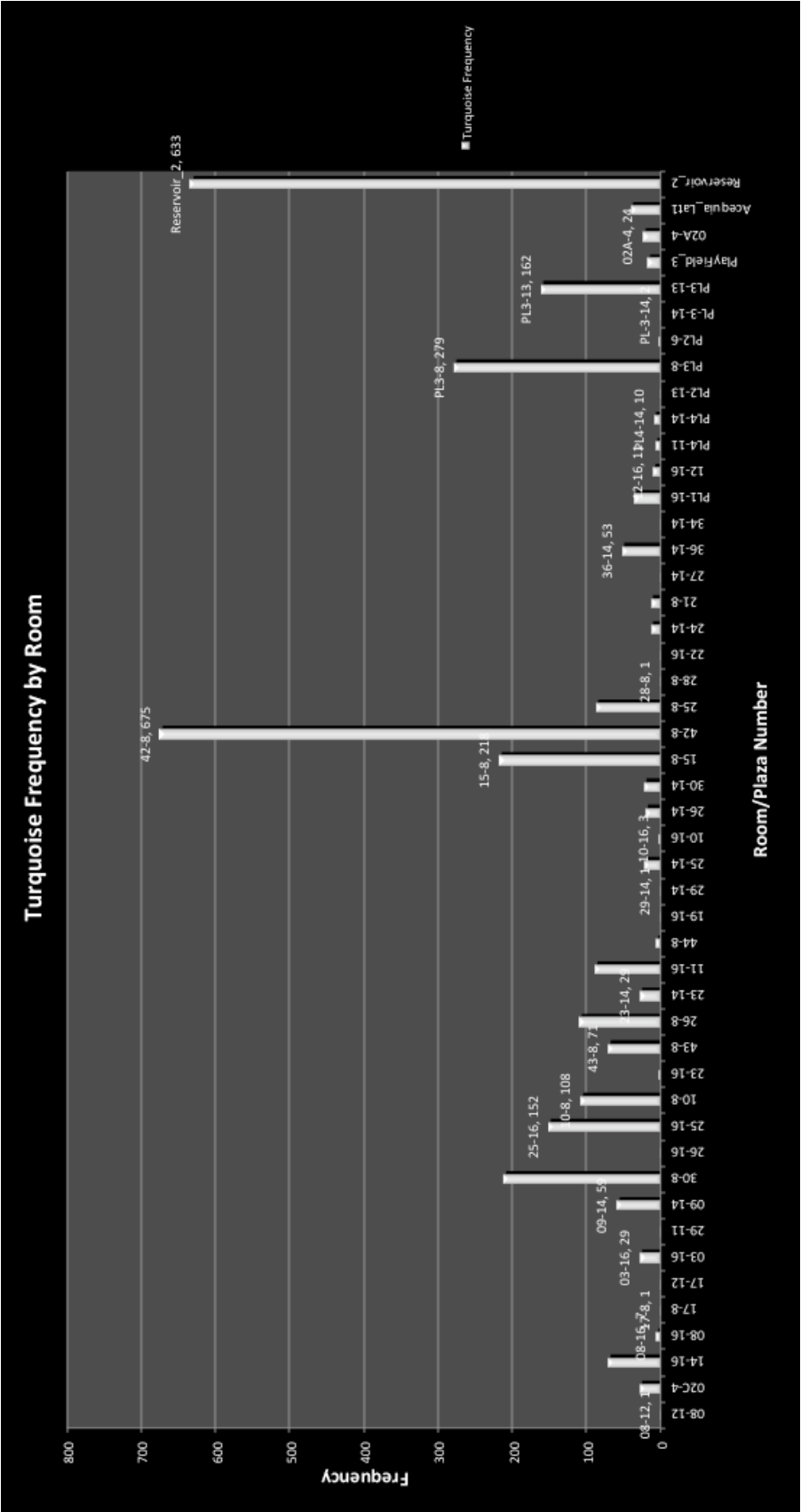
Figure 6.5: Turquoise frequency by room.
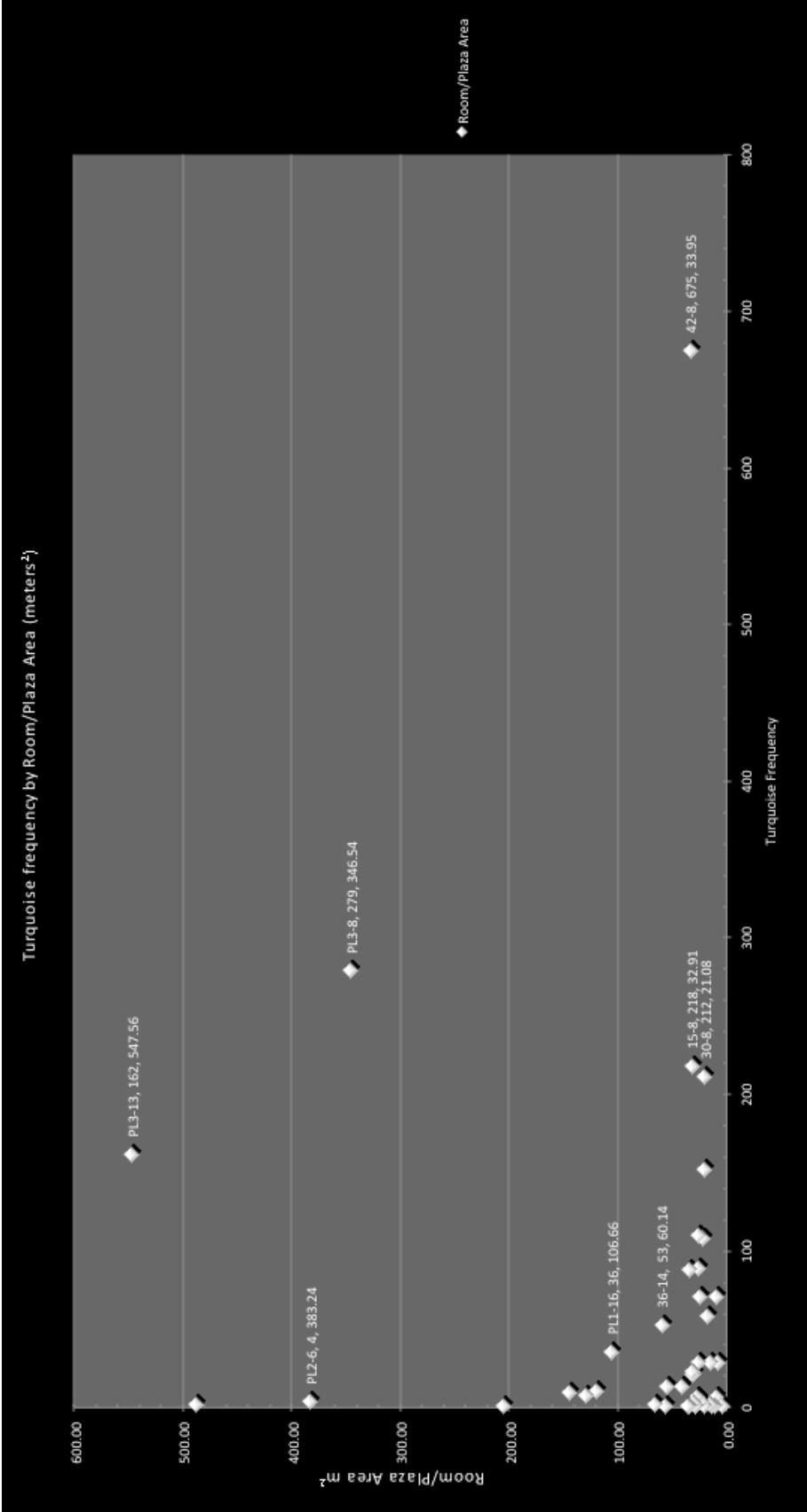
Figure 6.6: Scatter plot of turquoise frequency by room size (Reservoir 2 is not on the plot, as it is not a building with internal space, there was no area to enter).

shell, when turquoise frequencies per room are plotted against room size, distinct groups are not apparent (Figure 6.6). Instead, this plot emphasizes a small number of individual rooms with large quantities of turquoise.

Two features associated with these high quantities of turquoise are important for further discussions, the walk-in-well and Reservoir 2. The walk-in-well was a unique and complex architectural feature (Figure 6.7). Di Peso suggests that the material found in the well was thrown in while attackers were sacking the city, to prevent the theft of valuable ritual items. However, other researchers have reexamined the stratigraphic context of the well and suggested that it was revisited over time and consisted of multiple ritual deposits (Walker 2002; Walker and Lucero 2000). Given the evidence, I am inclined to agree with Walker and Lucero's interpretation.

This feature was a subterranean well that was dug about 40 feet (12.35m) below the ground surface to the water table (depth given is the high-water mark). Access to the well was gained from the floor in room 44-8 and descended down a subterranean, L-shaped staircase (Figure 6.7). The staircase started at floor level in room 44-8 and had two flights at right angles to one another. A person descending the stairs would have traveled due east into and below Plaza 3-8 for 15 steps, turned 90 degrees to the north on step 16, and continued for another four steps to arrive at a small pit dug into the water table. When Di Peso and his crew excavated this feature, many steps still had their wooden and stone treads. Suspended directly over the water pit, room 46-8 was built into the walls of the subterranean chamber; an air shaft came up from this room to the surface of Plaza 3-8.
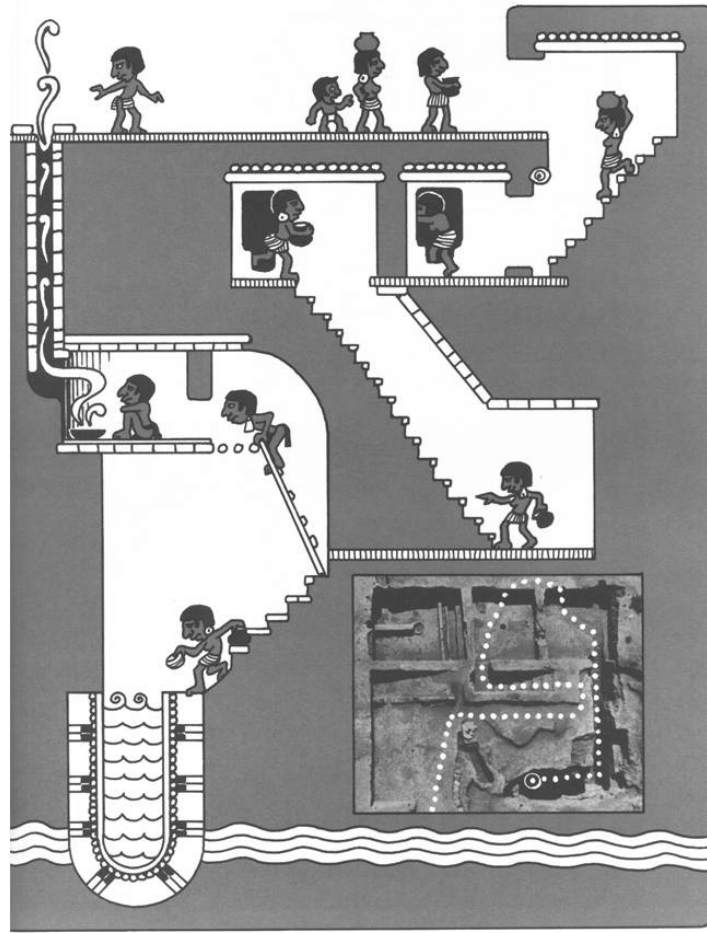
Figure 6.7: Artist's reconstruction of the walk-in well in profile, with an overhead image in the bottom right corner (Di Peso 1974:3:357, Figure 40-2)

Not only is the architecture of the walk-in well fairly extraordinary, but the artifact finds were highly unusual. The entirety of the staircase was covered in thick layers of more than 6,779 artifacts, more than 6,212 of which are small shell beads. From shell conch trumpets with turquoise inlay to shell beads, bone tools, shell bracelets, axes (*n*=23), stone bowls, and many more, the staircase down to the well was a location of repeated rich offerings. The walk-in well alone contained 225 of the 279 pieces of turquoise found in this plaza. Much of this turquoise (194 pieces) was tesserae used as inlay on shell trumpets and pendants. This is one of many examples of the use of shell and turquoise together; more on this below.

Another location where we see a concentration of turquoise is in Reservoir 2 at the southwest corner of the site (see Figure 6.6, above). This reservoir was the southernmost holding tank for water coming into the site from the Ojo Vareleño spring. A small channel went from this reservoir into unit 11. What was unique about this reservoir was the cache deposit found at the bottom. In the center of the reservoir, a hole was dug into the bottom of the reservoir. In the hole, a flat slab was placed over a small jar. This was a Playas Red jar that had a strand of turquoise and shell around the neck and was filled with more turquoise, ricolite, shell, red slate, and gray slate beads. At the bottom of the jar was a bovine horn. A total of 4,702 artifacts, mostly beads, were found in the jar. This is one of several turquoise offerings found with distinct water features.

The association with water features is something turquoise and green stone share with shell. Similar to shell, the distribution of turquoise across Paquimé is radically uneven. Given the small overall quantity, the few areas of concentration are even more prominent. Each of these locations—the walk-in-well, Reservoir 2, and room 42-8—also contain unusual quantities of shell, as well as being architecturally unique. Given the build-up or elaboration of these areas, I suggest that these are locations of ritual importance. These locations are differentiated not only from the rest of the site, but they also differentiate Paquimé from sites in the surrounding regions.

Use of Shell and Turquoise Together at Paquimé

In many of the contexts discussed above, turquoise and shell are found together. The contexts in which these two materials were found can speak to why these items were important at Paquimé and what role they played in hierarchical relations. I argue that the occurrence of shell and turquoise together indicates the intentional combination of blue

(or b/g) and white, and that the ritual action that placed these items together inscribed color/directional symbolism onto the architecture of Paquimé, making this central place a microcosm of the larger cosmos and differentiating Paquimé from surrounding sites. As an element that linked people to ancestors and origins, this combination also marked internal divisions.

Turquoise and shell appear to be important in rituals involving at least two identifiable aspects of Paquimé: (a) water and water features and (b) architecture rituals. In turn, I argue that both of these are instances of a broader theme, that of marking directional axes. The association with water is seen in the concentrations of turquoise and shell around key aspects of the water system at Paquimé for instance, the walk-in well (plaza 3-8), reservoir 2, and room 42-8, which suggests that turquoise and shell were important in rituals associated with water or watery places. Room 42-8 borders the walk-in-well plaza to the east. As noted in Chapter 4, shell and turquoise are commonly associated with water and water deities in Mesoamerica and the U.S. Southwest. Along with others, I suggest that this was part of their symbolism at Paquimé as well. However, I do not think this is the whole story. As with any symbol, I suggest that turquoise and shell had multiple layers of meaning. The architectural associations of these items suggest additional significance.

The consistent presence of turquoise in corner caches and under central roof support posts (which will be discussed in the next chapter) suggests that turquoise and shell were also an important component of architectural rituals. As noted, caching items either at the corners of buildings or in the center was common in Mesoamerica and the

Pueblo Southwest. This act of architectural caching roots the building and inscribes its place in the known world.

Shell and Turquoise in Caches

The water and architectural contexts of shell and turquoise suggest that these items were used to mark axes. Both water features were below ground and can be considered vertical axes of sorts (more on this later), while the corner caches mark the confluence of two directions. Here we see white and b/g used to inscribe color onto direction. The use of white and b/g to mark axes is further developed with the discussion of central posts, where we see this combination used at central vertical axes.

The most frequent kind of cache found at Paquimé was the corner cache. These caches showed remarkable consistency, both in content and context. As the name would suggest, they always occurred at the corner of a room, at the axis of two walls (Figure 6.8). The corner cache was a small, inconspicuous hole dug at each corner of a room (Figure 6.9). They were always plastered over at the floor level, indicating that the placement of these items was a one-time event.

These corner caches were also very consistent in their content, and always consisted of stone and shell beads in varying numbers (Figure 6.9 and Appendix B). The stone beads in these caches almost always included b/g stones of turquoise, malachite, ricolite, or all three, and sometimes black or dark gray stone beads were included. The black or dark gray stone beads are usually gray slate. In other words, some type of b/g stone and white shell were always a part of the corner caches (Appendix B). The shell in corner caches always consisted of small, drilled beads, sometimes accompanied by larger

pendants. Given that these caches are sealed at the floor level, it is likely that they are

dedicatory caches of some sort that were not revisited (Kunen et al. 2002).
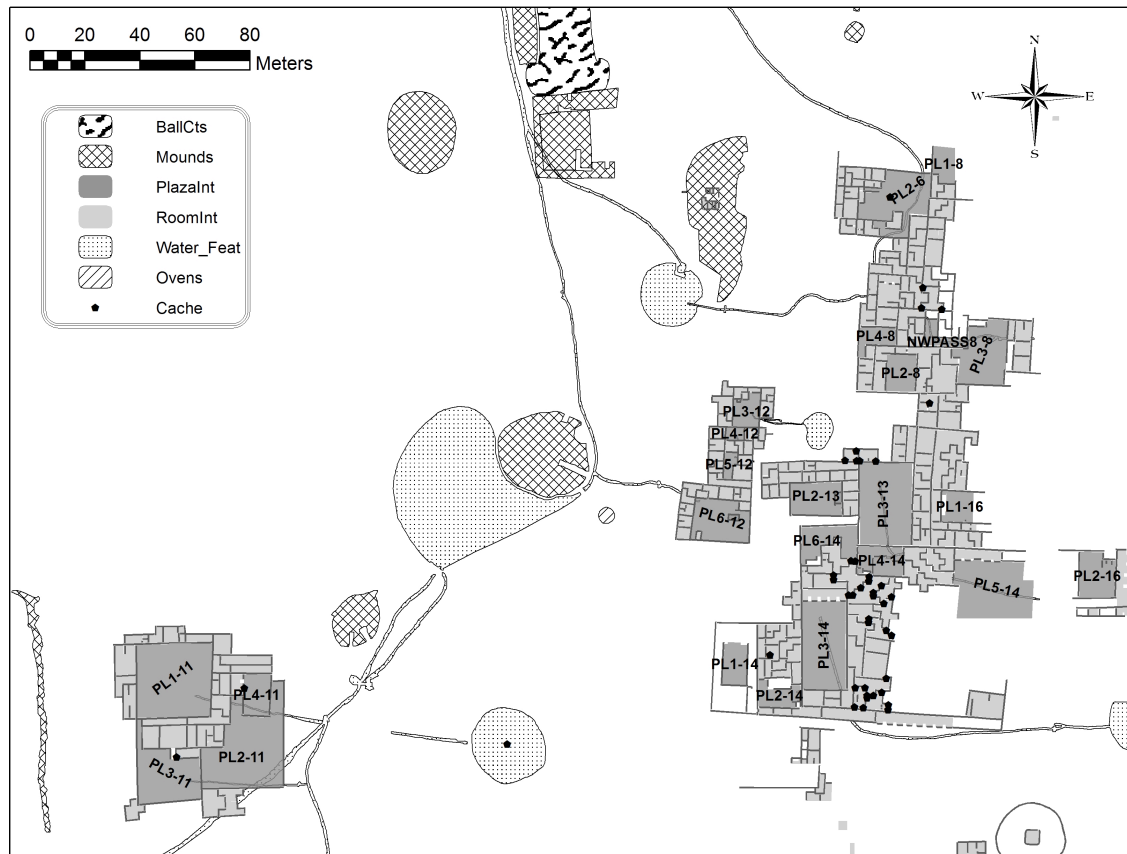
Figure 6.8: Distribution of caches at Paquimé; black dots mark the location of caches.

The quantity of shell in the corner caches accounted for less than 1% of the total

shell found at the site. However, this does not mean the shell in these caches was

insignificant. A total of 4,398 pieces of worked shell were found in caches throughout

Paquimé, and only 683 of these were found in corner caches specifically. However, the

repeated process of placing shell and turquoise at the corner of rooms marks these

locations as key sites of importance.

Similar to the scarlet and military macaw distribution, shell was found in much

greater quantities than turquoise. However, the counts and percentages of each material

Figure 6.9: Corner cache from room 26-14. Turquoise pendants and shell beads are shown in the small cache hole where they were found.

type suggest intentional placement of these items together (Tables 6.4 and 6.5). This pattern of strong association was also seen with the association of military and scarlet macaws. This suggests that the presence of turquoise will likely indicate the presence of shell.

Painted shell artifacts are another line of evidence that speaks to the intentional combination of white and b/g. Although there are not many pieces of painted shell compared to the total amount found at the site (Table 6.6), the painted shell is significant.

Count Category	Count Totals	Percentages
Amount of shell associated with turquoise	1,839,962	99.68%
Amount of turquoise associated with shell	2467	85.78%
Amount of shell without turquoise	5884	0.003%
Amount of turquoise without shell	409	14.22%

Table 6.4: Counts and percentages for occurrence of shell and turquoise together and separately

Unit	Room/Plaza Number	Shell Frequency	Turquoise Frequency
08	10-8	1,821	108
08	15-8	1,741298	218
08	17-8	183	1
08	25-8	339	88
08	30-8	21,391	212
08	42-8	3,535	675
08	43-8	83	71
08	44-8	315	7
08	PL3-8	8,353	279
11	PL4-11	57	8
12	08-12	14	1
12	17-12	11	1
13	PL2-13	14	1
13	PL3-13	3,386	162
14	09-14	896	59
14	23-14	17	29
14	24-14	6	14
14	25-14	9	22
14	26-14	22,211	21
14	27-14	550	1
14	29-14	1	1
14	30-14	44	23
14	34-14	32	2
14	36-14	89	53
14	PL3-14	10	2
14	PL4-14	61	10
16	03-16	22	29
16	10-16	16,700	3
16	11-16	6	89
16	12-16	184	11
16	14-16	8,626	71
16	19-16	5	1
16	22-16	11	1
16	23-16	240	4
16	25-16	11	152
16	26-16	2	1
16	PL1-16	9,429	36
Totals		1,839,962	2467

Table 6.5: Counts of shell and turquoise in rooms where both materials were found.

When pieces of shell are painted, they are always painted with blue pigment. Pigments

were found in many colors (Di Peso et al. 1974:8:190), but blue (blue-green) was always

used with shell. The few instances of other painted artifact types, such as stone, are

painted red (Table 6.6). In addition to shell that was painted blue, shell was also inlaid

with turquoise. Much of the turquoise found at Paquimé was found as pieces of tesserae

Unit	Room/Plaza	Artifact Name (Di Peso)	Frequency	Painted (Y/N); if so, what color
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	15-8	Shell Tinkler	1	Y/Blue
8	42-8	Shell Armlet	1	Y/Blue, Red
8	44-8	Shell Armlet	1	Y/Blue, Red
8	PL3-8	Painted Pebble	1	Y/Red
8	PL3-8	Painted Pebble	1	Y/Red
14	26-14	Shell Tinkler	12	Y/Blue
14	26-14	Shell Tinkler	1	Y/Blue
14	26-14	Shell Tinkler	4	Y/Blue
14	27-14	Shell Tinkler	3	Y/Blue
14	27-14	Shell Tinkler	3	Y/Blue
14	34-14	Shell Tinkler	1	Y/Blue
14	34-14	Shell Tinkler	1	Y/Blue
14	PL4-14	Shell Tinkler	1	Y/Blue
16	14-16	Shell Tinkler	1	Y/Blue
16	23-16	Shell Bead	2	Y/Green
16	23-16	Shell Bead	2	Y/Green
16	30-16	Shell Tinkler	1	Y/Blue
16	30-16	Shell Tinkler	1	Y/Blue

Table 6.6: Painted shell at Paquimé: location, artifact type, frequency, and color.

associated with shell. The most common instance of this was the Strombus shell trumpets with turquoise inlay.

Shell and turquoise, along with macaws and ceramic hand drums, provide evidence of color/directional symbolism at Paquimé. The contexts of these materials also suggest specific color pairs were part of this cosmological principle. Evidence for color associations in avian remains along with other media, such as the ceramic hand drums, shell, and turquoise, point to the mobilization of ritual knowledge using a common ritual language of color/direction symbolism. Thus far, the color aspect of color/directional symbolism has been the focus of discussion. I have argued that the combination of white and b/g at the corners of rooms links color and directions into a coherent cosmological schema. However, there is additional evidence for the importance of directionality at this site.

Directionality

The importance of directionality is definitively expressed at Paquimé, but through different lines of evidence, namely, habitation and public architecture. The overlap or confluence of color and direction can be seen mainly through the corner caches inscribing color onto the axes of buildings. More emphasis on directionality can be recognized in the architecture and site plan. From room walls to the shapes of the rooms, forms of public architecture, and the site overall, Paquimeans rigidly insisted on a north-south/east-west orientation as well as the use of many corners, more than would have been architecturally necessary. I suggest that this insistence was part of a worldview that created Paquimé as a reflection of a cosmological schema in which directionality was of the utmost importance.

The shape of various rooms is important when thinking about how directionality ties in with the colors of the corner offerings. For example, room 36-14 has been interpreted as the "butterfly" room based on its overhead shape (Di Peso et al. 1974:5:669; Wilcox 1999; Figure 6.10). This may have been important to the builders of this area of the site. Butterflies are important in both Pueblo and Aztec imagery and cosmology. However, I would point out that a rigid adherence to directionality created the shape of these rooms and the shape of the site overall. Room 36-14 is one of several rooms with room alcoves jutting out in either a N-S or E-W direction. Many, but not all of these rooms have corner caches at each corner; room 36-14 had eight corner caches.
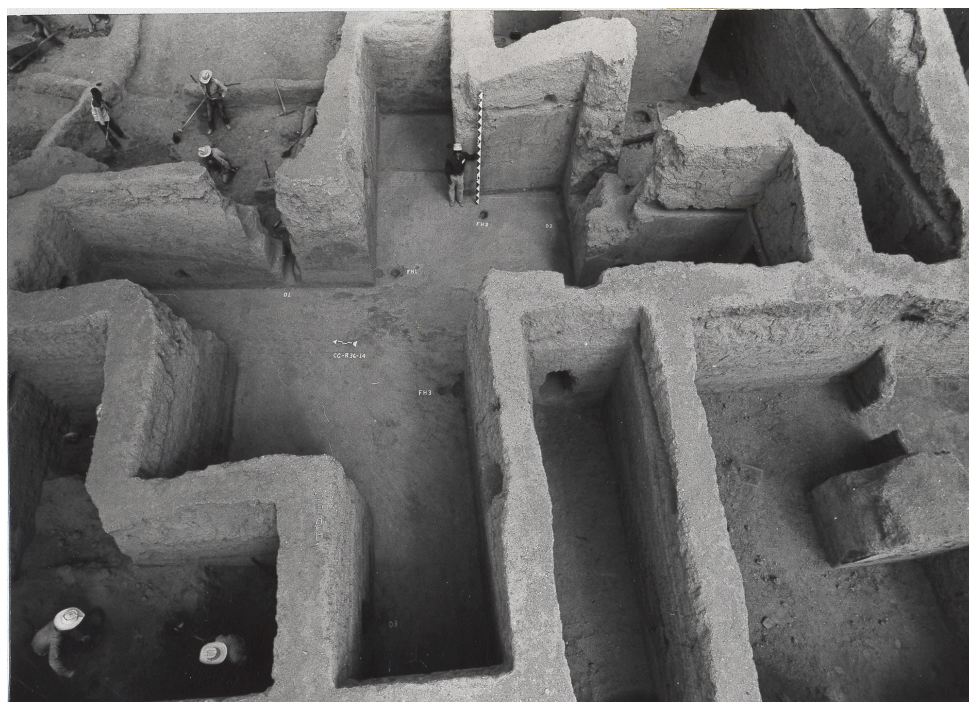
Figure 6.10: Overhead view of room 36-14.

The walls of the entire site are consistently oriented north-south and east-west (Di Peso et al. 1974:4). The ball courts of the surrounding region are also fairly standard in their orientation (Whalen and Minnis 1996:738, 2001). The ball courts in the region are oriented to within twenty degrees of north (Whalen and Minnis 1996:738). Considering

that most of the ball courts found by Whalen and Minnis's survey were open-air and thus not constrained by architecture, the orientation of ball courts at Paquimé and in the surrounding region has a clear pattern. At Paquimé itself, it is not just the ball court that follows this proscribed orientation, but the entire site. Even the various platform mounds are oriented north-south and east-west, in keeping with the orientation of the rest of the site. A particularly obvious example is the Mound of the Cross (Figure 6.11).

Figure 6:11: Overhead view of the Mound of the Cross

The Mound of the Cross, or Unit 2, is a small set of five mounds on the northern end of the site (Di Peso et al. 1974:4:287-289; Figure 6.11). The central mound is cross-shaped with the arms within a few degrees of the four cardinal directions (Di Peso et al. 1974:4:288). These mound arms line up with the main orientation of the walls of the

roomblock. About two meters off the end of each arm of the central mound is a small

circular platform mound (7-8 m across). This set of mounds taken together is quite small

compared to other platform mounds at the site, but it is set off from the rest of the site and

slightly apart from other mounds on the east side of the site. As many ethnographic and

more recent archaeological studies have shown, it is often the small, nondescript

locations, such as a sipapu among the pueblos or a small ball court hidden behind

massive temples among the Maya, that are the most sacred, and often anchor the

surrounding area (Freidel et al. 1993:124-125, 145-146; Parsons 1996). Directionality

seems to be fundamental to the layout of this set of small mounds.

A second cross can be found in another architectural form, in room 23-16 (Figure

6.12). Unlike the other eccentrically shaped rooms, the alcoves in room 23-16 make it
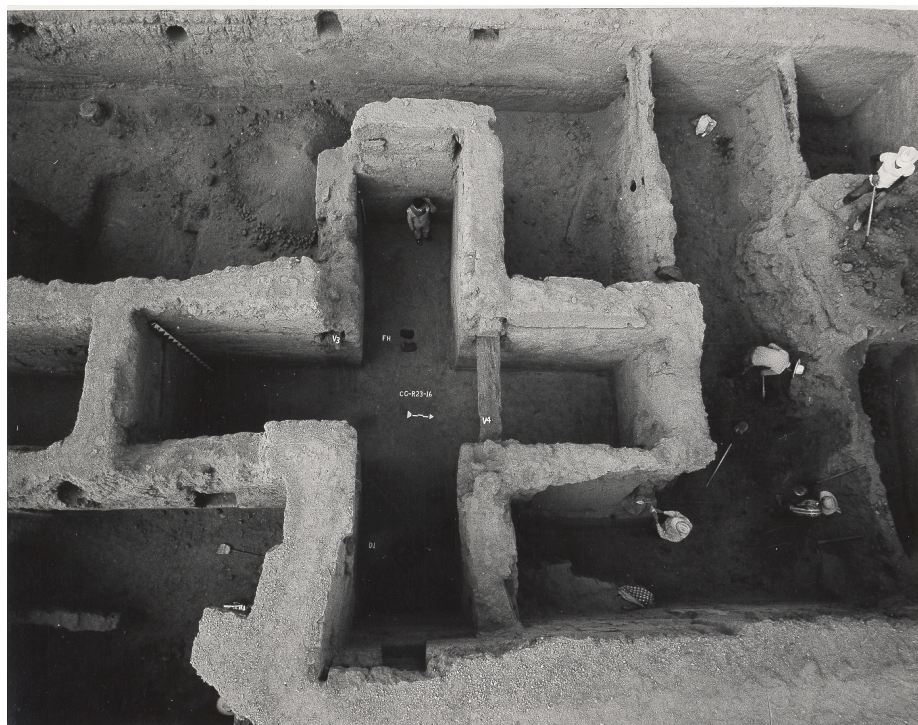
Figure 6.12: Overhead view of room 23-16

cross-shaped with one alcove in each of the four cardinal directions. In contrast to other

rooms such as room 36-14 which has four alcoves in the four directions, room 23-16 does

not have diagonal corners that jut out, as seen in room 36-14 (above). Room 23-16 also does not have corner caches, but it does have a unique artifact assemblage in the form of a long bone and skull cache. The artifact assemblage of this room will be discussed in Chapter 8, as the shape and material of this room make it a locus of important ancestors.

The layout of the roomblocks, ball courts, Mound of the Cross, and caches at the intersections of two walls would suggest that this concept of directionality played a part in the creation of the site. With the combination of the material in the caches at the axis of two walls—and the orientation of the walls and, therefore, the rooms themselves—we get a confluence of color and direction built into the architecture. Directionality is known to have influenced the design of some of the largest cities in Mesoamerica (Ashmore 1991; Ashmore and Sabloff 2002; Broda 2000; Carrasco 2000). It has also been argued that this concept shapes pueblo villages (Ortiz 1969). I argue that it also influenced the design of Paquimé during the Medio Period occupation. With the caches that contained the colors that were part of the color/directional symbol suite, Paquimé can be seen as a map of Medio Period cosmology.

Discussion and Conclusions

Archaeologically, we can see the remains of ritual events at Paquimé in various forms. Taken separately, these forms of ritual expression appear quite disparate, but if instead of seeing them as disconnected pieces, we look at them as part of a related system of meaning, connections can be seen. In the case discussed here, that larger system is the cosmological principle of color/directional symbolism. This principle integrates corner caches, site orientation, and certain artifacts found at Paquimé.

Within the larger color/directional schema, I argue that the intentional pairing of white and b/g mark directional axes. At Paquimé, white and b/g are seen in the presence of shell and turquoise and other green stones in corner caches in several rooms, in caches that are less uniform than the corner caches, and in shell painted blue/green. The requirement for this color association was met through multiple stone types. While shell always made up the white portion, the b/g color requirement was met through turquoise, malachite, and ricolite.

The act of caching makes buildings inhabitable by people by ensouling the building, making it animate. This process completes the house by making it a cultural entity. Once deposited, the caches at Paquimé are not seen again, as they are plastered over at the floor level. Thus, the power they carry to ensure the perpetuation of the house and its members stays hidden. The initial placement of these caches was an act that rooted the house and animated the structure (Freidel et al. 1993; Vogt 1998), giving the structure a soul by opening a pathway of communication with deities or ancestors (Freidel et al 1993). This act of caching also gives a structure its place in the known world. Among the Maya, the act of building and dedicating a new house is analogous to giving birth, abandoning a house is analogous to killing it (Vogt 1998). I suggest that the repeated offerings of turquoise, shell, and gray slate at Paquimé acted in the same way, inscribing an animate spirit onto the buildings and giving the structures a place in the larger cosmos through the use of material of specific colors. These caches inscribe color/directional symbolism onto the buildings at Paquimé at the axis of walls, the confluence of two directions.

Color/directional symbolism is a broad cosmological language used at Paquimé. Different internal groups referenced this complex in different ways. This cosmological principle was a backdrop against which ritual, and therefore political, negotiations took place. The items used as material expressions of this concept were not commodity wealth accumulated for show, but rather ritual items manipulated in certain contexts to demonstrate ritual knowledge. The people who knew how to properly perform the ceremonies that accompanied the act of caching and performing rituals associated with water were demonstrating their knowledge and their ability to interact with powerful forces. The tightly proscribed context of rituals was a situation in which the power could be demonstrated to all, but simultaneously restricted. Items of ritual importance were often seen as dangerous and capable of causing harm to those unprepared or untrained to handle them (Parsons 1996:186n).

Some archaeologists point to important symbols as representing fertility and thus items mobilized to create hierarchal relations (Van Pool 2003a, 2003b). Within the schema of color/directional symbolism, suggesting that one or the other color represents fertility is not particularly helpful. On one hand, I agree that fertility is key to the production and reproduction of humans, resources, and society in general, and is absolutely key to hierarchy. This does not necessarily make assigning specific meaning to specific colors prehistorically any easier. On the other hand, archaeological and ethnographic evidence proves that different colors represent different aspects of fertility: black in some cases represents rain laden clouds, blue (green-blue) in some cases represents water and in others green trees or plants, yellow can reference sun or the tassels of ripe corn, and red can signify blood from animals gotten from hunting. All of

these are different aspects of fertility. Thus, I would argue that all colors within the

color/directional schema may represent fertility in particular contexts, but the concept of

fertility itself is a richly laden idea that is manifest in countless ways.

Discussions of color symbolism in the prehistoric cultures of the U.S. Southwest

are becoming more common (DeBoer 2005), and the importance of color and direction

has long been noted in these and Mesoamerican cultures (Ashmore 1991; Bricker 1990;

Cushing 1979; Freidel et al. 1993; Ford 1980; Parsons 1996; Taube 1998, 2005), but

discussions of how this idea would be manifested in material that is archaeologically

recoverable are elusive. By recontextualizing various trade items such as macaw

remains, shell, and turquoise at Paquimé, we see that their importance as trade items

stems from their place within a larger symbolic system. The association of red and green

and white and b/g suggests that, like cultures to the north and south, color/directional

symbolism was operative at Paquimé, and gives some insight into the nature of the

prestige bestowed by these goods.

Based on the architectural association of shell and turquoise, I suggest that these

items were used to inscribe cosmological ideas onto the houses of Paquimé. This made

the buildings cultural entities, and among cultures to the north and south and I argue, at

Paquimé as well, this was as important as the structural integrity of the buildings. Shell

and turquoise are material that, when used properly, create a cosmogram out of the

buildings. They inscribe color/directional symbolism onto Paquimé at the axis of wall

corners, the confluence of directions.

All facets of the ethnographic record cannot be taken as direct examples of

prehistoric society. However, some aspects of Native American cosmology and social

organization have remained consistent over the course of time and continue to be important parts of indigenous identity (Cushing 1979; Freidel et al. 1993; Vogt 1998; Whiteley 1998). By taking indigenous ideas about cosmology seriously, we can understand how that worldview shaped the archaeological remains we see today.

Chapter 7: Hearths and Posts: Forms of the *Axis Mundi*

Among cultures in the U.S. Southwest, Mesoamerica, and many others, particular architectural features of houses ritually constitute the house. In particular, posts and hearths have more than functional importance and often become pathways to ancestors and ancestral powers, as well as a way in which the house is physically constituted. I argue that at Paquimé, large central room posts and the raised platform hearths were just such markers.

The marked posts at Paquimé are rarely discussed at all. While the raised platform hearths are used as a cultural trait to identify areas of interaction, but rarely is their importance within Paquimé mentioned. Given the importance of posts cross-culturally, the expectation is that they will constitute ritual attractors and be elaborated at Paquimé. I argue that the distribution of the raised platform hearths is an indication of household units. I suggest that hierarchical relations were given a sense of permanence through the house and its features.

I will first discuss posts then hearths at Paquimé, and their significance for understanding cosmology and social organization. At the outset, it is important to note that I am not arguing against functionality for these architectural features, but rather suggesting additional dimensions of significance.

Posts at Paquimé

My focus here is on a subset of the large, central room posts at Paquimé. There were many smaller posts and postholes, but these smaller posts did not receive the attention or elaboration of the larger, central posts. Within this set of large central posts, only a few were selected for offerings underneath them. The people of Paquimé were

fairly consistent in their construction of the central roof-support features. The post itself
was usually a species of pine, taken from the Sierra Madres to the west of Paquimé.
While the distance from Paquimé to the Sierra Madre Mountains is only approximately
40-45 km, once you reach the mountains the terrain becomes extremely difficult, as the
mountains rise quickly and are very rugged. This has implications for the transport of the
large timbers used for architectural beams at Paquimé. Getting the beams to the site itself
would have required fairly intense labor.

The post features include a large wooden post, a stone seating disk, and an adobe
"collar" (Figures 7.1 and 7.2). A large hole is dug into floor of a room
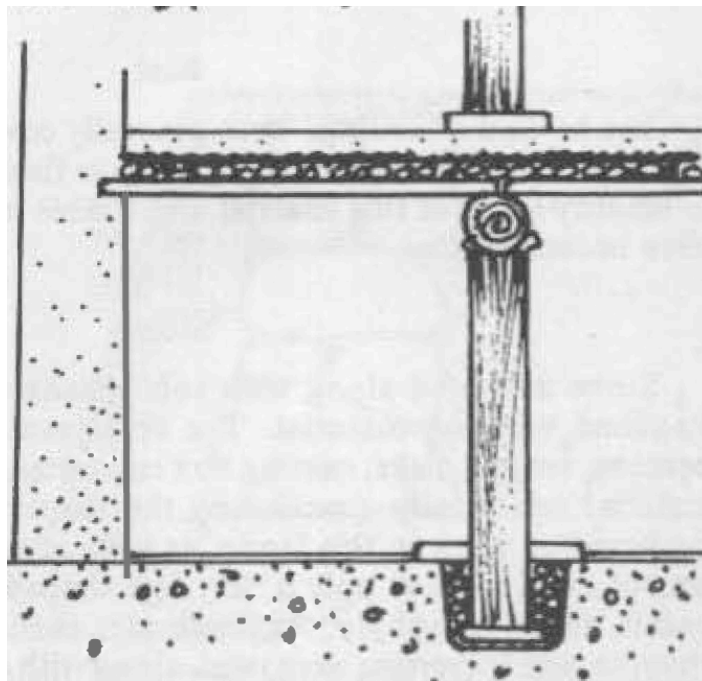
Figure 7.1: Drawing of central room posts, (Di Peso et al. 1974:4:213, Figure 141-4).

(before the actual floor is paved with adobe), the seating disk is placed in the hole, and
the post was then placed on top of the seating disk. If there are offerings, these are
usually placed below the seating disk or directly on top of it, below the post. The stone
seating disks are very large, some weighing almost 500 lbs. The disks have a much

larger diameter than the wooden beam and act as a larger platform to hold the wooden post. This prevents the narrower post from sinking into the ground under the weight of the heavy adobe architecture. After a small offering is placed in the ground, the seating disk is put down, and the wooden beam is placed on the seating disk. The posthole is then filled with dirt and stones up to the room floor level. At the floor level, the hole is paved over with adobe, and an adobe collar or ring is put around the post.

Figure 7.2: Cross-section of central support post in room 34-14. At the bottom is the seating disk; the square adobe around the base is the adobe collar.

These large posts sometimes span multiple stories and act as support for upper story walls and floors.

What is most interesting about some of these posts is the presence of offerings at their base. While the presence of an offering under a post was a relatively infrequent occurrence, it speaks to the importance of these features at Paquimé. The offerings mark these posts as locations of ritual importance. First I will discuss the overall distribution of posts, then specifically the posts with offerings underneath them.

The distribution of central room posts at Paquimé is highly uneven (Figure 7.3). Multiple central posts tend to occur in adjacent rooms. The sizes of the rooms that have
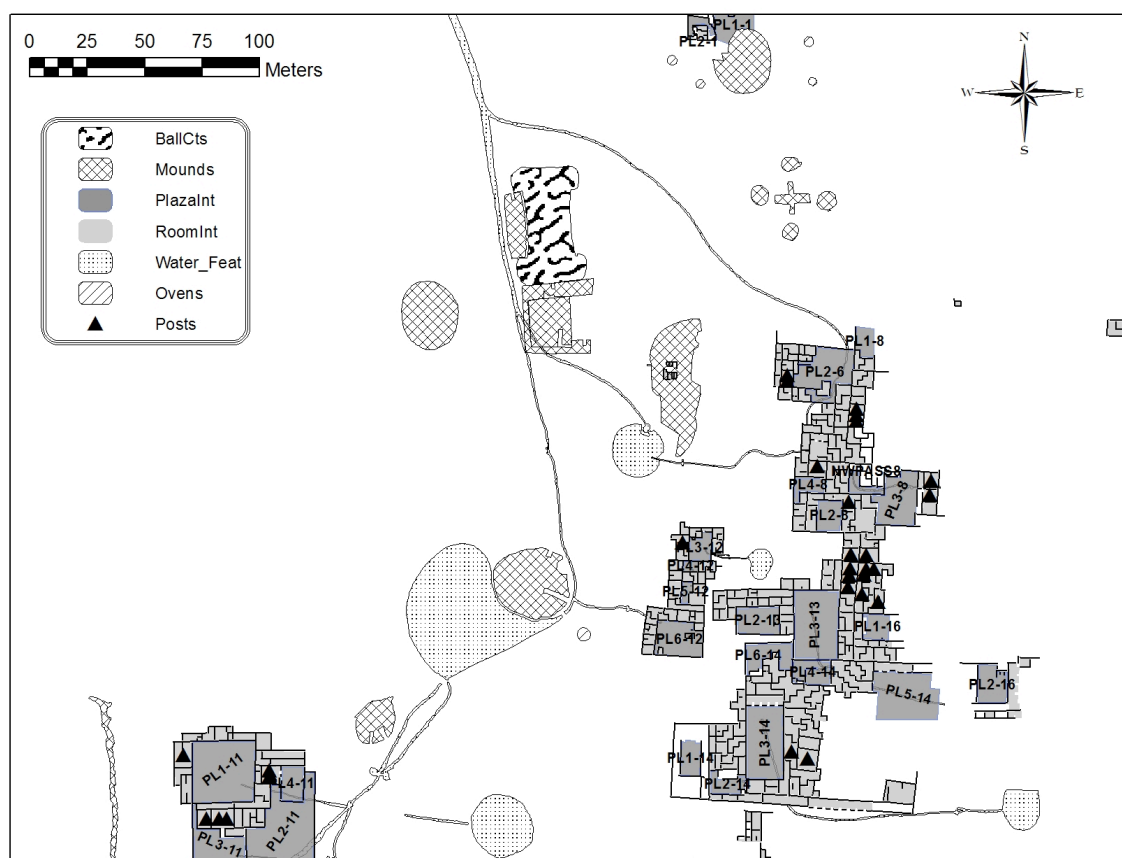
Figure 7.3: Map of Paquimé showing all central room posts. Triangles indicate central posts. Redrawn from original field maps (Amerind Foundation Inc.)

central posts range from 22.1 m^2 to 121.1 m^2. The largest room, at 121.1 m^2, is a slight anomaly, as this room, room 12-16, is a large hallway-shaped room that wraps around

room 23-16, the cross-shaped room. Most of the posts are in Unit 16, clustered in the

central section of the main roomblock.

Posts with Offerings

Out of 28 central support posts at Paquimé, only ten had offerings found with

them (Figure 7.4). Out of these, only six posts from three rooms had shell and/or

Figure 7.4: Paquimé. Posts with offerings are marked by triangles. Redrawn from
original field maps (Amerind Foundation Inc.)

turquoise placed underneath (Table 7.1). The other offerings consisted of axes, manos, or

ground stone in some form. I do not look closely at these offerings because, while the

placement of ground stone items may be intentional—as there are ground stone caches at

the site—these items may also, and more likely, have been part of the rubble fill used to

stabilize and fill the posthole. Di Peso does not specify the context of these ground stone

items within the posthole feature, but does specify that the shell and turquoise, where

they occur, were placed on or below the seating disk. This greatly reduces the number of

posts with offerings, but does not diminish their importance.

Room/Plaza	Number of Posts	Offering (Y/N)
7-06	2	N
27-08	1	N
32-08	1	N
42-08	1	N
43-08	1	N
18-11	2	N
7-12	1	N
12-16	4	N
18-16	1	N
22-16	1	N
29-16	1	N
30-16	2	N
21-08*	3	Y
1-11	1	Y
37-11	1	Y
38A-B-11*	2	Y
32-14	1	Y
34-14*	1	Y
31-16	1	Y

Table 7.1: Rooms with central posts. Asterisks signifies posts with turquoise and/or shell.

Three rooms, 21-8, 38-11, and 34-14 have posts with turquoise and shell. These

rooms are all quite different from one another, the only similarity being the posts with

turquoise and shell. Rooms 21-8 and 38-11 warrant further description. The most

interesting case of central posts occurs in room 21-8 (Figure 7.5), which is just north of

the plaza with the walk-in well. This area of the site has several rooms with an immense

quantity of goods in different, secretive contexts (see discussion below). Room 21-8, at

55.10m^2, is on the larger side of the room average (21.84 m^2). However, it does not

appear to be a structural necessity to have this many posts in a single room, as there are

many other rooms much larger than room 21-8 that do not use this number of posts to

support the roof and upper stories.
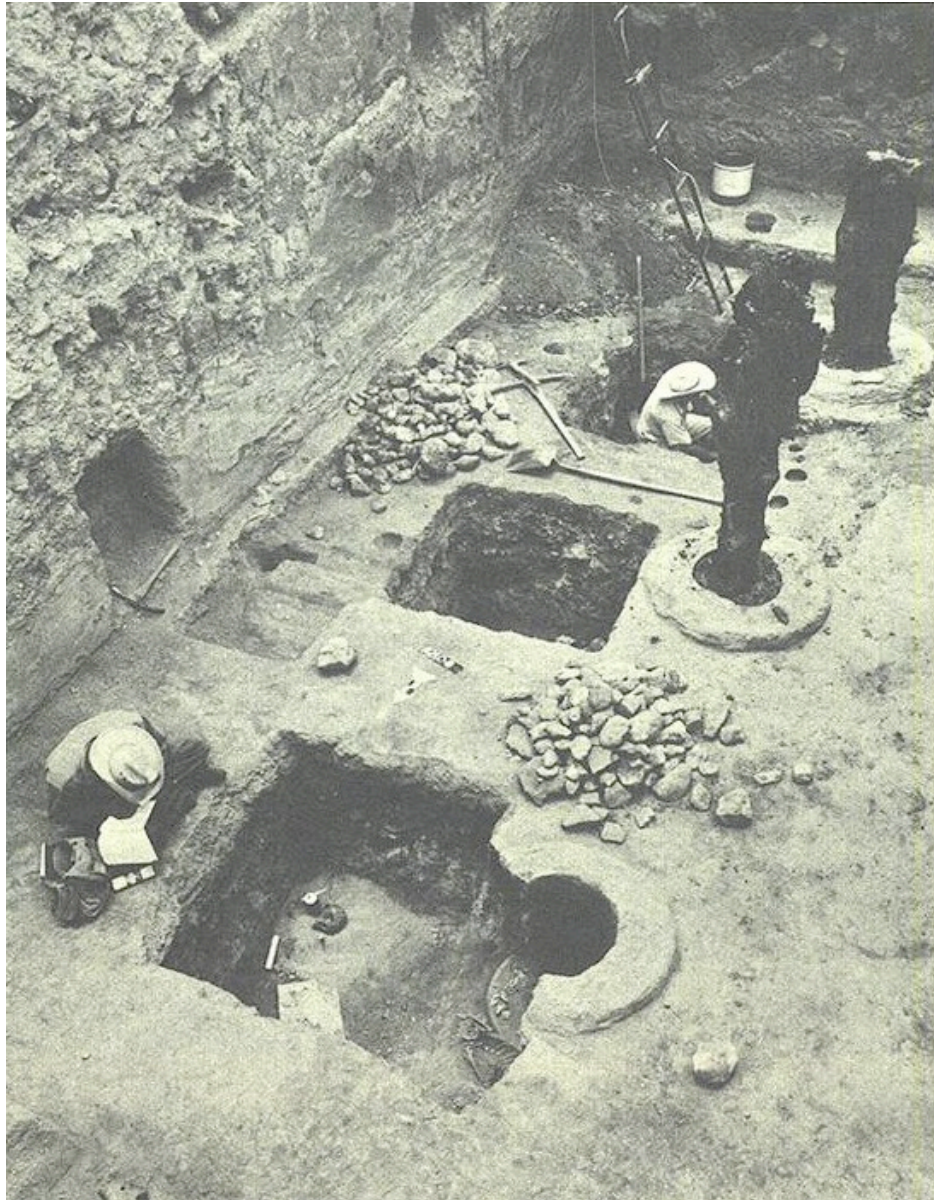
Figure 7.5: Room 21-8, looking south. The northern post (missing in the foreground) had the burial around the base. From Di Peso (1974:2, Figure 70-2)

Room 21-8 had three central posts running north to south (Figure 7.5).

Underneath each post in room 21-8 was an offering of turquoise beads: two posts had

five beads and one post had four beads. These beads were placed under the seating disks

of each post. In addition to the turquoise, a body was placed around the base of post 3,

the northernmost post. The remains around this post consisted of a single burial of a child between the ages of two and five, placed on the seating disk underneath the rubble fill of the posthole. Di Peso argues that this child was sacrificed, based on a hole in the left occipital bone (Di Peso et al. 1974:8:378). Although Di Peso states the child was sacrificed, he also notes that the hole in the occipital bone was most likely caused by a pathological condition (Di Peso et al. 1974:8:336), which may indicate a natural death. While Di Peso's own evidence calls the interpretation of intentional sacrifice into question, the placement of the body around the post indicates that this post and this room were locations of particular ritual importance.

The next room, 38-11, is a unique room in Unit 11 in the southwest corner of the site (Figure 7.6). This large room was one of the only semi-subterranean rooms found within a roomblock. Entrance to this room was through a stepped ramp on the south side (Di Peso et al. 1974:5:507-513 and Figure 5.6). This ramp was eventually closed with rocks at the far south end. There were two central room posts on either side of a large central pit. Each post had a small offering of shell and/or stone beads. Unfortunately, the central pit had been excavated, and any contents removed prehistorically. The pit had been refilled, but not replastered at floor level (Di Peso et al. 1974:5:509). There were two raised platform hearths along the west wall 2.25 m apart. Around the southernmost platform hearth were 16 scarlet macaw bodies, 12 macaw bodies (identified to genus only), and a common raven body (Di Peso et al. 1974:5:508). However, unlike the birds in plaza 3-12 and other areas of the site, Di Peso states that these birds were

Figure 7.6: Room 38-11, looking north. The two central circular features are the postholes with adobe collars; the platform hearths are along the left, or west, wall.

accidental burials, or at least they were not found in prepared burials. They were, however found on the floor of the room. In addition to the two posts, the two platform hearths, and the birds, this room also had four corner caches. Also, unlike rooms in the main roomblock to the east, these caches were found empty (Di Peso et al. 1974:5:509).

Room 38-11 has received attention from scholars in other regions, and has been used to make the argument that the Medio Period florescence at Paquimé was brought on by migrants from the north (Lekson 1999). Lekson (1999:75) calls this room a "Great Kiva," or a transplant architectural form brought in from peoples moving in from the north. However, when compared with earlier Viejo style architecture, it is more likely a remodeled remnant of an earlier, Chihuahuan style of architecture, specifically a Viejo Period "Community House" (Di Peso et al. 1974:4:156, 171, 192). Architectural similarities suggest that this structure may have remodeled Viejo features rather than

features from the U.S. Four Corners area. The semi-subterranean nature of the room, the ramp-like entryway, and the two posts on either side of a circular feature are reminiscent of the large "community structures" identified by Di Peso and his colleagues at the Viejo Period Convento site. The extensive remodeling of this house and its eventual closure suggests that this room was in use for a long period and in constant flux, architecturally speaking. This explanation also seems the most plausible, as there are Viejo Period pithouses below the Medio Period occupation of Paquimé. In addition, Whalen and Minnis (2001a, 2003) have demonstrated that Medio Period settlements often overlay older Viejo Period occupations.

Unlike rooms 21-8 and 38-11, room 34-14 does not have particularly unusual architectural features or an unusual artifact assemblage. However, it is larger than average, at 66.14 m^2, and located just north of a concentration of rooms with corner caches.

By marking the posts in room 21-8, 34-14, and 38-11 with turquoise and/or shell, these posts became the physical manifestations of a cosmological axis, possibly smaller versions of an *axis mundi*. The vertical axis, in the color/directional symbolism, acts as the *axis mundi*, or the central point around which other aspects of the cosmological scheme pivot. The physical manifestation of an *axis mundi* links the different levels of the cosmos and becomes a pathway to powers believed to be responsible for life itself. As discussed in previous chapters, posts are commonly conceptualized as pathways between cosmological realms. Marking certain posts with turquoise inscribes color onto this vertical axis, situating this practice, those who participate in it, and the built space they occupy within a larger cosmological framework.

The people who can access this power or use these pathways become a sort of social *axis mundi*, channeling power for the social good while keeping their knowledge secret. By positioning themselves as a social center of powerful ritual knowledge and then materializing that knowledge in architecture such as post offerings, hierarchical difference is given permanence. I suggest that this pattern at Paquimé was part of a strategy used to differentiate this site from those in the surrounding region. The posts will be discussed in relation to corner caches in the following chapter.

Hearths at Paquimé

Minnis and Whalen (2005) have argued that the large roasting ovens were most likely used for large site-wide or community-wide feasting events. Here I suggest that the raised platform hearth may be another level of social organization, one step down from the large public roasting ovens. The hypothesis here is that if, as demonstrated earlier, hearths are an important manifestation of a house, then the elaborate raised platform hearths at Paquimé may indicate one level of social organization. Specifically, the spatial distribution of these hearths may point to a midlevel of hierarchy if they group together in certain areas of the site.

For many years, hearths have been used to understand social groups in archaeology. Archaeologists in the Southwest have used hearths as proxy measurements for population estimates, with the assumption being that hearths represent family groups (Bernardini1999; Windes 1984). Researchers in Mesoamerica and across the globe have demonstrated that hearths are the physical symbol of sharing food, an important symbol for creating and maintaining kinship ties (Carrasco 1998; Carsten 1995b; Ng 1993; Sather 1993; Tambiah 1969). In many places, lineage is not the principle way of discerning

relatedness or kinship, but rather membership in a certain house (McKinnon2000a; Watts 1997). The central focus of many houses is the hearth. Thus a fruitful way to look at social groups, especially for archaeologists, may be to consider the hearth group rather than the lineage. This was discussed previously, in Chapter 3.

While there is a dearth of excavated pre-Medio or Viejo Period contexts in northern Chihuahua, the few sites excavated by Di Peso and his colleagues provide some examples. From this limited data, it appears that the large platform hearths are a distinctly Medio Period phenomenon; that is, they do not appear in the few available Viejo Period sites that have been excavated (Di Peso et al. 1974:4148-177). Minnis and Whalen (2009) demonstrate that the platform hearths are mainly a late Medio Period feature. This would suggest that as Paquimé rose to ascendency in the region, the platform hearth became an important way of demarcating social groups.

Similar to posts and other features, hearths play an important part in myth and, sometimes origin stories. In Chapter 4, ethnographic evidence was given for the importance of hearths in origin stories and their use as indicators of social units. Here I focus on the raised platform hearth distributions at Paquimé to argue that these features can be used as a proxy for identifying social groups at Paquimé.

There are many kinds of hearths at Paquimé. A total of 576 hearths were excavated and documented at Paquimé. They range from simple pit hearths to ceramic-lined pit hearths to the elaborate raised platform hearths to the large, circular, freestanding ovens. Of particular interest for this study are the raised platform hearths found in rooms. Interpretations of the raised platform hearths at Paquimé have not gone beyond a culture trait used for identifying areas of regional interaction (Skibo et al.

2002). I suggest that the raised platform hearths are an indication of one level of social groups at Paquimé.

The raised platform hearth, Di Peso's Type 2 hearth, consists of a rectangular adobe platform usually placed against a wall (Figure 7.7). Out of 256 excavated ground floor rooms, 113 have raised platform hearths, for a total of 126 platform hearths; several rooms have two (see Appendix D for a list of rooms with raised platform hearths). Average platform size is 1 m^2. The platform hearth was an elaborate feature with several components. Two small pits were dug into the adobe platform, the ash pit, which is

Figure 7.7: Platform hearth with ash pit against wall, the fire pit in the center, and the air vent radiating out from the fire pit. This example has a step design carved in the air vent.

closest to the wall, and the main fire pit in a more forward position. Many of the fire pits and ash pits had ash and/or charcoal in them when excavated, and some of the fire pits

contained charred animal bones (Di Peso et al. 1974:4). An air vent, as labeled by Di

Peso, was constructed in front of the main fire pit. The air vents consist of a shallow

channel dug out of the adobe, starting at the fire pit and extending to the end of the

platform (Figure 7.7). Usually this vent is plain, but in some cases it has a design carved

into the adobe, as in the case shown here. The two most common placements for the

platform hearths were in the center of one of the two main walls or placed at an interior

corner--at the intersection of two walls. Additionally, we see these hearths placed at the

end of wing walls that extend into a room.

In addition to the ash pit, fire pit, and air vent, there is evidence of a structure of

support built into the backside of the platform, most likely for holding vessels over a fire.

Two small holes in the adobe platform on either side of the ash pit (as in Figure 7.7)

provide evidence for a pot support structure. In some cases, corresponding holes were

found in the wall above the adobe platform. Some platform hearths were found with

associated pot rests, or "fire dogs" as Di Peso called them. These were made of either

adobe or stone and were roughly circular.

Raised platform hearths occur alongside simple pit hearths, although the former

are much less common than the latter. Often these two types of hearths originate from

the same floor, indicating their contemporaneity. Simple pit hearths ranged in size, and it

does not appear that the larger platform hearths were necessary for increased heat output,

as a larger pit hearth would have accomplished this if necessary. Also, there is direct
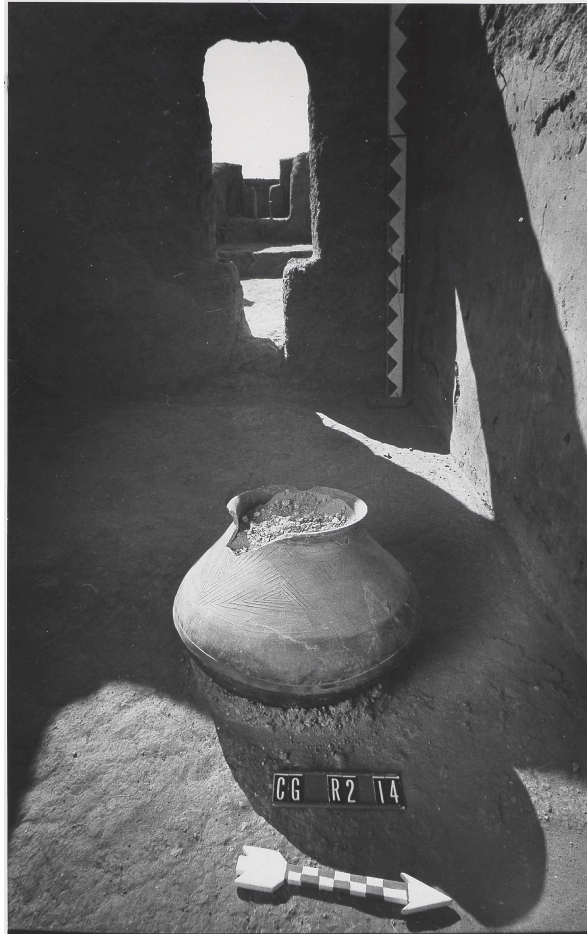
Figure 7.8: Playas Red Incised jar on a pit hearth. Burnt food material was found in the bottom of the jar (Di Peso et al. 1974:5:640).

evidence that both hearth types were used for food preparation. In at least one case, a jar containing food was found *in situ* on a pit hearth, and many of the pit hearths contained ash and burnt animal bone similar to the ash pits of the platform hearths (Figure 7.8; Di Peso et al. 1974:5:640). Burnt plant and faunal material found in both hearth types and in pots containing burnt food left on pit hearths make it clear that cooking was done on both types of hearths. It does not appear that there was a functional necessity for the raised platform hearths, yet compared to simpler hearth forms the platform hearths were clearly important to the residents of Paquimé, as significant labor investments were made in these features across the site.

Of the 126 raised platform hearths, 33 (26%) have designs carved into the adobe platform, the other 93 have plain air vents. However, the design variability is limited. The overwhelming majority of air vents with designs (*n*=30 or 91%) had a terrace motif or step design, one had a hooked triangle design (shown above in Figure 7.7), one had a terrace motif with a scroll (where the first or upper part of the design was a terrace or step and the second terrace was extended into a scroll), and one had a scroll design.

Figure 7.9: Location of all raised platform hearths at Paquimé. Stars mark the location of the hearths.

If the hypothesis here is that the platform hearths represent social groups at Paquimé, one way to measure this is to assess the spatial patterning of the platform hearths across the site. While the individual platform hearth may indicate a social unit, it is important to ask whether they group at a higher level. Is the nature of their distribution

clustered or dispersed? Are the platform hearths grouped around any particular area in the site? A spatial test is needed to answer these questions; one test appropriate to determine the nature of point distributions is Ripley's K function.

Ripley's K is a tool used to analyze spatial point processes (Dixon 2002; Stoyan and Penttinen 2000). Ripley's K function can assess the nature of a point distribution with the null hypothesis being that the points in the study area are completely spatially random (complete spatial randomness). This tool measures spatial clustering at different distances. Therefore, if the raised platform hearths were clustered across the site, this measure should discern not only whether or not the hearths are clustered, but also the distance at which these clusters occur. Ultimately, these tests were inconclusive due to the vagaries of the Paquimé data (see Appendix E for further discussion), and thus another approach was taken to assess the spatial distribution of platform hearths.

Given the difficulties of measuring spatial clustering at different scales, a density map was created as an alternative. I generated a map of platform hearth point densities to identify areas of concentration (Figures 7.10 and 7.11). The density map suggests areas where there are concentrations of platform hearths (Figure 7.11). There is definitely one, possibly four concentrations of raised platform hearths. The most obvious concentration is around plaza 1-16. Two less dense concentrations are just west of plaza 2-13 and just north of plaza 3-11, with a possible fourth area just south of Plaza 2-6. While there
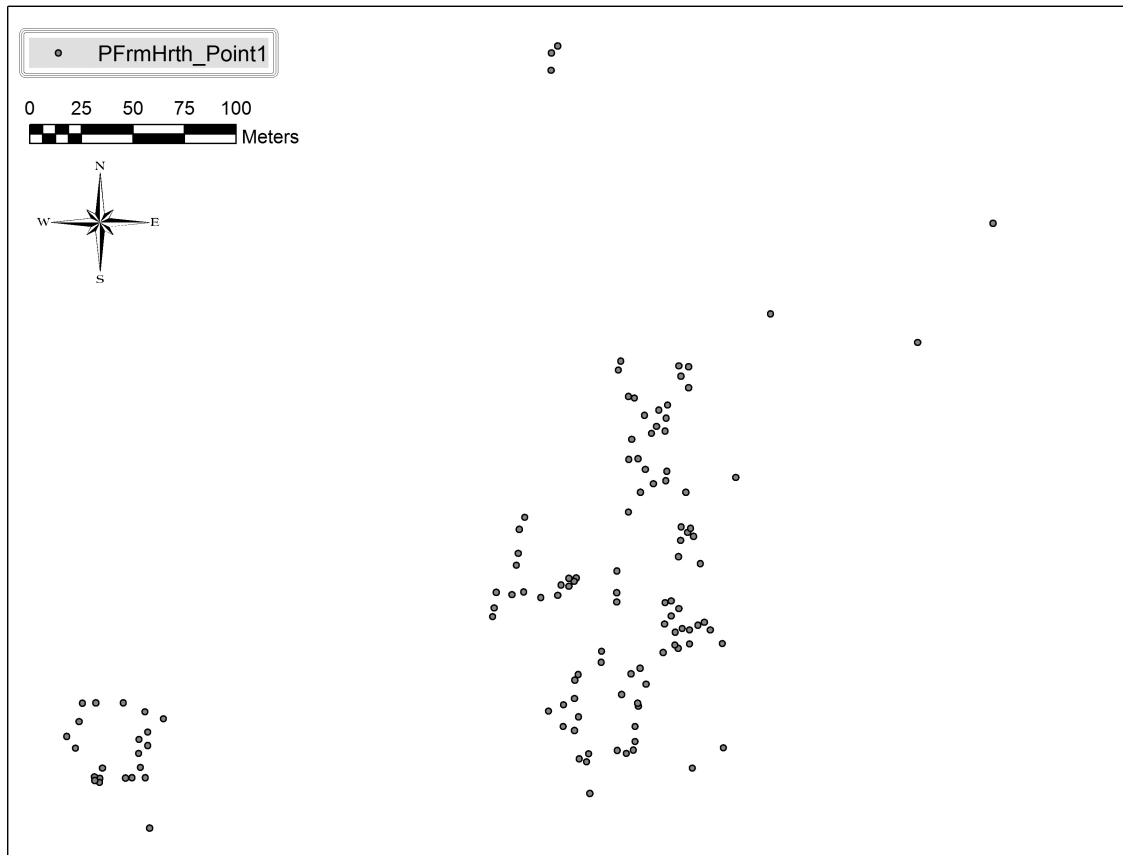
Figure 7.10: Point scatter of raised platform hearths.

are clear areas of concentration, within the roomblocks there are no clear boundaries

between the dense areas where the platform hearths occur. The density map suggests

areas of concentration, but does not clearly distinguish separate groups.

The one clear cluster around Plaza 1-16 had two rooms and one plaza that fell into

the three highest shell-frequency groups, and, as I suggested earlier, may be a locus of

shell ornament production. Other concentrations are tentative at best. These distributions

are not necessarily statistically significant. Overall, one cluster or concentration has been

identified, but the spatial distribution of the platform hearths

Figure 7.11: Point density plot of raised platform hearth points. Areas of darkest color indicate the highest density of points.

does not seem to indicate multiple groups of platform hearths across the site.

While I was not able to distinguish higher-level groups of platform hearths, density maps do show areas of heavy concentration. This does not invalidate the hypothesis that the large raised platform hearths are indicators of social units. Rather it suggests that the individual platform hearth may indicate one level of organization, with the next level consisting of the site level demonstrated by the large public roasting ovens. Pit hearths occur in most rooms, including those rooms that do not have a platform hearth, suggesting this is the lowest level social group. Loci of food preparation is then a marker of at least three levels of society at Paquimé: the larger site level in the form of the large pit ovens used for massive food preparation, the individual platform hearths,

and the smaller pit hearths in various forms. Within the conception of hierarchy as encompassment, it might be said that the raised platform hearths mark "houses" while the smaller pit hearths seen in almost every room may be the lineages, or immediate families that often make up a "house."

Discussion and Conclusions

The large central room posts at Paquimé were selectively marked, creating a vertical *axis mundi* in multiple locations. An *axis mundi* must be operational at multiple levels of society for it to work as an effective symbol. As seen among the Maya and the Tewa, both hearths and posts are considered *axis mundi* at multiple levels: a broad level in everyday houses, an elite level in the pyramids and powerful houses, a mythical level in the stories of creation, and a cosmic level in the constellations. Each progressively higher level of organization encompasses the level below.

In smaller-scale societies, such as Paquimé, these symbols and the systems they manifest are more diffuse and less pronounced than those seen in larger-scale societies. Thus we do not see large temples or depictions of rulers with the *axis mundi* actually emerging from them, but we do see these important ideas built into the environment in subtler ways. At Paquimé I have argued that the central room posts mark vertical axes within a color/directional schema. These posts acted as pathways between cosmological realms. Central posts are one small piece that inscribed cosmological principles onto the built space at Paquimé as part of a reconfiguring of ritual practices during the Medio Period in northwestern Mexico.   This confluence of color and direction will be more thoroughly developed in the next chapter.

The hearths, as markers of social groups, become the lowest-level center of each individual group. The hearth as the locus of food production is also one locus for the production of people. At Paquimé, I suggest that hearths may be placed in the same conceptual category as the large public roasting ovens—as loci of food production and, therefore, the production of social relationships. I argue that the different hearth categories are indicative of three levels of hierarchy at Paquimé, the top level being represented by the large public roasting ovens, the mid-level by the individual platform hearths, and the lower level by the pit hearths. These hierarchical levels may have been a new manifestation during the Medio Period that went along with the greater centralization identified in the region (Whalen and Minnis 2001). Ritual power and the ability to link oneself or one's group to ancestors—and thus create a sense of permanence—was fundamental to these changes.

Chapter 8: Additional Pieces: Ancestors, Origins, and Hierarchy

Throughout this discussion, there have been several points of overlap between color symbolism and ritually important architectural features. Several locations that have been mentioned in previous chapters remain in the forefront. These are locations that have an unusual build-up of large quantities of diverse materials either locations where multiple elements discussed earlier come together, or locations that are important, but for various reasons were not identified in the previous analyses. Here I introduce additional evidence for ritual at Paquimé that brings together the evidence of color/directional symbolism and hearths and posts.

A complex ritual language was developed during the Medio Period that involved the macaw as an important deity, ritual transformation, and access to origins and/or ancestors. All of these aspects were expressed, in part, through the dialect of color/directional symbolism. While the exact specifics of meaning for some of these elements may not be clear, what is clear is that this complex suite of ritual expressions became elaborated in new ways during the Medio Period. Powerful politico-ritual actors reconfigured the local cosmology to differentiate Paquimé within the region, and to reshape difference within Paquimé itself. I argue that there are three levels of hierarchy at Paquimé: the overarching site level demonstrated through the Mound of Offerings, the walk-in-well, and the large public roasting ovens, a mid-level group of elites identified by differential secondary treatment of human remains, and platform hearths and a lower level demonstrated by smaller pit hearths.

First, the overarching site-level and what might be considered the highest level of hierarchy, or the most encompassing, is demonstrated through the material manifestation

of ancestors on the Mound of Offerings and creation of a site-wide locus of origins

through the walk-in-well. The clearest example of the creation and differentiation of

ancestors comes from the human remains from the rooms in the Mound of Offerings.

The context and associated materials of these human remains have already been

discussed and interpreted as site-level ancestors by Rakita (2001, 2006, 2009). I agree

with his interpretations. These burials were secondary burials in Ramos Polychrome

urns, placed in sacred rooms built into the Mound of Offerings. These burials were

accompanied by two trenches dug in the floor and filled with elaborate offerings of

arrows, ornaments, and hundreds of other items, a finely carved "altar stone" (as labeled

by the original excavators), and a human phalange necklace (Di Peso et al. 1974:4:306-

311). No other burials at Paquimé received this kind of treatment, with a combination of

architectural differentiation, secondary treatment, and such elaborate offerings.

The construction of these chambers in a platform mound suggests they were

meant to be known about but not seen. These rooms were both visible in their high

location within a centrally located platform mound and simultaneously completely

restricted, as the walls of the rooms surrounding the burials would have prevented people

from seeing the most sanctified interior. Not only did the room walls limit visibility, but

an additional outer wall with only one entrance surrounded these rooms, further limiting

any view or access to the interior (Di Peso et al. 1974:4:306-309). As with inalienable

goods, these rooms and their contents were known but not seen. Thus, I agree with

Rakita's interpretation that these urn burials represent site-wide or overarching site-level

ancestors, placed in sacred chambers with elaborate offerings in the center of the site. I

would like to link these site-level ancestors to what I call the site-level manifestation of origins, the walk-in-well.

Most researchers recognize the walk-in-well as a sacred location related to water (Van Pool 2003a). I add to this interpretation in two ways, first by placing it in relation to the Mound of Offerings and second by adding the surrounding rooms to the picture. Oddly, the well itself is accepted as a ritual shrine of some sort, while the surrounding rooms are often discussed separately or not at all. I argue that the well and the surrounding rooms were related to this central point of origin for the inhabitants of Paquimé, and as such became ritually elaborated over time. This elaboration resulted in a sacred precinct in the center of the site.

The well beneath Plaza 3-8 has been described earlier (Van Pool 2003a; Walker 2002; Walker and Lucero 2000). This underground well and the stairway leading to it were the locus of multiple rituals over time (Walker 2002; Walker and Lucero 2000). The continued ritual offerings at the location led to highly elaborated offerings that built up through its use-life. I argue that the walk-in-well was the ultimate axis, one that led down to a watery underworld (Van Pool 2003) at the center of the site. This became the central *axis mundi* of Paquimé.

It was not just the well itself, however that became highly elaborated. The rooms immediately surrounding the well also became ritually elaborated, and I argue are part of the origin complex manifested in the well itself (Figure 8.1). Room 15-8 immediately to the northwest of the well plaza, as mentioned before, has a counterpart in room 26-14 in both the architectural features as well as the large quantity of shell. However, as mentioned, room 15-8 has an assemblage that is much more elaborate in quantity and

quality. The shell from this room has been left off of graphs in earlier discussions

because the sheer quantity would swamp any display. With more than four million

pieces of shell in the lower chamber, this single room has by far not only the most shell at
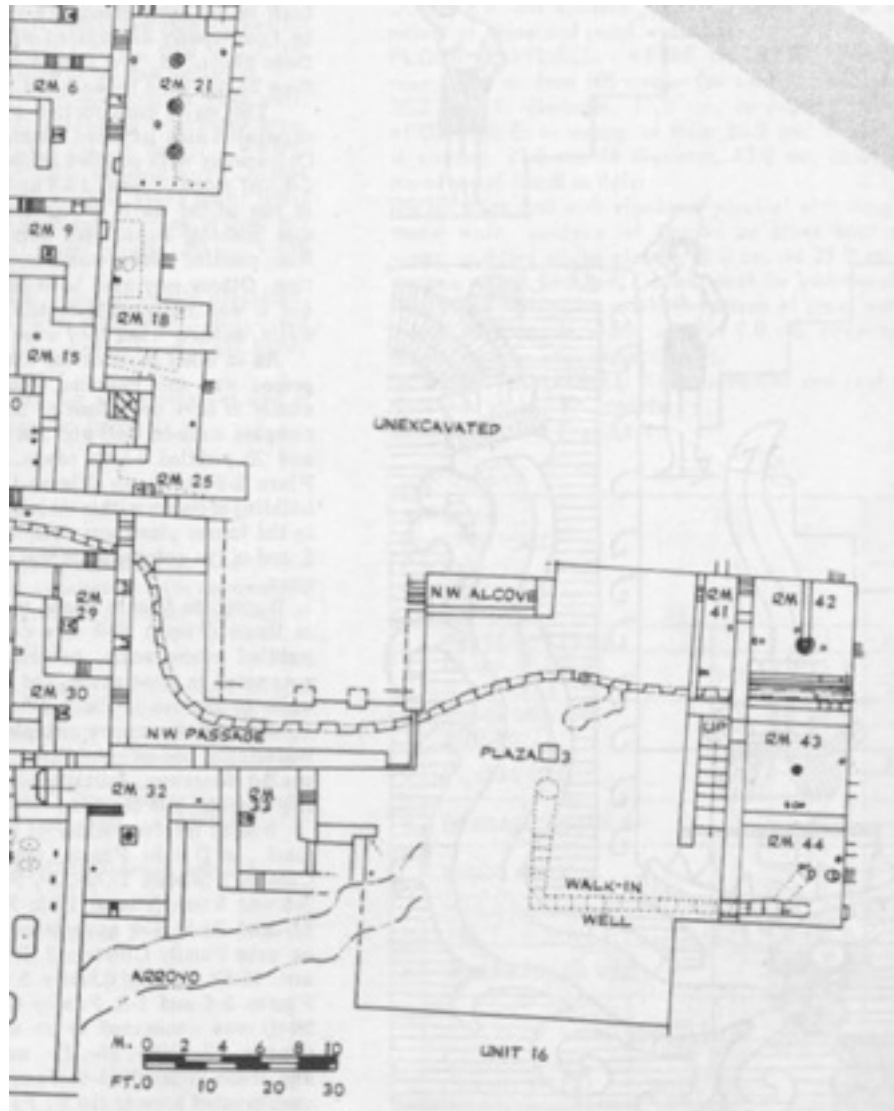
Figure 8.1. Eastern section of Unit 8 showing the walk-in-well plaza (Plaza 3-8) and the
surrounding rooms discussed in the text, from Di Peso et al. 1974:4:364, Figure 264-4.

the site, but also the most shell of any site in the region. Much of this shell was in a

lower chamber only 1 m high. Access to this chamber was gained from above through a

hatchway and wood plank steps at the corner of the N4 and E5 walls. This chamber

effectively his much of the shell from view. In addition to shell, this room had large

amounts of pigments, turquoise, axes, and other material. So while architecturally it may look similar to room 26-14, room 15-8, in close proximity to the well plaza, is much more elaborated and more heavily layered with sacred deposits.

Room 18-8, immediately north of room 25-8 and east of room 15-8, also had a remarkably rich assemblage. In a fill level 2.5 m deep, tens of thousands of artifacts were found of all kinds. Pigments in the form of crayons and cakes were also found throughout this fill. Among this assemblage were approximately 50 Salado Polychrome bowls. This is a nonlocal design and this was the only room where this kind of vessel was found.

In room 25-8, south of room 18-8 and east of 15-8, there are caches in each corner of the room. While this pattern of corner caching follows a broader pattern at Paquimé, in room 25-8, close to the well plaza, this pattern gets elaborated. Caches in room 25-8 are distinct in the quantity and type of material placed in them. With 855 pieces in all the caches combined, this room has almost three times as much material in its corner caches as any other room (see Appendix B for corner cache tallies). Additionally, along with shell and various green stones (ricolite, Fluorite, and olivine in this case) the corner caches in room 25-8 also contained black and red stone beads, thus completing the color suite. I would argue that at the ritual center of the site, the marking of directional axes with color gets intensified in a sense, elaborated beyond what was acceptable in other areas of the site.

Thus, I would argue that these rooms are part of a complex of ritual amplification that centered on the walk-in-well in Plaza 3-8 and created a ritual precinct at Paquimé. Kirch (2000) notes how houses of ancestors over time become elaborated and more

sacred, ultimately resulting in the shift from house to temple. Given the repeated

offerings in the well over time, and the distinct assemblages in the rooms close to the

well plaza, I suggest that these rooms held sacred deposits. The items in these rooms

were possibly the inalienable goods that manifest a locus of origin and distinguish a site-

level *axis mundi*. As one moves out from the well, offerings were layered onto the

surrounding rooms marking the well as the center place.

While the highest level of hierarchy is marked by the most extensive expressions

of ancestors and origins that encompass the whole site, the mid-level hierarchical

expressions are slightly less elaborate, but employ a similar language of color/directional

symbolism. I suggest that the concentration of human burials in Unit 13 associated with

a larger red and b/g complex, along with the distinct bone and artifact collection in room

23-16, represent a mid-level hierarchy at Paquimé.

Unit 13 and the association of the burials, hand drums, and macaws with red and

green has been discussed in previous chapters. Here I want emphasize the burials and the

ritual complex associated with them as a mid-level expression of ancestors. Mid-level

ancestors do not encompass the entire site, but rather a smaller subset of the population.

The ongoing rituals associated with the burials, hand drums, and macaws may suggest

that the rituals that used red and b/g symbolism extended beyond just mortuary practices.

Part of the function of these rituals was to establish and maintain ancestors that would

incorporate those living around these burial rooms, yet also differentiate those who took

part in the rituals of transition. If drums and percussion are associated with transition in

rituals (Needham 1967; Vogt 1977), it might be said that the large number and highly

concentrated distribution of hand drums around elaborate burials in Unit 13 may mark the

transition of the dead to a new status of important ancestors.

There is evidence for one more location where the creation of ancestors

demonstrates mid-level hierarchical relations, the adjacent rooms 12-16 and 23-16.

Room 23-16 has been briefly mentioned in the discussion of directionality, but both of

these rooms warrant further description here. Rooms 12-16 and 23-16 are next to each
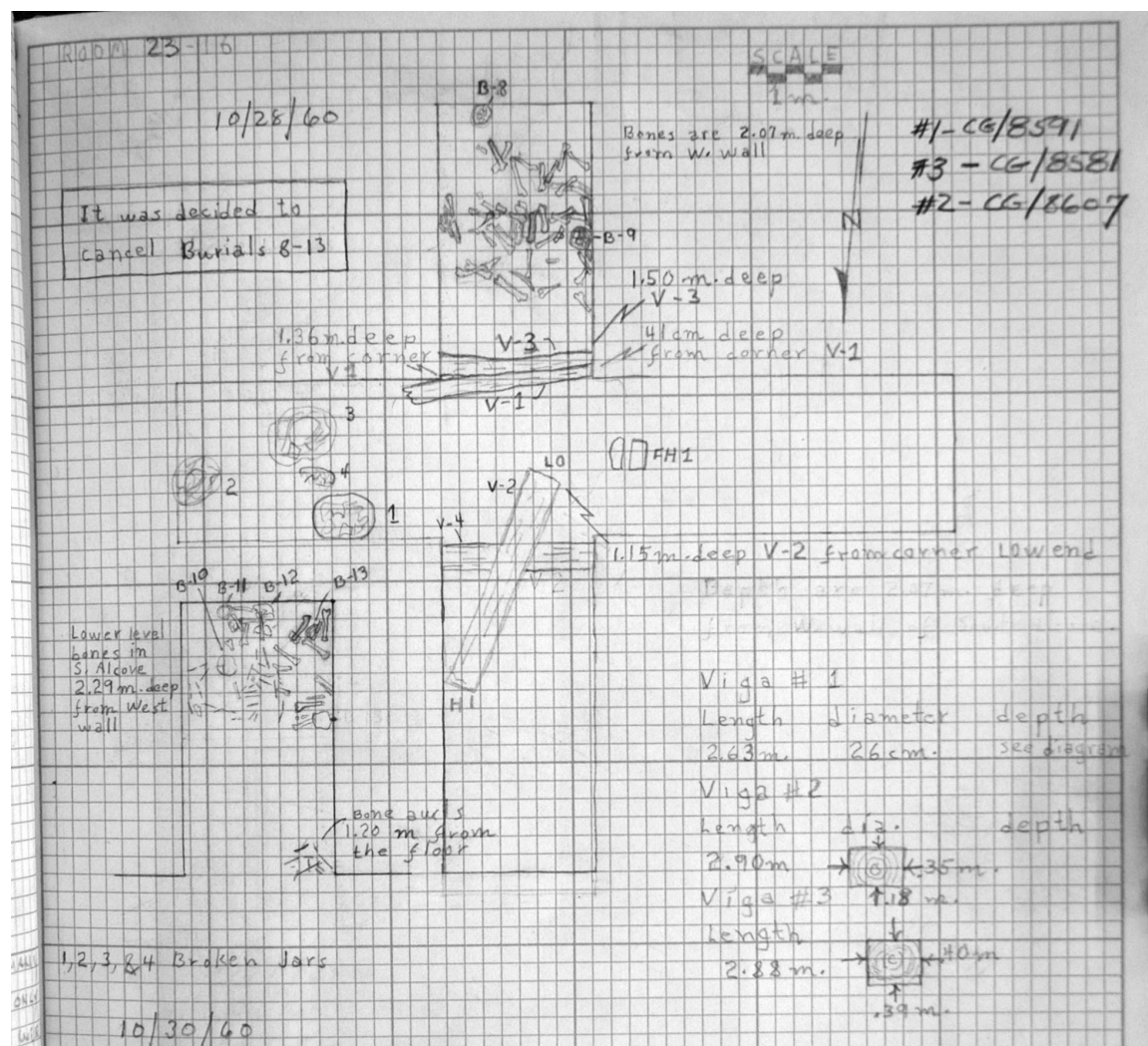
Figure 8.2. Map of room 23-16 with artifact and top layer of bone cache mapped. From
field notebook 12, pp. 51 (Amerind Foundation Inc.)

other, although there is no doorway between the two. Room 23-16 is the distinctive

cross-shaped room northeast of plaza 3-13 (Figure 8.2). Room 12-16 is the long hallway-

shaped room that runs along the west and north sides of room 23-16, essentially wrapping around the west and north sides of room 23-16.

Room 23-16 contained an unusual cache of long bones mixed with green stones and human skulls in the southern alcove of the cross shape (Figure 8.2). This long bone cache consisted of long bones from both humans and other predator species as well as important prey species: humans (4), black bears (*Ursus americanus*, 81), grizzly bears (*Ursus nelson*, 5), mountain lions (*Felis concolor*, 17), pronghorn antelope (*Antilocapra americana* 1), mule deer (*Odocoileus hemionus*, 1), and a Lesser Sandhill Crane (*Grus Canadensis*, 1; Figure 8.2; Di Peso et al. 1974:8:59-63).

Remains of six human skulls were also found along with these long bones. One skull was found intact, with cotton cloth wrapped around it and two turquoise ear pendants (Di Peso et al. 1974:8:53; Field notebook 12, p. 51). The skulls also had a hole drilled into the top of each one, suggesting that they were originally hung in some way. There were at least two layers of bones, the top layer consisted almost completely of long bones, and the lower layer was a mix of long bones and human skull pieces. The original field notes (Field notebook 12, p.51) state that pieces of green stone were mixed in the cache: "all had scattered around them small pieces of green stone (malachite?)." Room 23-16 also had a large number of worked bone awls or "bone wands".

Here we have an example of what Helms (1998) identifies as durable objects used to perpetuate identity. As Helms suggests in her discussion of the use of long bones, I argue that the bones in rooms 23-16 are structurally similar to the bones in the urn burials on the Mound of Offerings and the burials in Unit 13, in that they are another example of curating ancestral bones to establish permanence through durable, potent symbols.

The use of long bones and skulls can be located within the larger framework of color/directional symbolism. The use of green stone and a small amount of shell found with this cache suggests the association of ancestors as axes themselves. These ancestors may have acted as an axis between the living and the dead, signaled by the use of white and b/g. All of which was molded into the shape of a cross through the room architecture, thus inscribing directionality through the built space.

In room 12-16, just outside and west of room 23-16, there was an unusual array of whole pots placed along the west wall (Figure 8.3). On the floor of room 12-16, evidence of corn cobs and squash (*Cucurbita* sp.) was found. Given the assemblage in
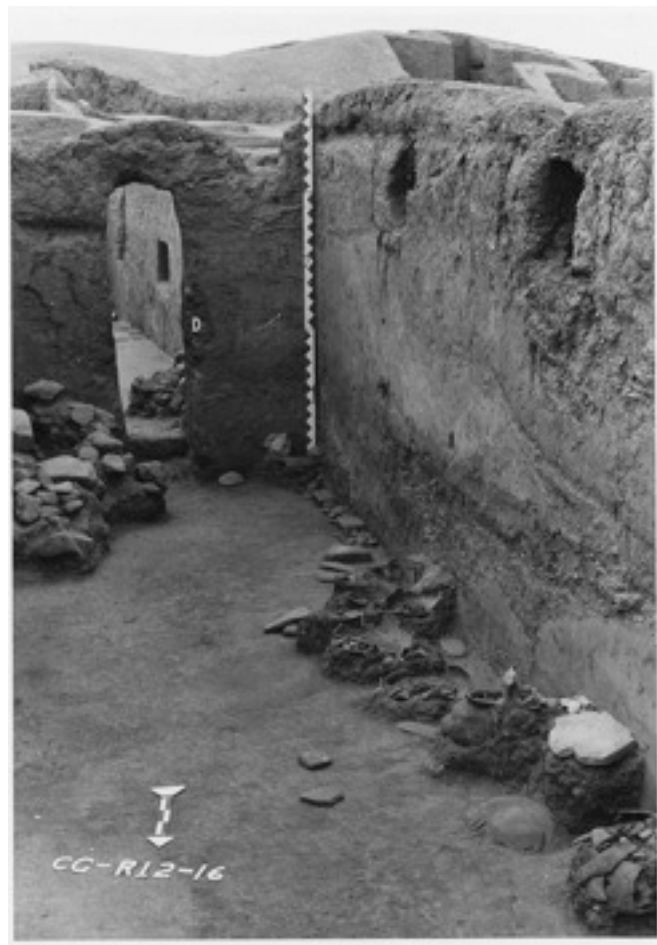
Figure 8.3. The floor and floor-level remains in room 12-16, looking south. Room 23-16 is on the left (not shown).

the room and its relation to room 23-16, I suggest that these vessels and their contents may have been offerings as part of the ritual complex involving the long bone caches in the next room. In most examples where ancestors and/or deities are invoked in ritual practices, food offerings are the most common offerings given. Feeding the ancestors is necessary for their cooperation, and is often an opening gift in an ongoing exchange. Most groups believe that when food is offered, the soul, breath, or essence of the food is consumed by recipients (Merrill 1988; Parsons 1996). Thus, the offerings in room 12-16 may have been part of the ceremonies that involved placing the bones in the next room.

I view these different manifestations of ancestors as "nested houses," in that they are encompassed by the higher-level ancestors on the Mound of Offerings and themselves encompass lower-level "hearth groups" who could not establish their own connection with ancestors (Gillespie 2000). Rooms associated with locations of ancestor creation encompass the lowest level of hierarchy. These are regular rooms occupied by hearth groups—groups that are subsumed by those more successful in establishing ancestral connections.

At this lower level we do not see manifestation of origins or ancestors, but we do see the language of color/directional symbolism being used site-wide, specifically in the marking of axes at room corners and centrally under posts. Both of these features demonstrate the intentional pairing of white and b/g, which has been discussed; here I want to emphasize the marking of axes. While the elaborate corner caches in room 25-8, close to the ritual center of the site, has been mentioned, across the site axes are marked with white and blue.

Throughout the site, rooms with corner caches and posts with offering are mutually exclusive (except in one case-Room 38-11; Figure 8.4). Rooms with corner caches do not have a central post or a post with an offering. It would seem that where one kind of axis is marked, another is not. If the
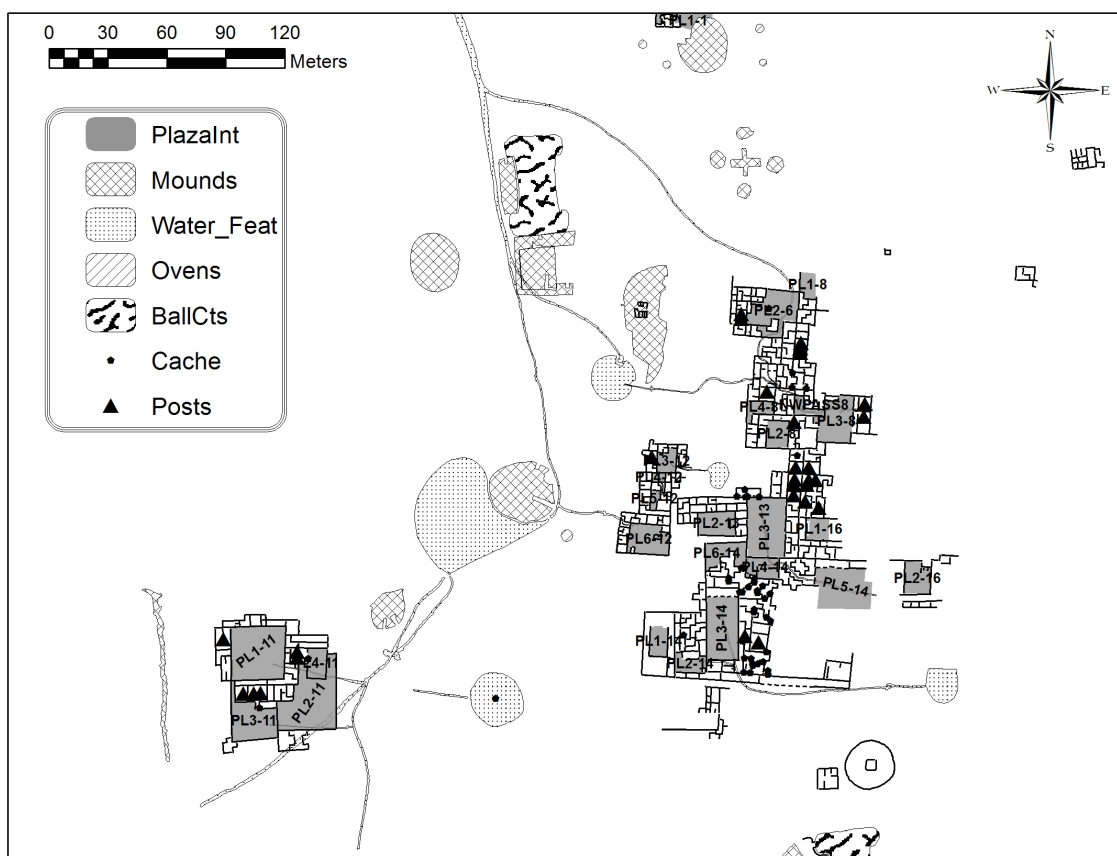
Figure 8.4: Distribution of central room posts and caches together. Triangles represent posts, and small hexagons represent caches.

walk-in-well is a site-level manifestation of origins through ritually layering the well itself and the rooms around it, the smaller axes marked across the site may be lower-level expressions of origins. The corner caches and central posts are found in different areas across the site, but not in all rooms. Only thirteen rooms have either corner caches or central room posts with offerings, so only a small subset of excavated rooms got marked

in this way. This may be a manifestation of origins writ-small expressed through the color/directional schema.

I suggest that these concentrations of bones, stones, and shell are evidence of political negotiations through the creation and maintenance of ancestors and origins. I argue that they represent three levels of hierarchy at Paquimé, conceptualized as different levels of encompassment (Dumont 1981). Ritual is an "arena for political action" and thus a powerful locus for creating and shifting hierarchical relations (Fox 1996). Although many of the contexts were ultimately hidden (in the lower level of room 15-8, for example), ritual events involved in their placement would have been seen by many. Ritual displays are a proscribed environment in which ritual knowledge can be displayed through proper ritual acts (i.e., correct use of sacred items and ritual speech), while keeping that knowledge restricted. Thus, the knowledge is displayed but not distributed. As Weiner (1992) notes, it is the paradox of keeping while giving: keeping the knowledge, while giving the beneficial effects of that knowledge through ritual acts.

Conclusions

When evaluating ritual forms of power at Paquimé, what emerges is not a clear-cut picture of a singular elite class with highly centralized control over ritual knowledge and power, but rather an image of multiple levels of hierarchy that use different ritual complexes to establish permanency and hierarchical position. As seen in the Pueblo Southwest, different households were responsible for their own rituals. Each ritual used a distinct set of sacra that simultaneously represented each household and was used for the betterment of the society as a whole. Different kinds of ritual displays at Paquimé, red and green in the form of birds and distinct vessel forms, blue and white around the well,

and long bones and skulls in the cross-shaped room 23-16, indicate three levels of hierarchy. Each level encompasses those below it.

These loci of ritual and political negotiations use the common cosmological language of color/directional symbolism in the use of particular materials: green stone and shell among the bones in room 23-16, massive amounts of shell and turquoise in the area around the walk-in-well, and the association of red and green across multiple media forms. However, more specific expressions of group identity are contained within this broader cosmological language.

At a regional level, Paquimé established itself as a primate center of a small regional system (Whalen and Minnis 2001a). Internally, groups at Paquimé worked to establish their own primacy through complex ritual negotiations. Change does not occur at a steady rate, measureable as decaying carbon isotopes, but rather in fits and starts, with periods of rapid change followed by long periods of stability. This is not unusual, and does not require external influence or force. Innovations and acceptance of new beliefs can cause massive cultural change. At Paquimé, we see the fairly rapid florescence of polychrome ceramic styles and new architectural forms during the Medio Period. These changes were accompanied by new forms of political negotiation through complex ritual displays leading to new hierarchy complexes and increased centralization.

Chapter 9: Conclusions

In this dissertation, I have attempted to identify broad cosmological principles in the material record, and understand how they helped shape hierarchy at Paquimé during the Medio period. The builders of Paquimé created this site as a cosmogram with layered metaphors of color/directional symbolism, ancestors, and origins. The occupants of Paquimé reified these cosmological principles in the architecture and artifacts, and through these acts created new hierarchical forms during the Medio Period. Paquime's rise as a central site in the region was most likely a rapid event (Whalen and Minnis 2001a, 2005). During this time of change, the physical manifestation of cosmological principles differentiated not only the site of Paquimé as a whole, but also groups within this large site.

By creating a cosmogram in the built environment, the inhabitants of Paquimé inscribed color/directional ideas onto the architecture and manifested ancestors and origins. I have suggested that through these ideas, three levels of hierarchy may have been present at Paquimé as a result of reconfiguring ritual practices. Evidence from hearths, ancestors, and origins suggest three levels of differentiation. Ancestors and origins were powerful tools used to mark difference and establish permanence in a relatively quickly changing social world. This pattern of multiple levels of hierarchy reflects similar patterns identified at the regional level (Whalen and Minnis 1996, 2001a, 2001b). The highest level of hierarchy, or the most encompassing, was expressed in site-level ancestors on the Mound of Offerings and in a central *axis mundi* in the walk-in-well and the surrounding rooms, as well as the large public roasting ovens. Mid-level hierarchy was identified in the build-up of bones and accompanying ritual deposits in

Unit 13 and room 23-16. This mid-level of hierarchy was also indicated by the raised

platform hearths and the marking with color of axes in a limited number of rooms. The

groups encompassed by these higher levels consist of the rest of the occupation rooms.

These different levels of encompassing hierarchy were conveyed through the ritual

language of color/directional symbolism.

Color/Directional Symbolism at Paquimé

Through analysis of macaw burials, painted ceramic hand drums, shell, and

turquoise this study has demonstrated that color/directional symbolism was operative at

Paquimé during the Medio Period. Additionally, evidence suggests that color pairings

within this system were possibly markers of different elements of hierarchy. The context

of the different media where the colors occurred suggests that they were repeatedly and

intentionally combined.

Ethnographic and cross-cultural comparisons demonstrate the ubiquitous nature of

color/directional symbolism from Mesoamerica through the northern U.S. Southwest and

beyond. In both Mesoamerica and the Pueblo Southwest, this cosmological principle

organizes all aspects of life, from the organization of ritual, to social groups, to the

physical settlement, labor practices, and subsistence choices. Color/directional

symbolism constitutes a deep ritual structure.

At Paquimé, this ritual structure is expressed through multiple media. I argue that

red and b/g were intentionally paired colors that had a restricted distribution in the center

of the site. This color set was distinguished by testing the frequency with which red and

green macaws were found together. Tests demonstrated that the presence of these two

birds together was not a matter of chance. This pattern suggests that these birds were

sacrificed and placed together as part of ceremonies that were conducted by specialists with knowledge of rituals involving red and green symbols.

In addition to the bird burial evidence, I argue that red and green painted ceramic hand drums were an important piece of the red and b/g complex. These vessels have a highly restricted distribution, occurring almost exclusively in a few rooms with high concentrations of human burials (Unit 13). These rooms are close to the location of the bird burials. All of these vessels appear to have been ceremonially broken at the time of deposition. The bases of many of these vessels were painted with alternating red and green designs—a block design not seen on other ceramic forms at Paquimé.

The close proximity of these red and green painted ceramic hand drums to the red and green macaw burials and the representation of macaws on Ramos Polychrome vessels suggests a larger ritual complex involving macaws and the colors red and green. I suggest that this is a ritual suite or "package" associated with the macaw—possibly a macaw deity—and the colors red and b/g. Similar to the Flower World complex (Hill 1992; Hays-Gilpin and Hill 1999), ritual complexes in Mesoamerica and the Pueblo Southwest are multifaceted and involve symbols operating at many levels. At Paquimé, I suggest one level on which this complex operated was the process of creating ancestors. I suggest that the concentration of red and b/g signified a locus where the status of some transitioned to an ancestor status. There is undoubtedly much more going on with this complex; here I can only speak to one element.

A similar association was demonstrated with b/g and white. The association of b/g and white was established through the media of shell and turquoise (and green stone in multiple material types) in multiple contexts. The contexts in which green stone and

shell were found were different from those in which red and green were found. Shell and turquoise were found in sealed corner caches, with water features, and in large quantities around what I have argued were ritual attractors.

I suggest that this color combination was part of the color/directional cosmological principle that differentiated Paquimé from sites in the surrounding region. White and b/g marked axes across the site, both at site-level places of origin and on a smaller scale in corner caches and under central room posts. Associations with water features and architectural elements both suggest a broader pattern of the importance of axes or pathways in ritual practices at Paquimé. I have suggested that both corner caches and room posts are axes of sorts. I argue that this color combination was associated with origins in a complex way and that it was used to mark pathways or axes in different ways.

Posts and Hearths

I argue that the marked posts along with corner caches link the color pair of blue and white to vertical axes. One of the locations marked by turquoise and shell were the large room posts. There were not many of these across the site, but where they were placed they were accompanied by offerings of shell and turquoise—and, in one case, a human offering. Posts are another instance in which turquoise and shell mark an axis. Posts are commonly thought of as pathways between worlds or cosmological levels of the universe. In both Mesoamerican and Pueblo origin myths and worldviews, posts play a fundamental role in shaping the universe. Posts were pillars that separated the earth from the sky at the four corners, and the center was a point at which the post or tree reached into the upper levels of the cosmos and crossed down to the lower levels. Such powerful

locations are often marked or elaborated as ritual attractors. At Paquimé these central axes were marked with blue and white, similar to the corners of buildings.

Hearths are another architectural feature fundamental to many creation myths. The hearth is often the symbol of the house, or the fundamental cultural unit. Among the Maya, the hearth is central to creation, and is the locus where the central world tree emerged to separate the earth from the sky. The mythic importance of hearths translates into on-the-ground importance. Ample ethnographic evidence demonstrates that belonging to a hearth is equivalent to belonging to a kin group. In some areas, kin groups are in fact defined by belonging to a particular hearth rather than by belonging to a particular lineage (McKinnon 2000).

Given the importance of hearths in origin stories and the creation of kin relations, it was hypothesized that the elaborate raised platform hearths at Paquimé are indicators of social groups. The initial hypothesis was that these hearths would group spatially across the site. However, the tests conducted to support this did not indicate multiple spatial groups. While disappointing, this result may actually be a better fit with the original hypothesis: if the raised platform hearths represent different social groups, then each of these hearths would represent a hearth group and there may be no reason for them to group together at a larger level—that is, the hearths themselves *are* the groups.

When put in relation to other food-producing loci such as the large roasting ovens and the smaller pit hearths, I argue that the hearths represent three levels of hierarchy at Paquimé. Distinct social groups were not identified, but rather multiple levels of encompassing differentiation.

Among indigenous groups in the U.S. Southwest and Mesoamerica (and elsewhere), ritual is the language of power and thus a tool for political negotiations. To understand social organization in prehistoric societies, we need to move the discussion of ritual beyond simple identification of ritual items. Ritual items are embedded in a system of hierarchical relations, and are key to both signifying that hierarchy and perpetuating it. A ritual language of power was materialized through inalienable goods, or animate objects that imbued space with a soul or spirit. Over time, the ability to use these items in the proper manner in the appropriate contexts became a source of differentiation.

Ritual knowledge must be demonstrated in the proper ritual context, but knowledge of ritual and the use of ritual items must remain secret to prevent others from gaining access to this power believed to be responsible for the forces that sustain life. In some ways this creates a paradox: ritual knowledge must be restricted through secrecy, yet it also must be demonstrated to effectively create differential relations. Ritual actions or events are the solution to this paradox. Ritual events are performed in a highly proscribed setting and with a fairly strict sequence of events. Many elements of ritual events are performed by a few individuals away from the larger group. As an important part of the larger ceremony, this instills a higher degree of sacredness to the entire event. In much the same way that Weiner (1992) suggests that certain sacred items must be withheld from exchange to instill value in the items that do circulate, so must certain parts of ritual events be withheld from the larger group to instill greater sacredness in the larger ritual. Ritual knowledge, then, is an inalienable good of sorts, passed down through the generations as "immaterial wealth" to create permanence and perpetuate difference (Levi-Strauss 1988:174). At Paquimé, I have determined that the creation and

manipulation of ancestors and origins was a fundamental aspect of this ritual knowledge. Ultimately, this differentiated Paquimé from sites in the surrounding region and, created internal differences within.

This experiment with centralization was ultimately unsuccessful, as the largely centralized way of life did not last beyond A.D. 1450, or approximately 200 years. By the time the Spanish explorers came through the area in the 1530s, the site had been abandoned for some time. This relatively short span may be one reason we see such immense variability in the remains at Paquimé. This was a system in flux, with new forms of ritual practice leading to new forms of hierarchy that were either unsustainable or not accepted, or both. Thus, Paquimé is an example of a location where—unlike areas to the south—leaders were not able to successfully appropriate or establish ancestral ties strong enough to withstand some sort of dissent.

Future Directions

Given the limited excavation in northwest Mexico, there are numerous areas that would benefit from further study. Most scholars agree that one such area that needs more work is the earlier Viejo Period. Very little work has been done on this period since Di Peso's excavations. Thus, we have little information on what kind of social organization preceded the Medio Period. Further survey and excavation are necessary to add to our understanding of Viejo Period settlement patterns and social organization.

In addition to the Viejo Period, more excavation is needed in the region surrounding Paquimé so as to continue the work of Whalen and Minnis, among others, in filling in our understanding of Paquimé's relationship to the surrounding region. This central site did not arise in a vacuum. Whalen and Minnis (1996, 2001a, 2001b, 2003,

2005, 2009) have provided the best understanding of regional settlement patterns and the relationship of the surrounding region to Paquimé. More work is needed, however, both in the Rio Casas Grandes river valley and nearby river valleys to get a more complete picture of the relationship between production of and degree of participation in the Medio Period ritual system, as well as many other areas.

Paquimé is a fascinating case study for the role of ritual and cosmology in the development of hierarchical systems, in some ways because this system didn't last. Paquimé provides ample evidence for materializing ritual and cosmological principles, and this has been a fruitful line of research for many. I hope I have contributed to our understanding of the Medio Period system as a first step towards a broader understanding of the prehistoric systems of northern Mexico.

Appendix A: List of rooms with *both* turquoise and shell and quantities of each in floor or subfloor contexts.

Unit	Room/Plaza Number	Shell Frequency	Turquoise Frequency
08	10-8	1821	108
08	17-8	183	1
08	25-8	339	88
08	30-8	21391	212
08	42-8	3535	675
08	43-8	83	71
08	44-8	315	7
08	PL3-8	8353	279
11	PL4-11	57	8
12	08-12	14	1
12	17-12	11	1
13	PL2-13	14	1
13	PL3-13	3386	162
14	09-14	896	59
14	23-14	17	29
14	24-14	6	14
14	25-14	9	22
14	26-14	22211	21
14	27-14	550	1
14	29-14	1	1
14	30-14	44	23
14	34-14	32	2
14	36-14	89	53
14	PL3-14	10	2
14	PL4-14	61	10
16	03-16	22	29
16	10-16	16700	3
16	11-16	6	89
16	12-16	184	11
16	14-16	8626	71
16	19-16	5	1
16	22-16	11	1
16	23-16	240	4
16	25-16	11	152
16	26-16	2	1
16	PL1-16	9429	36

Appendix B: Turquoise, Shell, and gray/black stone totals in caches found throughout Paquimé

Room/Cache	Shell Count	Turquoise Count	Other Green or Blue/ Green Stone	Type of other Green or Blue/Green Stone	Gray Slate or other black/gray stone (other stone only when specified)	Other Type of gray/ black stone
Room 02A-4/Trench Offering 1	561	0	0		5	
Room 02A-4/Trench Offering 2	72	8	3	Fluorite (possibly green)	16	
25-8/Corner Cache 1	23	16	19	Ricolite (16) and Fluorite (3)	22	
25-8/Corner Cache 2	114	24	100	Olivine (1) and Ricolite (99)	89	
25-8/Corner Cache 3	108	31	64	Fluorite (2) and Ricolite (62)	68	
25-8/Corner Cache 4	62	17	41	Fluorite (4) and Ricolite (37)	49	
PL3-13/Trove*	1982	130	42	Azurite (1), Fluorite (3), Malachite (34), Ricolite (4)	6	Gray Slate (4), Obsidi an (2)
14-13/Corner Cache 1	3	2			1	
14-13/Corner Cache 2	12	2			11	
14-13/Corner Cache 3	3	1			5	
15-13/Corner Cache 1	0	3				

Room/Cache	Shell Count	Turquoise Count	Other Green or Blue/ Green Stone	Type of other Green or Blue/Green Stone	Gray Slate or other black/gray stone (other stone only when specified)	Other Type of gray/ black stone
15-13/Corner Cache 2	0	2				
09-14/Pit Cache*	799	59	0		4	
23-14/Corner Cache 1	5	8	0		0	
23-14/Corner Cache 2	3	4	2	Malachite (2)	0	
23-14/Corner Cache 3	5	11	4	Malachite (4)	6	
23-14/Corner Cache 4	4	6	1	Malachite (1)	1	
24-14/Corner Cache 1	5	1	1	Malachite (1)	0	
24-14/Corner Cache 2	1	5	1	Malachite (1)	0	
24-14/Corner Cache 3	0	4	1	Malachite (1)	0	
25-14/Corner Cache 1	2	6	0		1	
25-14/Corner Cache 2	1	9	0		0	
25-14/Corner Cache 3	2	7	2	Malachite (2)	0	
26-14/Corner Cache 1	76	2	1	Chrysocolla (1)	14	
26-14/Corner Cache 2	7	0	0		1	
26-14/Corner Cache 3	21	0	0		8	

Room/Cache	Shell Count	Turquoise Count	Other Green or Blue/ Green Stone	Type of other Green or Blue/Green Stone	Gray Slate or other black/gray stone (other stone only when specified)	Other Type of gray/ black stone
26-14/Corner Cache 4	2	2	2	Malachite (2)	28	
26-14/Corner Cache 5	92	3	2	Malachite (2)	38	
30-14/Corner Cache 1	32	2	0		0	
30-14/Corner Cache 2	7	7	0		0	
30-14/Corner Cache 3	4	8	0		0	
30-14/Corner Cache 4	1	6	0		0	
36-14/Corner Cache 1	9	5	0		5	
36-14/Corner Cache 2	7	4	0		6	
36-14/Corner Cache 3	11	6	0		10	
36-14/Corner Cache 4	5	5	0		4	
36-14/Corner Cache 5	10	6	0		8	
36-14/Corner Cache 6	9	8	0		7	
36-14/Corner Cache 7	12	6	0		10	
36-14/Corner Cache 8	17	9	0		19	
36-14/Corner Cache 9	8	4	0		7	
14-16/Trove*	28	0	454	Azurite (4), Malachite (450)	0	

Room/Cache	Shell Count	Turquoise Count	Other Green or Blue/ Green Stone	Type of other Green or Blue/Green Stone	Gray Slate or other black/gray stone (other stone only when specified)	Other Type of gray/ black stone
23-16/Trove*	232	2	2	Cupritic Malachite (1), Malachite (1)	0	
Reservoir 2	59	631	4	Ricolite (4)	713	

Appendix C: Counts of shell and turquoise in rooms where only one of these material types was found

Totals shell count for rooms with *only* shell:

Unit	Room Number	Shell Frequency
01	03-1	1
01	06-1	1
01	PL1-1	1
06	08-6	1
06	14-6	1
06	16-6	1
06	PL2-6	272
08	18-8	8
08	19-8	13
08	31-8	1
08	32-8	5
08	37-8	2
08	41-8	1
08	PL1-8	145
11	14-11	1
11	19-11	8
11	32-11	1
11	36-11	2
11	38-11	41
11	PL1-11	3
11	PL2-11	2
12	03-12	1
12	06-12	277
12	07-12	1
12	11-12	1
12	18-12	1
12	20-12	5
12	23-12	4
12	25-12	25
12	26-12	2
12	33-12	1
12	PL4-12	3
12	PL5-12	6
12	PL6-12	8
13	02-13	1
13	03-13	2

Unit	Room Number	Shell Frequency
13	04-13	6
13	06-13	4
13	07-13	3
13	08-13	12
13	10-13	2
13	12-13	1
13	13-13	343
13	14-13	18
13	15-13	2
14	04-14	4
14	06-14	2
14	07-14	1
14	21-14	5
14	22-14	1
14	32-14	4
14	33-14	4
14	35-14	13
14	38-14	2
14	39-14	3
14	40-14	6
14	42-14	3
14	43-14	1
14	44-14	406
14	45-14	22
14	PL2-14	2
14	PL5-14	6
14	PL6-14	15
16	01-16	8
16	02-16	2
16	04-16	3
16	05-16	1
16	06-16	28
16	09-16	2
16	15-16	4
16	16-16	2
16	17-16	1
16	20-16	7
16	21-16	1
16	28-16	1
16	29-16	2

Unit	Room Number	Shell Frequency
16	30-16	74
16	31-16	4
16	33-16	1
16	PL2-16	4000
22	01-22	3
	Total	5884

Total turquoise count for rooms with *only* turquoise:

Unit Number	Room_Plaza Number	Turquoise Frequency
04	02A-4	24
04	02C-4	29
06	PL2-6	4
08	21-8	14
08	26-8	110
08	28-8	1
11	29-11	2
16	08-16	7
	Acequia_Lat1	41
	PlayField_3	18
	Reservoir_2	633
	Total	883

Appendix D: Rooms with raised platform hearths and the count of platform hearths in each room

Room/Plaza	Number of Raised Platform Hearths (All Type 2 hearths)
2A-1	1
2B-1	1
4-1	1
7-1	1
21-6	2
9-6	1
10-8	1
12-8	1
16-8	1
2-8	1
23-8	1
26-8	1
27-8	2
29-8	1
3-8	1
30-8	1
31-8	2
33-8	1
37-8	1
40-8	1
41-8	1
45-8	1
5-8	1
6-8	1
7-8	1
9-8	1
PL19-8	1
1-11	1
10-11	1
12-11	1
13-11	1
14-11	1
15-11	1
16-11	1
17-11	1
18-11	2
2-11	1
21-11	1
26-11	1

Room/Plaza	Number of Raised Platform Hearths (All Type 2 hearths)
29-11	1
32-11	1
33-11	1
37-11	2
38-11	2
5-11	1
9-11	1
13-12	1
18-12	1
20-12	1
21-12	1
23-12	1
26-12	1
29-12	1
30-12	1
4-12	1
7-12	1
14-13	1
16-13	1
18-13	1
2-13	1
3-13	1
5-13	1
7-13	1
12-14	1
13-14	1
14-14	1
16-14	1
17-14	2
18-14	1
22-14	1
23-14	1
24-14	1
25-14	1
26-14	1
27-14	1
29-14	1
3-14	2
30-14	1
31-14	1
33-14	2
34-14	2

Room/Plaza	Number of Raised Platform Hearths (All Type 2 hearths)
37-14	1
39-14	1
42-14	1
44-14	1
45-14	1
46-14	1
5-14	1
8-14	1
2-15	1
1-16	2
10-16	1
11-16	1
12-16	1
13-16	1
15-16	1
2-16	1
21-16	1
22-16	1
24-16	2
26-16	1
28-16	2
29-16	1
3-16	1
30-16	1
31-16	1
4-16	1
5-16	1
6-16	1
7-16	1
8-16	1
1-19	1
1-22	1
Total	126

Appendix E: Discussion of Ripley's K Function

It should be stated at the outset that the vagaries of the Paquimé data, the large

distances between roomblocks with no platform hearths and the unusual shape of the

main roomblock, rendered these tests inconclusive. The test was run on platform hearth

points for multiple distances, 10m, 20m, 30m, and 40m, using the ArchMap GIS

program. Although the point pattern analysis did characterize the nature of the

distribution of platform hearths, unfortunately it did not help identify clusters. The

spatial pattern of the platform hearths is significantly clustered at all distances (fig. 5.12

for one example).

The test was not able to identify the scale at which the hearths clustered because

the hearths were significantly clustered at *every* distance (fig. E). So the overall

distribution of the platform hearths is significantly clustered, but an internal, intra-site

scale of clustering could not be discerned.
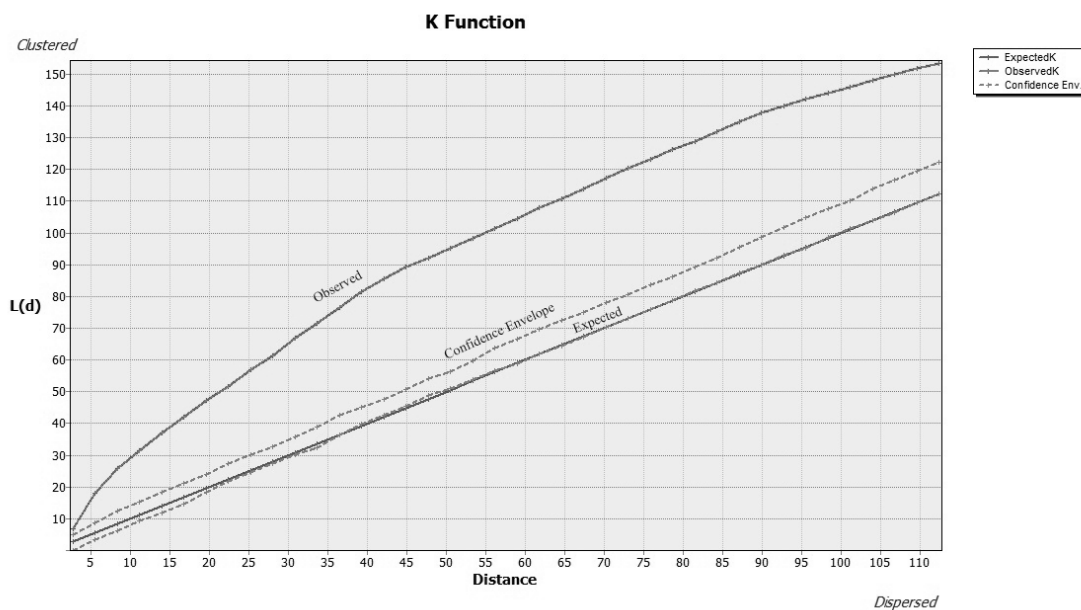
Figure E: Ripley's K analysis results, with and evaluation distance of 40. The
bottom line is the expected distribution, the dotted line is the 99% confidence level, the
upper line is the observed.

This pattern of significant clustering is equally pronounced at evaluation distances of 10m and 20m and 50m. There are several reasons why this may be. First, as noted thirteen rooms had two raised platform hearths. In these rooms, the platform hearths would usually be within five meters of each other. Although there is a large range, the average room size is about $21m^2$. So at distances of 20 or even 30 meters may see many hearths in close proximity in adjacent rooms. Also, many times hearths in different rooms were placed on opposite sides of the same wall. Since most walls at Paquimé were 60-80cm wide, this would put hearths within a one-meter distance of each other, despite being in separate rooms. Close proximity of some hearths would cause clustering at small distance scales, while larger architectural reasons would cause clustering at larger distance scales. The large open spaces of the interior plazas would create gaps (fig. 5.10), making the hearths appear to cluster. The separate roomblocks create clusters at a greater distance. It was hypothesized that a spatial clustering test would be able to tease out finer, intra-site patterns.

Another Ripley's K test was run, but this time the spatial area tested (or the statistical universe) was restricted to the main roomblock. Ripley's K is highly sensitive to study area size, thus this additional test was run to reduce the study area size and eliminate the large distances between roomblock units. This test did not detect any distance at which the spatial clustering was significant. Unlike the test on the site as a whole, the platform hearth distribution within the main roomblock showed no clustering at all. However the unusual shape of the main roomblock creates larger than expected distances between some of the hearth points, ultimately rendering the conclusions of this test unreliable.

Hearth Information By Provenience

PL = Plaza; Ram = Ramada
H_ID=hearth ID assigned in GIS

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #) Notes/ Comments
397	1	1-1	1A	N	N/A	34cm E of W-3 wall, 1.2m S of N-4 wall	280, 281:4
393	1	3-1	1A	N	N/A	#1: Floor B, 1.56m W of E-1 wall, 1.42m S of N-4 wall	280:4
394	1	3-1	1A	N	N/A	#2: Floor A, 2.1m W of E-1 wall, 2.98m S of N-4 wall	280:4
395	1	3-1	1B	N	N/A	#3: Floor A, 1.5m N of S-2 wall, 60cm E of W-3 wall	280:4
396	1	3-1	1A	N	N/A	#4: Floor B, 94cm W of E-1 wall, 1.54m N of S-2 wall	280:4
556	1	4-1	2A	Unknown	N/A	Air vent destroyed; against S-2 wall, 1.4m w of SE corner	281:4
398	1	5-1	1A	N	N/A	#1: 1.48m W of E-1 wall, 1.6m N of S-2 wall	283:4
399	1	5-1	1A	N	N/A	#2: 1m W of E-1 wall, 92 cm N of S-2 wall	283:4
400	1	7-1	2B	N	N/A	Against E-3 wall, 95cm N of SE corner	285:4
402	1	8-1	1A	N	N/A	#1: 38cm N of Wing Wall 2, 2.52m E of W-3 wall	286:4

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
401	1	8-1	1A	N	N/A	#2: 1.12m E of W-3 wall, 62cm N of Niche 2 mouth		
403	1	8-1	1A	N	N/A	#3: 2.3m N of S-2 wall, 78cm E of W-3 wall	286:4	
391	1	2A-1	2A	N	N/A	Against W end of N-2 wall	278:4	
392	1	2B-1	2B	N	N/A	40cm S of N-4 wall, 78cm E of W-3 wall	278:4	Several rooms in unit 6 were occupied until 1925 by modern families
404	6	1-6	1A	N	N/A	1.10m W of E-1 wall, 70cm S of doorway 2	325:4	
405	6	3-6	1A	N	N/A	Floor A, 1.25m W of E-1 wall, 1.5m S of N-4 wall	326:4	
422	6	4-6	1D	N	N/A	65cm S of N-2 wall, 2m E of W-5 wall	327:4	
421	6	7-6	1C	N	N/A	Floor A, N half under N-4 wall, 2m W of E-1 wall, against N-4 wall	346:4	Looks like only one hearth, but a little confusing
431	6	12-6	1D	N	N/A	#1: Floor B, 1.7m S of N-4 wall, 18cm W of E-1 wall	351:4	
432	6	12-6	1A	N	N/A	#2: Floor B, 2.75m S of N-4 wall, 35cm W of E-1 wall	351:4	
433	6	13-6	1C	N	N/A	#1: 54cm N of S-2 wall, 95cm W of E-1 wall	351:4	
434	6	13-6	1A	N	N/A	#2: 40cm E of W-3 wall, 1.45m N of S-2 wall	351:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #) Notes/ Comments
423	6	15-6	1D	N	N/A	Floor A, 1.25m S of N-4 wall, 25cm W of E-1 wall	328:4
424	6	16-6	1D	N	N/A	Floor A, 90cm W of E-1 wall, 35cm S of N-4 wall	328:4
437	6	18-6	1A	N	N/A	2.1m E of W-2 wall, 20cm S of N-3 wall	353:4
557	6	19-6	1A	N	N/A	75cm W of E-1 wall, 25cm S of N-4 wall	354:4
435	6	20-6	1A	N	N/A	#1: 2.25m W of E-1 wall, 1.5m N of S-2 wall	355:4
436	6	20-6	1A	N	N/A	#2: 2.85m W of E-1 wall, 60cm s of N-4 wall	355:4
425	6	21-6	2C	N	N/A	#1: 1.55m W of E-3 wall, platform against N-2 wall 1.3m W of E-3 wall	329:4
426	6	21-6	2A	N	N/A	#2: against W-5 wall, 2.05m S of NW corner	329:4
427	6	21-6	1A	N	N/A	#3: 1.18m W of E-1 wall 70cm S of N-6 wall	329:4
428	6	8-6	2A	N	N/A	#2: Floor B, against N-4 wall, 85 cm E of NW corner	348:4
429	6	8-6	1D	N	N/A	#1: Floor A, 2.05m W of E-1 wall, 45cm N of S-2 wall	348:4

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
430	6	9-6	2A	Y	Terrace Motif	against E end of wing wall	350:4	Upper, west portion of room was used by the Corralejo family as a living room; drawing in map on pg. 349 does not indicate any design present in the air vent
406	6	PL 2-6	Not Given	N	N/A	#1: 5.9m S of N-16 wall, 2.27m E of W-13 wall	341:4	
407	6	PL 2-6	Not Given	N	N/A	#2: Touches W-15 wall, 3.18m S of N-16 wall	341:4	
408	6	PL 2-6	Not Given	N	N/A	#3: 14.63m S of N-20 wall, 9.88m E of W-13 wall	342:4	
409	6	PL 2-6	Not Given	N	N/A	#4: 10.2m S of N-16 wall, 8.51m E of W-13 wall	342:4	
410	6	PL 2-6	Not Given	N	N/A	#5: 5.46m Sof N-18 wall, 7.21m E of W-15 wall	342:4	
411	6	PL 2-6	Not Given	N	N/A	#6: Against N-16 wall, 4.7m E of W-15 wall	342:4	
412	6	PL 2-6	Not Given	N	N/A	# 7: 7.88m s of N-16 wall, 5.3m E of W-13 wall	342:4	
416	6	PL 2-6	Not Given	N	N/A	#8: 6.08m S of N-16 wall, 6.48m E of W-13 wall	342:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
413	6	PL 2-6	Not Given	N	N/A	#9: 17.48m s of N-20 wall, 13m E of W-13 wall	342:4	
415	6	PL 2-6	Not Given	N	N/A	#10: 8.16m S of N-20 wall, 3.4m E of W-17 wall	342:4	
417	6	PL 2-6	Not Given	N	N/A	#11: 5.52m s of N-16 wall, 5.7m E of W-13 wall	342:4	
420	6	PL 2-6	Not Given	N	N/A	#12: 6.04m S of N-16 wall, 4.48m E of W-13 wall	342:4	
418	6	PL 2-6	Not Given	N	N/A	#13: 3.8m S of N-16 wall, 5.54m E of W-15 wall	342:4	
419	6	PL 2-6	Not Given	N	N/A	#14: 13.15m S of N-20 wall, 10.18m E of W-13 wall	342:4	
414	6	PL 2-6	Not Given	N	N/A	#15: 18.6m S of N-20 wall, 3.8m E of W-9 wall	342:4	
558	7	1-7	1A	N	N/A	in center of room, 4m from NE corner (to center), 3.75m from SW corner	362:4	
56	8	2-8	2A	N		Against N-6 wall, 1.81m E of W-5 wall	400:4	No air vent
55	8	3-8	2A	N		#3: Rm 3B-8, Floor A, against N-2 wall, 79cm W of E-3 wall	401:4	Below sealed doorway #3

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
58	8	5-8	2A	Y	Terrace Motif	#1: Floor A, against E-1 wall, 2.08m s of N-4 wall, 32cm W of E-1 wall	400:4	North half of platform destroyed
57	8	6-8	2A	N		Against E face of E wing wall, 1.5m S of N end	405:4	
59	8	7-8	2A	N		#3: At base of W-5 wall, 3.11m S of N-6 wall, flush with W-5/N-4 corner	406:4	
54	8	9-8	2A	Y	Terrace Motif	Against S-4 wall, 2.36m E of W-3 wall	407:4	
61	8	10-8	2A	N		Against N-8 wall, 3.42m W of E-1 wall	418:4	Airvent absent
62	8	12-8	2A	N		#2: Against W-7 wall, 3.38m S of N-8 wall, below doorway 3	422:4	Airvent absent
458	8	12-8	1A	N		#1: 1.81m W of E-3 wall, 15cm N of S-4 wall	422:4	
53	8	PL19-8	2A	N	N/A	#3: Floor C, against N-6 wall 50cm W of E-1 wall	394:4	
441	8	PL19-8	Not Given	N	N/A	#1: Floor A, 6.79m S of N-6 wall, 3.69m W of E-1 wall	394:4	
442	8	PL19-8	Not Given	N	N/A	#2: Floor A, 7.72m S of N-6 wall, 4.25m W of E-1 wall	394:4	
443	8	1-8	1D	N	N/A	Floor A, 1.49m S of N-4 wall, 30cm W of E-1 wall	399:4	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
63	8	13-8	1C	N		#2: firebox against W-5 wall, 2.6m S of N-6 wall	422:4	
459	8	13-8	1C	N		#1: firebox 42cm W of E-1 wall, 2.31m S of N-4 wall	422:4	
457	8	14-8	1C	N		remnant platform: Against N-4 wall, 2.5m W of E-1 wall	416:4	Remodeled from a type 2A hearth
460	8	15-8	1A	N		Rm 15C-8, 95cm E of W-11 wall, 3.18m S of N-12 wall	428:4	In bottom chamber (rm 15C)
60	8	16-8	2A	N		Against S-4 wall, Flush with W-3/S-4 corner	419:4	Airvent absent
462	8	17-8	1A	N		#1: 30cm W of E-1 wall, 2.4m S of N-4 wall	433:4	
463	8	17-8	1A	N		#2: 98cm W of E-1 wall, 2.15m s off N-4 wall	433:4	
477	8	18-8	1C	N		Rm 18C-8, 3.8m s of N-6 wall, 50cm E of W-5 wall	439:4	Remodeled from a type 2A hearth
464	8	20-8	1A	N		#1: Floor A, 35cm W of E-1 wall, 2.55m S of N-6 wall	434:4	
465	8	20-8	1A	N		#2: Floor A, 22cm W of E-1 wall, 3.4m S of N-6 wall	434:4	Lined with a bowl
466	8	20-8	1C	N		#3: Floor A, 40cm N of S-4 wall, 1.8m E of W-5 wall	434:4	
454	8	21-8	1A	N		#1: 40cm W of E-1 wall, 5.4m S of N-6 wall	409:4	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
452	8	21-8	1A	N		#2: 3.71m W of E-1 wall, 5.75m S of N-4 wall	409:4	
453	8	21-8	1A	N		#3: 30 cm E of W-3 wall, 2.45m S of N-4 wall	409:4	
455	8	22-8	1A	N		1.75m W of E-1 wall, 40cm N of S-2 wall	411:4	
64	8	23-8	2A	N		Against W-3 wall, 3.68m S of N-4 wall	443:4	Airvent absent
478	8	24-8	1A	N		1.55m S of N-4 wall, 45cm W of E-1 wall	443:4	
461	8	25-8	1A	N		Rm 25C-8, 3.8m S of N-10 wall, 40 cm W of E-1 wall	430:4	
65	8	26-8	2A	N		#1: Against N-2 wall, 3m E of E-1/N-2 corner	434:4	Airvent eroded
467	8	26-8	1C	N		#2: firebox 22cm S of N-2 wall, 1.95m W of E-3 wall	434:4	Remodeled from a type 2A hearth
52	8	27-8	2A	Y	Terrace Motif	#7: Against W-3 wall, 91cm S of N-4 wall	435:4	
66	8	27-8	2A	N		#6: Against S-2 wall, 2.55m W of E-1 wall	435:4	
468	8	27-8	1A	N		#1: 15cm W of E-1 wall, 52cm S of N-4 wall	435:4	
469	8	27-8	1A	N		#2: 56cm W of E-1 wall, 1.68m S of N-4 wall	435:4	
470	8	27-8	1A	N		#3: 1.98m W of E-1 wall, 3.3m S of N-4 wall	435:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
471	8	27-8	1C	N		#4: 2.3m N of S-2 wall, 1.85m E of W-3 wall, 40cm W of W end of wing wall	435:4	
472	8	27-8	1C	N		#5: 1.55m N of S-2 wall, 2.41m E of W-3 wall	435:4	Built into floor grout
473	8	28-8	1A	N		#1: 41cm N of S-6 wall, 26cm E of W-7 wall	436:4	Sealed w/ adobe
474	8	28-8	1A	N		#2: 2.7m N of S-6 wall, 36cm E of W-7 wall	436:4	
475	8	28-8	1A	N		#3: 3.33m N of S-6 wall, 40cm E of W-7 wall	436:4	Rectangular
476	8	28-8	1A	N		#4: 4.9m W of E-1 wall, 18cm s of N-8 wall	436:4	Description does not mention any design in the airvent, but the map shows a hearth with a terrace motif design in the airvent.
51	8	29-8	2A	Y?	Terrace Motif (?)	Rm 29B-8, against W-3 wall, 84cm N of S-2 wall	445:4	
446	8	3-8	1A	N		#1: Rm 3B-8, Floor A, 1.37m S of N-8 wall, 39cm W of E-1 wall	401:4	Separate rooms A & B?

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447	8	3-8	1A	N		#2: Rm 3B-8, Floor A, 2.2m S of N-8 wall, 34cm W of E-1 wall	401:4	Remodeled from a type 2A hearth
448	8	3-8	1A	N		#4: Rm 3B-8, Floor A, 2.1m S of N-8 wall, 1.25m W of E-1 wall	402:4	
49	8	30-8	2A	N		Against W-5 wall at corner of W-5/S-6 walls	446:4	
48	8	31-8	2A	N (?)		#2: Against S-4 wall, 4.72m W of E-3 wall	447:4	
479	8	31-8	1A	N		#1: 1.05m W of E-1 wall, 2.75m S of N-6 wall	447:4	Jar broken over the hearth
480	8	31-8	2A	N		#3: Against W-5 wall, 2.45m S of N-6 wall, firebos 40cm E of W-5 wall	447:4	Platform razed
481	8	32-8	1A	N		#1: 1.27m W of E-1 wall, 29cm N of S-2 wall	447:4	
482	8	32-8	1A	N		#2: 2.24m W of E-3 wall, 1.69m N of S-4 wall	447:4	
483	8	32-8	1A	N		#3: 2.61m W of E-3 wall, 4m N of S-4 wall	447:4	
50	8	33-8	2A	N (?)		Against W-5 wall, 2.4m S of N-6 wall	449:4	
559	8	35-8	1A	N		Floor A, 90cm N of S-2 wall, 2.1m W of E-1 wall	450:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
484	8	36-8	1A	N		#1: Floor A, 70cm W of E-1 wall, 5.3m S of N-4 wall	453:4	
485	8	36-8	1C	N		#2: Floor A, 1.9m W of E-1 wall, 55cm S of N-4 wall	453:4	Remodeled from a type 2A hearth
486	8	36-8	1A	N		#3: Floor B, 6.33m N of S-2 wall, 49cm E of W-3 wall	453:4	
487	8	36-8	1A	N		#4: Floor B, 6.92m N of S-2 wall, 46cm E of W-3 wall	453:4	
47	8	37-8	2A	Y	Terrace Motif	Floor A, against N-2 wall at E-1/N-2 corner	453:4	
488	8	38-8	1A	N		#1: Floor A, 2.11m W of E-1 wall, 1.2m N of S-2 wall	454:4	
489	8	38-8	1A	N		#2: Floor A, 2.1m W of E-1 wall, 1.53m N of S-2 wall	454:4	
490	8	38-8	1A	N		#3: Floor A, 1.98m W of E-1 wall, 2.18m N of S-2 wall	454:4	
491	8	38-8	1A	N		#4: Floor A, 1.75m W of E-1 wall, 2.68m N of S-2 wall	454:4	
492	8	38-8	1A	N		#5: Floor A, 1.96m W of E-1 wall, 2.87m N of S-2 wall	454:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
493	8	39-8	1C	N		firebox on Floor A, 51cm E of E end of wing wall, 2m N of S-2 wall	454:4	
46	8	40-8	2A	N		#2: Floor A, against N face of wing wall, 1.8m W of E-1 wall	455:4	
560	8	40-8	1A	N		#1: Floor A, 1.56m W of E-1 wall, 4.18m N of S-2 wall	455:4	
561	8	40-8	1A	N		#3:, Floor A, 1.01m W of E-1 wall, 46cn N of S-2 wall	455:4	
495	8	41-8	1A	N		#1: 26cm W of E-1 wall, 2.72m S of N-4 wall	456:4	Rectangular
494	8	41-8	2A	N		#2: Against W-3 wall, 5.05m S of N-4 wall	456:4	Eroded
496	8	42-8	1A	N		#1: 1.70m W of E-1 wall, 3.15m S of N-4 wall	458:4	
497	8	42-8	1D	N		#2: 51cm E of W-3 wall, 3.10m S of N-4 wall	458-459:4	Remodeled from type 2A hearth
498	8	42-8	1A	N		#3: 2.20m E of W-3 wall, 2.48m S of N-4 wall	459:4	
499	8	43-8	1A	N		#1: Floor A, 39cm W of E-1 wall, 1.73m S of N-4 wall	460:4	
500	8	43-8	1A	N		#2: Floor A, 2.45m W of E-1 wall, 4.32m S of N-4 wall	460:4	Sealed

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
502	8	43-8	1A	N		#4: Floor A, 3.10m W of E-1 wall, 4.23 S of N-4 wall	460:4	Sealed
501	8	43-8	1A	N		#3: Floor B, 2.60m W of E-1 wall, 4.30m S of N-4 wall	460:4	
503	8	44-8	1A	N		#1: Floor A, 65cm W of E-1, 2.50m N of S-2 wall	462:4	
504	8	44-8	1A	N		#2: Floor A, 2.31m W of E-1 wall, 3.0m N of S-2 wall	462:4	
505	8	44-8	1A	N		#3: Floor B, 1.89m W of E-1 wall, 2.50m N of S-2 wall	462:4	
567	8	45-8	2A	N		Against S face of partition wall, 99cm W of E-1 wall	462:4	Air vent on east side of platform
444	8	5-8	1A	N	N/A	#2: Floor A, 1.8m W of E-1 wall, 30cm N of S-2 wall	400:4	
445	8	5-8	1A	N	N/A	#3: Floor A, 60cm E of W-3 wall, 1m S of N-4 wall	400:4	Under bed platform
449	8	7-8	1A	N		#1: 1.95m S of N-6 wall, 1.25m W of E-1 wall	406:4	
450	8	7-8	1A	N		#2: 2.92m S of N-6 wall, 43cm W of E-1 wall	406:4	
451	8	7-8	1A	N		#4: 2.75m S of N-6 wall, 2.5m W of E-1 wall	406:4	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
456	8	8-8	1A	N		Against S-2 wall, 2.47m W of E-1 wall, firebox, 2.9m w of E-1 wall, 50cm N of S-2 wall	415:4	Remodeled from a type 2A hearth, entire floor of this room was covered with a mat (petate)
562	8	PL 3-8	Not Given	N	N/A	Floor A, 95cm N of S-19 wall, 66cm E of W-20 wall	374:4	
439	8	PL 4-8	Not Given	N	N/A	#1: Floor A, 1.15m W of E-1 wall, 1m S of N-6 wall	383:4	
440	8	PL 4-8	Not Given	N	N/A	#2: Floor B, 9.8m W of E-1 wall, 43cm N of S-2 wall	383:4	
438	8	PL2-8	Not Given	N	N/A	Floor C, 4.7m W of E-1 wall, 1.4m N of S-2 wall	371:4	
97	11	1-11	2A	N		Against E-1 wall, 5.50m S of N-4 wall	489:5	No comment on design-don't think there was one
96	11	2-11	2A	N		#3: Against N-4 wall, 4.25m E of W-3 wall	490:5	
508	11	3-11	1A	N		#1: 1.49m W of E-1 wall, 15cm S of N-4 wall	490:5	
509	11	2-11	1A	N		#2: 35cm S of N-4 wall, 3.15m E of W-3 wall	490:5	

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95	11	5-11	2A	Y	Terrace Motif	Against N-4 wall, at corner of N-4/W-5 walls		Ash pit (wall stained above it) also in this room
527	11	6-11	1A	N		#1: 82cm S of N-6 wall, against partition wall of Bed Platform 1	490:5	Also noted that this is "Room" 7-11)
528	11	6-11	1A	N		#2: 40cm W of E-3 wall, 2.0m S of N-6 wall	492:5	Also noted that this is "Room" 7-11)
529	11	6-11	1A	N		#3: 80cm N of S-4 wall, 2.55m W of E-3 wall	492:5	Also noted that this is "Room" 7-11)
530	11	6-11	1A	N		#4: 2.5m W of E-3 wall, 1.26m N of S-4 wall	492:5	Also noted that this is "Room" 7-11)
531	11	6-11	1A	N		#5: 2.48m S of N-6 wall, 2.72m W of E-3 wall	492:5	Also noted that this is "Room" 7-11)
94	11	9-11	2A	N		#4: Against N-4 wall, 4.12m E of W-3 wall	492:5	
106	11	9-11	1A	N		#1: Floor A, 48cm S of N-4 wall, 3.7m W of E-1	492:5	
566	11	9-11	1A	N		#2: Floor A, 88cm N of S-2, 82cm E of bed platform partition wall	492:5	

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512	11	9-11	1C	N		#3: Floor A, 1.15m N of S-2 wall, 3.45m E of W-3 wall	492:5	
107	11	10-11	1A	N		#1: 1.9m W of E-1 wall, 3.0m N of S-2 wall	494:5	
554	11	10-11	2A	N		#2: 2.1m N of S-2 wall, 2.45m E of W-3 wall	494:5	Hearth razed and sealed
103	11	11-11	1A	N		#4: 20cm S of N-4 wall, 78cm W of E-1 wall	487:5	
90	11	12-11	2A	Not Given		#3: Against W-3 wall, 3.3m N of S-2 wall	487:5	Razed when room remodeled
510	11	12-11	1C	N		#1: 1.90m N of S-2 wall, 35cm W of E-1 wall	487:5	
511	11	12-11	1A	N		#2: 1.90m N of S-2 wall, 40cm W of E-3 wall	487:5	
547	11	13-11	1F	N		#1: 3.90m E of W-5 wall, against S-4 wall	495:5	covered with stone slab
548	11	13-11	2A	N		#2: Against W-5 wall, 1.90m N of S-4 wall	495:5	
87	11	14-11	2A	Y	Terrace Motif	#1: Against S-4 wall, 4.53m W of E-3 wall	496:5	
549	11	14-11	1A	N		#2: 42cm S of N-6 wall, 3.78m E of W-5 wall	496:5	
86	11	15-11	2A	N		#3: Against S-2 wall, 5.83m W of E-1 wall	496:5	
550	11	15-11	1A	N		#1: 1.10m N of S-2 wall, 5.20m W of E-1 wall	496:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
551	11	15-11	1A	N		#2: 85cm N of S-2 wall, 4.95m W of E-1 wall	496:5	
552	11	15-11	1A	N		#4: 1.01m N of S-2 wall, 6.25m W of E-1 wall	496:5	
553	11	15-11	1A	N		#5: 1.0m N of S-2 wall, 80cm E of W-3 wall	496:5	
98	11	16-11	2D	N	N/A	#3: Against S butt end of N wing wall, flush with corner of E face		
104	11	16-11	1A	N	N/A	#2: 1.95m W of E-1 wall, 5.7m N of S-2 wall	501:5	
105	11	16-11	1A	N		#1: 84cm W of E-1 wall, 2.0m N of S-2 wall	501:5	
555	11	17-11	2A	Y	Terrace Motif	Against W-5 wall, 1.10m S of N-6 wall	491:5	Maul (CG/2471) inset 5cm in platform as pot support
91	11	18-11	2A	N		#1: Against S-1 wall, 1.25m E of W-2 wall	485:5	Also called Colonnade Hallway
92	11	18-11	2A	Y	Terrace Motif	#2: Against N-3 wall, 1.27m E of W-2 wall	485:5	Also called Colonnade Hallway
535	11	20-11	1A	N		#1: 68cm S of N-6 wall, 35cm W of E-1 wall	488:5	
536	11	20-11	1A	N		#2: 38cm E of W-5 wall, 36cm N of S-4 wall	488:5	

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537	11	21-11	3	N		#1: 2.25m S of N-4 wall, 1.58m E of W-3 wall	494:5	
93	11	21-11	2A	Y	Terrace Motif	#2: Against N-4 wall, 8.85m E of W-3 wall	494:5	Sealed; Many rooms in Unit 11 not fully described
533	11	24-11	1C	N		#1: Floor A, 40cm W of E-3 wall, 2.28m S of N-12 wall	519:5	
	11	24 & 26-11	1A	N		#2: Floor A, 48cm E of W-9 wall, 2.15m N of S-6 wall	519:5	
506	11	26-11	1A	N		#4: Floor B, 42cm E of W-9 wall, 2.38m S of N-12 wall	519:5	
534	11	24-11	1C	N		#5: Floor A, 60cm S of N-12 wall, 4.23m W of E-1 wall	519:5	
100	11	26-11	2A	N		#3: Floor A, against W-9 wall, 2.3m N of N-8/W-9 corner	519:5	Partition wall built over N side of hearth
88	11	29-11	2A	N		Against E-1 wall, 3.52m S of N-8 wall	498:5	Airvent eroded
89	11	32-11	2A	Y	Terrace Motif	Against E-5 wall, 3.65m N of S-6 wall	499:5	
538	11	33-11	2A	N	N	Against E-1 wall, 3.72m S of N-4 wall	508:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
101	11	34-11	Unknown	N		Unknown	503-504:5	No hearth mentioned in the room description section, but there is a hearth visible in the map.
539	11	36-11	1A	N	N/A	#1: 65cm W of E-1 wall, 1.5m N of S-2 wall	506:5	
542	11	36-11	1A	N	N/A	#2: 18cm N of S-2 wall, 3.31m W of E-1 wall	506:5	
541	11	36-11	1A	N	N/A	#3: 3.03m W of E-1 wall, 2.31m N of S-2 wall	506:5	
540	11	36-11	1A	N	N/A	#4: 1.79m W of E-1 wall, 1.9m N of S-2 wall	506:5	
543	11	37-11	2A	N		#1: Against S side of Central roof support adobe collar, 2.62m N of S-2 wall, 2.32m W of E-1 wall	499:5	
544	11	37-11	2A	N		#2: Against N side of central roof support adobe collar, 2.60m S of N-4 wall, 2.32m W of E-1 wall	499:5	
546	11	38-11	1A	N		#1: 4.55m S of N-4 wall, 3.6m E of W-3 wall	509:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #) Notes/Comments
545	11	38-11	1A	N		#4: 1.42m S of N-4 wall, 4.85m E of W-3 wall	509:5
84	11	38-11	2A	Y	Terrace Motif	#3: Against W-3 wall, 3.59m N of S-2 wall	509:5
85	11	38-11	2A	N		#2: Against W-3 wall, 1.34m N of S-2 wall	509:5
102	11	PL3-11	Not Given	N		Approximate center of plaza, 9.95m W of E-3 wall, 7.70m N of S-4 wall	482:5
126	12	1-12	1A	N		#1: Floor A, 95cm W of E-1 wall, 75cm S of N-6 wall	543:5
127	12	1-12	1A	N		#2: Floor A, 1.15m W of E-1 wall, 1.75m S of N-6 wall	543:5
128	12	1-12	1A	N		#3: Floor A, 1.37m W of E-1 wall, 1.8m S of N-6 wall	543:5
129	12	1-12	1A	N		#4: Floor A, 3.41m W of E-1 wall, 1.15m S of N-6 wall	543:5
130	12	1-12	1A	N		#5: Floor A, 2.8m W of E-1 wall, 41cm S of N-6 wall	544:5
125	12	2-12	1A	N		1.58m W of E-1 wall, 25cm S of N-4 wall	546:5
131	12	3-12	1A	N		#1: 1.87m N of S-4 wall, 30cm W of E-3 wall	548:5
132	12	3-12	1C	N		#2: 1.59m N of S-4 wall, 90cm E of W-5 wall	548:5

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
133	12	3-12	1C	N		#3: 1.79m N of S-4 wall, 40cm E of W-5 wall	548:5	
67	12	4-12	2A	N		#1: Against N-2 wall, 1.62m W of E-3 wall	548:5	
135	12	4-12	3	N		#2: 30cm E of W-5 wall, 1.0m s of N-6 wall	548:5	Ash pit in this room also
121	12	6-12	1G	N		#2: Floor A, 1.55m W of E-1 wall, 4.45m N of S-2 wall	544:5	
122	12	6-12	1A	N		#1: Floor A, 73cm W of E-1 wall, 32cm S of N-6 wall	544:5	
123	12	6-12	1H	N		#3: Floor A, 2.9m N of S-2 wall, 31cm E of W-3 wall	544:5	Sherd liner
124	12	6-12	1H	N		#4: Floor A, 1.85m E of W-3 wall, 51cm S of N-4 wall	544:5	Sherd liner
68	12	7-12	2A	N		#1: Against W-5 wall, 2.51m N of S-4 wall	549:5	Air vent absent
136	12	7-12	3	N		#2: 60cm W of E-1 wall, 1.4m S of N-8 wall	549:5	
134	12	8-12	1A	N		1.39m W of E-1 wall, 49cm S of N-4 wall	551:5	Ash pit
137	12	9-12	1A	N		32cm W of E-1 wall, 2.05m S of N-6 wall	550:5	Ash pit
563	12	10-12	1A	N		#1: 33cm W of E-1 wall, 1.11m S of N-4	552:5	
564	12	10-12	1A	N		#2: 91cm W of E-1 wall, 2.12m S of N-4 wall	552:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
138	12	11-12	1C	N		#1: 41cm W of E-3 wall, 2.35m S of N-6 wall	553:5	
139	12	11-12	1C	N		#2: 58cm W of E-3 wall, 3.01m S of N-6 wall	553:5	
140	12	12-12	1C	N		50cm S of N-2 wall, 1.66m W of E-3 wall	554:5	
69	12	13-12	2A	N		Against S-2 wall, 1.71m W of E-1 wall	554:5	Air vent missing
141	12	14-12	1C	N		1.5m E of W-3 wall, 1.25m N of s-2 wall	555:5	
142	12	15-12	3	N		Against E-1 wall, 1.75m N of S-2 wall	556:5	
143	12	16-12	1A	N		22cm N of S-4 wall, 1.35m E of W-5 wall	556:5	
144	12	17-12	1A	N		21cm N of S-4 wall, 80cm E of W-5 wall	557:5	
74	12	18-12	2A	N		Against W-5 wall, flush with W-5/S-6 corner	559:5	
147	12	19-12	1C	N		Floor A, 35cm S of N-2 wall, 2.81m w of E-3 wall	562:5	Ash pit
75	12	20-12	2A	N		Against E butt end of wing wall	563:5	Air vent destoyed
76	12	21-12	2A	N		Against E butt of wing wall	564:5	Air vent absent
70	12	23-12	2A	N		Against N-6 wall, 2.15m W of E-1 wall	557:5	Air vent eroded
145	12	24-12	1A	N		#1: 52cm W of E-1 wall, 95cm N of S-2 wall	558:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
146	12	24-12	1A	N		#2: Against W-3 wall, 1.72m N of S-2 wall	558:5	2 ash pits
148	12	25-12	1A	N		#3: Floor A, 8.72m W of E-3 wall, 39cm N of S-4 wall	565:5	
149	12	25-12	1A	N		#2: Floor A, 8.4m W of E-3 wall, 37cm N of S-4 wall	565:5	
150	12	25-12	1A	N		#1: Floor A, 7.9m W of E-3 wall, 37cm N of S-4 wall	565:5	
73	12	26-12	2A	N		Floor A, against W-3 wall, at W-3/S-4 corner	567:5	
71	12	29-12	2A	N		Against N-4 wall, 2.15m W of E-1 wall	569:5	
72	12	30-12	2A	N		Against E-1 wall, 1.91m S of N-4 wall	566:5	
151	12	32-12	1A	N		83cm S of N-4 wall, 38cm E of W-3 wall	571:5	
117	12	33-12	Not Given	N		Floor A, 3.21m W of E-3 wall, 1.68m S of N-2 wall	538:5	
108	12	PL3-12	Not Given	N		#7: Floor B, 7.5m W of E-1 wall, 1.85m S of N-4	531:5	
109	12	PL3-12	Not Given	N		#1: Floor B, 1.3m W of E-1 wall, 3.51m S of N-6 wall	531:5	
110	12	PL3-12	Not Given	N		#2: Floor B, 1.71m W of E-1 wall, 6.72m S of N-6 wall	531:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
111	12	PL3-12	Not Given	N		#6: Floor B, 3.48m W of E-1 wall, 6.65m S of N-6	531:5	
112	12	PL3-12	Not Given	N		#5: Floor B, 7.2m W of E-1 wall, 5.21m S of N-4 wall	531:5	
113	12	PL3-12	Not Given	N		#4: Floor B, 6.05m W of E-1 wall, 6.0m S of N-4	531:5	
114	12	PL3-12	Not Given	N		#8: Floor B, 5.14m W of E-1 wall, 1.62m S of N-4 wall	531:5	
115	12	PL3-12	Not Given	N		#9: Floor B, 3.61m W of E-1 wall, 3.16m S of N-6 wall	531:5	More "pit ovens" in this plaza - not entered here
116	12	PL3-12	Not Given	N		#3: Floor B, 1.3m W of E-1 wall, 10.25m S of N-6 wall	531:5	
118	12	PL4-12	Not Given	N		#2: Floor A, 32cm S of N-4 wall, 98 cm E of W-3 wall	534:5	
119	12	PL4-12	Not Given	N		#1: Floor A, 38cm S of N-4 wall, 39cm E of W-3 wall	534:5	
120	12	PL4-12	Not Given	N		#4: Floor B, 18cm E of W-3 wall, 1.51m S of N-4 wall	534:5	
513	12	PL4-12	Not Given	N		#3: Floor B, 1.18m S of N-4 wall, 28cm W of E-1 wall	534:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
514	12	PL4-12	Not Given	N		#5: Floor B, 11cm S of N-4 wall, 1.02m W of E-1 wall	534:5	
515	12	PL4-12	Not Given	N		#6: Floor B, 1.11m S of N-4 wall, 1.38m E of W-3 wall	534:5	
516	12	PL4-12	Not Given	N		#8: Foor C, 45cm W of E-1 wall, 35cm N of S-2 wall	534:5	
165	13	1-13	1C	N		37cm E of W-5 wall, 2.39m s of N-6 wall	593:5	
166	13	2-13	1A	N		#2: 24cm N of S-2 wall, 1.15m E of W-3 wall	595:5	
167	13	2-13	2E	N		#1: In E-1/S-2 corner	595:5	
77	13	3-13	2A	N		#1: against E-1 wall, 2.95m S of N-6 wall	596:5	Air vent absent
168	13	3-13	1A	N		#2: 48cm N of s-2 wall, 2.07m E of W-3 wall	596:5	
169	13	3-13	1A	N		#3: 30cm E of W-5 wall, 2.0m N of S-2 wall	596:5	
170	13	4-13	1A	N		31cm S of N-4 wall, 45cm E of W-3 wall	597:5	
78	13	5-13	2A	N		Against S-2 wall, 2.11m W of E-1 wall	598:5	
171	13	6-13	1A	N		#4: 16.01m W of E-1 wall, 1.35m N of S-2 wall	599:5	
172	13	6-13	1A	N		#5: 13.92m W of E-1 wall, 1.95m N of S-2 wall	599:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
173	13	6-13	1A	N		#3: 13.6m w of E-1 wall, 78cm N of S-2 wall	599:5	
174	13	6-13	1A	N		#2: 12.22m W of E-1 wall, 37cm N of S-2 wall	599:5	
175	13	6-13	1A	N		#1: 4.97m W of E-1 wall, 33cm N of S-2 wall	598-599:5	
81	13	7-13	2A	N		Floor A, against W-3 wall, 1.0m N of S-2 wall	599:5	No air vent
79	13	8-13	1C	N		#3: Old platform against N-4 wall, 2.19m W of E-1 wall	601:5	Remodeled from type 2A
						#1: Razed raised platform Against S-2 wall, 4.88m W of E-1 wall, Firebox 5.25m W of E-1 wall, 75cm N of S-2 wall		
80	13	8-13	1C	N		#2: 6.58m W of E-1 wall, 73cm S of N-4 wall	600:5	Remodeled from type 2A
176	13	8-13	1C	N		1.51m W of E-1 wall, 1.46m N of S-2 wall	600:5	
177	13	9-13	1H	N		1.5m S of N-4 wall, against E-1 wall	601:5	Plainware bowl set in firebox
178	13	10-13	1A	N		#3: 2.68m W of E-1 wall, 71cm S of N-4 wall	603:5	
179	13	11-13	1C	N		#1: 2.65m W of E-1 wall, 2.05m S of N-4 wall	603:5	
180	13	11-13	1I	N			603:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
181	13	11-13	1C	N		#2: 3.97m W of E-1 wall, 2.0m S of N-4 wall	603:5	
182	13	12-13	1C	N		Against N-4 wall, 2.48m W of E-1 wall	607:5	
185	13	13-13	1A	N		Against N-4 wall, 1.84m W of E-1 wall	608:5	
83	13	14-13	2A	N		Against S-2 wall, 2.03m W of E-1 wall	606:5	Air vent eroded
183	13	14-13	3	N		81cm W of E-1 wall, 99cm S of N-4 wall	606:5	
184	13	15-13	1C	N		1.08m W of E-1 wall, 1.34m N of S-2 wall	607:5	
82	13	16-13	2A	N		Against S-2 wall, 2.41m W of E-1 wall	608:5	
186	13	17-13	1D	N		43cm W of E-1 wall, 2.32m S of N-4 wall	609:5	
187	13	18-13	2A	N		Against N-4 wall, 2.52m W of E-1 wall	609:5	Air vent absent
188	13	19-13	1A	N		#2: Against S-2 wall, 3.41m W of E-1 wall	611:5	
189	13	19-13	1A	N		#1: 2.9m W of E-1 wall, 36cm N of S-2 wall	611:5	
190	13	19-13	1D	N		#3: 3.41m W of E-1 wall, 52cm N of S-2 wall	611:5	
517	13	PL1-13	Not Given	N		#1: Dead End Street, 2.6m W of E-5 wall, 1.4m S of N-4 wall	579:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
518	13	PL1-13	Not Given	N		#2: Dead end Street, 7.6m W of E-5 wall, 1.0m S of N-4 wall	579:5	
519	13	PL1-13	Not Given	N		#3: Dead end street, 7.85m W of E-5 wall, 1.05m S of N-4 wall	579:5	
520	13	PL1-13	Not Given	N		#4: Dead end street, 8.9m W of E-5 wall, 49cm S of N-4 wall	579:5	
521	13	PL1-13	Not Given	N		#5: dead end street, 9.25m W of E-5 wall, 25cm S of N-4 wall	579:5	
522	13	PL1-13	Not Given	N		#6: dead end street, 14.75m W of E-5 wall, 48cm S of N-4 wall	579:5	
152	13	PL2-13	Not Given	N		#1: Floor D, 5.45m W of E-1 wall, 40cm S of N-8 wall	581:5	
153	13	PL2-13	Not Given	N		#2: Floor D, 6.67m W of E-1 wall, 2.76m S of N-8 wall	581:5	
154	13	PL2-13	Not Given	N		#3: Floor D, 7.4m W of E-1 wall, 2.4m S of N-8 wall	581:5	
155	13	PL2-13	Not Given	N		#4: Floor D, 6.95m W of E-3 wall, 3.3m S of N-8 wall	581:5	
156	13	PL2-13	Not Given	N		#5: Floor D, 8.2m W of E-3 wall, 5.5m S of N-8 wall	581:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
157	13	PL2-13	Not Given	N		#7: Floor D, 8.65m W of E-3 wall, 5.1m S of N-8 wall	581:5	
158	13	PL2-13	Not Given	N		#6: Floor B, 10.10m W of E-5 wall, 9.10m S of N-8 wall	581:5	
159	13	PL2-13	Not Given	N		#8: Floor D, 12.25m W of E-3 wall, 4.42m S of N-8 wall	581:5	
160	13	PL3-13	Not Given	N		#2: Floor C, 5.15m W of E-1 wall, 6.2m S of N-4 wall	590:5	
161	13	PL3-13	Not Given	N		#3: Floor C, 2.5m W of E-1 wall, 12.71m S of N-4 wall	590:5	
162	13	PL3-13	Not Given	N		#4 (labeled #5 on map): Floor C, 15.98m W of E-1 wall, 10.75m s of N-4 wall	590:5	
163	13	PL3-13	Not Given	N		#1: Floor C, 4.15m W of E-1 wall, 1.19m S of N-4 wall	590:5	
164	13	PL3-13	Pit Oven			#5 (labeled #4 on map): Pit Oven, Floor C, 4.22m W of E-1 wall, 18.25m S of N-4 wall		Why is this called a pit oven? It's small
221	14	1-14	1A	N		#1: 30cm N of S-2 wall, 1.95m W of E-1 wall	639:5	
222	14	1-14	1A	N		#2: 48cm N of S-2 wall, 2.57m W of E-1 wall	639:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
223	14	1-14	1D	N		#3: 48cm N of S-2 wall, 4.28m W of E-1 wall	639:5	
224	14	2-14	1A	N		#1: 23cm N of S-2 wall, 1.9m W of E-1 wall	640:5	
225	14	2-14	1A	N		#3: 33cm S of N-4 wall, 2.63m W of E-1 wall	640:5	Sealed with adobe
226	14	2-14	1A	N		#2: 1.2m N of S-2 wall, 4.61m W of E-1 wall	640:5	Playas Red jar containing food found sitting on this hearth.
1	14	3-14	2A	Y	Terrace Motif	#1: Against S-2 wall, 3.3m W of E-1 wall	641:5	CG Plainware bowl on firebox (CG/4626)
2	14	3-14	2A	N		#2: Against N-4 wall at N-4/W-5 corner	641:5	Air vent destroyed (don't know if this means eroded, or clear evidence of being destoyed in antiquity)
227	14	4-14	1A	N		45cm E of W-5 wall, 3.05m S of N-6 wall	642:5	
8	14	5-14	2A	Y	Terrace Motif	Against W-3 wall, 2.86m S of N-4 wall	643:5	
228	14	6-14	1A	N		33cm W of E-1 wall, 1.39m N of S-2 wall	643:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
229	14	7-14	1D	N		#1: 78cm W of E-3 wall, 2.15m N of S-4 wall	644:5	
230	14	7-14	1D	N		#2: 1.58m E of W-5 wall, 40cm S of N-6 wall	644:5	
231	14	7-14	1A	N		#4: 21cm S of N-6 wall, 1.9m W of E-1 wall	644:5	
232	14	7-14	1A	N		#3: Firebox 40cm s of N-6 wall, 1.98m W of E-1 wall	644:5	Remodeled from a type 2A hearth.
9	14	8-14	2A	Y	Terrace Motif	Against S-2 wall, 1.65m W of E-1 wall	648:5	Had bowl hearth liner (CG/4652)
233	14	9-14	1C	N		#2: 2.0m W of E-1 wall, 42cm S of N-6 wall	644-645:5	
234	14	9-14	1A	N		#1: 1.94m N of S-4 wall, 1.21m E of W-5 wall	644:5	
235	14	10-14	1A	N		93cm W of E-1 wall, 78cm N of S-2 wall	645:5	
236	14	11-14	1A	N		#1: 1.28m W of E-1 wall, 1.43m N of S-2 wall	651:5	
237	14	11-14	1A	N		#2: 1.61m W of E-1 wall, 1.71m N of S-2 wall	651:5	
6	14	12-14	2A	N		Against S-2 wall, 1.97m W of E-1 wall	645:5	Air vent eroded
5	14	13-14	2A	Y	Terrace Motif	Against W-3 wall, 3.22m S of N-4 wall	652:5	
7	14	14-14	2A	N		Against E-1 wall, 2.89m S of N-6 wall	649:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
10	14	16-14	2A	Y	Terrace Motif	Against N-6 wall (End of wing wall)		
11	14	17-14	2A	N		#2: Against W-3 wall, 4.3m N of S-2 wall	638:5	Air vent eroded
12	14	17-14	2A	N		#1: Against E-1 wall, 5.25m S of N-8 wall	638:5	
3	14	18-14	2A	N		Against S-2 wall, 3.25m W of E-1 wall	642:5	
238	14	21-14	1A	N		#1: Floor A, 13.18m W of E-1 wall, 54cm N of S-2 wall	653:5	
239	14	21-14	1A	N		#2: Floor A, 2.54m N of S-2 wall, 17.55m W of E-1 wall	653:5	
4	14	22-14	2A	N		Floor A, against E-1 wall, 10.88m S of N-6 wall	655:5	
13	14	23-14	2A	Y	Terrace Motif	Floor A, against E-1 wall, 1.03m N of S-2 wall	658:5	
15	14	24-14	2A	N		Against S-2 wall. 4.56m W of E-1 wall	659:5	
14	14	25-14	2A	N		#3: Floor A, against N-6 wall, 1.75m E of W-5 wall	661:5	Air vent absent
240	14	25-14	1A	N		#1: Floor A, 1.58 m W of E-3 wall, 64cm N of S-4 wall	661:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
241	14	25-14	1C	N		#2: Floor A, against S-4 wall, 4.95m W of E-3 wall, firebox 5.31m W of E-3 wall, 92cm N of S-4 wall	661:5	
242	14	25-14	1A	N		#4: Floor A, 25cm E of W-7 wall, 1.68m S of N-8 wall	661:5	
507	14	25-14	1A	N		Labeled #3 on map-square one		Not entered in volume-no info.
22	14	26-14	2A	Y	Terrace Motif	Against W-13 wall, 80cm N of N-12/W-13 corner	665:5	
20	14	27-14	2A	N		#2: Against E-5 wall, at E-5/N-6 corner	669:5	
243	14	27-14	3	N		#1: Against E-3 wall, 1.0m S of S-2/E-3 corner	669:5	
254	14	28-14	1A	N		#1: Against W-7 wall, 2.32m N of S-6 wall	677:5	
255	14	28-14	1A	N		#2: 50cm S of N-10 wall, 3.7m W of E-1 wall	677:5	
21	14	29-14	2A	N		Against E-1 wall, 3.8m S of N-14 wall	679:5	
18	14	30-14	2A	Y	Terrace Motif	Floor A, against S-6 wall, 4.78m W of E-5 wall	684:5	
19	14	31-14	2A	N		#3: Against N-2 wall, flush with E-1/N-2 corner	686:5	
256	14	31-14	1A	N		#1: 51cm W of E-5 wall, 5.1m N of S-6 wall	686:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
257	14	31-14	1A	N		#2: 40cm W of E-5 wall, 3.21m N of S-6 wall	686:5	
258	14	32-14	1A	N		#1: Floor A, 2.11m W of E-3 wall, 2.47m S of N-2 wall	687:5	
259	14	32-14	1A	N		#2: Floor A, 2.77m N of S-6 wall, 2.24m W of E-3 wall	687:5	
260	14	32-14	1A	N		#3: Floor A, 38cm E of W-7 wall, 3.41m N of S-6 wall	687:5	
17	14	33-14	2A	N		Floor A, against N-4 wall, 3.8m W of E-1 wall	690:5	
565	14	33-14	2A	N		Against S-2 wall, 2.5m W of E-1 wall	690:5	
16	14	34-14	2A	N		#2: Floor A, against S side of adobe collar of central roof post, 3.68m w of W-1 wall	691:5	Platform and air vent razed
261	14	34-14	2A	N		#3: Floor A, firebox 3.9m W of E-1 wall, 3.12m S of N-4 wall	691:5	Platform and air vent razed
262	14	34-14	1A	N		#1: Floor A, 39cm W of E-1 wall, 3.55m S of N-4 wall	691:5	
266	14	35-14	1A	N		#4: Against W-11 wall, 42cm S of S-8/W-9 corner	695:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
267	14	35-14	1A	N		#5: 1.82m S of N-4 wall, 44cm W of E-5 wall	695:5	
268	14	35-14	1A	N		#6: 33cm W of E-9 wall, 1.52m S of N-6 wall	695:5	
244	14	36-14	1C	N		#1: 45cm S of N-2 wall, 5.15m W of E-3 wall	670:5	Remodeled from type 2A hearth
245	14	36-14	1A	N		#2: 1.12m W of E-3 wall, 15cm N of S-4 wall	670:5	
246	14	36-14	1A	N		#3: 60cm W of E-5 wall, 1.98m N of S-6 wall	670:5	
247	14	36-14	1C	N		#4: 45cm N of S-10 wall, 5.15m E of W-11 wall	670:5	Remodeled from type 2A hearth
248	14	36-14	1A	N		#5: 70cm E of W-13 wall, 1.58m S of N-14 wall	670:5	
263	14	37-14	2A	N		#1: Against N-2 wall, 37cm E of E-1/N-2 corner	695:5	
264	14	37-14	1A	N		#2: 30cm W of E-3 wall, 1.16m S of N-2 wall	695:5	
265	14	37-14	1A	N		#3: 30cm W of E-3 wall, 1.8m s of N-2 wall	695:5	
269	14	38-14	1H	N		#2: 60cm N of S-10 wall, 2.89m W of E-9 wall	696:5	
270	14	38-14	1A	N		#3: 38cm E of W-13 wall, 1.28m N of S-12 wall	696:5	
271	14	38-14	1A	N		#4: Against W-13/S-14 corner	696:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
272	14	38-14	1A	N		#5: 25cm E of W-15 wall, 1.8m N of S-14 wall	696:5	
273	14	38-14	1A	N		#6: 31cm E of W-17 wall, 1.82m N of S-16 wall	696:5	
274	14	38-14	1A	N		#7: 31cm N of S-18 wall, 2.91m E of W-19 wall	696:5	
275	14	38-14	1A	N		#1: 1.85m S of N-20 wall, 50cm W of E-3 wall	696:5	
23	14	39-14	2A	N		#1: Against E-1 wall, 2.14m S of N-6 wall	701:5	
278	14	40-14	3	N		#2: 32cm W of E-5 wall, 88cm N of S-6 wall	703:5	
279	14	40-14	3	N		#3: 3.61m E of W-19 wall, 45cm S of N-20	703:5	
280	14	40-14	1A	N		#1: 4.32m E of W-19 wall, 40cm S of N-20 wall	703:5	
281	14	40-14	3	N		#4: 10.70m E of W-19 wall, against N-20 wall	703:5	Several ash pits in this room
282	14	41-14	1C	N		#1: 2.12m N of S-4 wall, 46cm E of W-5 wall	704:5	
283	14	41-14	1A	N		#2: 85cm W of E-1 wall, 1.0m S of N-6 wall	704:5	
						#1: Against E-3 wall, 1.08m S of N-2 wall at junction with E-3 wall, 1.12m S of N-2 wall at W end		
24	14	42-14	2A	Y	Terrace Motif	end	705:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
284	14	42-14	1A	N		#2: Against S-4 wall, 5.38m W of E-3 wall	705:5	
249	14	43-14	1A	N		#1: Floor A, 5.97m S of N-14 wall, 46cm W of E-1 wall	672:5	
250	14	43-14	1A	N		#2: Floor A, 4.52m S of N-12 wall, 25cm E of W-9 wall	673:5	
251	14	43-14	1A	N		#3: 3.76m S of N-12 wall, 61cm E of W-9 wall	673:5	
252	14	43-14	1A	N		#4: Floor A, 3.41m S of N-12 wall, 62cm E of W-9 wall	673:5	
253	14	43-14	1A	N		#5: 83cm N of S-10 wall, 43cm E of W-11	673:5	
285	14	44-14	2A	N		#1: Floor A, against E-1 wall, 1.83m s of N-32 wall	710:5	
286	14	44-14	1A	N		#2: Floor A, 10.98m W of E-1 wall, 2.4m S of N-32 wall	710:5	
287	14	44-14	1A	N		#7: Floor A, 38cm S of N-32 wall, 3.38m W of E-1 wall	710:5	
288	14	44-14	1A	N		#6: Floor A, 28cm S of N-32 wall, 4.22m W of E-1 wall	710:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
289	14	44-14	1A	N		#5: Floor A, 42cm S of N-32 wall, 11.68m W of E-1 wall	710:5	
290	14	44-14	1A	N		#3: Floor A, 18.08m W of E-1 wall, 3.4m S of N-32 wall	710:5	
291	14	44-14	1A	N		#4: 48cm S of N-32 wall, 35cm E of W-31 wall	710:5	
292	14	45-14	2A	N		#3: Against N-4 wall, 3.68m W of E-1 wall	712:5	
293	14	45-14	1A	N		#1: 35cm W of E-1 wall, 5.9m S of N-4 wall	712:5	
294	14	45-14	1A	N		#2: 60cm W of E-1 wall, 39cm N of S-2 wall	712:5	
295	14	45-14	3	N		#4: 10.38m W of E-1 wall, 3.01m N of S-2 wall	712:5	
201	14	46-14	2A	N		#2: Against W face of partition wall, 1.73m S of N-16 wall	697:5	
202	14	46-14	1A	N		#1: 75cm S of N-16 wall, 1.32m W of E-1 wall	697:5	
203	14	46-14	1A	N		#3: Against N-16 wall, 5.07m W of E-1 wall	697:5	
204	14	46-14	1A	N		#12: Against N-16 wall, 6.72m W of E-1 wall	697:5	Sealed
205	14	46-14	1A	N		#4: 25cm S of N-16 wall, 9.1m W of E-1 wall	697:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
206	14	46-14	1A	N		#5: 52cm S of N-16 wall, 9.62m W of E-1 wall	697:5	
207	14	46-14	1A	N		#6: 54cm S of N-16 wall, 10.24m W of E-1 wall	697:5	
208	14	46-14	1A	N		#7: 33cm S of N-16 wall, 10.72m W of E-1 wall	697:5	
209	14	46-14	1A	N		#8: 55cm S of N-16 wall, 10.95m W of E-1 wall	697:5	
210	14	46-14	1A	N		#9: 35cm S of N-16 wall, 11.02m W of E-1 wall	697:5	
211	14	46-14	1A	N		#10: 15cm S of N-16 wall, 11.15m W of E-1 wall	697:5	
212	14	46-14	1A	N		#11: 68cm S of N-16 wall, 11.79m W of E-1 wall	697:5	
191	14	PL3-14	Not Given	N		#1: Floor A, 1.72m W of E-1 wall, 3.01m s of N-4 wall	628:5	
192	14	PL3-14	Not Given	N		#2: Floor A, 1.35m W of E-1 wall, 7.82m s of N-4 wall	628:5	
193	14	PL3-14	Not Given	N		#3: Floor A, 5.5m W of E-1 wall, 22.6m S of N-4 wall	628:5	
194	14	PL3-14	Not Given	N		#4: Floor A, 9.82m W of E-1 wall, 3.85m S of N-4 wall	628:5	
195	14	PL3-14	Not Given	N		#5: Floor A, 10.0m W of E-1 wall, 3.1m S of N-4 wall	628:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
196	14	PL3-14	Not Given	N		#6: Floor A, 13.52m W of E-1 wall, 38cm S of N-4 wall	628:5	
197	14	PL3-14	Not Given	N		#7: Floor A, 13.75m W of E-1 wall, against N-4 wall	628:5	
198	14	PL4-14	Bin	N		#1: n Fire bin, 1.3m W of E-1 wall, 43cm N of S-2 wall	630:5	
199	14	PL4-14	Bin	N		#2: In fire bin, 1.71m W of E-1 wall, 40cm N of S-2 wall	630:5	
200	14	PL4-14	Bin	N		#3: In fire bin, 2.7m W of E-1 wall, 20cm N of S-2 wall	630:5	
213	14	PL5-14	Not Given	N		#1: 1.83m S of N-14 wall, 11.86m E of W-9 wall	632:5	
214	14	PL5-14	Not Given	N		#2: 1.12m S of N-10, 1.18m E of W-9 wall	632:5	
215	14	PL6-14	Not Given	N		#4: Floor C, against S-2 wall, 4.21m W of E-1 wall	635:5	Adobe lined
216	14	PL6-14	Not Given	N		#3: Floor C, 4.12m S of N-10 wall, 1.34m W of E-1 wall	635:5	
217	14	PL6-14	Not Given	N		#2: Floor A: 25cm W of E-1 wall, 6.2m S of N-10 wall	635:5	Adobe lined

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
218	14	PL6-14	Not Given	N		#1: Floor A, 28cm W of E-1 wall, 1.69m s of N-10 wall	635:5	Adobe lined
219	14	PL6-14	Not Given	N		#5: Floor C, 2.2m S of N-10 wall, 4.21m W of E-1 wall	635:5	
220	14	PL6-14	Not Given	N		#6: Floor C, 6.27m W of E-1 wall, 99cm S of N-10 wall	635:5	Adobe lined
565	14	PL6-14	Not Given	N		#7: Floor C, partially under N-10 wall, 16.22m W of E-1 wall	635:5	
296	15	1-15	1D	N		#1: 52cm W of E-1 wall, 3.1m S of N-4 wall	715:5	Air vent (no design) in floor
297	15	1-15	1A	N		#2: 53cm W of E-1 wall, 5.75m S of N-4 wall	715:5	
298	15	1-15	1D	N		#3: 1.9m W of E-1 wall, 6.8m s of N-4 wall	715:5	
299	15	1-15	1A	N		#5: 3.22m W of E-1 wall, 4.18m S of N-4 wall	715:5	
						#6: In floor of crib in NW section of Room, 3.25m W of E-1 wall, 1.65m S of N-4 wall		
300	15	1-15	4B	N		#4: 2.89m W of E-1 wall, 4.75m S of N-4 wall	715:5	
301	15	1-15	5C	N			715:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
99	15	2-15	2A	N		Against N butt of W wall of bed platform, 1.61m W of E-1 wall, 2.2m S of N-4	717:5	Air vent missing; This room connected to room in Unit 14
25	16	1-16	2A	N		#1: Against S-10 wall, 1.35m E of W-11 wall	699:5	This room connected to room in Unit 14
26	16	1-16	2G	Y	Scroll Motif	#2: Against W-11 wall, 11cm S of W-11/S-12 corner	699:5	This room connected to room in Unit 14
27	16	2-16	2A	N		#1: Against W-5 wall, 23cm N of W-5/S-6 corner	700:5	This room connected to room in Unit 14
276	16	2-16	1A	N		#2: 1.72m S of N-10 wall, 39cm E of W-7 wall	700:5	
34	16	3-16	2A	Y	Terrace Motif	Floor A, against S-4 wll, at S-4/W-3 corner	731:5	
319	16	4-16	1C	N		#2: 45cm W of E-1 wall, 2.0m S of N-6 wall	732:5	
320	16	4-16	1D	N		#3: 1.87m W of E-1 wall, 2.13m S of N-6 wall	732:5	
31	16	4-16	2A	N		#4: Against N-6 wall, 2.97m W of E-1 wall	732:5	
29	16	5-16	2A	Y	Terrace Motif	Against W-5 wall, 2.49m S of N-6 wall	733:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
30	16	6-16	2A	Y	Hooked Triangle	Against S-2 wall, 1.95m W of E-1 wall	736:5	Air vent missing; This room connected to room in Unit 14
28	16	7-16	2A	N		#1: Against E-1 wall, 4.0m S of N-6 wall	701:5	
277	16	7-16	1A	N		#2: 15cm N of S-2 wall, 1.88m W of E-1 wall	701:5	This room connected to room in Unit 14
32	16	8-16	2A	Y	Terrace Motif	Against W-3 wall, 1.48m S of N-4 wall	737:5	
321	16	9-16	1A	N		3.54m W of E-1 wall, 43cm N of S-2 wall	738:5	
36	16	10-16	2A	N		#4: Against W-3 wall, 3.21m N of S-2 wall	740:5	
322	16	10-16	1A	N		#1: 2.89m S of N-4 wall, 42cm W of E-1 wall	740:5	
323	16	10-16	1A	N		#2: 5.38m S of N-4 wall, 40cm W of E-1 wall	740:5	Sealed
324	16	10-16	1A	N		#3: 2.95m N of S-2 wall, 37cm E of W-3 wall	740:5	
35	16	11-16	2A	Y	Terrace Motif and Scroll	Against W-3 wall, 2.4m N of S-2 wall	741:5	
39	16	12-16	2A	N		#1: Against E-5 wall, placement unknownn	746:5	
326	16	12-16	1A	N		#2: 5.52m N of S-16 wall, 41cm E of W-17 wall	746:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
325	16	12-16	1C	N		#3: 7.78m N of S-16 wall, 49cm E of W-17 wall	746:5	
38	16	13-16	2A	N		#2: Against W-3 wall, 2.36m S of N-4	747:5	
327	16	13-16	1A	N		#1: Against E-1 wall, 2.08m S of N-4 wall	747:5	
37	16	15-16	2A	Y	Terrace Motif	#1: Against W-3 wall, 3.27m N of S-2 wall	749:5	
328	16	15-16	1A	N		#2: 33cm N of S-4 wall, 1.63m E of W-5 wall	750:5	
329	16	16-16	1C	N		45cm W of E-1 wall, 2.38m S of N-6 wall	754:5	Remodeled from a type 2A hearth
330	16	17-16	1C	N		#1: 49cm W of E-1 wall, 1.22m S of N-6 wall	755:5	
331	16	17-16	1D	N		#2: 1.76m W of E-1 wall, 2.33m S of N-6 wall	755:5	
332	16	17-16	1A	N		#3: 2.63m W of E-1 wall, 2.45m S of N-6 wall	755:5	
333	16	18-16	1A	N		#1: 2.58m W of E-1 wall, 1.72m S of N-4 wall	757:5	
334	16	18-16	1C	N		#2: 4.5m W of E-1 wall, 51cm N of S-2 wall	757:5	
335	16	19-16	1A	N		#1: Floor A, 22cm W of E-1 wall, 8.28m S of N-4 wall	759:5	
336	16	19-16	1A	N		#2: Floor A, against W-3 wall, 2.61m S of N-4 wall	759:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
337	16	19-16	1A	N		#3: Floor A, 1.1m E of W-3 wall, 2.15m S of N-4 wall	759:5	
338	16	19-16	1A	N		#4: Floor A, 41cm E of W-3 wall, 1.88m S of N-4 wall	759:5	
352	16	20-16	1A	N		#1: 48cm N of S-2 wall, 1.97m W of E-1 wall	765:5	
353	16	20-16	1C	N		#2: 3.0m N of S-4 wall, 25cm E of W-5 wall	765:5	
354	16	20-16	1C	N		#3: 3.28m N of S-4 wall, 21cm E of W-5 wall	765:5	
355	16	20-16	1A	N		#4: 3.62m N of S-4 wall, 30cm E of W-5 wall	765:5	
33	16	21-16	2A	Y	Terrace Motif	Against S-2 wall, 1.82m E of W-3 wall	752:5	
356	16	22-16	1C	N		#1: 82cm W of E-3 wall, 5.07m N of S-4 wall	767:5	
357	16	22-16	2A	N		#2: Firebox 25cm N of S-4 wall, 1.69m W of E-3 wall	768:5	Air vent razed; Sealed w/ adobe
43	16	24-16	2A	N		#2: Against S-4 wall, 5.4m W of E-3 wall	775:5	
45	16	24-16	2A	N		#1: Against N-2 wall, 1.32m E of E-1/N-2 corner	775:5	
339	16	25-16	1C	N		#1: 1.9m W of E-1 wall, 2.78m S of N-4 wall	760:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
340	16	25-16	1A	N		#2: 2.41m W of E-1 wall, 1.32m S of N-4 wall	760:5	
341	16	25-16	1A	N		#3: 68cm N of S-2 wall, 18cm E of W-3 wall	760:5	
342	16	26-16	1C	N		#1: Floor B, 2.4m W of E-1 wall, 47cm N of S-2 wall	761:5	
343	16	26-16	1A	N		#2: Floor B, 2.11m W of E-1 wall, 2.25m N of S-2 wall	761:5	
344	16	26-16	1A	N		#3: Floor B, 2.15m W of E-1 wall, 2.78m N of S-2 wall	761:5	
345	16	26-16	1A	N		#4: Floor B, 2.65m W of E-1 wall, 3.0m N of S-2 wall	761:5	
346	16	26-16	2F	N		#5: Floor B, 49cm S of N-4 wall, 1.15m E of W-3 wall	761:5	
						25cm N of N-4/W-5 corner, firebox 58cm E of W-5 wall, 2.8m S of N-6 wall, raised platorm originally against W-5 wall		
358	16	27-16	1C	N			776:5	Remodeled from type 2A hearth
44	16	28-16	2A	Y	Terrace Motif	#1: Against E-1 wall, 1.85m S of N-6 wall	777:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
359	16	28-16	2A	N		#2: Originally against W-3 wall, peg holes: 2.35m and 2.89m N of S-2 wall	777:5	Only indication of this hearth is the peg holes in the wall
41	16	29-16	2A	N		#3: Against N-4 wall, 2.25m W of E-1 wall	778:5	
360	16	29-16	1A	N		#1: 15cm W of E-1 wall, 2.55m S of N-4 wall	778:5	
361	16	29-16	1H	N		#2: 75cm W of E-1 wall, 4.3m S of N-4 wall	778:5	
40	16	30-16	2A	N		#1: Floor A, against E-1 wall, 3.69m S of N-4 wall	762:5	Air vent destroyed
348	16	30-16	1A	N		#2: floor A, 3.8m W of E-1 wall, 2.85m S of N-4 wall	762:5	
349	16	30-16	1A	N		#3: Floor A, 4.2m W of E-1 wall, 2.7m S of N-4 wall	762:5	
350	16	30-16	1A	N		#4: Floor A, 2.3m S of N-4 wall, 4.0m W of E-1 wall	763:5	
351	16	30-16	1A	N		#5: Floor B, 68cm E of W-3 wall, 37cm S of N-4 wall	763:5	
347	16	30-16	3	N		#6: Floor B, 2.83m W of E-1 wall, 4.2m S of N-4 wall	763:5	
42	16	31-16	2A	N		#1Against E-1 wall, 2.08m S of N-4 wall	779:5	
362	16	31-16	1A	N		#2: 1.65m W of E-1 wall, 1.45m N of S-2 wall	779:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
363	16	31-16	1C	N		#3: 48cm S of N-4 wall, 1.98m E of W-3 wall	779:5	
366	16	33-16	1A	N		#1: Floor A, 2.85m N of S-4 wall, 3.12m E of W-5 wall	780:5	
364	16	33-16	Fire Pit	N		#2: Floor B, 3.95m N of S-4 wall, 1.48m W of E-3 wall	780:5	"Fire Pit" 1.01m diameter
365	16	33-16	Fire Pit	N		#3: Floor B, 2.7m N of S-4 wall, 2.4m W of E-3 wall	780:5	"Fire Pit" 1.55m on one side
367	16	34-16	1A	N		#1: 38cm W of E-1 wall, 1.15m N of S-2 wall	780:5	
368	16	34-16	1H	N		#2: 76cm W of E-1 wall, 1.91m N of S-2 wall	780:5	
304	16	35-16	1A	N		#3: 50cm W of column 4, 12.62m S of N-5 wall	729:5	
305	16	35-16	1A	N		#1: 43cm S of N-5 wall, 1.68m E of W-4 wall	729:5	
306	16	35-16	1A	N		#2: Against column 1, 48cm S of N-5 wall	729:5	
307	16	35-16	1A	N		#4: On step 4, 91cm N of S-1 wall, 7.58m E of W-2 wall	729:5	
308	16	35-16	1A	N		#5: On step 5, against S-1 wall, 3.0m E of W-2 wall	729:5	

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
309	16	35-16	1A	N		#6: On step 5, 55cm S of N-3 wall, 2.38m E of W-2 wall	729:5	
310	16	36-16	1A	N		#1: 52cm W of E-1 wall, 31cm N of S-2 wall	782:5	
311	16	PL1-16	Not Given	N		#3: Floor C, 1.78m N of S-1 wall, 1.0m E of W-2 wall	725:5	adobe-lined
312	16	PL1-16	Not Given	N		#2: Floor C, 2.98m N of S-1 wall, 4.35m E of W-2 wall	725:5	adobe-lined
313	16	PL1-16	Not Given	N		#1: Floor A, 5.08m S of N-3 wall, 3.55m E of W-2 wall	725:5	
314	16	PL1-16	Not Given	N		#4: Floor C, 39cm E of W-2 wall, 74cm S of N-3 wall	725:5	adobe-lined
315	16	PL1-16	Not Given	N		#5: Floor C, 12cm E of W-2 wall, 49cm S of N-3 wall	725:5	
316	16	PL1-16	Not Given	N		#7: Floor C, 3.89m S of N-3 wall, 7.08m E of W-2 wall	725:5	
317	16	PL1-16	Not Given	N		#6: Floor C, 25cm S of N-3 wall, 3.82m E of W-2 wall	725:5	adobe-lined
318	16	PL1-16	Not Given	N		#8: Floor C, 75cm S of N-3 wall, 7.85m E of W-2 wall	725:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
302	16	PL2-16	Not Given	N		#1: 3.3m S of N-6 wall, 3.82m E os W-5 wall	727:5	
303	16	PL2-16	Not Given	N		#2: 25cm N of S-4 wall, 7.3m W of E-3 wall	727:5	
380	18	1-18	1A	N		#1: SW corner of NE partition room, 2.55m W of E-1 wall, 3.2m S of N-4	789:5	
381	18	1-18	4A	N		#2: 4.65m W of E-1 wall, 1.51m N of S-2 wall	789:5	
382	18	1-18	1A	N		#3: 6.5m W of E-1 wall, 4.55m N of S-2 wall, in line with N end of S Wing Wall	789:5	
383	18	1-18	1A	N		#4: 4.0m W of E-1 wall, 6.55m N of S-2 wall	789:5	
384	18	2-18	Fire Pit	N		2.4m S of S wall of room 2-18 (to center)	790:5	
385	18	2-18	1A	N		#1: 65cm W of inner edge of door frame (to center)	791:5	
568	18	2-18	1A	N		#2: 75cm W of Fire Hearth 1(center to center)	791:5	Ash pit
532	19	1-19	2A	N		#1: Against S-4 wall in SW alcove, 35cm W of SE corner	795:5	
386	19	1-19	1C	N		#2: 2.84m W of E-3 wall, 45cm N of S-4 wall	795:5	No air vent

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
387	19	1-19	1A	N		#3: 1.45cm W of E-1 wall, 2.6m N of S-4 wall	795:5	Under bed platform 1/Mezzanine Deck
388	19	2-19	1A	N		25cm E of W-3 wall, 2.4m N of S-2 wall	796:5	
390	22	1-22	1A	N		#1: 30cm W of E-1 wall, 76cm S of N-4 wall	804:5	
389	22	1-22	2A	N		#2: Against S-2 wall, 1.05m E of W-3 wall	804:5	
	8 (6?)	A-8	2A	Y	Terrace Motif	2.15m W of SE corner against S-4 wall,	330:4	
	8 (6?)	B-8	2A	Y	Terrace Motif	W-9 wall, 4.65m S of NW corner	331:4	
	Central Pla	CPL	Not Given	N		#1: On Platform 2, 56cm W of E-3 wall, 5.25m S of N-2 wall	813:5	On Platform 2
	Central Pla	CPL	Not Given	N		#2: 24.5m N of S-20 wall, 7.3m E of W-25 wall	813:5	
	Central Pla	CPL	Not Given	N		#3: 6.5m S of N-12 wall, 9.07m W of E-13 wall	813:5	
	East Plaz	EPL	Not Given	N		Floor A, 3.1m E of partition wall 1 of Room 35-16, 38cm N of jacal wall grout	819:5	
369	17	BLCT2	Not Given	N		#1: 6.75m from mound, 3.0m from entry	787:5	

H_ID	Unit	Room/Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (location in room, etc.)	Page Number (format =page #:volume #)	Notes/Comments
370	17	BLCT2	Not Given	N		#2: 7.45m from mound, 4.70m from entry	787:5	
371	17	BLCT2	Not Given	N		#3: 8.0m from mound, 6.15m entry	787:5	
372	17	BLCT2	Not Given	N		#4: 9.4m from mound, 7.6m from entry	787:5	
373	17	BLCT2	Not Given	N		#5: 8.85m from mound, 8.3m from entry	787:5	
374	17	BLCT2	Not Given	N		#6: 8.25m from mound, 7.4m from entry	787:5	
375	17	BLCT2	Not Given	N		#7: 6.0m from mound, 4.8m from entry	787:5	
376	17	BLCT2	Not Given	N		#8: 5.3m from mound, 3.95m from entry	787:5	
377	17	BLCT2	Not Given	N		#9: 6.18m from mound, 2.8m from entry	787:5	
378	17	BLCT2	Not Given	N		#10: 5.5m from mound, 2.5m from entry	787:5	
379	17	BLCT2	Not Given	N		#11: 4.1m from mound, 5.25m from entry	787:5	
524	14	PL1-14	Not Given	N		#1: 76cm W of E-1 wall, 4.57m S of N-4 wall	619:5	North End of Playing field
523	14	PL1-14	Not Given	N		#2: 60cm W of E-1 wall, 5.22m S of N-4 wall	619:5	North End of Playing field
526	14	PL1-14	Not Given	N		#3: 25cm E of W-3 wall, 5.15m S of N-4 wall	619:5	North End of Playing field

H_ID	Unit	Room/ Plaza	Di Peso Type	Design Present in Air Vent (Y/N)	Design Type	Comments (locaction in room, etc.)	Page Number (format =page #:volume #)	Notes/ Comments
525	14	PL 1-14	Not Given	N		#4: 4.35m E of W-3 wall, 2.7m S of N-4 wall	619:5	North End of Playing field

References Cited

Adams, Richard E. W.
    1990 Archaeological Research at the Lowland Maya City of Rio Azul. *Latin American Antiquity* 1(1):23-41.

Adams, E. Charles
    1991 *The Origin and Development of the Pueblo Katsina Cult*, University of Arizona Press, Tucson, Arizona.

Appadurai, Arjun
    1988 Introduction: Commodities and the Politics of Value. In *The Social Life of Things, Commodities in Cultural Perspective*, edited by Arjun Appadurai, pp. 3-63. Cambridge University Press, Cambridge.

Ashmore, Wendy
    1991 Site-Planning Principles and Concepts of Directionality among the Ancient Maya. *Latin American Antiquity* 2(3):199-226.

Ashmore, Wendy, and Jeremy A. Sabloff
    2002 Spatial Orders in Maya Civic Plans. *Latin American Antiquity* 13(2): 201-215.

Barrett, John C.
    1990 The Monumentality of Death: The Character of Early Bronze Age Mortuary Mounds in Southern Britain. *World Archaeology* 22(2): 179–189.

Bartlett, John Russell
    1854 *Personal Narrative of Explorations and Incidents in Texas, New Mexico*. D. Appleton & Company, New York, N.Y.

Bayman, James M.
    1996 Shell Ornament Consumption in a Classic Hohokam Platform Mound Community Center. *Journal of Field Archaeology* 23(4):403-420.

Benson, Elizabeth P.
    1997 *Birds and beasts of ancient Latin America*. University Press of Florida.

Bernardini, Wesley
    1999 Reassessing the Scale of Social Action at Pueblo Bonito, Chaco Canyon, New Mexico. *Kiva* 64(4):447-470.

Blackiston, A. H.
    1906 Ruins of the Cerro De Montezuma. *American Anthropologist* 8(2): 256-261.

Bloch, Maurice

1995   The Resurrection of the House Amongst the Zafimaniry. In *About the House: Levi-Strauss and Beyond*, edited by Janet Carsten and Stephen Hugh-Jones, pp. 69-83. Cambridge University Press, Cambridge.

Bradfield, Richard M.
1995   *An Interpretation of Hopi Culture*. Derby, England: Richard M. Bradfield (independently published).

Bradley, Ronna J.
1993   Marine Shell Exchange in Northwest Mexico and the Southwest. In *The American Southwest and Mesoamerica: System of Prehistoric Exchange,* edited by Jonathon Ericson and Timothy Baugh, pp. 121-157. New York, N.Y.: Plenum Press.

1996   The Role of Casas Grandes in Prehistoric Shell Exchange Networks Within the Southwest. Unpublished Doctoral Dissertation, Department of Anthropology, Arizona State University.

Brand, Donald
1933   The Historical Geography of Northwestern Chihuahua. Unpublished Doctoral Dissertation, University of California.

1935 The Distribution of Pottery Types in Northwest Mexico. *American Anthropologist* 37(2):287-305.

Brandt, Elizabeth
1977   The Role of Secrecy in a Pueblo Society. In *Flowers of the Wind: Papers on Ritual, Myth, and Symbolism in California and the Southwest*, 8:11-28. Ballena Press Anthropological Papers. Ballena Press, Socorro, NM.

 1994   Egalitarianism, Hierarchy, and Centralization in the Pueblos. In *The Ancient Southwestern Community, Models and Methods for the Study of Prehistoric Social Organization*, edited by W.H. Wills and Robert D. Leonard, pp. 9-23. University of New Mexico Press, Albuquerque.

Breitburg, Emanuel
1993   The Evolution of Turkey Domestication in the Greater Southwest and Mesoamerica. In *Culture and Contact: Charles C. Di Peso's Gran Chichimeca,* edited by Anne Woosley and John Ravesloot, Amerind Foundation and University of New Mexico Press, Dragoon, AZ, Albuquerque, NM.

Bricker, Victoria R.
1988   A Phonetic Glyph for Zenith: Reply to Closs. *American Antiquity* 53(2):394-400.

Broda, Johanna
2000   Calendrics and Ritual Landscape at Teotihuacan: Themes of Continuity in Mesoamerican "Cosmovision." In *Mesoamericas Classic Heritage from Teotihuacan to*

the Azec, edited by David Carrasco, Lindsay Jones, and Scott Sessions, pp. 397-432. University Press of Colorado, Boulder, CO.

Broda, Johanna, David Carrasco, and Eduardo Matos Moctezuma
1987 *The Great Temple of Tenochtitlán: Center and Periphery in the Aztec World.* University of California Press, Berkeley.

Brown, Linda
2004 Dangerous Places and Wild Spaces: Creating Meaning with Materials and Space at Contemporary Maya Shrines on El Duende Mountain. *Journal of Archaeological Method and Theory* 11(1):31-58

Carey, Henry A.
1931 An Analysis of the Northwestern Chihuahua Culture. *American Anthropologist* 33(3):325-374.

Carrasco, David
1981 City as Symbol in Aztec Thought: The Clues from the Codex Mendoza. *History of Religions* 20(3):199-223.

1990 *Religions of Mesoamerica: Cosmovision and Ceremonial Centers*. Waveland Press, Inc., San Francisco, California.

1998 *Daily Life of the Aztecs: People of the Sun and Earth*. Greenwood Press, Westport, Connecticut.

2000 *City of Sacrifice: The Aztec Empire and the Role of Violence in Civilization*. Beacon Press, Boston, Massachusetts.

Carsten, Janet
1995a Houses in Langkawi: Stable Structures of Mobile Homes? In *About the House: Levi-Strauss and Beyond* edited by Janet Carsten and Stephen Hugh-Jones, pp. 105-128, Cambridge University Press, Cambridge.

1995b The Substance of Kinship and the Heat of the Hearth: Feeding, Personhood, and Relatedness among Malays in Pulau Langkawi. In *American Ethnologist* 22(2):223-241.

Chance, John K.
2000 The Noble House in Colonial Puebla, Mexico: Descent, Inheritance, and the Nahua Tradition. *American Anthropologist* 102(3): 485-502.

Chang, Kwang-chih
1983 *Art Myth and Ritual: The Path to political Authority in Ancient China*. Harvard University Press, Cambridge, Massachusetts.

Chase, Diane Z., and Arlen F. Chase

1994 The Architectural Context of Caches, Burials, and other Ritual Activities for the Classic Period Maya. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp:299-332. Dumbarton Oaks, Washington D.C.

Costin, Cathy L.
1991 Craft Specialization: Issues in Defining, Documenting, and Explaining the Organization of Production. *Archaeological Methods and Theory* 3:1-56.

Creel, Darrell, and Charmion McKusick
1994 Prehistoric Macaws and Parrots in the Mimbres Area, New Mexico. *American Antiquity* 59(3): 510-524.

Crown, Patricia L.
1994 *Ceramics and Ideology: Salado Polychrome Pottery*. University of New Mexico Press, Albuquerque, New Mexico.

Crown, P. L., and W. J. Hurst
2009 Evidence of cacao use in the Prehispanic American Southwest. *Proceedings of the National Academy of Sciences* 106(7):2110-2113.

Crumley, Carole L.
1979 Three Locational Models: An Epistemological Assessment for Anthropology and Archaeology. In *Advances in Archaeological Method and Theory*, 2:141-173.

1995 Heterarchy and the Analysis of Complex Societies. In *Archeological Papers of the American Anthropological Association*. 6(1):1-5.

Cruz Antillón, Rafael, and Timothy Maxwell
1999 The Villa Ahumada Site: Archaeological Investigations East of Paquime. In *The Casas Grandes World*, edited by Curtis F. Schaafsma and Carroll L. Riley, The University of Utah Press, Salt Lake City.

Cruz Antillón, Rafael, Robert D. Leonard, Timothy D. Maxwell, Todd VanPool, Marcel J. Harmon, Christine S. VanPool, David A. Hyndman, Sidney S. Brandwein
2004 Galeana, Villa Ahumada, and Casa Chica: Diverse Sites in the Casas Grandes Region. In *Surveying the Archaeology of Northwest Mexico*, edited by Gillian E. Newll and Emiliano Gallaga. The University of Utah Press, Salt Lake City.

Cushing, Frank Hamilton
1979 *Zuñi: Selected Writings of Frank Hamilton Cushing*. University of Nebraska Press, Lincoln, Nebraska.

Cushing, F. H.
1966 [1883] *Zuni Fetishes*. Kc Pubns, Las Vegas, Nevada.

Dean, Jeffery S., John Ravesloot, and Michael S. Foster

1995 New Perspective on the Casas Grandes Tree-ring Dates. In *The Gran Chichimeca: Essays on the Archaeology and Ethnohistory of Northern Mesoamerica*, edited by Jonathan E. Reyman, Ashgate Publishing Company, Brookfield, Vermont.

Dean, Jeffery S., and John C. Ravesloot

1993 The Chronology of Cultural Interaction in the Gran Chichimeca. In *Culture and Contact: Charles C. Di Peso's Gran Chichimeca*, edited by Anne I. Woosley and John C. Ravesloot, Dragoon, AZ, Albuquerque, NM: Amerind Foundation and University of New Mexico Press.

DeBoer, Warren R.

2005 Colors for a North American Past. *World Archaeology* 37(1):66-91.

Di Peso, Charles C.

1974 *Casas Grandes: A Fallen Trading Center of the Gran Chichimeca, Vol. 1-3*. 8 vols. Dragoon, AZ, Flagstaff, AZ: Amerind Foundation and Northland Press.

Di Peso, Charles C., John B. Rinaldo, and Gloria J. Fenner

1974 *Casas Grandes: A Fallen Trading Center of the Gran Chichimeca*, *Vol. 4-8*. 8 vols. Dragoon, AZ, Flagstaff, AZ: Amerind Foundation and Northland Press.

Dixon, Philip M.

2002 Ripley's K Function. *Encyclopedia of Envirometrics* 3:1796-1803.

Dumont, Louis

1981 *Homo Hierarchicus: The Caste System and Its Implications*. University of Chicago Press, Chicago, IL.

Durán, Diego

1971 *Book of the gods and rites and The ancient calendar*. [1st ed.], Norman, Oklahoma.

Earle, Timothy K.

1997 *How Chiefs Come to Power: The Political Economy in Prehistory*. Stanford University Press, Stanford, California.

2002 *Bronze Age Economics: The Beginnings of Political Economies*. Westview Press, Boulder, Colorado.

Errington, Shelly

1989 *Meaning and Power in a Southeast Asian Realm*. Princeton University Press, Princeton, New Jersey.

Fish, Paul R., and Suzanne K. Fish

1999 Reflections on the Casas Grandes Regional System from the Northwestern Periphery. In *The Casas Grandes World*. edited by Curtis F. Schaafsma and C.L. Riley, pp. 27-42. The University of Utah Press, Salt Lake City, Utah

Freidel, David A., and Linda Schele
    1988 Kingship in the Late Preclassic Maya Lowlands: The Instruments and Places of Ritual Power. *American Anthropologist* 90(3): 547-567.

Freidel, David A, Linda Schele, and Joy Parker
    1993 *Maya Cosmos: Three Thousand Years on the Shaman's Path*. William Morrow and Company, New York.

Ford, Richard I.
    1980 The Color of Survival. In *Discovery* 1-80:17-29. School of American Research, Santa Fe, New Mexico.

Foundation for the Advancement of Mesoamerican Studies, INC.
    1993a http://www.famsi.org/research/pohl/jpcodices/fejervary_mayer/img_fm01.html. Accessed 9/29/2009 .

    1993b http://www.famsi.org/research/graz/madrid/index.html. Accesses 9/30/3009

Fox, James J.
    1993 Comparative Perspectives on Austronesian Houses: An Introductory Essay. In *Inside Austronesian Houses, Perspectives on Domestic Designs for Living*, edited by James J. Fox, pp. 1-28. Australian National University, Canberra, Australia.

Fox, John Gerard
    1996 Playing with Power: Ballcourts and Political Ritual in Southern Mesoamerica. *Current Anthropology* 37(3): 483–509.

Franz, Allen R.
    1996 Huichol Ethnohistory: The View from Zacatecas. In *People of the Peyote: Huichol Indian History, Religion, and Survival,* edited by Stacy B. Schaefer and Peter Furst, pp. 63-87, Albuquerque, NM: University of New Mexico Press.

Gillespie, Susan
    2000a Maya "Nested Houses": The Ritual Construction of Place. In *Beyond Kinship: Social and Material Reproduction in House Societies*, edited by Rosemary A. Joyce and Susan D. Gillespie, pp. 135-160. Philadelphia: University of Pennsylvania Press.

    2000b Rethinking Ancient Maya Social Organization: Replacing "Lineage" with "House." *American Anthropologist* 102(3):467-484.

Gillespie, Susan, and Rosemary Joyce
    1998 Deity Relationships in Mesoamerican Cosmologies: The Case of the Maya God L. *Ancient Mesoamerica* 9:279-296.

Gilman, Patricia A.

1990 Social Organization and Classic Mimbres Period Burials in the SW United States. *Journal of Field Archaeology* 17(4):457-469.

Godelier, Maurice
1999 *The Enigma of the Gift*. University of Chicago Press, Chicago, IL.

Gregory, Chris A.
1982 *Gifts and commodities*. Academic Press.

Hammond, George P., and Agapito Rey
1928 *Obregon's History of 16th Century Explorations in Western America, Entitled Chronicle, Commentary, or Relation of the Ancient and Modern Discoveries in New Spain and New Mexico, Mexico, 1584*. Wetzel Publishing Company, Inc., Los Angeles, California.

Hard, Robert J., José E. Zapata, Bruce K. Moses, and John R. Roney
1999 Terrace Construction in Northern Chihuahua, Mexico: 1150 B. C. and Modern Experiments. *Journal of Field Archaeology* 26(2):129-146.

Hargrave, Lyndon
1970 *Mexican Macaws: Comparative Osteology and Survey of Remains from the Southwest*. Anthropological Papers 20. University of Arizona Press, Tucson, Ariaona.

Hays-Gilpin, Kelley, and Jane H. Hill
1999 The Flower World in Material Culture: An Iconographic Complex in the Southwest and Mesoamerica. *Journal of Anthropological Research* 55(1):1–37.

Helms, Mary W.
1998 *Access to Origins: Affines, Ancestors and Aristocrats*. University of Texas Press, Austin, Texas.

Hendrickson, Mitch J.
2003 *Design Analysis of Chihuahuan Polychrome Jars from North American Museum Collections*. Archaeopress, Oxford.

Heyden, Doris
1975 An Interpretation of the Cave underneath the Pyramid of the Sun in Teotihuacan, Mexico. *American Antiquity* 40(2):131-147.

Hill, James N.
1966 A Prehistoric Community in Eastern Arizona. *Southwestern Journal of Anthropology* 22(1):9-30.

1968 Broken K Pueblo: Patterns of Form and Function. In *New Perspectives in Archaeology*, edited by Sally R. Binford and Lewis R. Bindord, pp. 103-142. Aldine Publishing Company, Chicago.

Hill, Jane H.
    1992 The Flower World of Old Uto-Aztecan. *Journal of Anthropological Research* 48(2): 117–144.

Janowski, Monica
    1995 The Hearth-Group, The Conjugal Couple and the Symbolism of the Rice Meal Among the Kelabit of Sarawak. In *About the House: Levi-Strauss and Beyond*, edited by Stephen Hugh-Jones and Janet Carsten, pp. 84-104, Cambridge University Press, Cambridge.

Jones, Andrew, and Gavin MacGregor
    2002 *Colouring the past: the significance of colour in archaeological research*. Berg Publishers, New York, New York.

Judd, Neil
    1954 *The Material Culture of Pueblo Bonito*. Miscellaneous Collections 124. Smithsonian Institution Press, Washington D.C.

Kelley, Jane H., Joe D. Stewart, Arthur C. MacWilliams, and Karen R. Adams
    2004 Recent Research in West-Central Chihuahua. *In Identity, Feasting, and the Archaeology of the Greater Southwest*. edited by Barbara J. Mills, University Press of Colorado, Boulder, Colorado.

Kirch, Patrick V.
    2000 Temples as "Holy Houses": The Transformation of Ritual Archtiecture in Traditional Polynesian Societies. In *Beyond Kinship: social and Material Reproduction in House Societies*, edited by Rosemary Joyce and Susan Gillespie, 103-114. University of Pennsylvania Press, Philadelphia.

Kolb, Michael J.
    2006 The Origins of Monumental Architecture in Ancient Hawai'i. *Current Anthropology* 47(4):657–665.

Kopytoff, Igor
    1988 The Cultural Biography of Things: Commoditization as Process. In *The Social Life of Things: Commodities in Cultural Perspective*, edited by Arjun Appadurai. Cambridge University Press, Cambridge.

Kroeber, A. L.
    1938 Basic and Secondary Patterns of Social Structure. *The Journal of the Royal Anthropological Institute of Great Britain and Ireland* 68:299-309.

Kunen, Julie L., Mary Jo Galindo, and Erin Chase
    2002 Pits and Bones: Identifying Maya Ritual Behavior in the Archaeological Record. *Ancient Mesoamerica* 13(02):197-211.

Kuper, Adam
1982 Lineage Theory: A Critical Retrospect. *Annual Review of Anthropology* 11:71-95.

Lekson, Stephen H.
1999 *The Chaco meridian: centers of political power in the ancient Southwest*. Rowman Altamira, Walnut Creek, California.

Lesure, Richard
1999 On the Genesis of Value in Early Hierarchical Societies. In *Material Symbols: Culture and Economy in Prehistory*, edited by John E. Robb, pp. 23-55. Center for Archaeological Investigations Occasional Paper No. 26. Southern Illinois University, Carbondale.

Lévi-Strauss, Claude
1988 *The way of the masks*. Trans. Sylvia Modelski. University of British Columbia Press, Vancouver, British Columbia, Canada.

Lister, Robert H.
1946 Survey of Archaeological Remains in Northwestern Chihuahua. *Southwestern Journal of Anthropology* 2(4):433-453.

Lockhart, James
1992 *The Nahuas After the Conquest: A Social and Cultural History of the Indians of Central Mexico, Sixteenth through Eighteenth Centuries*. Stanford University Press, Stanford, California.

Lok, Rossana
1987 The House as a Microcosm: Some Cosmic Representations in a Mexican Indian Village. In *The Leiden Tradition in Structural Anthropology: Essays in Honour of P.E. de Josselin de Jong* edited by R. de Ridder and J.A. J. Karremand, pp. 211-233, E. J. Brill, Leiden, The Netherlands.

López Luján, Leonardo
1994 *The Offerings of the Templo Mayor of Tenochtitlan*. The University Press of Colorado, Boulder, Colorado.

Lopez Austin, Alfredo, and Leonardo López Luján
2000 The Myth and Reality of Zuyua: The Feathered Serpent and Mesoamerican Transformations from the Classic to the Postclassic. In *Mesoamericas Classic Heritage from Teotihuacan to the Azec,* edited by David Carrasco, L. Jones, and S. Sessions, pp. 21-84. University Press of Colorado, Boulder, Colorado.

Marcus, Joyce
1978 Archaeology and Religion: A Comparison of the Zapotec and Maya. *World Archaeology* 10(2):172-191.

2007 Rethinking Ritual. In *Archaeology of Ritual,* edited by Evangelos Kyriakidis, Cotsen Advanced Seminars, 3. Cotsen Institute of Archaeology, Los Angeles, California.

Marx, Karl
1976 *Capital, A Critique of Political Economy*. Vol. Volume 1. Penguin Books, London.

Mathews, Jennifer P., and James F. Garber
2004 Models of Cosmic Order: Physical Expression of Sacred Space Among the Ancient Maya. *Ancient Mesoamerica* 15(1):49-59.

Mathien, Frances Joan
2001 The Organization of Turquoise Production and Consumption by the Prehistoric Chacoans. *American Antiquity* 66(1):103-118.

Mathiowetz, Michael
2008 The Sun Youth of Mesoamerica and the Greater Southwest: Mesoamerican Religion and Cosmology at Paquimé, Chihuahua. Paper Presented at the 73rd Annual Meeting of the Society for American Archaeology, Vancouver, British Columbia.

Mauss, Marcel
1990 [1925] *The Gift: The Form and Reason for Exchange in Archaic Societies*. Routledge, London ; New York.

McGuire, Randall H. and Dean J. Saitta
1996 Although They Have Petty Captains, They Obey Them Badly: The Dialectics of Prehispanic Western Pueblo Social Organization. In *American Antiquity* 61(2):197-216.

McKinnon, Susan
1991 *From a Shattered Sun: Hierarchy, Gender, and Alliance in the Tanimbar Islands*. Madison, Wisconson.

1995 Houses and Hierarchy: The View from a South Moluccan Society. In *About the House: Levi-Strauss and Beyond*, edited by Janet Carsten and Stephen Hugh-Jones, pp. 170-188. Cambridge University Press, Cambridge.

2000a Domestic Exceptions: Evans-Pritchard and the Creation of Nuer Patrilineality and Equality. *Cultural Anthropology* 15(1):35-83.

2000b The Tanimbarese Tavu: The Ideology of Growth and the Material Configurations of Houses and Hierarchy in an Indonesian Society. In *Beyond Kinship: Social and Material Reproduction in House Societies*, edited by Rosemary Joyce and Susan D. Gillespie, pp.161-176. University of Pennsylvania Press, Philadelphia.

Merrill, William L.
1988 *Rarámuri Souls: Knowledge and Social Process in Northern Mexico*. Smithsonian Institution Press, Washington, D.C.

Miller, Mary Ellen, and Karl Taube

   1993 *The Gods and Symbols of Ancient Mexico and the Maya: An Illustrated Dictionary of Mesoamerican Religion*. Thames and Hudson, New York, New York.

Mills, Barbara J.

   2004 The Establishment and Defeat of Hierarchy: Inalienable Possessions and the History of Collective Prestige Structures in the Pueblo Southwest. *American Anthropologist* 106(2):238-251.

Mills, Barbara J., and T. J. Ferguson

   2008 Animate Objects: Shell Trumpets and Ritual Networks in the Greater Southwest. *Journal of Archaeological Method and Theory* 15(4):338-361.

Minnis, Paul

   1988 Four Examples of Specialized Production at Casas Grandes, Northwestern Chihuahua. *The Kiva* 53(2):181-1913.

Minnis, Paul E., Michael E. Whalen, Jane H. Kelley, and Joe D. Stewart

   1993 Prehistoric Macaw Breeding in the North American Southwest. *American Antiquity* 58(2):270-276.

Minnis, Paul E., and Michael E. Whalen

   2005 At the Other End of the Puebloan World: Feasting at Casas Grandes, Chihuahua, Mexico. In *Engaged Anthropology, Research Essays on North American Archaeology, Ethnobotany, and Museology*, edited by Michelle Hegmon and B. Sunday Eiselt, pp.114–128. Anthropological Papers, Museum of Anthropology, University of Michigan 94. Ann Arbor, MI.

Minnis, Paul E., Michael E. Whalen, and Ryan Emerson Howell

   2006 Fields of Power: Upland Farming in the Prehispanic Casas Grandes Polity, Chihuahua, Mexico. *American Antiquity* 71(4):707-722.

Mock, Shirley Boteler (editor)

   1998 *The sowing and the dawning: termination, dedication, and transformation in the archaeological and ethnographic record of Mesoamerica*. University of New Mexico Press, Albuquerque, New Mexico.

Myers, Mark C., and Christopher Vaughan

   2004 Movement and behavior of scarlet macaws (*Ara macao*) during the post-fledging dependence period: implications for in situ versus ex situ management. *Biological Conservation* 118:411-20.

Nelson, Ben A.

   1995 Complexity, Hierarchy, and Scale: A Controlled Comparison between Chaco Canyon, New Mexico, and la Quemada, Zacatecas. *American Antiquity* 60(4):597-618.

Ng, Cecilia
    1993 Raising the House Post and Feeding the Jusband-Givers: The Spatial Categories of Social Reproduction Among the Minangkabau. In *Inside Austronesian Houses, Perspectives on Domestic Designs for Living*, edited by James J. Fox, pp. 117-139. Australian National University, Canberra, Australia.

Noguera, Eduardo
    1926 *Ruinas Arqueologicas de Casas Grandes Chihuahua*. Vol. 14. Pulicaciones de La Secretaria de Educacion Publica. Mexico City, Mexico.

Ortiz, Alfonso
    1969 *The Tewa World; Space, Time, Being, and Becoming in a Pueblo Society*. University of Chicago Press, Chicago, Illinois.

Parsons, Elsie Worthington Clews
    1996 *Pueblo Indian Religion, Vol. I and II*. Bison Books ed. Lincoln, Nebraska.

Pearson, Mike, and Colin Richards
    1994 Ordering the World: Perceptions of Architecture, Space, and Time. In *Architecture and Order, Approaches to Social Space*, edited by Michael Parker Pearson and Colin Richards, pp. 1-37. Routledge, New York.

Pepper, George H.
    1920 *Pueblo Bonito*. Anthropological Papers of the American Museum of Natural History 27. New York.

Peregrine, Peter N.
    2001 Matrilocality, Corporate Strategy, and the Organization of Production in the Chacoan World. *American Antiquity* 66(1):36-46.

Phillips, David A., and Elizabeth A. Bagwell
    2001 How Big Was Paquimé? Poster Presented at the 2001 Society for American Archaeology Meetings presented at the Society for American Archaeology Annual Meeting, New Orleans. http://www.unm.edu/~dap/howbig/howfront.html.

Pitezel, Todd A.
    2007 Surveying Cerro de Moctezuma, Chihuahua, Mexico. *Kiva* 72:353-369.

Plog, Stephen
    1995 Equality and Hierarchy, Holistic Approaches to Understanding Social Dynamics in the Pueblo Southwest. In *Foundations of Social Inequality*, edited by Douglas Price and Gary M. Feinman, pp. 189-206. Plenum Press, New York.

    1997 *Ancient Peoples of the American Southwest*. Thames and Hudson, New York.

2003 Exploring the Ubiquitous through the Unusual: Color Symbolism in Pueblo Black-on-White Pottery. *American Antiquity* 68(4): 665-695.

Plog, Stephen, and Carrie Heitman
2010 Hierarchy and social inequality in the American Southwest, A.D. 800–1200. *Proceedings of the National Academy of Sciences* 107(46):19619 -19626.

Potter, James M., and Elizabeth M. Perry
2001 Ritual as a Power Resource in the American Southwest. In *Alternative Leadership Strategies in the Prehispanic Southwest*, edited by Barbara J. Mills. The University of Arizona Press, Tucson, Arizona.

Rakita, Gordon F.
2001 Social Complexity, Religious Organization, and Mortuary Ritual in the Casas Grandes Region of Chihuahua, Mexico. Unpublished Doctoral Dissertation, University of New Mexico, Albuquerque, New Mexico.

2006 Ancestors and Elites: Emergent Complexity, Ritual Practices, and Mortuary Behavior at Paquimé, Chihuahua, Mexico. In *Religion in the Prehispanic Southwest*, edited by Christine Van Pool and Todd Van Pool, pp.219-233. AltaMira Press, New York.

2009 *Ancestors and elites: emergent complexity and ritual practices in the Casas Grandes polity*. Rowman Altamira, Lanham, Maryland.

Rautman, Alison E.
1998 Hierarchy and Heterarchy in the American Southwest: A Comment on Mcguire and Saitta. *American Antiquity* 63(2): 325-333.

Ravesloot, John C.
1988 *Mortuary Practices and Social Differentiation at Casas Grandes, Chihuahua, Mexico*. First ed. University of Arizona Press, Tucson, AZ.

Richards, Colin
1996 Monuments as Landscape: Creating the Centre of the World in Late Neolithic Orkney. *World Archaeology* 28(2):190–208.

Riley, Carroll
1963 Color-Direction Symbolism. An Example of Mexican-South-Western Contacts. *América Indígena* 23(1):49-59.

Rocek, Thomas R.
1995 Sedentarization and Agricultural Dependence: Perspectives from the Pithouse-to-Pueblo Transition in the American Southwest. *American Antiquity* 60(2):218-239.

Saile, David G.

1977 Making a House: Building rituals and spatial concepts in the pueblo indian world. *Architectural Association Quarterly* 9(2 and 3):72-81.

Sandstrom, Alan R.
1996 Center and Periphery in the Social Organization of Contemporary Nahuas of Mexico. *Ethnology* 35(3):161-180.

2000 Toponymic Groups and House Organization: The Nahuas of Northern Veracruz, Mexico. In *Beyond Kinship: Social and Material Reproduction in House Societies*, edited by Rosemary A. Joyce and Susan D. Gillespie, pp. 53-72. University of Pennsylvania Press, Philadelphia.

Sather, Clifford.
1993 Posts, Hearths, and Thresholds: The Iban Longhouse as a Ritual Structure. In *Inside Austronesian Houses, Perspectives on Domestic Designs for Living*, edited by James J. Fox, pp. 65-115. Australian National University, Canberra, Australia.

Sayles, E. B.
1936 *An Archaeological Survey of Chihuahua, Mexico*. Medallion Papers No. 21. Gila Pueblo, Globe, Arizona.

Scarborough, Vernon L.
1998 Ecology and Ritual: Water Management and the Maya. *Latin American Antiquity* 9(2):135-159.

Schaafsma, Polly
2001 Quetzalcoatl and the Horned and Feathered Serpent of the Southwest. In *The Road to Aztlan: Art from a Mythic Homeland*, edited by Virginia M. Fields and Victor Zamudio-Taylor, Los Angeles County Museum of Art, Los Angeles, California.

Schaafsma, Polly, and Karl A. Taube
2006 Bringing the Rain: An Ideology of Rain Making in the Pueblo Southwest and Mesoamerica. In *A Pre-Columbian World*, edited by Jeffery Quilter and Mary Ellen Miller, pp.231-286. Dumbarton Oaks Research Library and Collection, Washington D.C.

Shennan, Stephen
1988 *Quantifying Archaeology*. Edinburgh University Press, Edinburgh.

Simon, Arleyn W.
1998 *Salado Ceramics and Social Organization: Prehistoric Interactions in Tonto Basin, The Roosevelt Archaeology Studies, 1989 to 1998*. Roosevelt Monograph Series 11, Anthropological Field Studeis 40. Arizona State University Office of Cultrual Resource Management, Tempe, Arizona.

Skibo, James, Eugene B. McCluney, and William H. Walker

2002 *The Joyce Well Site : on the frontier of the Casas Grandes world*. University of Utah Press, Salt Lake City, Utah.

Somerville, Andrew D., Ben A. Nelson, and Kelly J. Knudson
2010 Isotopic investigation of pre-Hispanic macaw breeding in Northwest Mexico. *Journal of Anthropological Archaeology* 29(1):125-135.

Spicer, Edward Holland
1962 *Cycles of Conquest; the Impact of Spain, Mexico, and the United States on the Indians of the Southwest, 1533-1960. Drawings by Hazel Fontana*. University of Arizona Press, Tucson, Arizona.

Spielmann, Katherine A.
2002 Feasting, Craft Specialization, and the Ritual Mode of Production in Small-Scale Societies. *American Anthropologist* 104(1):195-207.

Stanton, Travis W, and David A Freidel
2005 Placing the Centre, Centring the Place: the Influence of Formative Sacbeob in Classic Site Design at Yaxuná, Yucatán. *Cambridge Archaeological Journal* 15(2):225–249.

Stevenson, Matilda Cox
1894 *The Sia*. Government Printing Office.

Stoyan, Dietrich, and Antti Penttinen
2000 Recent Applications of Point Process Methods in Forestry Statistics. *Statistical Science* 15(1): 61-78.

Stuhr, Joanne (editor)
2002 *Talking Birds, Plumed Serpents and Painted Women: Ceramics of Casas Grandes*. University of Arizona Press, Tucson, Arizona.

Tambiah, Stanley J.
1969 Animals are Good to Think and Good to Prohibit. In *Ethnology* 8(4): 423-459.

Taube, Karl A.
1995 *Aztec and Maya myths*. University of Texas Press, Austin, Texas.

1998 The Jade Hearth: Centrality, Rulership, and the Classic Maya Temple. In *Function and Meaning in Classic Maya Architecture*, edited by Stephen D. Houston, pp. 427-478. Dumbarton Oaks Research Library and Collection, Washington D.C.

2000a The Turquoise Hearth: Fire, Self Sacrifice, and the Central Mexican Cult of War. In *Mesoamericas Classic Heritage from Teotihuacan to the Azec,* edited by David Carrasco, L. Jones, and S. Sessions, pp.269-340. University Press of Colorado, Boulder, Colorado.

2000b Lightning Celts and Corn Symbolism in Mesoamerica and the American Southwest. In *Olmec Art and Archaeology in Mesoamerica*, edited by John E. Clark and Mary E. Pye, pp. 297–338. National Gallery of Art, Washington D.C.

Tedlock, Dennis
1996 *Popl vuh: the Mayan Book of the Dawn of Life*. Simon and Schuster, New York.

Titiev, Mischa
1992 *Old Oraibi: A Study of the Hopi Indians of Third Mesa*. University of New Mexico Press, Albuquerque, New Mexico.

Townsend, Richard F.
1992 *The Aztecs*. Thames and Hudson, New York.

Tyler, Hamilton A.
1964 *Pueblo gods and myths*. University of Oklahoma Press, Norman, Oklahoma.

Upham, Steadman
1982 *Polities and power: An economic and political history of the western Pueblo*. Academic Press, New York.

Van Gennep, Arnold
1960 *The Rites Of Passage*. Routledge, London.

Van Pool, Christine S
2003a The Symbolism of Casas Grandes. Unpublished Doctoral Dissertation, University of New Mexico, Albuquerque, New Mexico.

2003b The Shaman-Priests of the Casas Grandes Region, Chihuahua, Mexico. *American Antiquity* 68(4):696-717.

Van Pool, Todd L., and Robert D. Leonard
2002 Specialized Ground Stone Production in the Casas Grandes Region of Northern Chihuahua, Mexico. *American Antiquity* 67(4):710-730.

Van Pool, Christine S., and Todd L. VanPool
2006 Gender in Middle Range Societies: A Case Study in Casas Grandes Iconography. *American Antiquity* 71(1):53-75.

Van Zantwijk, Rudolf
1981 The Great Temple of Tenochtitlan: Model of Aztec Cosmovision. In *Mesoamerican Sites and World-views*, edited by Elizabeth Benson, pp. 71-86. Dumbarton Oaks, Washington D.C.

Vogt, Evon Z.

1976 *Tortillas for the gods : a symbolic analysis of Zinacantecan rituals*. Harvard University Press, Cambridge.

1998 Zinacanteco Dedication and Termination Rituals. In *The Sowing and the Dawning: Termination, Dedication, and Transformation in the Archaeological and Ethnographic Record of Mesoamerica*, edited by Shirley B. Mock, pp. 21-30. University of New Mexico Press, Albuquerque, New Mexico.

Voth, Henry R.
1901 *The Oraibi Powamu ceremony*. Vol. III, No. 2. Anthropological Series. Field Columbian Museum, Publication 61, Chicago, Illinois.

1905 *The Traditions of the Hopi*. Anthropological Series. Field Columbian Museum, Publication 96, Chicago, Illinois.

Walker, William H.
2002 Stratigraphy and Practical Reason. *American Anthropologist* 104(1):159-177.

Walker, William H., and Lisa J. Lucero
2000 The Depositional History of Ritual and Power. In *Agency in Archaeology,* edited by M. Dobres and J. Robb, pp. 130-147. Routledge, London.

Waterson, Roxana
1990 *The Living House: An Anthropology of Architecture in South-East Asia*. Tuttle Publishing. London.

Watts, Linda K.
1997 Zuni Family Ties and Household-Group Values: A Revisionist Cultural Model of Zuni Social Organization. *Journal of Anthropological Research* 53(1):17-29.

Wauchope, Robert
1938 *Modern Maya Houses, A study of Their Archaeological Significance*. Carnegie Institution of Washington, Washington D.C.

Weiner, Annette B.
1992 *Inalienable Possessions: The Paradox of Keeping-While-Giving*. University of California Press, Berkeley, California.

Whalen, Michael E., and Paul E. Minnis.
1996 Ball Courts and Political Centralization in the Casas Grandes Region. *American Antiquity* 61(4):732-746.

2001a *Casas Grandes and its hinterland*. The University of Arizona Press, Tucson, Arizona.

2001b Architecture and Authority in the Casas Grandes Area, Chihuahua, Mexico. *American Antiquity* 66(4):651-668.

2003 The Local and the Distant in the Origin of Casas Grandes, Chihuahua, Mexico. *American Antiquity* 68(2): 314-332.

2009 *The Neighbors of Casas Grandes: Excavating Medio Period Communities of Northwest Chihuahua, Mexico*. University of Arizona Press, Tucson, Arizona.

Whalen, Michael E., A.C. MacWilliams, and Todd Pitezel
2010 Reconsidering the Size and Structure of Casas Grandes, Chihuahua, Mexico. *American Antiquity* 75(3):527-550.

White, Leslie A.
1935 The Pueblo of Santo Domingo, New Mexico. *American Anthropologist* 37 (2):3-210.

Whiteley, Peter M.
1988 *Deliberate Acts: Changing Hopi Culture Through the Oraibi Split*. University of Arizona Press, Tucson, Arizona.

1998 *Rethinking Hopi ethnography*. Smithsonian Institution Press, Washington D.C.

2008 *The Orayvi Split: a Hopi Transformation*. Anthropological papers of the American Museum of Natural History, 87. American Museum of Natural History, New York.

Wilcox, David R.
1999 A Preliminary Graph-Theoretical Analysis of Access Relationships at Casas Grandes. In *Casas Grandes World*. The University of Utah Press, Salt Lake City, Utah.

Windes, Thomas
1984 A New Look at Population in Chaco Canyon. In *Recent Researchon Chaco Prehistory*, 75–87. Reports of the Chaco Center 8. Division of Cultural Research, U.S. Department of the Interior, National Park Service, Albuquerque, New Mexico.