

In Search of Chaco

New Approaches to an Archaeological Enigma

Chaco's Golden Century

W. James Judge

In the hundred years between 1030 and 1130 CE, residents of the central San Juan Basin of northwestern New Mexico expended almost unbelievable human energy to create a cultural landscape of epic proportions, a truly enduring architectural masterpiece. They constructed massive buildings, great kivas, formal stairways up cliffs and mesas, a system of roads, and complex irrigation systems. Then, shortly after 1130, this unprecedented burst of human endeavor faded away almost as quickly as it had begun. These hundred years were Chaco Canyon's golden century, a period virtually unmatched elsewhere in the pre-Columbian Southwest.

Chaco Canyon is a desolate place by modern standards, seemingly devoid of most of the basic resources necessary to build the complex society that emerged there—which makes that accomplishment even more perplexing. Equally astounding is the rapidity with which the events took place. In 1030, only three structures were prominent on the Chaco Canyon landscape. Seventy years later, the canyon was home to a dozen massive buildings (“great houses”), each with hundreds of rooms. It boasted two separate great kivas, an extensive canal irrigation system, and a network of formal roads, ramps, and stairways connecting the great houses. Further, Chaco Canyon served as a ceremonial center linking possibly two hundred outlying sites dispersed throughout the San Juan Basin.

Archaeologists and visitors alike crave an explanation of the Chaco phenomenon. One way to attempt to explain it is to ask a series of questions

that commonly come to mind when people visit Chaco Canyon and examine its archaeology.

Why Did Complexity Emerge in Chaco Canyon and Not Elsewhere?

An unusual configuration of environmental features made Chaco Canyon a rarity in the San Juan Basin. Reconstructions of the ancient climate, based on analyses of tree-ring patterns, fossil pollen, and the contents of packrat middens, indicate that the central San Juan Basin has been dry—with an average of 8.5 inches of annual precipitation—for several thousand years. Yet within the basin, Chaco Canyon is a geological anomaly. It runs generally east-west, exposing a set of cliffs in the bedrock sandstone several hundred feet high. The cliffs are especially pronounced on the north side of the canyon, where they are capped with an expanse of bare slickrock.

A series of side canyons, or *rincones* (“rincons” in English usage), channel runoff to the main canyon floor. The bottoms of the rincons and the canyon itself are level and thus were suitable for irrigation farming by the Chacoan people.

Another factor is that the canyon lies just west of Chacra Mesa, the highest mesa in the central San Juan Basin and an area rich in plants and animals that people could efficiently exploit. At its western edge, the canyon joins Escavada Wash, where the water table surfaces to provide even greater agricultural potential. Concentrated at the center of this near desert, then, Chaco Canyon's unique diversity of geological and biological resources made it a relative oasis in which a complex society had an opportunity to emerge.



Figure 1.2. Chaco Canyon from the air, looking northwest, with Fajada Butte in the foreground.

Why Did Chaco Flourish in the Eleventh Century and Not Earlier?

In the eleventh century, an increase in population and a combination of environmental factors converged to create, for the first time, the conditions necessary for Chaco Canyon's florescence. First, population had been gradually increasing in the central San Juan Basin since the advent of agriculture and village life in the sixth and seventh centuries. In the 900s CE, it was augmented by immigrants from the San Juan River region, over one hundred miles to the north. By the early 1000s, many large Pueblo settlements were dispersed throughout the basin, providing a population threshold for the emergence of complexity.

Second, the recent discovery of a former natural sand-dune dam just above the confluence of the Chaco and Escavada Washes suggests that sufficient water may have been impounded to create a marsh-like wetland at the west end of Chaco Canyon (see chapter 2). Together with an aggrading streambed, the dam would have raised the water table in the

canyon sufficiently to increase the agricultural potential there even more.

The years from 990 to 1030 CE were ones of generally favorable precipitation. In the late 900s, taking advantage of the relatively bountiful environment and perhaps in order to store surplus farm produce, Chaco's inhabitants erected the canyon's first three great houses: Peñasco Blanco, Pueblo Bonito, and Una Vida. In addition, it is possible that canyon residents developed irrigation canals and gridded fields in the early 1000s to capture slickrock runoff during intense summer storms. Of the twenty-eight rincons adjoining the canyon, seventeen are known to have had irrigation systems, making Chaco one of the few places in North America in which people constructed extensive canal irrigation networks based solely on precipitation runoff. Thus, a combination of early-eleventh-century environmental factors and a general population increase set the stage for the emergence of the complex sociopolitical system that was to define Chaco's florescence.



Figure 1.3. Chetro Ketl, with the great kiva in the foreground.

What Happened in the Canyon to Create the Chaco Phenomenon?

Scholars have referred to the extraordinary developments that took place in Chaco Canyon as the “Chaco phenomenon.” Archaeologists calculate that during the eleventh century, massive amounts of human energy—more than four hundred thousand person hours—were invested in construction in the canyon. The Chacoans built four new great houses—Hungo Pavi, Chetro Ketl, Pueblo Alto, and Pueblo del Arroyo—each according to a similar “D-shaped” architectural plan. They constructed two stand-alone great kivas, now known as Casa Rinconada and Kin Nahasbas, as well as several great kivas inside the plazas of existing structures. They engineered roads that connected the canyon great houses, and in some places they built dirt and masonry ramps and formal staircases to ascend the cliffs.

Chacoan researchers debate the motivating force behind this labor investment. Some have suggested that a ritual “sodality” emerged to integrate the diverse groups living within the canyon and its sur-

rounding areas. Sodalities are sociopolitical entities that draw their membership from kin-based organizations such as lineages and clans but are not themselves based on kinship. As such, they cut across existing social units and bind together diverse elements of a society. Perhaps a common belief system, manifested in shared rituals, helped the Chacoans cope with their challenging environment and inspired them to build ceremonial centers, just as other people around the world have built temples, cathedrals, and mosques. It might also have served to offset potential conflict among diverse cultural groups in the San Juan Basin. The leaders of this society might have been priests who controlled the organization through their knowledge of religious rituals.

Other scholars think that one or more formal sociopolitical entities called chiefdoms evolved in Chaco, with leadership based more on social rank or status than on ritual knowledge. In such chiefdoms, the power base of the leaders, or chiefs, can be seen in the accumulation of material wealth. This wealth can be envied and challenged and leads to increased

competition both within and among chiefdoms. Archaeologists question this model of Chacoan complexity, noting that except at Pueblo Bonito, little evidence of such wealth has been uncovered in the excavated Chacoan great houses. Further, a political system that fostered competition among aspiring leaders would have been generally less capable of integrating the dispersed and diverse communities of the San Juan Basin. Religious authority, on the other hand, encompasses an entire belief system and so is more inclusive and integrative. Virtually all researchers recognize a strong ritual component to Chacoan authority and view the Chacoans as having formed a regional center with a compelling and integrating body of ceremony at its core.

Why Were the Chacoan Great Houses Built, and What Were They Used For?

The function of the Chacoan great houses has long puzzled researchers. Of the hundreds of small sites excavated by archaeologists in the Southwestern United States, most are clearly residential. They contain fire pits, storage and sleeping areas, and places to do household work. Chacoan great houses have few such features and few artifacts. As a result, archaeolo-

gists are now rethinking earlier interpretations in which they viewed great houses as residences for large numbers of people. Previous population estimates of more than ten thousand for Chaco Canyon are being reduced to fewer than two thousand. This revised view suggests that the great houses might not have been primarily residences. But if they were not, and if they did not house a large population, why were they built?

One clue might be found in the manner in which great houses were designed and constructed over time. As Chaco Canyon was emerging as a ceremonial center, perhaps the great houses were planned as monumental architectural expressions of Chacoan ritual. For example, Chetro Ketl, the largest of the D-shaped structures in the canyon, with three stories and some five hundred rooms, was built in distinct stages over an eighty- to ninety-year period in the eleventh century. Without written records, how did its builders adhere to its original architectural design throughout decades of construction? Perhaps the foundation for the entire structure was laid at the outset as a kind of master plan to guide the generations of workers who followed. The width of the foundation could have served to project the number



Figure 1.4. Reconstruction of Chetro Ketl by Robert Coffin, about 1930.

of stories to be constructed in later building stages. The maze of rooms found in the depths of such massive sites may have changed function as the building rose, ultimately serving as a structural support for the entire building. In this view, Chaco was at once a ceremonial center and a place of ritual architecture—a dramatic stage, as it were, for all to see and appreciate.

How Did the Chaco System Function during the Golden Century?

In the latter part of the eleventh century, Chaco Canyon reached the peak of its development as the architectural and ceremonial center of the San Juan Basin. Rainfall was generally above average from 1050 to 1080 CE, and the runoff irrigation system was probably producing sufficient crops to feed both residents and visitors to the canyon. During this time, residents of the San Juan Basin traveled to Chaco periodically to conduct ceremonies and to confirm their allegiance to the ritual system that served them well in their outlying settlements. A small group of priests may have resided in each canyon great house, which might also have housed pilgrims and served as storage places for ritual paraphernalia.

Particular groups living outside the canyon might have supplied the workforce to construct certain great houses there. Workers engaged in such construction, as well as in the building of great kivas and other public works, might have been housed in the small pueblos on the south side of the canyon, where the resident farmers lived. When their construction services were no longer needed, workers would have returned to their permanent settlements outside the canyon. Those making pilgrimages into the canyon might have contributed specific ceremonies to the mix and been supplied with seed corn or other useful goods for their return. The permanent canyon population, then, might have consisted of relatively few priests with authority over ceremonies and a limited number of farmers and maintenance workers. Of course, this population must have swelled during pilgrimage times and major construction episodes.

Constituents of the Chacoan ritual system living in the greater San Juan Basin and beyond probably came from varied cultural backgrounds and spoke different languages. Certainly, diverse peoples had

lived there earlier, in Archaic and Basketmaker times. This diversity might have been reflected in the ownership of great houses and control of traditional ceremonies in the canyon. Again, the encompassing ritual that emerged in the early eleventh century might have integrated such factions and helped keep the peace. The same integrative capability might also have reinforced economic networks designed to redistribute the scarce and unequal resources of the San Juan Basin.

How Big Was the Chacoan System?

As many as two hundred great-house communities in the San Juan Basin display Chacoan characteristics, though they vary considerably in size, dates of occupation, and architecture. Not all have great kivas, and only a small number have formal roads nearby. Consequently, the size of the system integrated by Chacoan ritual at any given time is difficult to determine. Estimates range from thirty thousand to forty thousand square miles—an area about the size of Portugal. As primary components of the Chacoan system, outlying great houses might themselves have served as ritual centers for their surrounding Pueblo settlements. Persons of authority who lived in them might have organized periodic labor excursions and religious pilgrimages to Chaco Canyon, contributing to construction and ceremony there and confirming their affiliation with the larger ritual alliance.

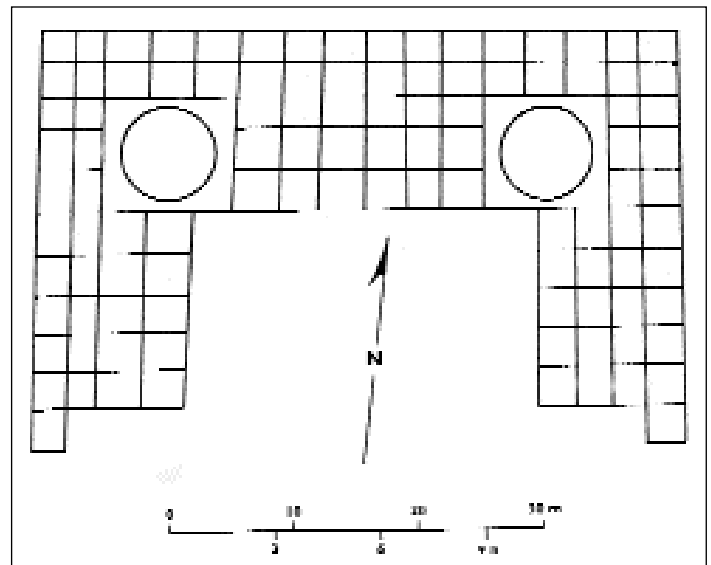


Figure 1.5. Plan of Wijiwi, constructed in the 1100s. Note the small, compact rooms typical of late Chacoan great houses.



Figure 1.7. Typical desert terrain of the central San Juan Basin.

Why Did It Collapse in the Early Twelfth Century?

Because they depended on cultivating crops in an arid land, the Chacoans likely focused much of their ceremonialism on appeals for moisture. During the very late 1000s, a downturn in precipitation in the San Juan Basin must have contributed to major changes in the Chacoan system and stimulated ordinary Chacoans to seriously question the efficacy of the rituals being performed by their priests. Further, increasingly large influxes of visitors, drawn to the canyon on pilgrimages or work details, might have taxed the area's fragile environment to its limit. Perhaps in the Chaco phenomenon's successes were sown the seeds of its demise. Around 1100, the leadership may have decided to relocate the ceremonial center north to sites along the San Juan River and its tributaries, where the great houses of Salmon and Aztec were already under construction.

Following this shift, the early years of the twelfth century saw a definite improvement in the climate. This may have been the reason for new construction in the canyon, which by then had become ancillary to the new Aztec-Salmon center. Those left in Chaco constructed new great houses such as Kin Kletso and Wijiji in a different architectural style, resembling structures to the north in the Mesa Verde area.

Unlike the earlier canyon great houses, these were erected in single building seasons. They also have a more residential than ritual appearance and may have been the homes of those who chose to remain in the once great ceremonial center. Regardless, the climate again turned bad after 1130, this time initiating one of the most severe and enduring Southwestern droughts on record—almost fifty years of below-average precipitation. As the twelfth century progressed, many great-house occupants, including those in Chaco Canyon, moved away from their homes.

In retrospect, one might regard the extraordinary construction in Chaco Canyon as a noble experi-

ment in the adaptive potential of human society. Considering the canyon's relatively bountiful environment, it is understandable that it became the economic, social, and ritual center for the people of the San Juan Basin. Given the harsh environment of the basin as a whole and the diversity of its people and customs, one might expect social tensions and conflict to have arisen among disparate groups, and probably they did. Hallmarks of Chacoan expression, the elaborate social system and religious rituals that emerged would have served to integrate the people and contain such conflict. The extraordinary accomplishments that resulted endure today as central facets of the modern Pueblo world.

W. James Judge headed the National Park Service's Chaco Project from 1977 to 1985 and was coeditor of *Chaco and Hohokam: Prehistoric Regional Systems in the American Southwest*. His current interests include the electronic publication of archaeological research materials. He is an emeritus professor of anthropology at Fort Lewis College in Durango, Colorado.

Excerpt from
In Search of Chaco: New Approaches to an Archaeological Enigma
Edited by David Grant Noble
© 2004 School of American Research. All rights reserved. Copying and/or distributing this excerpt is strictly prohibited without written permission from SAR Press.
www.sarpress.sarweb.org