The Chaco World

John Kantner and Keith Kintigh
August 13, 2002

Introduction

From September 25–27, 1999, a dozen archaeologists met at Arizona State University for the Chaco World Conference, one of the topics seminars in the NPS Chaco Synthesis series. Organized by Keith Kintigh, Nancy Mahoney, and John Kantner, the conference brought together many of the archaeologists currently investigating Chacoan great house communities located outside of Chaco Canyon—those entities often referred to as “outliers.” The event was moderated by Steve Lekson and Keith Kintigh, and two outsiders—Tim Pauketat and Dave Anderson—served as discussants. Many of the participants had earlier participated in a symposium at the 1998 SAA Annual Meeting, the proceedings of which were published as Kantner and Mahoney 2000.

Prior to the Chaco World Conference, several of the participants were responsible for assembling a database representing the state of knowledge on outlying great houses and the communities in which they are found. Each scholar was assigned the geographical region that they knew best, and each alleged great house in their region was assessed using a standardized set of variables. Most participants also provided detailed annotated information for each great house community. All of the resulting data were then assembled in a preliminary database that was available for the Chaco World Conference, and it was also used to write position papers for the seminar. Since then, the database has been updated and modified to serve as an online spatial database. In 2001, John Kantner received a grant from the National Center for Preservation Training and Technology (NCPTT) to finish data entry and improve the online interface for the database. The working version is available at http://sipapu.gsu.edu/chacoworld.html.

A smaller group of the participants in the Chaco World Conference recently reworked the original position papers and updated them using the new expanded Chaco World database. These new papers have been submitted for publication together in a special issue of the journal Kiva. Ruth Van Dyke discusses great house architecture, Kathy Roler Durand addresses the function of great houses, Dennis Gilpin considers the great house communities, John Kantner brings these together to discuss the nature of a Chaco “system,” and Keith Kintigh provides a final assessment of the state of knowledge on the Chaco World.

The current contribution, then, is a summary of all of these articles, revised and expanded from Kantner’s Kiva article. Themes that permeated both the Chaco World Conference and the resulting manuscripts include how Chacoan or great house communities are defined; what level of interaction occurred among these communities and between them and Chaco Canyon; and the degree of symbolic and sociopolitical unification across the Chaco World. At the end of this contribution, the Chaco Capstone timeline will be assessed.

Great House Communities

Most scholarship has focused on the community as the basic entity that together form the Chaco World, for it appears that loose aggregations of puebloan households predate the emergence of Chaco patterns. As such, the development of the Chacoan system is arguably more closely associated with developing relationships beyond community borders rather than relationships within communities. This is not to say that substantial changes did not occur at the same time within communities, for clearly they did (e.g., Durand and Durand 2000; Gilpin 2002; Van Dyke 1997a, 1999a). The point is that Chaco was primarily a supracommunity, regional development and not a set of internal changes that happened to occur independently in a similar fashion in every community (see Lekson 1999:37; Van Dyke, this issue).

This proposal of course begs the question of how community is defined, which, as Gilpin (2002) describes, has been more often implicit than explicit in Chaco scholarship. Mahoney has recently noted (2000; see also Kolb and Snead 1997, Varien 1999) that the traditional approach has been to identify household clusters that are separated by comparatively empty spaces, relying on the ethnographic correlate of a community consisting of those people engaged in regular face-to-face interaction. She challenges this definition, pointing out that many of the Puebloan communities identified in this way would not have been demographically stable. Mahoney instead proposes that we identify multiple aggregations that together would have fulfilled a minimal mating network. Such research would no doubt provide additional insight into Puebloan interaction during this time period, and Gilpin (2002) pursues this line of inquiry to show that only 14 great house communities had momentary populations above the 475-person that Mahoney identifies as sustainable. He therefore concludes that Chaco-era community boundaries must have been amorphous, often including multiple habitation clusters.

Although Mahoney and Gilpin highlight important problems with simply using habitation clusters to define communities, two points should be considered when basing interpretations on arguments of demographic sustainability. First, household aggregations that are too small to be demographically self-sufficient will not necessarily recognize that their long-term stability is endangered, and the implied consequences of small mating pools are likely to express themselves very slowly (Kantner 2002), certainly more slowly than
the short community lifespan identified by Gilpin (2002). A second point to consider is that the space that often (but not always; see Gilpin 2002) exists between aggregations must have been maintained for a reason, and the identity likely associated with each of these groups was undoubtedly regarded as important to community members. For this reason, the spatially distinct cluster of habitations can be tentatively regarded as the basic community unit, and Gilpin’s discovery that Chacoan settlement clusters are at least 30 times as densely packed as the surrounding area supports this approach.

If the community is the basic unit discussed in reference to Chaco Canyon, which Pueblo II communities should be considered part of the Chaco World? We can include all communities that have features traditionally associated with Chaco Canyon and Chacoan identity (e.g., Gilpin 2002; Lexkon 1991; Van Dyke 2002). This includes the apparently ubiquitous great house with its inordinately large size, core-veneer masonry, and blocked-in kivas; formal great kivas (although in most cases these cannot be distinguished from their less formal predecessors since excavation is so rare); prehistoric roadways; and Dogoszhi-style ceramics. Other features found in Chaco Canyon and thus often expected to appear in distant Chacoan communities are enclosed plaza areas, earthworks or berms, and tower kivas. This list of features separates these communities from those lacking any material evidence of Chacoan influence, which also did exist during the Chaco era (see Gilpin 2002).

The Chaco World database includes all of these variables except for information on the Dogoszhi style; ceramic data are expected to be added soon. Most of the communities included in the database for which enough information is available include great houses with most of these features (although only a handful have all of them together), providing a useful group to be examined to determine how many communities might have been part of a system and how this system was manifested (Figure 2). As Van Dyke (this volume) identifies, these Chacoan variables do not occur together as a cohesive package of traits, but rather they occur in regional and temporal clusters in which a set of communities share some but not all of the features seen in Chaco Canyon. Core-veneer masonry and low kiva/room ratios at great houses are the characteristics most frequently found in communities whose association with the central canyon is fairly indisputable, such as those in the San Juan Basin; roadways and enclosed plazas are also common. For now, the issue as to what these stylistic features indicate about the integration and interdependence of communities in the Chaco World will be deferred until later (and see Van Dyke 2002). At this point, we have defined what units comprise the Chaco World—communities sharing Chacoan architectural features—although none of the variables are perfectly correlated through time or space.

**Chaco World Interaction**

Chacoan scholarship has generally explored two major sources of data when considering interaction between communities exhibiting Chacoan characteristics: roadways and ceramics. Roadways in particular have served for a long time as an indication that communities were regularly interacting with one another, and they are associated with the majority of great houses in the Chaco World database. Recent research by Roney (1992), Vivian (1997a; 1997b), and Kantner (1997) suggest that the roads found throughout the northern Southwest may not have formed a network connecting communities with one another and with Chaco Canyon (see discussion in Durand 2002). Instead, the majority of roadways may have only served to connect communities with neighboring hamlets or to have directed community members towards nearby landscape features with presumed ideological meaning. These smaller road segments therefore do not represent intense and consistent interaction at a regional level, although they may have formed small local networks in some areas of the northern Southwest (e.g., Till 2001; Till and Hurst 2002).

The fact remains, however, that at least two and perhaps three major roadways with apparent continuity do emanate from Chaco Canyon and cross to edges of the San Juan Basin (Figure 1). Three characteristics of these features merit discussion. First, the intended destinations of these roads remain something of a mystery. Certainly, these roads pass through a number of large communities exhibiting Chacoan characteristics. But the ultimate destinations of these roads do not appear to be those communities; rather, they appear to be directed towards prominent points on the landscape. For example, the South Road, although passing through or near several communities, including Kin Ya’a, almost certainly had the impressive Hosta Butte as its destination (Kantor 1997; Nials et al. 1987). The North Road’s linearity and direction as well as its termination at Kutz Canyon seem more important qualities than any connections it might provide with population centers (Kincaid 1983; Lexkon 1999). The roads were apparently built not to promote regular interaction between communities, but rather to direct regional attention to important points on the landscape (Sofaer et al. 1989).

Were the roads built to access resource areas and funnel these materials to Chaco Canyon or throughout the alleged Chacoan “system”? No known roadway extends to Narborea/Washington Pass, where distinctive chert lithic material and trachyte pottery found in large quantities in Chaco Canyon originated (Cameron 2001; Mills et al. 1997). Similarly, no continuous road reaches into the Red Mesa Valley, the likely origin of some of the chert, obsidian, and petrified wood found in the central canyon (e.g., LeTournou 1997). Snygg and Windes (1998) suggest that the lengthier roads were used for moving construction beams to the central canyon. These are known to have been imported from considerable distances away, a proposal consistent with recent compositional analyses comparing beams from Chaco Canyon buildings with the forests from which they are suspected to have originated (Durand et al. 1999; English et al. 2001). It is interesting to note, however, that no confirmed roadways go to either the San Mateo or to the Chuska Mountains, the two tentatively identified sources for timbers (the compositional studies so far have not sampled forests at the end of the North or South Roads).
The second interesting characteristic of the roads is that the quantities of ceramic or lithic material along roads or associated with roadway features suggest that little travel actually occurred on them. For example, Nials et al. (1987) reveals that herraduras or other architectural features associated with the roadways were mostly devoid of artifacts (see also Obenauf 1980:146). If the roadways were conduits for regional interaction, one might expect that they would show more use than they do. Frequencies of artifact deposition along roadways outside of Chaco Canyon proper (e.g., Windes 1991) should be explored in more depth.

The third and final point to consider in regard to roadways concerns the labor needed to construct and maintain them. Surely, one might propose, the considerable labor required to construct the roads is evidence for regular, regional interaction. Roadway labor deserves more attention, but a few points might provide insight into this issue. First, even the longer roadways such as the South Road have their most substantial manifestations along those segments located in or near communities; most roads disappear altogether in areas away from populations (Nials et al. 1987). Second, despite the ramps and stairways that are emphasized in the popular literature (e.g., Gabriel 1991), most identified roadways are barely recognizable linear segments with ephemeral or nonexistent berms. Finally, the roadways do not appear to have been consistently maintained after they were built; only one of the road cross-sections reported in Nials (1983) shows evidence of maintenance, and this was apparently a one-time event. These points suggest that the construction of the longer roadways is not necessarily evidence of the regularity of interaction between Chacoan people, but instead is more consistent with sporadic interaction between those local villagers who formalized the routes closest to their communities and those who suggested that such lengthy roads to distant features of the landscape be constructed.

The exchange of material goods between Chacoan communities is a research topic that has received substantial attention and that could provide evidence for the regularity of regional interaction (Cameron and Toll 2001). Toll’s studies (1985, 1991, 2001; Toll and McKenna 1997) of the movement of ceramics across the San Juan Basin shows that materials were flowing into the central canyon, with the areas where these materials originated changing over time. This evidence is substantiated by studies of lithic (Cameron 1984, 2001) and even faunal (Akins 1985) remains. Certainly, these changing frequencies indicate interaction between Chaco Canyon great houses and specific outlying areas at different points in time. However, the mechanisms for this interaction and its regularity remain to be demonstrated. A common proposal is that the canyon hosted large, periodic ceremonial events during which materials were brought in by pilgrims and perhaps even ritually destroyed (Judge 1993; Stoltman 1999; Toll 1985, 2001; Windes 1987), but this interpretation has recently been challenged (Wills 2001). Many questions regarding material flow into Chaco Canyon remain unanswered, but it is informative to note the lower frequencies of imported materials and evidence for local production identified at the smaller habitations in Chaco Canyon (Toll and McKenna 1997; Windes et al. 2000); materials imported into the canyon are oriented to the great houses.

Almost all studies of Chacoan exchange, including Van Dyke (1997b), Kantner et al. (2000), and Betancourt et al. (1986), demonstrate that while material was flowing into Chaco Canyon, little of it was flowing back out. Neither was material bypassing Chaco and moving directly between different areas of the Colorado Plateau; the vast majority of ceramics in most Chacoan community are local (e.g., Duff 1994; Gilpin and Purcell 2000; Glowacki et al. 1997; Huntley et al. 1998; Neff et al. 1993; Neitzel and Nials (1983) shows evidence of maintenance, and this was apparently a one-time event. These points suggest that the construction of the longer roadways is not necessarily evidence of the regularity of interaction between Chacoan people, but instead is more consistent with sporadic interaction between those local villagers who formalized the routes closest to their communities and those who suggested that such lengthy roads to distant features of the landscape be constructed.

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Results of a recent compositional analysis of ceramics around Lobo Mesa to the south of Chaco Canyon (Kantner et al. 2000) suggest that the physical boundaries surrounding the San Juan Basin substantially limited interaction over a wider area. This conclusion is consistent with the overall scarcity of materials recovered from the San Juan Basin that originated in outside areas. In general, the exchange of utilitarian materials along the edges of the basin seems to have been heavily localized, with each community producing its own pottery and lithic tools and then only trading them relatively short distances as facilitated by topography (e.g., Gilpin and Purcell 2000; Kantner et al. 2000; Van Dyke 1997b; Windes et al. 2000). Only Chaco Canyon was unique in acquiring substantial quantities of materials from considerable distances away.

Valuables such as turquoise or copper bells ultimately came to Chaco Canyon from much further away, although the mechanisms by which they were brought to the canyon are unknown. Lekson (1999, 2000) has recently emphasized the role of exotic items, especially those originating in Mesoamerica, for stimulating sociopolitical developments in the Southwest beginning with Chaco Canyon. Lekson’s interest is in relationships between Chaco and Paquimé, and he is therefore not explicit in how these rare goods were used in the region except to note that they contributed to a “political-prestige economy” (Lekson 1999: 54–55). If a prestige-goods economy did exist in the northern Southwest during the 11th and early 12th centuries, the fact that the vast majority of these items have been found in Chaco Canyon but not elsewhere confirms that the interaction between Chaco Canyon and the surrounding communities was not regular or systemic.

One final source of information can provide us insight into the intensity of interaction across the Chaco World. Tower kivas have often been described as elevated positions for relaying signals from great house to great house (Wilcox 1999*). The Chaco World database includes data on tower kivas, which are defined as elevated kivas that project one or more stories above the rest of the great

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house structure. Intriguingly, a query of the database reveals that 9 of the 10 tower kivas are approximately 40 km apart from one another, with little overlap. This pattern is indeed suggestive of their use as signaling stations. However, a recent GIS-enhanced study conducted on the intervisibility of Kin Ya’a and Haystack revealed that, even if intermediate relaying stations existed, the tower kivas were not built to communicate with one another. In fact, while their elevated positions greatly enhanced visibility of the immediate community area, their extra height did not increase long-distance visibility at all (Kantner and Hobgood 2002).

Chaco World Interdependence

The issue of interdependence is one that hearkens back to the redistribution models of the 1970s and 1980s (e.g., Judge 1979; Schelberg 1984). These models, which generally propose that the regional relationships centered on Chaco Canyon were formed to share highly variable food surpluses, continue to receive attention today. Lekson (1999:36–37), for example, proposes that redistribution still explains the developments within the San Juan Basin, especially during the initial stages. The classic model of redistribution is that materials flow into a center, where they are stored, and then taken back out to the periphery as needed. No materials found in communities along the edge of the basin, however, are distributed in such a way as to suggest that redistribution took place (see also Durand 2002). As mentioned earlier, virtually all pottery and lithics found in each peripheral community are local products. Although Chacoan communities no doubt interacted with their immediate neighbors (e.g., Kantner et al. 2000; Till 2001), they do not seem to have participated in or needed a regional economy drawing upon Chaco Canyon. And why should they? Chaco Canyon certainly had no material resources needed by the outlying communities, almost all of which were situated in comparatively resource-rich areas.

An alternative that has been proposed is that Chaco Canyon served as a regional exchange facilitator, with people from various outlying areas bringing their food and perhaps other crafts for exchange in places such as Pueblo Alto’s plaza (Stoltman 1999; Windes 1987). Such exchange, however, must have been delayed reciprocal or generalized exchange, for, as discussed earlier, there is no evidence of material moving among disparate outlying areas of the San Juan Basin. If one group was bringing in surplus maize, for example, they apparently got nothing in return except for the hope that someday their generosity would be reciprocated. And presumably those who were in need of food would have brought their own empty pots or baskets with them for transporting the materials back out, for there is no evidence of the movement of pottery from area to area within the Chacoan world. Overall, all scenarios of redistribution seem to rely on highly improbable sociopolitical relationships that have no apparent parallel in the ethnographic literature. Why would a community such as Dalton Pass, situated near a number of springs and a major wash draining Lobo Mesa, want to participate in a redistributive system whose members presumably included Greenlee or Grey Hill Springs, which were located in much more marginal environments? What economic advantages would Dalton Pass have received?

If communities exhibiting Chacoan characteristics were not economically interdependent, could they have been demographically interdependent? Is it possible that Chaco Canyon emerged as a center where social ties among distant communities could be established? As noted earlier, Mahoney (2000) has recently proposed that most Chacoan communities as they are traditionally defined were not demographically sustainable because their populations were too small for maintaining sufficient mating networks. Perhaps the canyon provided opportunities for forming long-distance social networks. An important issue, however, is whether this kind of interaction could possibly have been intentional (Kantner 2002). It simply seems improbable that interaction between communities exhibiting Chacoan characteristics and with Chaco Canyon itself would have formed intentionally to expand social and mating networks, especially since the consequences of inadequate mating networks are arguably not readily recognizable to people over the few generations represented by Chaco’s rise and fall. Any demographic interdependence that may have developed in the region seems likely to be unrelated to what the Chaco entity was and why it developed. Of greater relevance to most models of Chacoan development is the failure to identify any evidence of economic interdependence.

Chaco World Unification

The discussions above suggest that the Chaco World was not unified; the communities exhibiting Chacoan characteristics do not appear to have formed a single consolidated and integrated unit, a conclusion reached by a number of scholars (e.g., Fish 1999:49–50; Wilcox 1993, 1999; contributors to this volume). Some communities were firmly connected to Chaco Canyon via roadways, while other more distant communities were vaguely emulating a few of the patterns seen within the San Juan Basin (see contributions in Kantner and Mahoney 2000; Durand 2002; Van Dyke 1999b, 2002). Most communities fall somewhere in between. Overall, the impression is decidedly not of a unified whole, but rather a disconnected heterogeneity.

In discussions of the “wholeness” of Chacoan patterning, emphasis is placed on shared stylistic conventions such as great house form, roadways, and Dogoszhi-style ceramic decoration. Debate on the former is perhaps the most problematic, for two scholars can look at the same architecture and come to different conclusions regarding the implications for the unity of Chacoan style. The majority of “outlier” scholars emphasize diversity rather than similarity in great house form (e.g., Gilpin 2002; Hurst 2000; Kantner 1996; Lekson 2000; Durand 2002; Van Dyke 2000). Despite this architectural variability, however, Durand (this volume) does identify patterning in the material culture recovered from great houses that appears to be shared across the Chaco world. Her research on avifauna (Roler 1999), as well as her discussion of artifacts of likely ritual use, indicate that great houses everywhere seem to have served ceremonial functions. Whether rare painted wooden artifacts, turquoise ornaments, or raptorial birds, these items are recovered in greater
quantities from great houses as compared with the more diminutive domestic structures surrounding them. Durand reasonably interprets this as evidence for the primarily ritual function of all Chacoan great houses, although she does note that those in Chaco Canyon—especially Pueblo Bonito—contained a substantially greater quantity of ritual artifacts than found anywhere else in the northern Southwest, while the frequencies of these items found in outlying communities are quite variable. This suggests that great houses were definitely part of a shared cultural pattern, but the degree of unification represented by these patterns is questionable due to their highly variable expressions.

The Dogoszhi ceramic style is so standardized compared to its predecessors, such as Red Mesa, that it too seems to reflect some level of symbolic unity between Chacoan communities. Even in this case, however, sufficient variability exists in the Dogoszhi style to allow for the creation of community-based symbolic identity; differences between hachure spacing, line width, and framing line thickness appear to distinguish at least some neighboring communities from one another (Kantner 1999; Kantner and Sebastian 2002).

Still unknown is if the distinctive “Chacoan” patterns and styles emanated from Chaco Canyon. Based on currently available dates (Windes and Ford 1996), the great house architectural tradition appears to have originated in the canyon, and the Chaco World database confirms this by showing that the earliest great houses outside of Chaco Canyon were located close to the canyon (Figure 3; Gilpin 2002). Roadways are so difficult to date that documenting their origin is not yet possible, although their greater formality and size in areas within and near Chaco Canyon suggests their origin there (Vivian 1997b; Windes 1991). The origin of Dogoszhi-style hachure and the sequence of its spread are also unclear, although its appearance in Chacoan contexts is rather abrupt (Windes 1984). The most relevant issue here, however, is whether the stylistic similarities across a wide area are indicative of a high degree of sociopolitical unity. Most Chaco World Conference participants argue that they are not, concurring with other scholars (Toll and McKenna 1997:211–214) who emphasize that these patterns reflect no more than a low but important degree of shared identity that different communities exhibited to varying degrees, similar in many ways to other religions with powerful spiritual centers but a degradation in symbolic fidelity and sociopolitical allegiance as space and time increase. Research in this area, however, is obviously still too incomplete for drawing confident conclusions regarding the degree of unification in the Chacoan world.

Temporal Patterning: The Chaco Capstone Timeline

The evidence, tentative as it is, suggests that the first extra-canyon public structures in the San Juan Basin appear at places like Willow Canyon and Padilla Well in the late AD 700s, well before true “Chacoan” features emerge in the canyon itself. These are above-ground spaces with minimal architecture, but they are obviously different from proto-great kivas. But the distinctive Chacoan traits first emerged in Chaco Canyon and apparently supplanted the earlier public structures. At Padilla Well, for example, eventually core-veneer masonry and an enclosed plaza would be included, but, as in the case with virtually all outlying great houses, when these features were added is unknown.

Chacoan features were elaborated in areas immediately surrounding Chaco Canyon sooner than in other areas. The features then appear to spread to the southern San Juan Basin in the late AD 920s to 940 (Figure 3). As Vivian has suggested (1990), the southern area probably had historical and social ties to Chaco Canyon, facilitating the sharing of the Chacoan patterns. Interestingly, this is during a down-turn in climatic conditions that followed the good rainfalls at the turn of the tenth century; the appearance of these earliest outlying great houses is also not correlated with the shift from low to high spatial variability. On the surface at least, this is consistent with views that see the development of the Chaco World as a direct response to spatial instability in horticultural success, for so-called “outliers” first appear well before the paleoclimatic record indicates high spatial variability.

After this point in time, the Chacoan features apparently spread relatively quickly according to geography: down the Rio Puerco and Rio San Jose drainages in the late AD 940s, up the Chuska slope by the turn of the eleventh century and perhaps earlier, and into the San Juan area mostly in the mid-1000s and later. Areas along the inner edge of the San Juan Basin exhibit Chacoan patterns first; communities well outside of the basin tend to build great houses much later and with less accurate replication of Chacoan features (Figures 2 and 3; see also Gilpin 2002; Van Dyke 2002). Big bursts of great house construction in outlying communities in all areas occur in the latter half of the eleventh century, such that by the turn of the twelfth century, the greatest number are actively being used. Again, the Chaco Capstone timeline shows that this is a period of relatively high rainfall that again follows a few decades of less favorable conditions.

The frequency of goods imported into Chaco Canyon show some rough correlations with the appearance of great houses in outlying areas. According to the Chaco Capstone timeline, the increase in ornaments of non-local materials, especially shell and turquoise, seem to increase in the same decades that great houses were built in areas south of Chaco Canyon; unclear is whether this is accompanied by the import of basic communities such as pottery from these areas. Narbona Pass chert is imported in small quantities at about the same time that great houses appear on the Chuska Slope; in the following decades, both the number of great houses in this area and the frequency of the chert in Chaco Canyon increase. Interestingly, the import of Chuskan pottery did not reach a height until much later, in the early AD 1100s when outlying great houses were just beginning to be abandoned. Studies of the movement of materials into Chaco Canyon (e.g., Kantner et al. 2000) suggests that communities beyond the San Juan Basin were not as closely tied with the central canyon, a point confirmed by other Chaco World Conference contributors and the Chaco Capstone timeline.
Similarly, in the Chaco Capstone timeline, labor expenditures in canyon construction also appear to roughly correlate with the appearance and use of great houses in outlying communities. The first great houses to the south on the Chaco Slope and the Red Mesa Valley, for example, appear during the first peak in construction in Chaco Canyon in the AD 900s. The peak of great house use in these areas also correlates with the AD 1050s labor expenditures in the canyon—this is also when Chacoan features are most frequently seen in new great houses built in all outlying areas (including the transition from Red Mesa B/W to Gallup B/W). The final frenzy of canyon construction at the turn of the twelfth century occurs when the most outlying great houses in the entire Chaco World were in use.

Great house abandonments begin as early as the tenth century, but the frequency is clearly greatest in the first half of the twelfth century, perhaps as a result of the sustained dry conditions at the turn of the AD 1100s. Brief as this drought was, it was worse than earlier ones and it occurred when Chaco Canyon was extracting the greatest amount of resources and labor from the Chaco World. In any case, abandonment occurs nearly in the reverse order of great house construction (Figure 4). As in all discussions of outlying great houses, however, the lack of fine temporal control makes all of these conclusions tentative.

Concluding Comments

The patterns in imports and labor in Chaco Canyon revealed in the Chaco Capstone timeline are consistent with archaeologists (e.g., Judge 1989, 1993; Malville and Malville 2001) who see the canyon as becoming increasingly important as a religious center as time passes. However, it seems unlikely that Chaco ever became strongly hegemonic in the sense that it was able to control activity in the distant Chacoan communities, and this is revealed in the limited range of basic commodities imported to the canyon (contra Lekson 1999, 2000; Wilcox 1993). The canyon instead seems to have been occasionally visited by members of some outlying communities bearing gifts or offering services such as labor. Of course, outlying great house communities must have engaged with Chaco Canyon in ways that also benefited them. Participating communities might have reaped the benefits of occasional large-scale social occasions, an extended social network, and perhaps even enhanced observations of seasonal changes or farming schedules (Malville 1991; Sofaer and Sinclair 1987). Judging by the patterns discussed above, the extent of these mutual relationships and shared ideology was apparently strongest between Chaco Canyon and communities within the San Juan Basin proper, especially those to the south and west; these are the areas where Van Dyke’s analysis of architectural data in the Chaco World database (this volume) identifies a lack of great kivas. Durand’s (this volume) discussion of competitive emulation and symbolic entrainment is consistent with this view of different areas of the Chaco world having tied themselves to Chaco Canyon in a variety of ways, to achieve a number of different ends both for canyon leaders and their counterparts in outlying communities.

The assessments offered in this contribution are of course preliminary and are not completely elaborated here. The main conclusion is that the group of communities exhibiting Chacoan features outside of Chaco Canyon were interacting with the canyon in varying ways. One could propose that at least those communities within the San Juan Basin and surrounding highlands were somewhat regularly interacting with one another and with Chaco Canyon, thereby forming an interdependent, systemic socioeconomic entity. However, although the movement of pottery and timber is always emphasized in the literature on Chaco Canyon, this does not as clearly correlate with activities in outlying areas. The import of substantial quantities of Chuskan pottery to Chaco Canyon, for example, occurs long after great houses were established on the Chuska Slope. Instead, the trend in great house construction in outlying communities is that their appearance is most closely correlated with the movement of prestige goods, perhaps including valuable cherts such as Narbona Pass. And bursts of these interactions seem to consistently appear during a period of relatively good rainfall that follows a number of years of unstable conditions. All of these patterns, tentative as they are, appear to be more consistent with models that see the Chaco “phenomenon” as emerging not so much to contend with the marginal environment but rather as part of a more politicized era. A working model might consider how aspiring leaders in the canyon and in the outlying communities were dependent on each other for continued legitimization of their local activities, but the sustainability of the communities themselves arguably were not dependent on these interactions.
Figure Captions

Figure 1: Great house architecture included in the Chaco World database (http://sipapu.gsu.edu/chacoworld.html). Great house names in italics are tentative additions to the database, pending additional information.

Figure 2: Number of Chacoan features identified at great houses for which complete data are available in the Chaco World database. Only those three features most often associated with Chacoan architecture are considered: core-veneer masonry, multiple stories, and blocked-in kivas. Due to the intensity of research within the San Juan Basin and immediately surrounding areas, more complete data are available there than for the more distant parts of the Chaco World.

Figure 3: Estimated construction dates for the great house architecture in the Chaco World database. Only those great houses for which dates are available are included in this figure.

Figure 4: Estimated abandonment dates for the great house architecture in the Chaco World database. Only those great houses for which dates are available are included in this figure.
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