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MEMORY, MEANING, AND MASONRY: THE LATE BONITO CHACOAN LANDSCAPE

Ruth M. Van Dyke

The monumental architecture of Chaco Canyon, New Mexico was constructed to convey, reinforce, and challenge ideas about social, ritual, and cosmological order. The concept of social memory can help clarify how architecture was employed in the transformation of Chacoan society at the beginning of the Late Bonito phase (A.D. 1100–1140). During the preceding century, Classic Bonito phase architecture expressed basic tenets of a Chacoan worldview—directionality, balanced dualism, and the canyon as a center place. At the beginning of the Late Bonito phase, confidence in the Chacoan ritual order was shaken by environmental and social developments. Leaders sought to re-formalize Chaco as a center place by instituting a new building scheme. Six new great houses were positioned on the landscape in a patterned, nested series of oppositional relationships. This re-formalization of the Chacoan landscape was legitimated through direct alignments and indirect architectural references to the Classic Bonito past. The new buildings were meant to bolster confidence in leaders and to attract followers by offering a combination of the familiar and the novel.

La arquitectura monumental del Cañón de Chaco, Nuevo México, se construyó para transmitir, reforzar, y desafiar las ideas acerca de del orden social, ritual y la cosmología. El concepto de la memoria social puede ayudar a clarificar cómo la arquitectura se empleó en la transformación de la sociedad de Chaco a principios de la fase Bonito Tardía (D.C. 1100–1140). Durante el siglo anterior, la arquitectura de la fase Bonito Clásica expresó los principios básicos de la cosmovisión Chaco—direccionalidad, dualidad equilibrada, y el cañón como un lugar central. A principios de la fase Bonito Tardía, la confianza en el orden ritual de Chaco fue sacudida por cambios ambientales y desarrollos sociales. Los líderes quisieron re-formalizar Chaco como un lugar central instituyendo un esquema nuevo de construcción. Seis casas grandes nuevas se agregaron al paisaje en un patrón de series vinculadas en relaciones espaciales de oposición. Esta re-formalización del paisaje de Chaco fue legitimado por alineaciones directas y referencias arquitectónicas indirectas al pasado de la fase Bonito Clásica. Los edificios nuevos sirvieron para reforzar la confianza en los líderes y también para atraer los seguidores ofreciendo una combinación de lo familiar y lo nuevo.

The immediate as well as the distant past is often invoked, referenced, and reconstructed in the interest of legitimating authority or consolidating group identity. This process can be clearly seen a millennium ago in Chaco Canyon in northwestern New Mexico. Here, between A.D. 880 and 1140, a number of imposing masonry pueblos, or great houses, were erected. Great houses such as Pueblo Bonito are some of the most dramatic and best-preserved standing ruins in the American Southwest. Twelve standing great houses in Chaco Canyon represent three centuries of construction and social change. During the Classic Bonito phase (A.D. 1020–1100), Chaco

Canyon appears to have been a center for ritual and pilgrimage for communities in the San Juan Basin and perhaps beyond. Architecture, material wealth, and social complexity were at their zenith. As the eleventh century drew to a close, however, Chaco's role as the center of the ritual world grew tenuous. After decades of relative prosperity, canyon leadership was in crisis, coping with the aftermath of a climatic downturn as well as challenges from new potential centers—such as Aztec—located along permanent rivers to the north. Those who had participated in and supported Chaco as a regional ritual center may have no longer had confidence in leaders' abilities to ensure balance and prosperity.

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Leaders needed to create something to retain Chaco Canyon's importance as a center place, something new and attractive to ritual visitors and participants, yet familiar enough to resonate with people emotionally.

One way for leaders to cope with competition and waning support was to initiate new building projects that celebrated a renewed world order, yet at the same time provided a familiar sense of continuity with the preceding centuries. During the Late Bonito phase (A.D. 1100–1140), a new set of great houses was established in Chaco. Although these structures exhibited clear architectural continuity with existing great houses, they also represented something new and distinctive. The new great houses may have served a variety of practical functions, but on a symbolic level, they presented people with something both novel and familiar, recalling the meanings represented by older, Classic Bonito great houses. Late Bonito great houses were part of the active construction of social memory at Chaco.

The past is a mutable canvas from which may be drawn stories and beliefs that serve the needs of the present. This process, the construction of social memory, is part of the ongoing mediation between experiences, perceptions, social relationships, and ideas (Bourdieu 1977; Giddens 1984; Lefebvre 1991; Soja 1996). Memory, like a sense of place (*sensu* Feld and Basso 1996), invokes a history of social engagement with surroundings and with landscape (see for example Ashmore and Knapp 1999; Bender 1993). Just as sensual responses to art and architecture can be forces behind social action or political legitimation (Kus 1992:172; Smith 2000), emotionally charged locales may be powerful focal points for social transformation (Alcock 2002; Bradley and Williams 1998; Joyce 2003; McGuire and Reckner 2002).

Social memory may involve general links to a vague mythological antiquity based on reinterpretation of monuments or landscapes (e.g., Alcock 2001; Meskell 2003; Sinopoli 2003), or it may entail direct connections to specific ancestors in the recent past (Gosden and Lock 1998; Lillios 2003). The construction of memory is a selective process—some aspects of the past may be deliberately obliterated, subsumed, or dismantled (Connerton 1989; Halbwachs 1975[1925]; Manning 1998; Papalexandrou 2003; Rowlands 1993).

Memory is also employed in the service of resistance, as multiple and conflicting versions of events can co-exist (Alonso 1988; LeGoff 1992:97–98).

Neither Chacoan landscape nor society was ever static, and social memory was always integral to Chacoan building projects. For centuries, architects worked within an ancient and storied landscape charged with meaning. Some sites were explicitly linked with ancestral occupations; for example, Peñasco Blanco, established in the ninth century, was built in the shadow of an abandoned sixth-century village (Windes 1975). At Pueblo Bonito, repeated remodelings between the tenth and twelfth centuries carefully preserved an original core of ninth-century rooms. This core became a very important part of Pueblo Bonito: the wealthiest burials from all of Chaco Canyon were interred in these rooms in the late eleventh century (Akins 2003). The highly formalized Classic Bonito phase (A.D. 1020–1100) great kiva makes meaningful symbolic reference to the Basketmaker III great pit-structure (A.D. 450–700) of several centuries earlier (Van Dyke 2003). The concept of ritual renewal discussed by Crown and Wills (2003) with respect to ceramic vessel repainting and kiva remodeling, and by Fowler and Stein (1992) with respect to landscape, illustrates a Chacoan concern with cyclical time. The related concept of social memory is more concerned with the social implications of references to a past—whether cyclical or linear—that is being continually dismantled and reconstructed.

Social memory is often used to create the appearance of a seamless social whole, naturalizing or legitimating authority (e.g., Alcock 2002; Hobsbawm and Ranger 1983; Jonker 1995), or creating and supporting a sense of individual and community identity (Basso 1996; Blake 1998). Thus it should be no surprise that Late Bonito builders seeking to attract and retain followers in the opening decades of the twelfth century constructed a landscape that not only provided viewers with something new, but also celebrated familiar tenets of the Chacoan worldview. Late Bonito builders sought to remake the Chacoan world, to improve upon it, but at the same time to link themselves directly to the Classic Bonito heyday of their parents' and grandparents' experience.

Below, I present a brief description of Classic Bonito Chacoan architecture, followed by an interpretation of some of ways in which Chacoan world-

views were represented on the eleventh-century landscape. I then describe Late Bonito architecture and landscape. Focusing on the six major Late Bonito great houses in Chaco Canyon, I argue for social memory as one means toward understanding Late Bonito great house layout, masonry, and site location.

Chaco Canyon—An Overview

Chaco Canyon, at the heart of the San Juan Basin in northwestern New Mexico, will be familiar to many readers as the location of large-scale masonry architecture erected by Ancestral Puebloan agriculturalists. Great houses such as Pueblo Bonito and Chetro Ketl are among the best-preserved prehispanic ruins in the Southwest, with standing walls in excess of 8 m in height. These planned, massive structures represent a substantial investment of labor and design. Great house construction in central Chaco Canyon was initiated during the mid-A.D. 800s at three locations: Una Vida, Pueblo Bonito, and Peñasco Blanco (Windes 2003; Windes and Ford 1992, 1996). Construction escalated dramatically during the Classic Bonito phase (A.D. 1020–1100), when major additions were made to Una Vida, Pueblo Bonito, and Peñasco Blanco, and four new great houses, Hungo Pavi, Chetro Ketl, Pueblo Alto, and Pueblo del Arroyo, were erected (Lekson 1986; Windes and Ford 1992, 1996). During the Late Bonito phase (A.D. 1100–1140), six new great houses, Casa Chiquita, Headquarters Site A, Kin Kletso, New Alto, Tsin Kletsin, and Wijiji, were built in Chaco Canyon (Lekson 1986:72; Vivian and Mathews 1965:81).

The transformation of great houses into massive edifices and the formalization of other elements of the Chacoan landscape dates from the Classic Bonito phase. Great kivas, semi-subterranean circular structures averaging 15 m in diameter, are found at most Classic Bonito phase great houses as well as in stand-alone locations on the south side of Chaco Canyon (Vivian and Reiter 1960). Other formalized elements of the Classic Bonito landscape include earthworks and road segments (Cameron 2002; Kincaid 1983; Roney 1992; Stein et al. 2003; Stein and Lekson 1992; Vivian 1997; Windes 1987:529–667). Together with great houses, great kivas, earthworks, and road segments form an ensemble sometimes termed Bonito style

architecture (Gladwin 1945). Hundreds of small domestic sites also are present in the canyon throughout the Bonito sequence (Hayes 1981; McKenna and Truell 1986). By the Classic Bonito phase, over a hundred outliers (Bonito style architecture surrounded by a community of small sites) are found beyond Chaco Canyon, across the San Juan Basin and adjacent areas of Utah and Arizona (Fowler et al. 1987; Kantner and Mahoney 2000; Marshall et al. 1979; Marshall and Sofaer 1988; Powers et al. 1983).

By the latter half of the eleventh century, developments in Chaco had reached their zenith. Classic Bonito phase Chaco could not have been foreseen by laborers or leaders involved in the original, small-scale events (following Dobres and Robb 2000:4). Social changes had accumulated as the result of many small decisions made over centuries, by people following tradition, until the scale of construction events had dramatically increased, as had the magnitude of social differences.

Models for social and political configurations at Chaco are many and various, ranging from Vivian's (1990:419–448) rotating sequential hierarchy to Lekson's (1999:27) "starter-kit kingdom." Chaco Canyon does not comfortably fit any ethnographically identified sociopolitical niche, so it has provided splendid fodder for arguments about the nature of complexity and power in non-state societies (e.g., Johnson 1989; Nelson 1995; Saitta 1997; Yoffee 1994, 2001). Judge (1989), Kantner (1996), Sebastian (1992), and Neitzel (2003a) have argued for institutionalized, hierarchical religious leaders, whereas Saitta (1997), Toll (1985), and Wills (2000) are among those who have pointed out that ritual specialization could have co-existed with communal forms of economic and social organization. Good overviews and critiques of many Chaco models are provided by Sebastian (1992:82–97), Mills (2002:77–80), and Vivian (1990:391–419).

Although the particulars of Chacoan social and political organization remain a controversial topic of discussion (compare for example Judge 1989; Kantner 1996; Lekson 1999; Neitzel 2003a; Renfrew 2001; Sebastian 1992; Toll 1985; Vivian 1990; Wilcox 1993; Wills 2000), most researchers agree on a few fundamental things. Planned architecture on a monumental scale suggests to me, as it does to many of the authors cited above, the presence of institutionalized social and political authority. Mor-

tuary evidence also supports the existence of elites at Chaco. Two Classic Bonito burial areas in Pueblo Bonito contain great wealth in the form of turquoise, shell, jet, wooden and other exotic items (Akins 2003; Mathien 2003; Neitzel 2003b; Pepper 1909). Based on her burial analyses, Akins (2003) postulates the existence of a three-tiered, ascribed social hierarchy.

Power need not be grounded exclusively in economics (Yoffee 2001); access to ritual knowledge is a basis for authority in ethnographic Pueblo societies (Brandt 1977, 1980; Levy 1992; Ortiz 1969; Whiteley 1985, 1986). In most of the above scenarios (but cf. Lekson 1999; Wilcox 1993) elite authority takes the form of relatively benign priestly leaders who held exclusive ritual knowledge and attracted followers by holding religious ceremonies or feasts. Evidence for the importance of public ritual at Chaco includes not only the architecture itself (great house plazas, mounds, great kivas), but also ritual paraphernalia, such as the cache of wooden staffs found in the Classic Bonito phase great house of Chetro Ketl (Vivian et al. 1978).

Toll (1985, 2001) has convincingly argued for periodic feasting at great houses such as Pueblo Alto (but see Wills 2001 for a dissenting view). People traveled to Chaco from the slopes of the Chuska Mountains, 75 km to the west, and from many other surrounding areas of the San Juan Basin (e.g., Cameron 2001; Kantner 2003). By the Classic Bonito phase, Chaco Canyon was the central, focal point of a set of highly formalized ritual practices. People gathered in the canyon for ritual events and festivities probably coordinated with astronomical events such as solstices and lunar standstills (e.g., Sofaer 1997; Stein et al. 1997). Those who orchestrated and presided over these events, whether corporate groups, or individuals, or lineages, must have derived a great deal of status and prestige from their positions. Labor was organized on a large scale, to build settings for ritual activities, to direct the experiences of visitors, and to celebrate elements of the belief system.

Sacred Geography

What was the nature of the Chacoan belief system? Although we can probably never learn the details of specific ceremonies or ritual practices, the Chacoans did leave us tantalizing hints as to the major ideas behind their worldview inscribed in archi-

tecture and landscape. Directions—north and south, east and west, up and down—were important. Nested, hierarchical, interconnected levels revolved around a center place, a fulcrum for symmetrical or dualistic balance.

Architectural expressions of many these ideas were noticed by Fritz (1978) and Doxtater (1990), who pointed out nested, symmetrical, and directional relationships at the level of both building and landscape at Chaco. Doxtater (2002) has also examined alignments across the larger Chacoan landscape. Stein and others (Fowler and Stein 1992; Stein 1987; Stein and Lekson 1992) recognized the symbolic significance of Bonito style architecture found at outliers across the Chacoan world, proposing the concept of a Chacoan ritual landscape representing shared cosmographic ideas. Vivian (1990:446–448) argues that the symmetrical layout of canyon great houses reflects a concern with dualism that may represent the presence of a rotating sequential hierarchy in the canyon. Fritz (1978), Lekson (1999), Marshall (1997), Stein (Stein et al. 1997), and others have recognized the importance of a north-south meridian at Chaco. The meridian is expressed most clearly through the construction of the two longest road segments—the Great North Road and the South Road. The Great North Road extends for over 50 km from Pueblo Alto to the edge of the Kutz Canyon badlands. Although some scholars (e.g., Lekson 1999) believe the road continued past this point to the outliers of Salmon and Aztec, Sofaer and Marshall (Sofaer et al. 1989) contend the road terminated at Kutz Canyon, a sacred subterranean space possibly associated with a place of emergence in Pueblo mythology. The South Road extends south-southwest for 50 km from Chaco Canyon to stop just short of Hosta Butte, a dramatically visible landform. Marshall (1997) suggests the Great North Road and the South Road fix Chaco as a Center Place, balanced halfway between north and south, and between low and high places.

Astronomical events were observed at Chaco. For example, the Sun Dagger petroglyph on Fajada Butte marks solstices and equinoxes as well as lunar standstills (Sinclair et al. 1987; Sofaer and Sinclair 1987; Sofaer 1997, 1999). When cardinal directions are expressed architecturally, as in the central north-south wall at Pueblo Bonito, solar significance is implied, since true north marks the

midpoint of the sun's daily journey across the sky (Stein et al. 1997). Archaeoastronomical alignments such as these were some of the ways in which Chaco Canyon, and specifically Pueblo Bonito, were constructed by their builders to represent the spatial and the temporal center of the Chacoan world (Farmer 2003; Stein et al. 1997; Sofaer 1997, 1999).

Basic aspects of a Chacoan worldview, including the notions of directionality, dualism, and center place, are found in contemporary and ethnographic Pueblo relationships to landscape. The Pueblo peoples of the Southwest United States have an intimate and complex relationship with the landscape, interweaving the physical, the social, and the mythic. Most contemporary and ethnographic Pueblos, including Tewa (Ortiz 1969, 1972), Keresan (Snead and Preucel 1999; White 1942, 1960), Zuni (Cushing 1896, 1966; Ladd 1979; Young 1988), and Hopi (Hieb 1979) place importance on spatial divisions and directions. Physical, social, and spiritual worlds are represented in horizontal and vertical dimensions through landscape and architecture. Horizontal divisions correspond to cardinal directions, and vertical divisions include upper and lower worlds. Nested layers and symmetrical quarters are connected at a center place—the pueblo village. The center place is the place of convergence, where six sacred directions (four cardinal directions, plus zenith and nadir) join (Ortiz 1972:142). Multiple levels are inscribed on the landscape by topographic features and shrines, and the pueblo itself represents this organization in microcosm. Although there are many specific variations on this theme, most Eastern Pueblo social and ritual organization separates the world into two divisions, or moieties, often associated with summer and winter. The western pueblos of Zuni and Hopi lack this dual division yet still express links between directions, social divisions, and ritual practices.

Dualism and balance are important ideas among the Tewa, Tiwa (Ortiz 1965, 1969), and Rio Grande Keresans (Fox 1967; White 1942:142–144). Dualism permeates the organization of society, ritual, and the natural world. Moiety memberships cross-cut memberships in other ritual societies, integrating the pueblo in a complex organizational scheme so that no single group of people can ever really obtain clear-cut power over others. Asymmetrical

relationships present for half the year are balanced when the other group has power during the other half.

The presence of cardinality, the idea of center place, dualism, and landscape-inscribed cosmologies among contemporary Pueblo groups who speak different languages and otherwise have different ritual practices speaks to the antiquity of these belief systems among Puebloan peoples (Dozier 1960). Within the Chacoan world of a millennium ago, there are clear archaeological indicators that similar worldviews were present (Swentzell 1992). Furthermore, as in contemporary pueblos, these beliefs were expressed spatially, through landscape and architecture.

Classic Bonito phase Chacoan builders manipulated architecture, landscape elements, and astronomical alignments to express the canyon's position as the center of both space and time, as the fulcrum of a balanced dualism. Chacoan architecture was built to convey these values aesthetically to viewers and participants. Visibility was a critical consideration in the positioning and construction of Chacoan great houses during the Classic Bonito phase. Great houses were built both to see, and to be seen. During the Classic Bonito phase, canyon as well as outlier great houses were positioned in high places (e.g., Pueblo Alto, Guadalupe) or in geologically dramatic locations (Andrews, Las Ventanas). Locations emphasized lines of sight down the canyon (Peñasco Blanco) or outwards from the canyon (Una Vida, Pueblo del Arroyo). Three- and four-story massive structures (Pueblo Bonito, Chetro Ketl, Pueblo Pintado, Kin Bineola), some with tower kivas (Kin Klizhin, Kin Ya'a), loomed over viewers. Intervisible shrines and stone circles were built in high places, with spectacular views of natural landmarks such as Fajada Butte, Huerfano Mountain, and Hosta Butte (Hayes and Windes 1975; Lekson 2002). It is clear that the Classic Bonito Chacoan landscape was built to be experienced, and it was constructed to communicate basic tenets of Chacoan cosmography.

Into the Late Bonito Phase

It was in the shadow of this tradition that Late Bonito phase builders worked. Like the structures of the Classic Bonito phase, the Late Bonito buildings expressed principles of the Chacoan world-

view, but the new architecture was even more formalized in layout. "Late Bonito Chacoan architecture strongly reflected the ancient precepts of order, formality, standardization, and symmetry, and the concept of a master plan" (Vivian 1990:374). But this new construction represents more than simple continuity with the forms and ideas of the preceding century. Distinctive new buildings were founded in new locations, but directional and road alignments were employed to make deliberate references to the old Classic Bonito order. The new buildings encouraged viewers to appreciate the potency of Late Bonito leaders, yet at the same time they brought to mind the longevity and past importance of Chaco ceremonialism and beliefs.

Late Bonito phase (A.D. 1100–1140) Chaco is characterized by a number of materially visible breaks with the preceding Classic Bonito phase (A.D. 1020–1100). These include the appearance of carbon-painted ceramics, a shift in faunal consumption from deer to small mammals and birds, an increase in the number of small habitation sites, increased evidence for domestic occupation in great houses, and the deposition of trash in abandoned structures as opposed to mounds (Judge 1989:246; Toll 1985:483–489). Most importantly and visibly, Late Bonito phase Chaco is characterized by a dramatic shift in architectural construction styles (Lekson 1984:267–269). A number of new great houses were erected in a new building style dubbed "McElmo" by Vivian and Mathews (1965), who believed the style to represent an intrusion from the Mesa Verde region, where similarly blocky sandstone architecture is found. Lekson (1986:267–269), however, refuted this argument, connecting the McElmo layout with design tenets found in Classic Bonito buildings. The most important similarities shared by McElmo style architecture in both regions are a compact, symmetrical ground plan with enclosed kiva(s), and bun-shaped, pecked sandstone veneers. Erected in Chaco Canyon between A.D. 1100 and 1130, McElmo style structures look very different from earlier great houses in terms of building size, layout, and masonry facing style.

Six Late Bonito great houses in Chaco Canyon are the focus of this study: Casa Chiquita, Headquarters Site A, Kin Kletso, New Alto, Tsin Kletsin, and Wijiji (Table 1, Figure 1a). These structures were erected in one (or occasionally two) planned,

short, self-contained construction events between A.D. 1100 and 1130 (Lekson 1986:267–269; Vivian 1990:367). More precise dating is, in many cases, difficult due to a lack of excavation data.

Like Classic Bonito great houses, Late Bonito great houses feature core-and-veneer masonry—two parallel walls separated by a space filled with stacked masonry or rubble (Lekson 1986:21–23). Two varieties of Cliff House sandstone found in the Cretaceous cliffs of Chaco Canyon were employed in veneers—hard, dark brown tabular sandstone that was scabbled or snapped to form long, thin pieces, and massive, reddish-brown sandstone that was pecked and ground into bun-shaped blocks. A number of veneer typologies exist (Hawley 1934, 1938; Judd 1927, 1964; Roberts 1938). Lekson (1986:17–21) added Vivian and Mathews's (1965) McElmo style to Judd's Type I-IV schema to come up with five basic veneer types commonly referenced today. Types III and IV, which originated during the Classic Bonito phase, were used into the early 1100s. Type III masonry exhibits distinctive banding produced by alternating layers of the thin, tabular sandstone with layers of massive sandstone blocks. Type IV veneers are of tightly coursed, thin, tabular sandstone (Lekson 1986:17–21).

Located in east Chaco Canyon, the Late Bonito great house Wijiji is built of Types III and IV masonry. Vivian (1990:286–288) considers Wijiji to be transitional in layout between Classic Bonito and McElmo style structures. Wijiji is placed in the Late Bonito phase on the basis of its compact layout, and a single published tree-ring date of 1110c (Lekson 1986:224–231).

Most Late Bonito phase construction, including the five remaining great houses discussed here, Kin Kletso, Tsin Kletsin, Headquarters Site A, Casa Chiquita, and New Alto, employed the pecked and shaped massive sandstone blocks characteristic of McElmo style masonry. However, it is not only masonry but also layout that sets Late Bonito great houses, including Wijiji, apart from their Classic Bonito forbears. By contrast with Classic Bonito phase buildings, which were modified in planned stages, Late Bonito great houses represent a self-contained unit of design (Lekson 1986:64). The five McElmo style buildings consist of one or two "McElmo units"—compact, symmetrical squares or rectangles of approximately 30 rooms arranged in a gridlike fashion around an enclosed kiva (Fig-

Table 1. Summary Information for Six Late Bonito Phase Great Houses in Chaco Canyon.

Great House	Dates (A.D.)	Layout	Masonry	Ground Floor/		No. of Stories	Avg. Rm. Size (sq m)	Visibility	Stabilization, Excavation, Additional Sources
				Total Rms	Rms				
Casa Chiquita	1100-1130	1 McElmo unit; nearly symmetrical; 1-2 enclosed kivas	McElmo	34/ 59	4.2	1-3	4.2	poor	Lekson 1986:246-251; Vohl and Mayer 1964 (stabilization)
Headqrtrs Site A	1100-1130	1-2 enclosed kivas similar to Wijiiji (symmetrical, bracket-shaped, 2 enclosed kivas)	McElmo	39/39	7-9	1	7-9	poor: Fajada Butte	Lister and Lister 1981:252-253; Vivian 1990:350, 365, 425; Vivian and Mathews 1965:81 (testing)
Kin Kletso	1125-1130	2 McElmo units; symmetrical; 4 enclosed kivas (excluding later addition)	McElmo	57/ 132	8.6-9.4	2-3	8.6-9.4	fair: Peñasco Blanco, Pueblo Bonito, Pueblo del Arroyo	Lekson 1986:238-246; Vivian and Mathews 1965 (excavation and stabilization)
New Alto	1100-1130	1 McElmo unit; symmetrical; 1 enclosed kiva	McElmo	32/ 58	2.5 - 7.1	1-2	2.5 - 7.1	excellent: Peñasco Blanco, Pueblo Alto, Tsin Kletsin	Lekson 1986:251-256; Morris and Kayser 1966 (stabilization); Vivian 1947
Tsin Kletsin	1110-1115	1 McElmo unit (east); 1 L-shaped unit (west); asymmetrical; 3 enclosed kivas; enclosed plaza	McElmo	55/ 74+15 in arc = 89	4-5	1-2	4-5	excellent: Pueblo Alto, New Alto, Kin Klizhin	Bradford 1981 (stabilization); Lekson 1986:231-238; Mayer 1971
Wijiiji	early 1100s	bracket-shaped; symmetrical; 2 enclosed kivas	Types III & IV	104/ 206	5.4	2-3	5.4	poor: 29SJ 1642 (great kiva)	Lekson 1986:224-230; Shiner 1959 (stabilization)

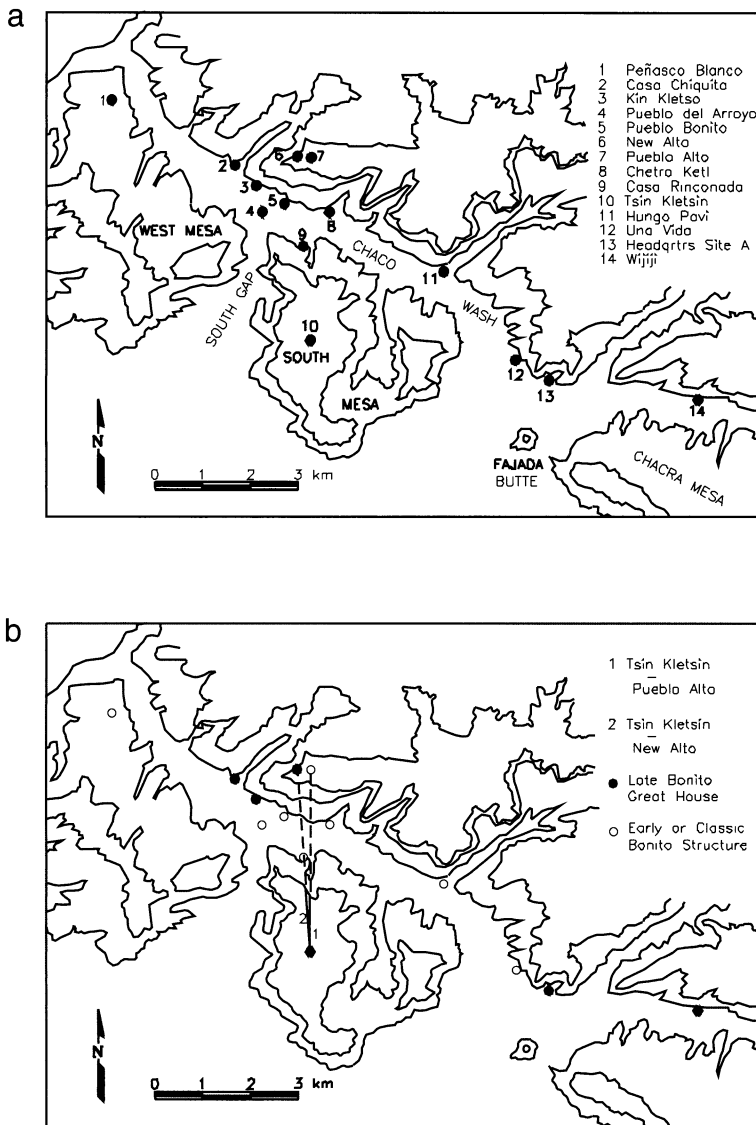


Figure 1. (a) Locations of major structures discussed in the text (drawing by author). (b) Tsin Kletsin – Pueblo Alto, Tsin Kletsin – New Alto, and New Alto – South Gap alignments (drawing by author).

ure 2). Room sizes vary between structures from 2.5 sq m (New Alto second story) to 9.4 sq m (Kin Kletso), but within each great house room sizes are fairly uniform. Although Wijiji is larger and slightly different in shape than the McElmo great houses, it too consists of two symmetrical blocks of uniform rooms each surrounding a single kiva. Late Bonito great houses are from one to three stories high. Unlike Classic Bonito great houses, Late Bonito great houses do not have enclosed plazas, associated great kivas, or (with the exception of Tsin Kletsin) associated refuse.

Kin Kletso (Figure 3), located against the north wall of Chaco Canyon northwest of Pueblo Bonito, is the only excavated McElmo great house (Vivian and Mathews 1965). As a result, interpretations made at Kin Kletso are often applied to the other McElmo sites. Kin Kletso consists of two adjacent McElmo units, with a small addition later added to the east end of the structure. Construction of both halves took place over a short span between A.D. 1118–1125 or 1125–1130. Some eleventh-century tree-ring dates likely represent reused beams (Bannister 1964; Lekson 1986:238–246; Vivian and

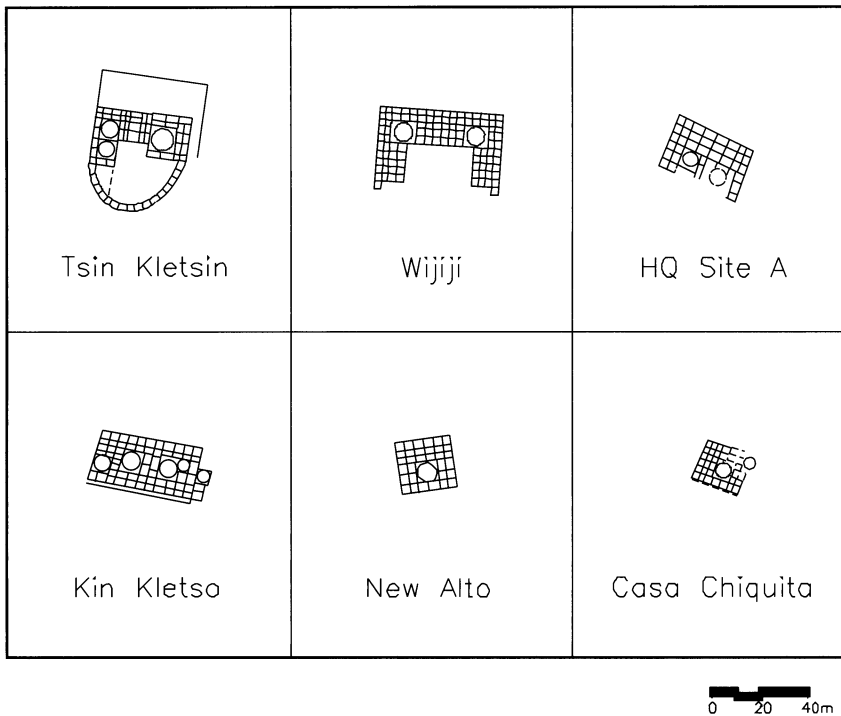


Figure 2. Plans of six Late Bonito phase great houses (drawing by author; Headquarters Site A from plan by Tom Windes and Dabney Ford; other structures from base maps in Lekson [1986]).

Mathews 1965:53–54; Tom Windes, personal communication, January 2003).

Like Kin Kletso, Tsin Kletsin consists of two buildings. A McElmo unit on the east is attached to an L-shaped roomblock on the west, with an enclosed plaza in front to the south. Although Tsin Kletsin may represent two separate construction events, like Kin Kletso the building was completed over a short span of time, probably between A.D. 1110 and 1115 (Lekson 1986:238). Published tree-ring dates include 1112rL, 1111rL, and 1113v (Robinson et al. 1974:42). Associated refuse, in the form of a light scatter of spalls and artifacts enclosed by a masonry wall south of the great house, does not resemble domestic trash (Windes 1987:642–644).

Casa Chiquita and New Alto closely resemble each other in size and in layout, each consisting of one symmetrical McElmo unit. Casa Chiquita is located northwest of Kin Kletso, at the mouth of Clys Canyon (Lekson 1986:246–251; Voll and Mayer 1964). Published tree-ring dates include 1063rL, 1058vv, and 1064r (Lekson 1986:230), but the great house is nevertheless dated to the early

1100s based on McElmo masonry (Lekson 1986:230). New Alto is located atop the north side of Chaco Canyon, west of the Classic Bonito great house, Pueblo Alto.

Headquarters Site A is a smaller version of Wijiji located in a cul-de-sac on the north side of Chaco Canyon, just northwest of Gallo Wash (Dabney Ford, personal communication, January 2003; Vivian and Mathews 1965:81). This little-known structure is largely buried by alluvial wash. It is dated to the Late Bonito phase on the basis of McElmo style masonry.

My interpretations here focus on these six new great houses. Nevertheless, it is important to recognize that Late Bonito construction includes a number of additional building events. In addition to these new Late Bonito great houses, modifications were made to five existing canyon great houses—Peñasco Blanco, Pueblo Bonito, Chetro Ketl, Pueblo Alto, and Pueblo del Arroyo—in the early 1100s (Lekson 1986). Many of these modifications employed McElmo style masonry, although some employed Type III or IV veneers. Common additions included plaza-enclosing arcs



Figure 3. Kin Kletso from the canyon rim above (photo by author).

of rooms, blocks of small rooms, firepits, second-story kivas, remodeled kivas, and great kivas (Hawley 1934:25–30; Lekson 1986; Windes 2003). Some Classic Bonito great houses were used as habitations. Spaces were subdivided, doorways sealed, and domestic refuse was dumped in empty rooms (Windes 2003:26–27). Architectural anomalies dating from the early 1100s include a colonnade-like feature at Chetro Ketl (Lekson 1986:192) and a tri-walled circular structure behind Pueblo del Arroyo (Judd 1959; Vivian 1959). An ambiguous group of McElmo foundations termed Hillside Ruin was built east of Pueblo Bonito (Jackson 1878:442; Judd 1964:146–147; Stein et al. 2003:55–56; Windes 2003:31). Roberts Small Pueblo, an unfinished McElmo structure, was initiated east of Wijiji (Roberts 1926–27).

In addition to the buildings described above, there are at least 20 smaller structures in Chaco Canyon dating to the Late Bonito phase and exhibiting McElmo style masonry (Hayes 1981; Lister and Lister 1981:252–254; McKenna and Truell 1986; Vivian and Mathews 1965; Vivian 1990:423–429). Some of the better-known include Rabbit Ruin, northwest of Pueblo Alto (Windes 1987:85–90),

Lizard House, east of Chetro Ketl (Vivian and Mathews 1965:135, 137), and an isolated McElmo unit on a platform northeast of Peñasco Blanco (Lekson 1986:95, 109). In the early 1100s, size and masonry-based distinctions between great house and small sites began to blur (Truell 1986:145–146). Although I restrict my focus here to the six planned, labor-intensive, great houses situated firmly at the upper end of the McElmo site continuum, clearly there are other aspects of Late Bonito construction that bear scrutiny.

Re-Formalizing the Late Bonito Landscape

Late Bonito Chacoans lived in a world that they perceived to be logical and coherent, grounded in a landscape that their ancestors had occupied, and modified considerably, over preceding centuries. Chacoan architecture expressed aspects of a worldview designed to be experienced by subjects moving in and among the buildings, conveying meaningful ideas, offering spatial experiences that resonated with a traditional Chacoan aesthetic. Late Bonito great houses were built to look imposing and to convey symbolic messages, regardless of the

activities that took place inside them. The structures celebrated concepts of directionality and opposing dualisms that helped keep the world in balance both for social cohesion and for agricultural productivity. Late Bonito leaders bolstered confidence in a new world order using tangible references to the earlier, Classic Bonito landscape.

Expedient Symbols

Late Bonito great house builders clearly were concerned about the visual impact their structures would have on viewers, employing illusory tricks to emphasize both mass and height (see Fowler and Stein 1992:111; Fowler et al. 1987:61–66). Secondary, externally faced parallel walls were built along the south sides of Casa Chiquita and Kin Kletso (Vivian and Mathews 1965:44; Voll and Mayer 1964:7). Crude, unfaced internal crosswalls turned the space between the walls into small 150 x 50 cm cells. A similar parallel wall with cells is found along the west exterior of the contemporaneous outlying Kin Bineola great house (Marshall et al. 1979:59). Vivian and Mathews speculate these walls may represent “buttresses” or “defensive devices,” but they have no clear structural or functional purpose. Rather, these partitioned, empty spaces represent mere added mass. One of the most prominent features of Kin Kletso is Kiva A, a two-story kiva built atop a large boulder that looms above neighboring rooms. Lekson (1986:245) speculates that architects intentionally chose to construct Kin Kletso around and atop the boulder so it could be used to elevate the kiva; the overall effect is one of a more imposing building.

The functions of the compact Late Bonito great houses have long been debated. Lekson (1986:269–272) contended that McElmo structures were specialized structures built for administration and storage. Vivian (1990:375–376) refuted Lekson’s interpretation point by point, arguing rather that McElmo structures were built to be habitations. Whether the Late Bonito great houses were used for any or all of the above, they represent strong symbolic statements.

The lack of physical evidence for domestic occupation, often used to support a storage interpretation, might as easily be construed to indicate the buildings were not meant to be used at all. Perhaps the structures were meant to convey the ideas inherent in the concept of “great house” (in which

case it is not surprising that they are more than simple facades, they also contain rooms and kivas with floor features), but they were not intended to be used as such. Interestingly, it is during these same decades that we see the first good evidence in two centuries for domestic occupation of the old great houses, such as Pueblo Bonito (Windes 2003:26–28). Construction of a new, Late Bonito phase Chaco may have involved consigning the old great houses to residential use as the new, symbolically charged great houses were erected.

Late Bonito great houses were meant to generate renewed interest in Chaco as a center place and to restore confidence in the rituals that took place there. But the Late Bonito building program seems to have been undertaken by a leadership that had less labor at its disposal. During the Classic Bonito phase, Chacoan architects likely were able to draw upon a large labor pool as basin residents visited periodically to attend ritual events. By the early 1100s, it is possible many people throughout the San Juan Basin had shifted their allegiance, if not their residence, to the Aztec area. Correspondingly, there is considerable evidence that expediency was the Late Bonito builders’ watchword.

Late Bonito great houses were constructed of one or more fairly standardized McElmo units. Use of this template would have facilitated speedy and straightforward construction of multiple buildings. As described above, efforts were made to make several Late Bonito great houses look larger than they were, and yet these structures were much smaller, overall, than Classic Bonito phase great houses. Lekson (1986:257–269) considers McElmo style buildings to represent “Class II” construction events, which required 55,000–90,000 person-hours, or approximately one-half to one-third as much labor as Classic Bonito phase “Class IV” events, which required 170,000–192,000 person hours. Beam transport was the most time-consuming of the various activities involved in great house construction, but some time could be saved by recycling wood from older structures. Anomalous tree-ring dates from Casa Chiquita and Kin Kletso suggest the use, or re-use, of beams harvested during the Classic Bonito phase. The smaller rooms found in McElmo structures required less timber for ceilings and roofs, which would have also saved labor. A concern with expediency also could explain the shift to McElmo masonry, which uses

only large, pecked sandstone blocks and omits the alternating bands of shaped, thin tabular sandstone. Wide, fat sandstone blocks may have been faster to shape and faster to stack than small pieces of tabular sandstone (Gwinn Vivian, personal communication, January 2003). Sources of blocky sandstone were immediately on hand near most great houses, whereas tabular sandstone would have had to be brought from slightly further away. The fact that McElmo structures such as Hillside Ruin and Roberts Small Pueblo were either robbed of building stone or left unfinished also may indicate shortages of resources or labor.

Architecture and Meaning

Late Bonito great house builders were concerned with the visual impact of the structures on viewers, as is evidenced by careful attention to form, layout, and mass. The positioning of Late Bonito great houses on the canyon landscape was equally important. Site alignments and intervisibility were employed to make statements about the Late Bonito worldview and its connection to the Classic Bonito past. Like their Classic Bonito predecessors, Late Bonito great houses celebrate the themes of horizontal and vertical directionality, dualism, balance, and center place.

One way Late Bonito architects referenced the past within their newly re-formalized landscape was through the use of alignments and roads. Chacoan roads and alignments very likely carried substantial symbolic meaning (Lekson 1999; Roney 1992; Sofaer et al. 1989; Stein and Lekson 1992). Some Chacoan roads, termed "time bridges" by Fowler and Stein (1992:116–118), link noncontemporaneous sites in what can only be interpreted as the symbolic connection of the present with the past. They constitute tangible references to the past employed in the construction of social memory (see also Lekson 1999:130; Van Dyke 2003).

Late Bonito builders used the "time bridge" concept in the positioning of Tsin Kletsin. Tsin Kletsin was built in what seems at first to be an odd location, in isolation atop South Mesa, far from viable farmland. Most researchers agree that visibility was important in the siting of Tsin Kletsin. From Tsin Kletsin, one can see Pueblo Alto, New Alto, Kin Klizhin, Bis sa'ani, and a site in the Kin Bineola community (29SJ 1578), as well as Huerfano Mountain, Mount Taylor, Cabezon Peak, Hosta

Butte, and the more distant ranges of the La Plata and Chuska Mountains. Although the edges of Chaco Canyon block the view to great houses on the canyon floor, line-of-sight connections exist between Tsin Kletsin and all other canyon great houses via two shrines at the edges of South Mesa: 29SJ 1207 and 29SJ 706 (Hayes and Windes 1975). However, rising dunes block the view of the Chaco Slope to the south. If maximizing intervisibility with other great houses or landmarks had been the sole concern, it might have been better to construct the great house on the true high point of South Mesa, some 700 m to the southwest and 50 feet higher, along the old park service boundary fence. From this spot the viewer can see not only nearly all the landmarks and features listed above, but also the vast expanse of the Chaco Slope, including the outlier Kin Ya'a, and a third shrine, 29SJ 2113 (Hayes and Windes 1975). Why was Tsin Kletsin not constructed here, with vistas to the south as well as views to the west, north, and east? While it was important that Tsin Kletsin be visible, it was just as important that the great house be positioned due south of Pueblo Alto.

Tsin Kletsin was constructed in a location that was not only intervisible but was also highly symbolically charged. It is situated due south of the Classic Bonito great house Pueblo Alto, which sits atop the north side of Chaco Canyon (Figure 1b). The Pueblo Alto—Tsin Kletsin alignment is "so familiar it evokes little comment in the vast Chacoan literature" (Lekson 1999:82). Fritz (1978) and Sofaer (1997) consider the alignment to be the north-south axis of a directional cross, with the east-west axis formed by Pueblo Bonito and Chetro Ketl. However, it is important to note that the north-south relationship between Pueblo Alto and Tsin Kletsin is not only an alignment through space, but through time. Occupation of the site of Pueblo Alto dates from the early 1000s, and modifications to the great house continued through the early 1100s (Windes 1987), but the major construction and use of this great house—including the controversial smashing of many imported Chuskan jars (Toll 1985; Wills 2001)—occurred during the Classic Bonito phase. When Late Bonito builders erected Tsin Kletsin in the early 1100s, they symbolically connected themselves to the past ritual order and to past ritual activities conducted at Pueblo Alto. The importance of this relationship was further

emphasized by the construction of a road segment leading due north from Tsin Kletsin, pointing toward Pueblo Alto, but stopping at the north edge of South Mesa (Stein and Lekson 1992:90; Vivian 1997:12, 14,15). The Pueblo Alto—Tsin Kletsin alignment was part of the construction of social memory—a deliberate and conscious link to the Classic Bonito phase world order.

In constructing Tsin Kletsin, Late Bonito builders successfully referenced the rituals, beliefs, and power structure of the previous generation. The next step was to invoke a new order, grounded in the old, but separate. Like the old order, the new framework was concerned with balance, with dualism, with directionality, with visibility. Late Bonito builders continued these traditions, but wished to establish themselves as separate, more formal, and, perhaps, more powerful than those who had come before. And so they built New Alto. New Alto is situated not due north of Tsin Kletsin, but rather, at 357° east of true north, 3.7 km away. The importance of this alignment is emphasized by a second road segment leading north from Tsin Kletsin to the edge of South Mesa, pointing directly to its early 1100s neighbor, New Alto. The positioning of New Alto with respect to Tsin Kletsin created a new north-south axis, a new meridian, based on the old, but slightly different (Figure 1b). This new axis travels across Casa Rinconada and bisects the space between Pueblo Bonito and Pueblo Alto, referencing these earlier structures and perhaps legitimating the new Late Bonito alignment through associations with the past. If I am right about this relationship, tree-ring dates from New Alto indicating that the structure was built either at the same time or later than Tsin Kletsin (but not earlier) would support my argument.

The Pueblo Alto—Tsin Kletsin—New Alto alignments are an elegant example of Late Bonito Chacoan ideas as expressed on the landscape. However, all six Late Bonito great houses operate at several additional levels to convey symbolic meaning. Late Bonito builders reformalized the Chacoan landscape to express and restate familiar elements of the Classic Bonito worldview, particularly directionality and dualism. This was accomplished within the buildings themselves and through the positioning of the great houses on the landscape.

As we have seen, Tsin Kletsin, Pueblo Alto, and New Alto form two north-south axes over the core

of Classic Bonito phase Chaco, one an alignment to the past, one to the present. East-west directional patterning is evident in the paired opposition of four Late Bonito great houses on the canyon floor, on either side of this meridian. Kin Kletso and Casa Chiquita extend an arm of the axis to the west, and Headquarters Site A and Wijiji extend the axis to the east. All six structures are symmetrically balanced against each other, with the core of the old Classic Bonito canyon as its center place.

Not only the horizontal but also the vertical dimension was important in the concept of six sacred directions and a center place. Correspondingly, the six great houses' positions on the landscape reflect a vertical dimension. Tsin Kletsin and New Alto are both highly visible, and intervisible, structures. These buildings may represent the high, the light, the vertical direction. However, views from Tsin Kletsin and New Alto to the other McElmo style great houses are blocked by the edges of Chaco Canyon. These two high buildings exist on their own, upper plane, in opposition with the buildings on the canyon floor, which exist on a different, lower plane. In the canyon below, Casa Chiquita, Kin Kletso, Headquarters Site A, and Wijiji may represent the low, the dark, the subterranean direction. The positions of the six great houses create an elegant balance of low against high, subterranean against celestial.

Another related duality revolves around the visible and invisible. This opposition is strongly expressed in the positioning of Late Bonito great houses. As mentioned, Tsin Kletsin and New Alto are highly visible, but not from within the canyon. Most Classic Bonito canyon great houses are intervisible with at least one, sometimes as many as eight, other great houses. For example, from Peñasco Blanco, a sweeping vista eastwards down Chaco Canyon includes most of the central canyon great houses. Pueblo Bonito was probably not originally sited with a concern for visibility, yet nearly all the central canyon great houses, from Peñasco Blanco to Kin Nahasbas, are within sight of its walls. Even Hundo Pavi, all alone at the mouth of Mockingbird Canyon, is connected through line of sight with five other great houses.

Interestingly, Casa Chiquita, Headquarters Site A, and Wijiji are the *only* canyon great houses that lack a line of sight connection to any other great house. All were deliberately positioned in cul-de-

sacs or around canyon corners, just out of sight of others. Just as the siting of Tsin Kletsin and New Alto suggest a deliberate concern with visibility, the siting of these three sites suggests a deliberate concern with *invisibility*. Paradoxically, these structures were built to be seen . . . but not from other great houses. They may represent the nadir of a new, Late Bonito element in the traditional Chacoan scheme of balanced dualism—the visible and the invisible.

Finally, balance and dualism are expressed by the symmetry within the great houses themselves. Casa Chiquita, Kin Kletso, New Alto, and Wijiji are remarkably symmetrical structures; what evidence there is suggests that Headquarters Site A fits this pattern as well (Figure 2; Table 1). The only nonsymmetrical McElmo site is Tsin Kletsin, which, I would argue, must have been the first of the central canyon group of McElmo style sites to be built. The overall form of Tsin Kletsin, a multi-storied room block fronted by an arc of plaza-enclosing rooms, mirrors the form of the older sites of Pueblo Alto, as well as Hungo Pavi, Chetro Keti, and Pueblo del Arroyo.

Directionality, opposing dualisms, and center place are Classic Bonito concepts that would have been familiar to a Late Bonito viewer. These Classic themes were reformed on the Late Bonito landscape, restated elegantly and directly. Late Bonito great houses in Chaco Canyon form a patterned, nested series of relationships opposing cardinal directions, and the visible and invisible, emphasizing Chaco Canyon as the nexus of a larger universe. Reiteration of these Classic ideas invoked social memory, tying the Late Bonito phase into the beliefs and practices of an earlier era.

Fables of the Reconstruction

At the end of the eleventh century, a number of factors came together to throw the Chacoan world out of balance. There was a sharp downturn in agricultural production during the 1090s (Sebastian 1992:135). If ceremonies at Chaco were supposed to, at least in part, ensure agricultural productivity, then a decade of extremely low corn production might have shaken the faith of the populace in their ritual leadership. Near the end of the Classic Bonito phase, burial evidence indicates material and nutritional differences between great house and small

site inhabitants were at their most extreme. Intriguingly, the most lavishly buried individual in Pueblo Bonito met a violent end (Akins 1986, 2003). Today, Puebloan society tends to be intolerant of individual aggrandizement, leading some to speculate that this was a reaction to Chacoan leaders who overstepped their bounds. Perhaps in response to both social and environmental factors, some people began to move to the verdant valleys and permanent water of the San Juan and Animas river valleys. Construction began at Salmon Ruin in A.D. 1088 and at Aztec during the same decade (Stein and McKenna 1988). By the late 1100s, Aztec had become an important center of the post-Chacoan world (Judge 1989:247; Lekson 1999:140–141; Sebastian 1992:135).

Still, not everyone left Chaco Canyon, not right away. Most of the construction at Aztec West took place between A.D. 1110 and 1120 (Robinson et al. 1974:57), during the same period that the McElmo style structures were built in Chaco. From the A.D. 1100 to 1130 decades, agricultural yields rebounded dramatically (Sebastian 1992:135). Renewed times of plenty would have helped restore confidence in rituals and in ritual leaders. Perhaps two factions of religious leaders were now in competition: one group, who had moved to Aztec and were attempting to establish a new center there, and the other, a group who had stayed in Chaco, and who now sought to re-establish the canyon as a regional center for ritual. The canyon leaders faced several challenges. They needed to bolster confidence in rituals at Chaco, to assure people that the world was still in balance. They may also have wished to attract new followers. As a result, the Chacoans invited potential followers to participate in a new construction program, firmly grounded in old ideas, yet slightly different. The Late Bonito phase builders took the notion, developed through the Classic Bonito period, that architecture should reflect elements of Chacoan worldview that were particularly important for social and ritual organization. They formalized these ideas as never before, from the ground up, making symbolic connections to the past order, but reinstating directionality and duality with the placement of new buildings. The new order was based upon the old, but with even more formality and clarity than before, to encourage confidence in its strength.

The new order was based on familiar concepts

and grounded in the social memory of Classic Bonito phase activities and beliefs. A tangible bridge with the old order, represented by Pueblo Alto, lent the new order legitimacy. Directionality, duality, and center place had been important at Chaco for a century or more. McElmo style architecture expresses these ideas, but with some new twists. The reformalization of these old ideas encouraged people to continue to celebrate Chaco as a cosmographic, social, and ritual gathering place. However, the flurry of new construction activity lasted only a generation, perhaps less. The building program failed—in fact, some buildings were never completed—and Chaco never regained its former regional importance as a ritual center. If Chaco was in competition with Aztec during the early 1100s, Aztec won.

Concluding Thoughts

Although we cannot empirically examine a “world-view” or a “sense of place,” we can certainly assume that Chacoans, like contemporary Pueblo peoples, lived in a landscape imbued with meaning. It is important to separate the layers of the palimpsest that comprise the Chacoan landscape, and to think about social transformations and the reasons behind them. The idea of social memory can help us think about the social implications of cyclical or linear references to architectural and ideational elements of the more distant past. As I have argued here, Late Bonito leaders used these ideas to help attract followers and to create a sense of stability and legitimacy in the reformalized world of early 1100s Chaco Canyon.

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