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Exploring Zuni Origins

David A. Gregory, Desert Archaeology, Inc.

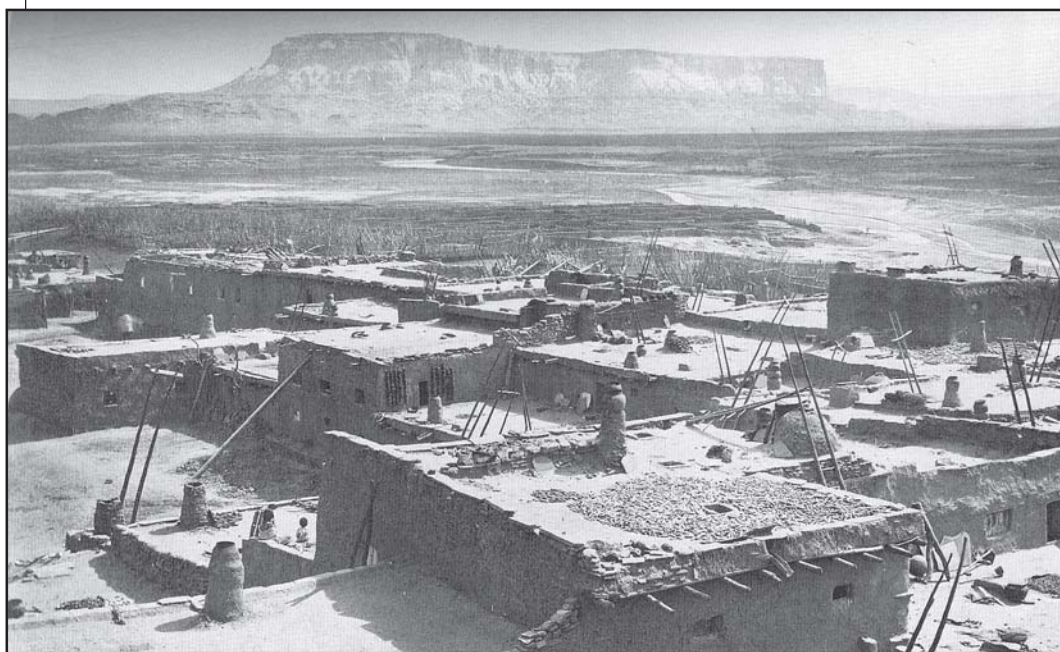
David R. Wilcox, Museum of Northern Arizona

AMONG THE NATIVE PEOPLES of the American Southwest and Mexican Northwest are the Zuni Indians, a Pueblo group numbering about 12,000 people who speak a unique language. Today, they live primarily in and around the Pueblo of Zuni, New Mexico, which they regard as the Middle Place long sought after by their ancestors (see page 4). Zuni was a focus of early anthropological research, and the photographs taken at Zuni Pueblo in the late 1800s have shaped public imagination about Pueblo life in the Southwest.

Based on work they did in the Little Colorado River Valley in the 1950s and 1960s, Paul S. Martin and John Rinaldo of the Field Museum of Natural History, Chicago, had proposed that the archaeologically defined Mogollon culture may

have been ancestral to the modern Zuni. Following their lead, we reasoned that a specialized Mogollon adaptation to the highlands of Arizona and New Mexico may have resulted in the kind of geographic and social isolation that resulted in the differentiation and maintenance of the Zuni language. Initially, we suggested that Zunian may have been restricted to “sky island” settings above 6,000 feet in elevation, though we now believe the language may have been spoken over a significantly larger region.

These ideas provided an important baseline for a



Multi-storied, densely clustered architecture at Zuni Pueblo in the 1880s.

group of scholars who came together at an advanced seminar in October 2001. There was optimism that combining methods and insights from the four subfields of anthropology—archaeology, linguistics, cultural anthropology, and physical anthropology—could provide stronger results than a strictly archaeological approach. When linguist Jane Hill revealed at the seminar that the linguistic evidence pointed to the Zuni language’s differentiation at least 7,000 to 8,000 years ago, both the time frame and the geographic scope for the research efforts of the seminar participants were greatly expanded. Consequently, an interest in Zuni origins can refer to multiple processes that operated on different temporal and geographic scales: the initial differentiation and subsequent maintenance of the Zuni language; the emergence of an archaeologically or historically recognizable ancestral cultural entity; or, the modern Pueblo community of Zuni and its antecedents.

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Today, the Pueblo of Zuni extends broadly along the margins of the Zuni River, but it is still focused on the ancient Pueblo community buildings from many centuries ago.

mented in the Zuni area. Michael Diehl explores the Mogollon concept and reviews archaeological evidence of either isolation or the appearance of a new group in the region. Like Matson, Diehl comes up with no firm conclusions, but feels that he has reduced the total number of possibilities.

Next, Barbara Mills and Dean Wilson look at the ways in which ceramics allow insights into patterns of exchange and migration. Decorated pottery is one means by which Puebloan groups expressed

This issue begins with Jane Hill's explanation of the implications of the Zuni language as a linguistic isolate. She makes an important observation that evidence of the social boundaries that must have played a role in maintaining Zunian as a linguistic isolate may be visible in the archaeological record. Many of the authors in this issue address this point in their articles.

T. J. Ferguson initiates the discussion with a review of Zuni traditional history. He notes that this oral history has developed principally over the past millennium, and he argues that the Zuni evidence suggests the merging of at least two groups to become the historical Zuni.

The next two articles provide a broad context for the discussions that follow. David Gregory, Fred Nials, and Jeffrey Dean take a very long view and consider changes in environmental conditions that might have affected ancient populations of Zunian speakers over time. Jeffery Clark reviews refinements in archaeological methods for tracing groups with "enduring cultural traditions through time and space."

R. G. Matson uses a process of elimination in his quest to assess where the Ancestral Zuni population was located during the Archaic period (5500 B.C. to roughly 500 B.C.). Then, Jonathan Damp summarizes information about early irrigation canals and maize that have been docu-

their cultural identity; another was through petroglyphs and pictographs, which are discussed by Polly Schaafsmas and Jane Young. The rock art medium revealed participation in a broad Puebloan ideological realm with few indications of linguistic boundaries.

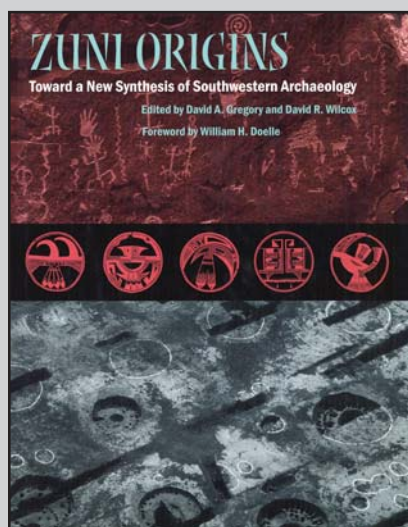
In the following article, Laurie Webster considers both the types of raw materials used and the technology of weaving as she examines evidence for a distinctive signature in the perishable materials of the region, and Arthur Vokes traces patterns in the distribution of four rare classes of material culture that are good indicators of long-distance exchange and the potential role of Zuni in that exchange.

Keith Kintigh uses information from extensive archaeological surveys and focused excavations at Zuni to document changing organizational strategies and settlement sizes from A.D. 950 to 1680. Then, taking a larger view, David Wilcox, David Gregory, and Brett Hill employ the extensive Coalescent Communities Database, which contains more than 3,000 sites across the North American Southwest that date between A.D. 1200 and 1600, to consider whether there are patterns of interaction or gaps in settlement distribution that might indicate boundaries. It is not until relatively late, around 1300, that clear boundaries appear.

Next, Jonathan Damp provides a history of archaeological work at Zuni. Early research was accomplished by outsiders, but Zuni has played a leadership role in the development of a tribal-based heritage program. That program has had many successes, which are highlighted by Damp.

Given the role that the linguistic isolate status of the Zuni language played in the formulation and implementation of the research reported in this issue of *Archaeology Southwest*, the final brief article by Gregory and Wilcox serves as a synthetic statement. It presents two maps that show the probable distributions of the Zuni language in the early 1200s and then at the time of the first European contact in the early 1500s.

Finally, William Doelle considers several issues that are related to funding nonprofits and their research, and he briefly touches on the potential value of the present research for the modern residents of Zuni, as well as their tribal government.



A WEEK-LONG SEMINAR was held in October 2001 at the Colton House, Museum of Northern Arizona, cosponsored by the Center for Desert Archaeology and the Museum of Northern Arizona in Flagstaff. Ultimately, these efforts resulted in the volume *Zuni Origins: Toward a New Synthesis of Southwestern Archaeology*, edited by David A. Gregory and David R. Wilcox and published by the University of Arizona Press. In this issue of *Archaeology Southwest*, many of the seminar participants provide their particular perspectives on the complex issues of Mogollon-Zuni relationships and Zuni origins.

Zunian as a Linguistic Isolate

Jane H. Hill, University of Arizona

THE ZUNI LANGUAGE is spoken today in only a single village and associated settlements that total about 12,000 people. At the time of Spanish contact, Zunian was spoken in several closely spaced villages.

When we call Zunian a linguistic isolate, we mean that it has no known “genetic” relatives—that is, languages that resemble it because they descend from a common ancestor shared with Zunian. If Zunian had diverged from surviving related languages only about 4,000 or 5,000 years ago, it is likely that linguists would have found those languages. Furthermore, the methods of historical linguistics indicate that the Ancestral Zuni community must have gone its own way at least 7,000 or 8,000 years ago, maintaining its integrity over a very long period of time.

For archaeologists, these linguistic findings provide a relatively precise interval in time. Several useful inferences flow from this reference point:

- ♦ The differentiation of the Zuni language did not necessarily occur in the Southwest, and it happened before, or possibly during, the interval when modern environmental conditions changed (see page 5).
- ♦ Language differentiation occurred prior to the arrival of maize in the Southwest some 4,000 years ago, and thus, the integrity of the language was maintained

through this fundamentally important development in subsistence technologies. Pre-pottery, maize-cultivating populations were present in the Zuni area by at least 3,000 years ago (see page 8).

- ♦ The language differentiation occurred long before the development of Puebloan culture and was maintained throughout the millennium or more during which Puebloan populations were developing in the Zuni area.
- ♦ For at least 7,000 to 8,000 years, sufficient social boundaries existed between Zunian speakers and speakers of other languages to keep Zunian a linguistic isolate; evidence of social boundaries may be perceptible in the archaeological record.
- ♦ Areal relationships (that is, through bilingual or multilingual speakers) are indicated by loan words from Keresan and from Hopi and Piman (both Uto-Aztecan languages) in the Zuni vocabulary, indicating population interaction in the relatively recent past. These loan words are often used only in ritual contexts and/or to refer to specific deities. They provide important clues about the nature of large-scale geographic interaction among Southwestern populations during the late prehistoric period.

Zuni Traditional History

T. J. Ferguson, Anthropological Research, LLC

A ROBUST ARCHAEOLOGICAL THEORY of Zuni origins must take into account Zuni traditional history. Zuni traditions constitute an independent source of historical information that can be used as a gauge in evaluating archaeological data. When Zuni traditions are congruent with archaeological data, we have corroboration for archaeological theories. When archaeology and

kiva groups, priesthoods, and religious societies. The Zuni view of the past is more dynamic than that of archaeologists, who rely on relatively static archaeological cultures as the framework for historical reconstruction. From a Zuni perspective, their ancestors were sequentially affiliated with many different archaeological cultures as they moved through time and space.



Origin talks identify the Grand Canyon as the place where the Zuni people emerged into the world.

Zuni traditions diverge, we are faced with the challenge of explaining this disparity in a manner that respects both archaeological and traditional sources of knowledge.

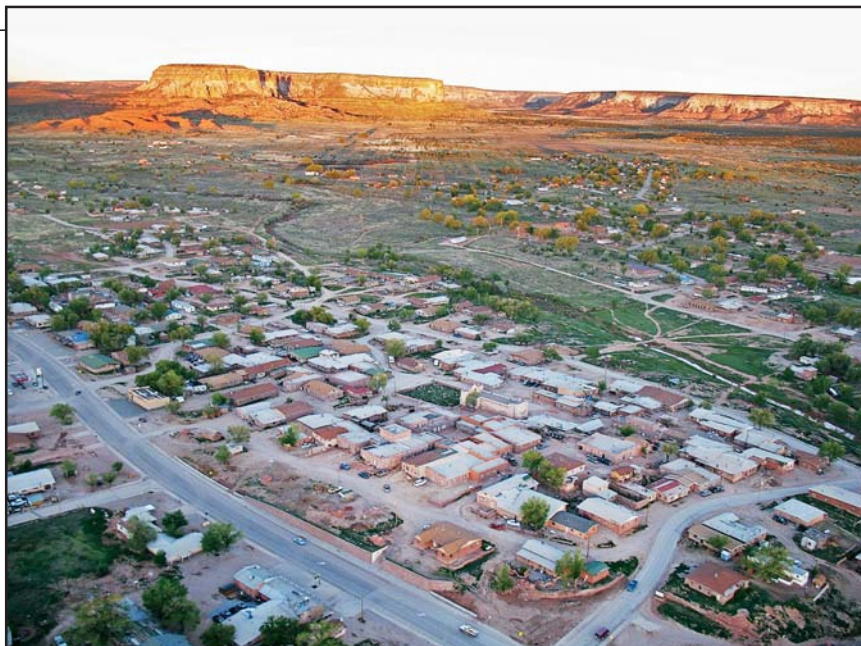
The traditions of the Zuni people derive from their homeland, which they have occupied for more than a millennium. These traditions are tied to named places in a cultural landscape that provides the Zuni people with the means to symbolize and recall the ancient past. The Zuni landscape encompasses an extensive geographical area and represents the long period during which the Zuni people migrated from their place of emergence to Zuni Pueblo. The area occupied by their ancestors during this migration has continuing historical and religious significance to the Zuni people. It is through the awareness and use of this landscape that the ancient past is projected into the contemporary world and kept alive.

The Zuni comprehend the archaeological record in terms of their ancestors, whom they call *Enodekwe*. These ancestors traveled far and wide on their migrations, and their history is maintained in oral accounts conveyed by

The *chimiky' anakona penane* ("from the beginning talk") describes how the Zuni emerged at Chimik'yan'kya dey'a, located at the base of a waterfall at the head of a creek entering the Grand Canyon. The Zuni then migrated eastward up the Little Colorado and the Zuni rivers to ultimately reach the Middle Place at the center of the universe, a place we now call Zuni Pueblo. Along the way, one group of Zunis split off and traveled south into Mexico, never to return. Another group diverged and migrated northward and eastward, stopping for a time along the Rio Grande before ultimately rejoining the main body of Zunis.

Narrative themes running through Zuni traditions provide hypotheses for scientific research. These include references to warfare or violent interaction with other groups of people; assimilation of various groups of people in complex processes of creating a new ethnic identity; and various groups having different *kokko* (kachinas), suggesting a complex and accretional development of Puebloan religion. The groups implicated in Zuni traditions

include the tribe as a whole, religious societies, and clans. It is clear that archaeologists need to develop models of migration that include a wide range of migrating groups. Zuni traditional history and cultural geography is best summarized in a working hypothesis proposed by anthropologist Frank Hamilton Cushing more than century ago. In Cushing's reconstruction, the Zuni are descended from at least two or more peoples, and they are the heirs of at least two cultures. One branch arose in the Zuni area, and the other branch was intrusive, from the west or southwest. The aboriginal branch of Zuni was the larger, but the smaller western branch is most spoken of in origin talks, and spoken of in the first person as being the original A:shiwi or Zuni. The western branch was thus culturally dominant, as several groups were assimilated into the Zuni tribe.



View looking east along the Zuni River at sunset, with Dowa Yalanne (Corn Mountain) in the distance. The rich oral traditions of the Zuni are set in a cultural landscape steeped in history.

Paleoenvironment and Zuni Origins

David A. Gregory, Desert Archaeology, Inc.

Fred L. Nials, Desert Archaeology, Inc.

Jeffrey S. Dean, University of Arizona

WHY SHOULD PALEOENVIRONMENT be included as a factor in a consideration of Zuni origins? At the most general level, a knowledge of variations in the environment helps us to better understand human adaptations and population dynamics. These processes may, in turn, influence linguistic continuity and change. Hill's finding (see page 3) that Zunian must have differentiated from other languages by at least 7,000 to 8,000 years ago provides a point of reference about how environmental factors may have influenced the differentiation and maintenance of Zunian as a linguistic isolate.

Major temperature and vegetational changes that began about 20,000 years ago played a part in the extinction of Pleistocene megafauna by about 10,000 years ago. By 8,000 years ago, most elements of modern vegetation communities appear to have been established in the Southwest. It is also during this general interval that the shift from Paleoindian to Archaic lifeways occurred, likely marked by changes in population density, distribution, and perhaps organization, as human groups adjusted to much-altered environments. At the latest, then, the Zuni may have differentiated about the time that modern biotic environments become or were becoming established. More

generally, the period of significant changes that occurred in the natural environment between 11,000 and 8,000 years ago likely produced conditions conducive to changes in the distributions of linguistic groups and subsequent linguistic change.

Numerous alluvial records and paleoenvironmental reconstructions suggest that geomorphic responses to climate processes played a major role in human adaptation and movement during the last 7,000 years. This time was particularly notable for alternating episodes of erosion and deposition in valley bottoms that significantly affected groundwater, stream flow, and other valley-bottom resources. This erosion removed much of the prior evidence for paleoenvironmental conditions and archaeological occupation in these critical environments. Following a long depositional interval, another erosional episode affected valley bottoms about 4,000 years ago. Maize appears to have been introduced in the Southwest toward the end of this episode. Maize agriculture quickly spread into aggrading floodplains across most of the Southwest. Where Zunian speakers lived and by what processes the integrity of the language was maintained over this long interval remain unanswered questions.

Archaeological Methods for Tracing Zuni Origins

Jeffery J. Clark, *Center for Desert Archaeology*

OVER THE PAST THREE DECADES, archaeologists have developed methods to track groups with enduring cultural traditions, such as the Zuni, through time and space. An important aspect of this research has been the recognition of two basic types of style—symbolic and technological.

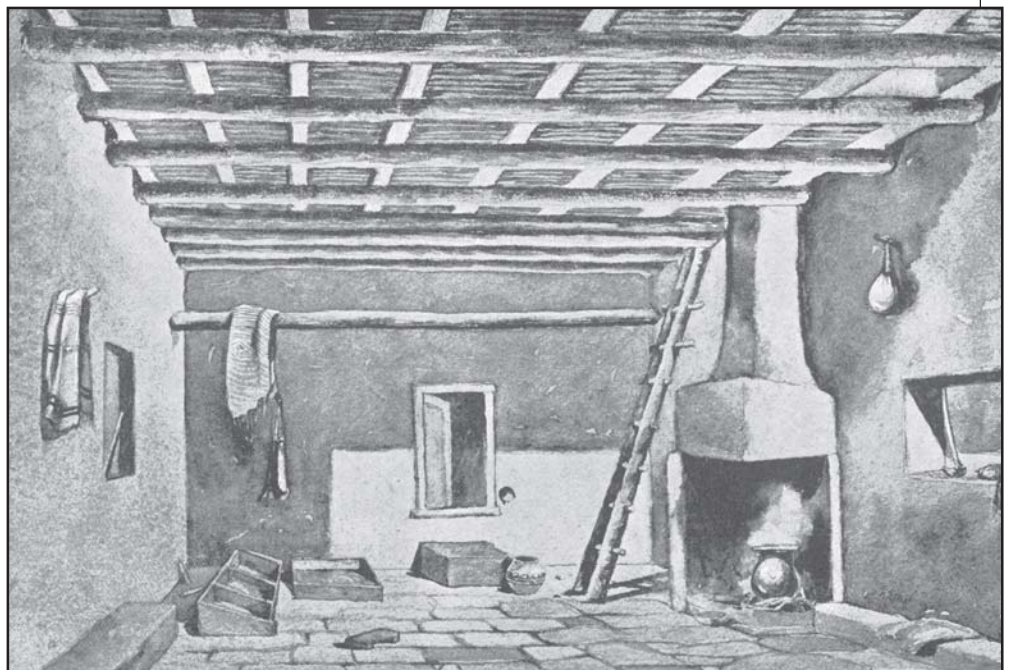
Symbolic style represents a conscious attempt to produce symbols that convey important messages about religion, group identity, and individual status to a specific audience. If that audience is an outside group, the symbols are usually found in highly visible locations, such as boulders, cliff faces, outer building walls, and on large ceramic pots (see pages 10–12). Symbols are also displayed at multi-group gatherings, such as feasts or rituals, and along territorial boundaries.

Symbolic style can change frequently as relations between groups shift and religions are transformed or revitalized. While symbolic style gives archaeologists a glimpse of past social relations and ideologies, it is not a reliable indicator of cultural identity, because symbols associated with low-status backgrounds are often suppressed, while those of high-status backgrounds are imitated.

After considerable debate, archaeologists now recognize a more mundane and subtle style in artifacts and architecture, called *technological style*. Artifacts with the same function can often be made in different ways, whether they are used to grind maize, skin a deer, or provide shelter. An example of technological style is the series of choices made among materials and weaving techniques used to produce textiles (see

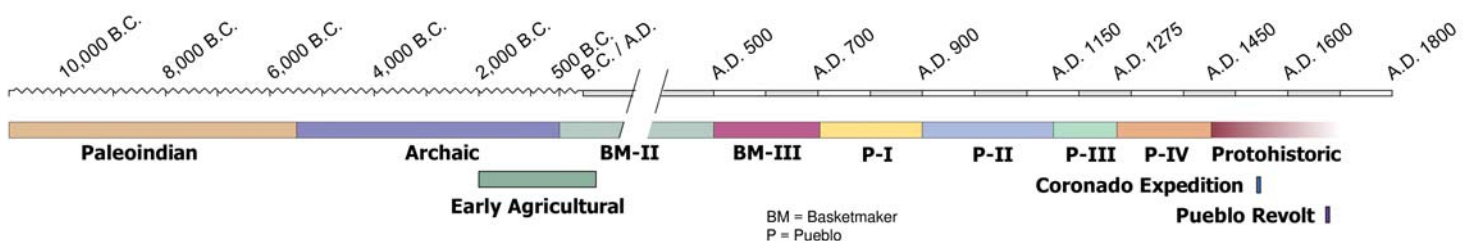
page 13). In traditional societies, technological style is handed down to children by their parents and neighbors, who show them the culturally correct way to make tools, clothing, and dwellings.

When socially distant groups come into close contact, symbolic style used in public contexts can rapidly change to accommodate the new social climate, but technological style associated with each group persists in the home. Considering the archaeologist's ability to examine the homes of past peoples and sift through their trash, technological style is a powerful tool that can be used to identify "true"



Victor Mindeleff recorded the interior of this room at Zuni Pueblo in the late 1880s.

cultural background, regardless of what identity is being displayed in public. A comparison of unique Zuni and Highland Mogollon technological style may be the best method to evaluate a possible cultural relationship between these two groups.



Timeline of Southwestern archaeology and history.

The Archaic Origins of the Zuni

R. G. Matson, *University of British Columbia, Retired*

BECAUSE OF THE MANY CHANGES that have occurred in Zuni life in the last 2,000 years, it is difficult to discern what the Zuni's preagricultural stage was like, or even where it was. We can, however, begin to limit some of the possibilities by working from the "unknown" (that is, Archaic origins) to the "known" (modern Zuni). Therefore, in this article, I begin by reviewing the archaeology of hunters and gatherers and early agriculturalists.

Recent research on the Basketmaker II period has demonstrated that cultural identity can best be determined by studying perishable items, particularly those items associated with domestic life (see timeline on page 6). In addition, dental analysis and the study of mitochondrial DNA from human remains and coprolites, which can reveal biological relationships among ancient peoples, have proved useful in examining the Basketmaker II period.

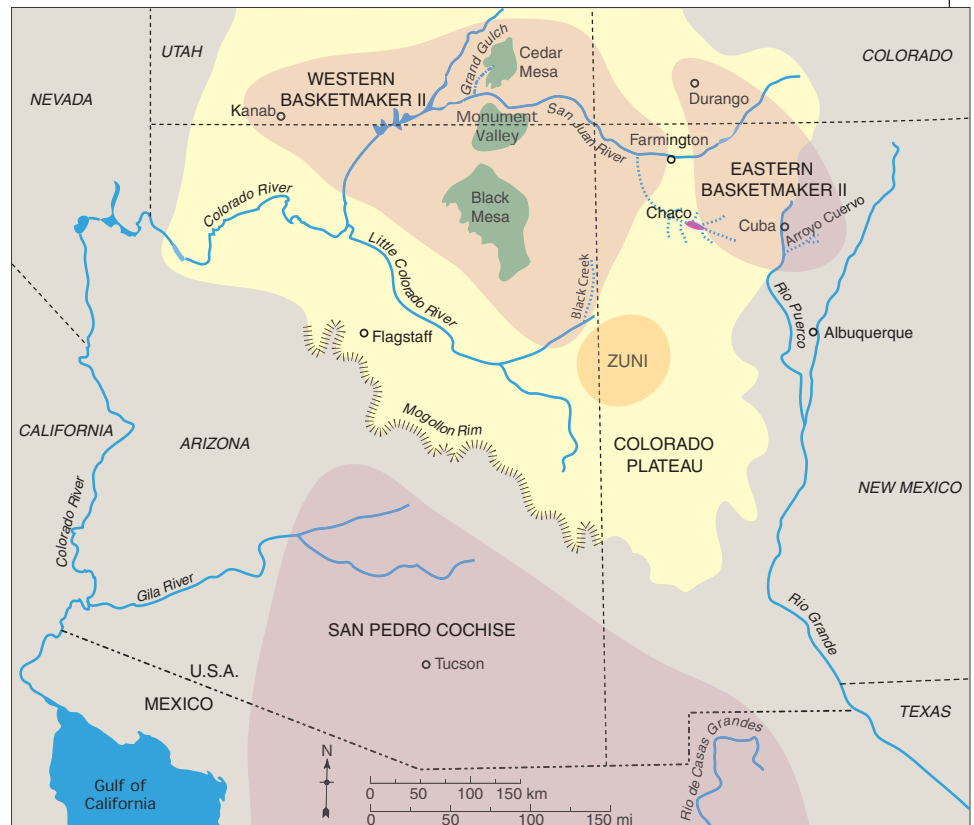
How can these analyses point to the possible Archaic origins of the Zuni? The answer is mainly through a process of elimination. Linguistic research, reviewed by Hill (see page 3), has shown that the Zuni have no known close linguistic relatives in the Southwest or Mexico. Thus, biological populations or cultures that are linked to Mexico or other Southwestern language populations cannot be Archaic Zuni. For example, Western Basketmakers are now widely seen as having been Uto-Aztecan speakers and ultimately migrants from Mexico.

I think we are only a few years from seeing this conclusively demonstrated by ancient DNA studies. Thus, the large part of the western Colorado Plateau occupied by the Western Basketmaker II people can be rejected as a homeland of the Archaic Zuni. Furthermore, since the San Pedro Cochise are seen as the likely progenitors of the Western Basketmakers, the areas that they occupied can also be rejected.

But what about Eastern Basketmaker II people, best known for occupying the area near Durango, Colorado? Their biology and perishable items are clearly different from those of the Western Basketmakers. They are now

thought to be Tanoan speakers and the probable ancestors of the Rio Grande Pueblo peoples.

Thus, in our search for the Archaic Zuni, we are looking for archaeological cultures that were unlike either kind of Basketmaker II group or the San Pedro Cochise, and that were located somewhere not occupied by those groups about 2,000 years ago. There are two other criteria that we



Major cultural and geographic subdivisions of the Southwest between 2,000 and 3,000 years ago, in relation to Zuni.

can use to limit our search: first, avoiding areas that would be good for early agriculturalists, and second, looking for areas with environmental diversity.

Good floodwater farming areas, such as Zuni is today, were likely occupied early by agriculturalists, who, with their much greater population density, would have pushed the indigenous Archaic people out. Very few Archaic remains are found in the relatively uniform center of the Colorado Plateau compared to its more diverse edges. It is most likely that the Archaic Zuni homeland was in such a diverse area—for example, around the southern edges of the Colorado Plateau. It appears that something like 4,000 to 8,000 square miles are necessary to support a hunting and gathering group in an environment such as the South-

west. There are only a limited number of possibilities, taking all the factors in account. Today, we do not know which of these places was the Archaic homeland of the Zuni, but we have eliminated much of the Southwest as a possibility.

I think that several more potential areas will soon be excluded, so that our focus will shortly be on a very small set of alternatives. Sometimes going from the unknown to the known is the most efficient research approach.

The Economic Origins of Zuni

Jonathan E. Damp, Zuni Cultural Resource Enterprise

AT ZUNI, two recent archaeological projects—one near State Highway 602 and one at the new Zuni High School—have extended the evidence for settlement in the Zuni area back to the late Archaic/Basketmaker II period (see timeline on page 6). The findings from these projects suggest that early farmers moved into the Zuni

region some 3,000 to 4,000 years ago, bringing with them irrigation agriculture and living in communities laid out along the riverine environments.

The irrigation canals encountered by these projects contained evidence of maize and weedy species and produced 26 radiocarbon dates. Flecks of wood or other plant charcoal embedded in the filled-in irrigation canals or in associated alluvial deposits were subjected to accelerator mass spectrometry (AMS) dating. The two sets of dates are consistent with one another in showing the use of irri-

gation canals from 3,000 until approximately 1,000 years ago (Pueblo II times).

The introduction of irrigation during early Zuni prehistory does not imply that large labor pools were necessary for construction and maintenance of canals; individual households would have been capable of such activities. Pit

structure settlement evolved from this foundation in Zuni prehistory, but a shift in social organization is shown in the widespread distribution of Pueblo II sites throughout the Zuni area. This distribution is correlated with the increased dependence upon drought-resistant varieties of maize that did not need irrigation, and it signals a transition from winter-based rainfall to summer-based (monsoon) rainfall on the Colorado Plateau. Winter-based rainfall implies exploitation of snowmelt in the Zuni Mountains and tapping into the increased stream flow during the spring months. Summer-based rainfall is dependent upon the monsoon rains that generally fall around July.

By adapting to a regime of summer-based rainfall, early Zuni farmers spread out across the landscape. The Pueblo II settlement pattern in the Zuni area indicates that extended families were integrated by means of activities centered at great houses, such as Village of the Great Kivas.

Our interpretation of the data from the Zuni heartland suggests an initial movement of late Archaic/Basketmaker II peoples into the Zuni area and in situ cultural development thereafter. Outside influences obviously affected Zuni cultural development, but the core of this development was set in place thousands of years ago. This development was transformed by the restructuring of social networks in reaction to changes in economic production, especially a shift in subsistence patterns from winter-based to summer-based rainfall strategies.



The shallow irrigation canal shows clearly in this cross-section. Irrigation and maize cultivation along the Zuni River was underway by 3,000 years ago.

Mogollon, Zuni, and Sky Islands

Michael W. Diehl, *Desert Archaeology, Inc.*

MOGOLLON IS AN archaeological “culture area” that was originally defined by archaeologist Emil Haury in the 1930s. The concept and its geographic extent have been expanded upon by others. The Mogollon region now includes the upland areas of southeastern Arizona and southwestern New Mexico, and it spans the years from roughly A.D. 200 to 1100.

My review of existing archaeological information for five subareas of the Mogollon region revealed no evidence of population isolation at any time in Mogollon prehistory. The residents of these Mogollon areas were in touch with the rest of the Southwestern world over the entire 900-year time span. Without evidence for material isolation, one possibility is that Zuni linguistic uniqueness derives from recent social events that occurred after 1100 and are not visible in the Mogollon archaeological record. For example, the Zuni language might be a consequence of a revitalization movement marked by a conscious effort to define Zunian as something apart from the rest of the Pueblo world.

Alternatively, Zuni isolation could be the outcome of much older events that occurred long before all the material expressions called Mogollon began to occur in Arizona and New Mexico, prior to the Early Agricultural period (2000 B.C.–A.D. 50).

In concluding my discussion on Mogollon and Zuni, I invoked the high-altitude, or “sky islands,” concept that Gregory and Wilcox identify in their introductory article (see pages 1–3). I offered two possible ways that isolation may have occurred in the absence of a relatively recent revitalization movement. In both models, mountain sky is-

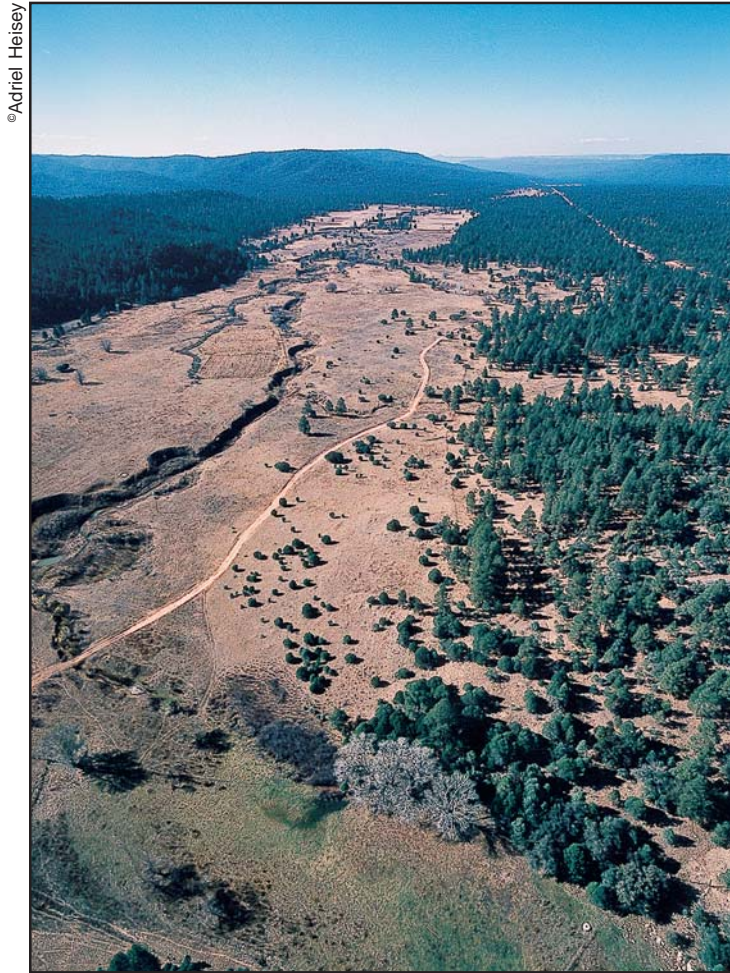
lands are considered to be logical places of refuge for an isolated Ancestral Zuni populace that moved to the current Zuni homeland in response to external events.

In one model, the ancestors of the Zuni were one among many Desert Archaic groups who thrived some-

where in southern Arizona or New Mexico (or perhaps northern Chihuahua or Sonora) during the interval from roughly 6500 to 3000 B.C. I posited that northward-migrating agriculturists who spoke a Uto-Aztecan language outcompeted hypothetical Ancestral Zuni foraging ancestors as Uto-Aztecs migrated northward from Mexico. In that case, if archaeologist Paul S. Martin was correct to suggest that the Mogollon culture is related to Zuni, then the ancestors of the Zuni were displaced, isolated, and surrounded by farmers until they, too, adopted farming. These Ancestral Zuni subsequently emerged as the Mimbres Mogollon, and gradually moved northward into their present-day location out of the Mimbres region.

An alternative scenario places the Ancestral Zuni among the agriculture-

using, northward-migrating Sonoran or Chihuahuan groups who brought agriculture to southern Arizona and New Mexico during the Early Agricultural period. In this model, the Ancestral Zuni were part of a hypothetical, regionally and demographically larger Zuni language group who occupied a continuous area from what is now New Mexico through Chihuahua, Mexico. If such a group existed, that group was, in large part, eliminated or absorbed by other cultural groups as a consequence of events in Mexico sometime during the interval from roughly A.D. 500 through the early 1500s.



View of an area above 6,000 feet in elevation within the sky island zone along the Mogollon Rim of east-central Arizona and west-central New Mexico.

Ceramics and Zuni Exchange, Migration, and Identity

Barbara J. Mills, *University of Arizona*

C. Dean Wilson, *New Mexico Office of Archaeological Studies*

THE EXAMINATION OF ZUNI CERAMIC VESSELS allows archaeologists to consider questions of regional interaction, including exchange, migration, and shared social identities. From A.D. 200 to 500, ceramic technology in the Zuni region was influenced by pottery made in the Mogollon area. This influence included the initial use of ceramics and the later application of neck banding and corrugation. Similar changes occurred across the Southwest and seem to have resulted from small-scale movement of people and exchange.

By 1000, Cibola White Ware ceramics were widely produced on the Colorado Plateau and were being exchanged to the Mogollon area to the south. This pattern of exchange is recognized because iron-rich clays that are ill-suited for making white ware are found below the Mogollon Rim, while rich beds of sedimentary kaolinitic clays are present on the plateau. The ceramic exchange indicates contact and interaction among different people in varied environmental zones and reflects the increasing importance of both economic and social ties between people living in the Mogollon Highlands and the Colorado Plateau.

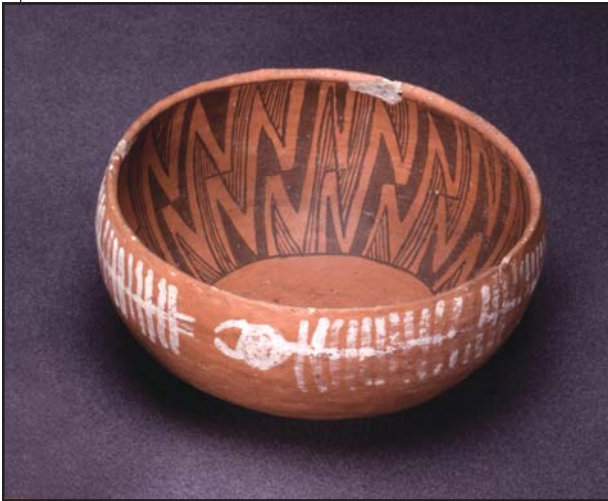
Ceramics produced after 1200 in the Zuni region are interesting because of their active use of style as a marker of social identity (see page 6). St. Johns Polychrome is an excellent example of active signaling of identity expressed in highly visible designs on vessel exteriors. If these were meant to convey social identity within the household, designs on bowl interiors would suffice. Instead, bold designs are

painted on the exterior, where they are visible at a distance even if the bowls are full. These vessels are correlated with increasing aggregation of the population with partially enclosed plazas.

The period from 1275 to 1325 represents a major shift in the historical trajectory toward larger, aggregated sites. Important changes in pottery included the use of glaze paints, thinner exterior white lines, and the use of both red and white slips. Bowls with smaller exterior designs were associated with the highly integrated pueblos of this period in the Zuni region and surrounding areas. Thus, while a common identity was still referenced in the use of white lines on the exterior, the social distances seem to have been closer, corresponding with the tighter spatial arrangement of the pueblos.

The ceramic assemblages of the 1300s became more diverse through the addition of white-slipped interiors on some bowls and entirely white-slipped surfaces on some bowls and jars. The use of different slip colors on contemporaneous wares may reflect different village identities. New designs were also used on these vessels. Before 1350, the designs were mostly geometric, but on white-slipped vessels, images of parrots, eagles, feathers, and butterflies appear, much like designs found on ceramics in eastern Arizona. One vessel even has a masked figure and another the first depiction of a Shalako figure.

The diversity in ceramics, glaze paints, and red and white slips ended relatively suddenly in the early to mid-1400s. An entirely new technology of nonglaze paints on a polished buff slip was introduced, and it eclipsed the other wares within two potting generations. Called Matsaki Buff Ware, this pottery was made for nearly 300 years, before and after the Spanish entrada. These vessels often depict kachinas, and there is less use of exterior designs. Evidence for migration of people from



Bold designs on the exterior of St. Johns Polychrome may have signaled social identity during a time of population aggregation. (Courtesy of the Arizona State Museum)



Kwakina Polychrome bowl with a white-slipped interior and glaze-painted design. (Courtesy of the Arizona State Museum)

late prehistoric sites such as Point of Pines is suggested by the new practices of cremation burials, vessel “killing,” and patterned notching of vessel rims. As marks of identity, ceramics of the 1400s accomplished something important: they unified the migrants and the host population. After the Spanish entrada, images of kachinas became more abstract and asymmetrical, though the technology of buff ware remained the same.

Glaze paint decoration was reintroduced during the Mission period (A.D. 1630–1680). This reintroduction coincided with the assignment of friars from the Rio Grande area, where glaze-decorated ceramics were continuously made in several districts. The Mission period ceramics suggest that there were subtle expressions of Zuni religious themes despite the Spanish presence. Kachina imagery was present but less recognizable, and textile and eagle-



Matsaki Polychrome vessel from the 1400s. (Courtesy of the Arizona State Museum)

Janelle Weekly

feather designs were indigenous motifs that referred to Zuni ceremonial life. These designs indicate a form of native resistance and the persistence of Zuni ceremonial identities despite the presence of the Spanish.

Ceramic changes paralleled the dramatic settlement and social shifts of the Pueblo Revolt in 1680. After the revolt, a new ware was introduced that marked a technological break with the past.

Ashiwi Polychrome was the first of these new matte-painted polychromes. It replaced Hawikuh Polychrome, a glaze ware that had cultural associations with the Spanish and ceased to be made after the Pueblo Revolt. This reversal in technological style is related to the reconstruction of Zuni identity in the historic period, as settlement consolidated into a single village at Zuni Pueblo. Today, matte-painted polychromes are still produced at Zuni, continuing the tradition that was established with Ashiwi Polychrome.

Rock Art of the Zuni Region: Boundaries, Traditions, and Networks of Communication

Polly Schaafsma, Museum of Indian Arts and Culture

M. Jane Young, University of New Mexico, Retired

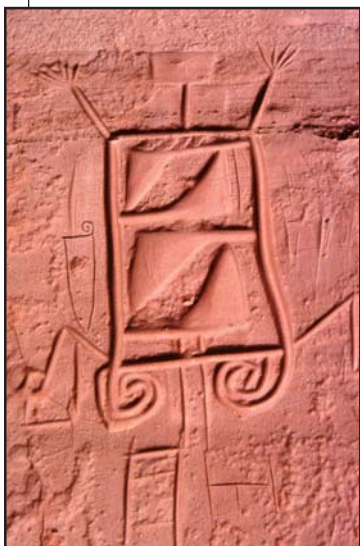
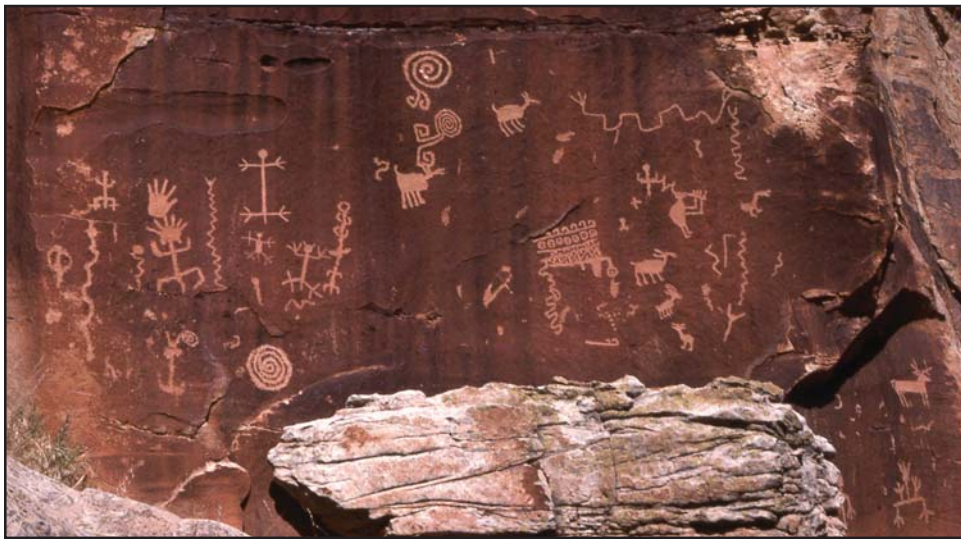
THE PICTURE CREATED for Zuni origins as seen through the medium of rock art over 4,000 years is sometimes sketchy but also dynamic and complex. Rock art provides bold outlines of cultural/historical relationships on the ideological front—the nonmaterial culture of the Zuni region—and how its relationships with neighboring regions changed through time. Unlike the Zuni language, the rock art of the Zuni region is not an isolate (see page 3). Zuni rock art is generally regarded as conservative and lacking distinctions of its own. However, the late historic finely incised and painted kachina masks include many that are peculiar to Zuni alone. Absences are what often characterize the prehistoric repertoire of images at Zuni, and no discrete Zuni rock art style can be identified for any period in Zuni prehistory.

The rock art of the San Juan and middle Little Colorado River drainages documents a shamanic tradition that prevailed through centuries, apparently derived from a base in the preceding Archaic period. The absence of this tra-



Centipede petroglyphs from Village of the Great Kivas (A.D. 1000–1175) on the Zuni Reservation.

dition in the Zuni region suggests that important ideological differences separated Zuni from the San Juan and middle Little Colorado Basketmakers. Seen from the per-



Top: Petroglyphs at Village of the Great Kivas on the Zuni Reservation reflect the wider Ancestral Pueblo cosmology. Left: Incised human figure dates to late Pueblo III to early Pueblo IV.

spective of rock art, this is the clearest cultural boundary between Zuni and its neighbors at any time in Zuni cultural history.

At no point did Zuni rock art strongly resemble that of the Mogollon region. From Pueblo I on, rock art evidence indicates that agriculturalists in the Zuni region were conversant with

a world view that was widespread throughout the entire Ancestral Pueblo area, minor regional differences notwithstanding (see timeline on page 6). We would characterize this period at Zuni as conservative in a thematic sense, its primary affiliations with the area between Chaco Canyon and Quemado, in New Mexico.

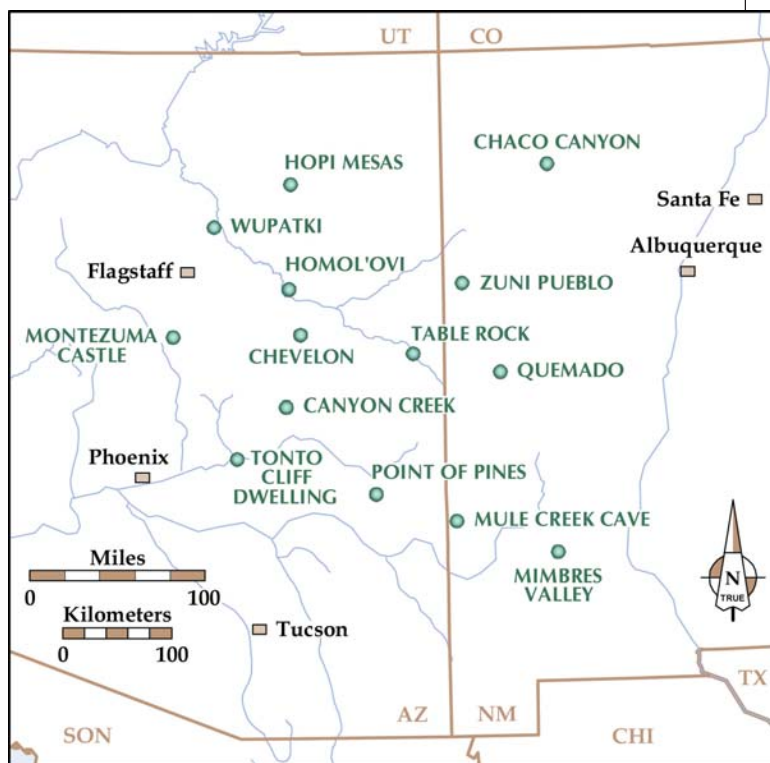
As documented in rock art throughout the Colorado Plateau, between about A.D. 900 and 1300, the Zuni region was a participant in the wider Ancestral Pueblo cosmology. However, the lack at Zuni of many items of ceremonial paraphernalia—including some Mimbres motifs depicted in the rock art of the middle Little Colorado—suggests that Zuni was still somewhat distinct from its western neighbors with regard to ceremonial and ritual practices.

Sometime during the 1300s, new elements and styles in Pueblo IV rock art became widespread. These were accompanied by changes in other aspects of Pueblo culture, some of which imply migrations. Hypothetically, social crises, as evidenced by a wholesale Ancestral Pueblo migration out of the Four Corners region and elsewhere, would have resulted in an increased recep-

tivity to new ideas in the form of a revitalization movement. A new cosmology and participation in the kachina cult, for example, suggests religious/ideological shifts following this population redistribution. While Zuni does not appear to have been a source for new religious concepts during Pueblo IV, ceramic designs and rock art iconography show that the Zuni region did participate in these changes.

The issue has been raised about potential correlations between linguistic relationships in the past and rock art styles. It might be argued that persistent, well-established boundaries, as defined by rock art between Zuni and neighboring regions to the north and

west in the early phases of Zuni prehistory, indicate linguistic differences as early as the late Archaic. However, in the protohistoric and historic periods, the rich Pueblo symbolic and metaphoric systems, as expressed graphically in rock art and other media, cross-cut linguistic boundaries. Therefore, what we are looking for in the rock art is not evidence for linguistic ties, but ideological affiliation. Although Zuni is a linguistic isolate, it has clearly participated in a broadly Puebloan world view for much of its history.



Archaeological sites and geographic locations mentioned in this issue.

A Perishables Perspective on Mogollon-Zuni Relationships

Laurie D. Webster, University of Arizona

SIMILARITIES AMONG certain classes of Mogollon and Zuni textiles and baskets provide support for an ancestral relationship between the Mogollon archaeological culture and the Zuni people. One feature of Zuni weaving that suggests a strong connection to Mogollon textile traditions is the use of noncotton plant fibers, especially yucca, for the production of loom-woven cloth. An early emphasis on noncotton plain weaves in the highland Mogollon region sets this tradition apart from surrounding Southwestern cultures and points to an underlying relationship with northern Mexico, where noncotton fabrics were commonly used.

The appearance of yucca plain weaves in the Little Colorado River drainage in the A.D. 1300s, and their strong presence at Zuni by 1400, provides some of the strongest perishable evidence in support of a cultural relationship between the Mogollon-Pueblo and Zuni people. These were the most common fabrics at Hawikku (Hawikuh) and Kechiba:wa (Kechipawan), where, as at Canyon Creek and sites in northern Chihuahua, they served an important role as mortuary shrouds. Sixteenth-century Spanish accounts and later ethnographic writings by anthropologist Matilda Coxe Stevenson underscore the importance of yucca fabrics in the lives of the Zuni people, suggesting that this textile tradition was brought north by people from such places as Canyon Creek Pueblo, Point of Pines, or Tularosa phase or Cliff phase sites in the Upper Gila (see map on page 12).

Another technique from the south that was seen at Zuni during the contact period is 3/3 oblique interlacing, used for the production of braided sashes. Known from Mule Creek Cave in the Upper Gila, as well as Tonto Cliff Dwellings and Montezuma Castle, 3/3 oblique interlacing became popular at Zuni and Hopi during Pueblo IV, replacing 2/2 oblique interlacing as the main braiding technique used north of the Mogollon Rim (see timeline on page 6).

Not all early Zuni textiles exhibit a Mogollon-Pueblo flavor. Several plain-weave fragments from Kechiba:wa and

Halona:wa (Zuni Pueblo) were mended with twined double running-stitch embroidery, a technique not reported for Mogollon assemblages but common in Pueblo III assemblages on the Colorado Plateau. A twelfth-century twined sandal from Village of the Great Kivas is another textile of northern derivation, one that links that assemblage to the Chaco regional system.

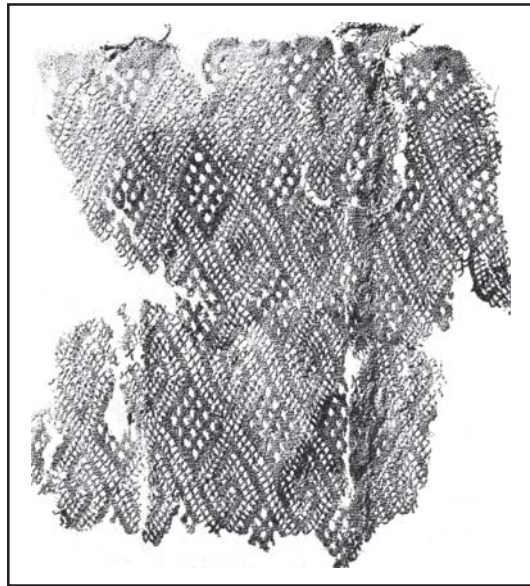
Two basketry constructions at Hawikku and Kechiba:wa also suggest southern influences at Zuni. The Mexican technique of bundle-foundation coiling became

widespread in central and southern Arizona and New Mexico in the 1100s or 1200s, but is not typical of Pueblo II and Pueblo III assemblages on the Colorado Plateau. During late Pueblo III/early Pueblo IV, the technique appeared north of the Mogollon Rim at Table Rock Pueblo, the ancestral Hopi sites of Homol'ovi II, Kawayqa'a, and Kookopngyamu, and the Zuni site of Hawikku.

The wickerwork plaque also made a sudden appearance on the Colorado Plateau, including at the Zuni sites of Hawikku and Kechiba:wa, in the 1300s. No definite Pueblo III examples are known from the Colorado Plateau, nor are they reported from Hohokam, Salado, or most Sinagua or Mogollon assemblages. In late

Pueblo III/Pueblo IV, they occurred south of the Mogollon Rim in the Verde Valley and at Canyon Creek Pueblo and north of the rim in the Middle Little Colorado region (Chevelon and Homol'ovi I), near the Hopi Mesas (Kawayqa'a and Kookopngyamu), and at Hawikku and Kechiba:wa. Their history remains obscure, but a southern source seems likely.

Zuni perishable traditions suggest that ancestors of the Zuni people participated in a broad Colorado Plateau pattern up through Pueblo III, then witnessed a shift in Pueblo IV to a tradition heavily weighted with southern influences. The presence of these southern technologies may best be explained by an immigration of people from various regions, including the Mogollon Highlands, into the upper and middle Little Colorado River, and the Zuni and Hopi areas in Pueblo IV.



Example of cotton openwork fabric from Mule Creek Cave in the Upper Gila region of western New Mexico, circa A.D. 1000 to 1400. (Courtesy of Peabody Museum of Archaeology and Ethnology, Harvard University)

Zuni's Place in the Long-Distance Exchange Systems

Arthur W. Vokes, Arizona State Museum

WHEN SPANISH EXPLORERS ARRIVED in the Southwest, they discovered that the Zuni communities were central nodes in exchange networks extending throughout the region and into other areas. It was clear that these networks had been in place for a long time. In order to understand Zuni's cultural traditions, we need to examine the structure and history of these networks.

With this goal in mind, I looked at the distribution of four "exotic" or rare classes of material: copper bells, macaws, marine shell, and turquoise. Access to these items was often controlled by, or restricted to, high-status individuals. Plotting the distributions of these materials against known or suspected trade routes indicates that the exchange networks changed over time.

Prior to A.D. 900, the exchange system was extensive and included the Hohokam, who supplied most of the

The collapse of the Chacoan great house system and the restructuring of populations in the Mimbres and Puebloan regions in the late 1100s and early 1200s led to a disruption of, and subsequent restructuring of, the exchange systems. From this disorder emerged a new, large-scale exchange system focused on the regional center of Paquimé, in what is now Northwest Mexico. Distribution of the different exotic materials associated with post-1250 settlements focused on the Casas Grandes region. The bulk of these items were associated with settlements to the northwest of Paquimé—in the upper San Simon Valley, the Safford Valley, and the highlands of eastern Arizona below the Mogollon Rim—and a smaller branch extending northeast from Paquimé into southern New Mexico. Significantly, the network does not appear to have extended north into the region above the Mogollon Rim, including

the Colorado Plateau. The presence of a largely depopulated zone by 1350, in what were the Mogollon highlands, tended to isolate the two regions from one another. Zuni, and the Pueblo communities of the northern Rio Grande, does not appear to have actively participated in this Paquimé exchange system. As a result, by 1400, the Zuni exchange network was oriented east to west, linking it with the Mojave Trail to the west and the Plains trading networks in the east. It is this network that continued into the historic period.

The demise of the Paquimé regional system in the 1400s ended the last well-documented regional exchange network of the pre-contact era. However, the exchange of exotic goods did not end there. With the exception of copper bells, which ceased to be

made around the time the Spanish entered Mexico, exotic goods continued to move north into the Southwest, and turquoise was traded south into Mexico. Excavations at Hawikku show that the Zuni continued to obtain shell and turquoise during this period; however, these materials may not have been as controlled by local elites as they were in the past. Thus, it was no accident that the native guides led Fray Marcos de Niza's party, and later Francisco Vázquez de Coronado's expedition, to the Zuni communities, as these were settlements known to them through long-term trading relationships.



A diverse sample of copper bells from the Southwest. (Photo by Arthur W. Vokes)

shell ornaments used in Southwestern communities. Around 900, a more formal exchange network arose, linking Chaco Canyon, the Mimbres area, and northern Mexico (see map on page 12). This network largely bypassed the Hohokam and extended directly along the river systems of what are now the Mexican states of Sonora and Sinaloa. Ultimately, the network extended across the Colorado Plateau, in northern Arizona, to incorporate the communities around Wupatki, which then provided a link with Hohokam networks. The Zuni area would have been well positioned in this network.

Zuni Settlement Patterns: A.D. 950–1680

Keith Kintigh, Arizona State University

WHAT CAN SETTLEMENT PATTERNS—the relative locations and gross architectural characteristics of settlements traced through time—tell us about the demography, social identities, and political organization of Zuni society? For the settlement patterns to be informative, we must be able to assign dates of occupation to individual sites. After about A.D. 950, this can be done with reasonable confidence because the pottery types found on the surfaces of the sites changed rather quickly and because tree-ring dates provide absolute dates for these changes.

In the period from 950 to 1175, the population appears to have been initially relatively low and spatially dispersed. However, the population grew substantially, especially late in this period. Sites typically had 10 or fewer rooms, with no more than about 35 rooms; associated subterranean ceremonial structures known as kivas were relatively rare. Sites had short occupations, and the preferred topographic settings changed through this interval. With few exceptions, sites were not clustered on the landscape. A number of Chacoan great houses (outliers) were established in the Zuni area, though the nature of their relationships with nearby settlements is unclear and may have varied.

Between 1175 and 1275, the population grew substantially, particularly during the first half of this interval. Settlements became increasingly concentrated on the landscape. By the end of this period, a substantial portion of the population resided in a few dense clusters of pueblos. Some, but not all, of these clusters had public buildings that shared some features with the Chacoan great house complexes—for example, the Hinkson site. Notably, they

had massive great houses and roads, but frequently had very large (about 80 feet in diameter, or more), shallow, unroofed great kivas rather than the smaller, deeper, roofed Chacoan-era great kivas. The average size of a pueblo room block was substantially larger in this interval, and toward its end, the first of the enormous, planned pueblos characteristic of the subsequent interval were constructed. For

this and subsequent periods, artifact styles and exchange patterns indicate that Zuni had remarkably low levels of interaction with surrounding areas.

It is also during this interval that we first detect dense clusters of pueblos, usually centered on post-Chacoan great houses and surrounded by substantial expanses of vacant or nearly vacant land. These territories, on the order of 11 miles across, may represent independent social or political identities.

During the next interval, from 1275 to 1400, the entire population of the area was housed in a dozen or so large planned pueblos in the eastern portion of Zuni. These structures had from about 180 to up to as many as 1,400 rooms, often with two, and sometimes three, stories. Because of their size, we probably know the locations of all

pueblos dating to this and the subsequent interval, so we can take a more expansive view of the settlement patterns. Despite their size, the majority of these pueblos were occupied for a few decades at most, and contemporaneous pueblos do not appear to have been clustered in any consistent way. Archaeologist Deborah Huntley has examined social relationships, as indicated by the sharing of technological knowledge about ceramic production, and as revealed by the exchange of pottery that can be shown (by its chemical composition) to have been produced in differ-



Aerial views of the Spier 61 and Kechiba:wa sites on the Zuni Indian Reservation.

ent places. Her studies do not indicate separate territories, but instead, reveal complex, overlapping networks of relationships. Sometime prior to 1400, occupation ceased at all of the pueblos except the one that is under modern Zuni Pueblo.

In the period from 1400 to 1680, nine large pueblos were constructed, all of them associated with major drainages in the western part of Zuni. These were the places

that stimulated the journeys in search of the “Cities of Cibola” by Fray Marcos de Niza in 1539 and Coronado in 1540. The Spanish perceived these settlements as having a single tribal identity that we recognize today as Zuni. Nonetheless, analyses of the mortuary assemblages at two of these contact-period pueblos (Hawikku and Kechiba:wa) suggest that a diversity of social identities existed within these Zuni pueblos.

Zuni in the Puebloan and Southwestern Worlds, A.D. 1200–1600

David R. Wilcox, Museum of Northern Arizona

David A. Gregory, Desert Archaeology, Inc.

J. Brett Hill, Center for Desert Archaeology

HOW WAS PUEBLO SOCIETY organized, and how did it change between A.D. 1200 and 1600? Were villages autonomous, or were multiple settlements integrated politically into confederations or “polities”? Our settlement pattern studies allowed us to consider Zuni and other Pueblo groups on multiple spatial scales of interaction.

The gradual accumulation of information about the location, size, and time of occupation of thousands of archaeological sites is an invaluable resource. It allowed the compilation of a Coalescent Communities Database of all known sites with 13 or more rooms in the North American Southwest for the period from 1200 to 1600. On the facing page, we have included three maps out of an eight-map series that illustrates substantial changes in population distribution and the potential for interaction in 50-year time periods from 1200 to 1600. These maps allow us to see which populations were neighbors and how far apart they were.

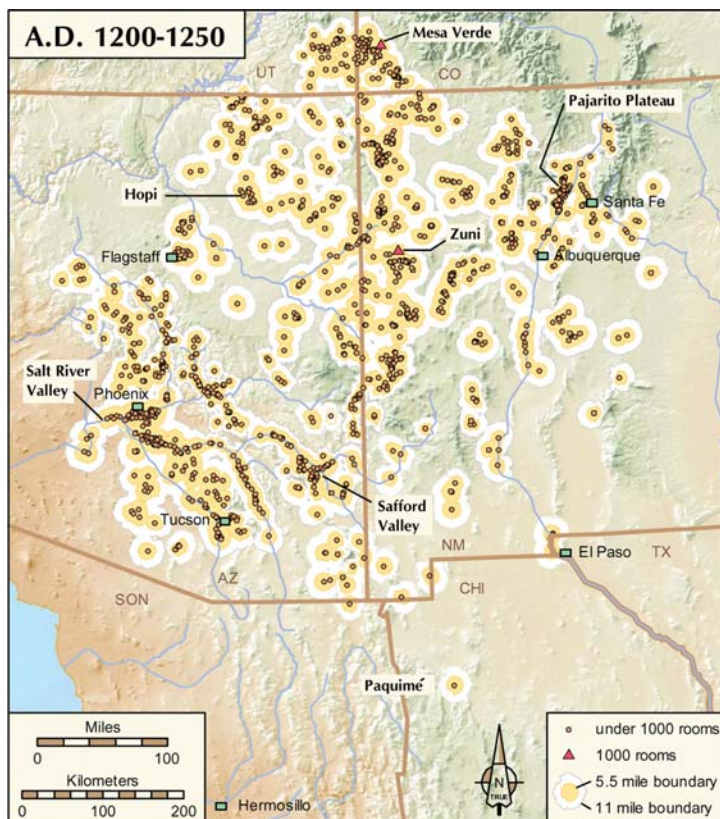
The maps presented here illustrate several major trends. First, while there is a fundamental division into the northern (Puebloan) Southwest and the southern Southwest throughout these four centuries, these distinctive regions were networked together in the 1200s and 1300s by multiple north-south zones of interaction, all of which disintegrated by about 1400. Second, over time, there is a strong trend toward larger settlement size and the development of more localized population clusters. Third, by 1450, half of the extant rooms in the northern Southwest were in large villages of 1,000 rooms or more, and the occupation of the southern Southwest, as reported in sixteenth-century Spanish documents, was reduced to a zone of clustered large villages in central Sonora.

Constructing population estimates from archaeological information is difficult and often controversial. The Coalescent Communities Database has been used by different researchers to generate peak population estimates for the early 1300s that range from 160,000 to roughly 260,000 people. Population decline was initiated soon thereafter, and by the eve of Spanish colonization in New Mexico in 1598, the northern and southern Southwest populations had both declined to levels of about 60,000 people each.

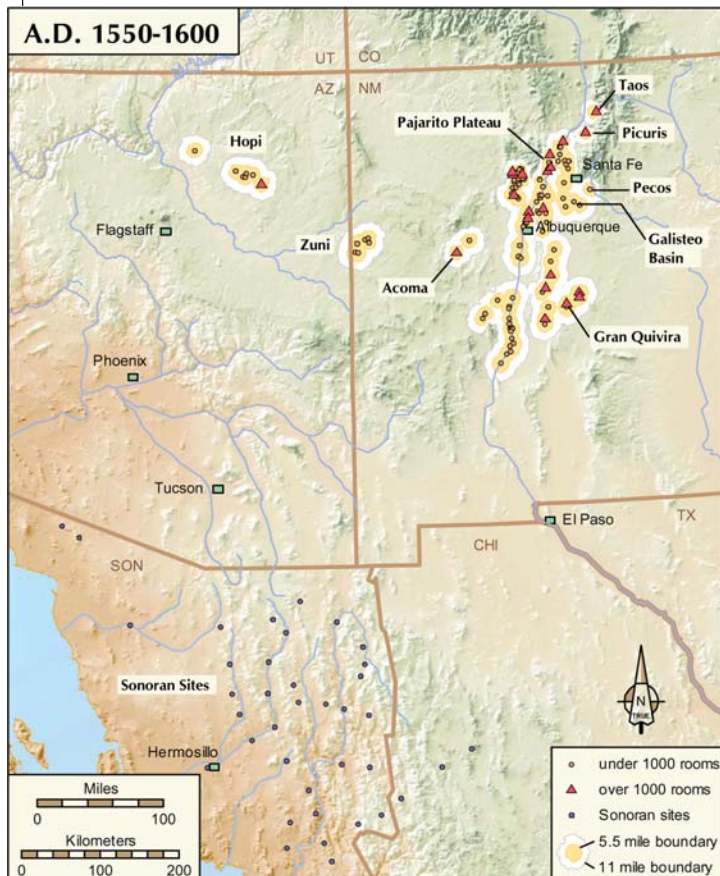
The demographic trends and spatial relationships identified above almost certainly had implications for how Zuni and the other Pueblo groups of the northern Southwest were organized. An interesting suggestion of greater complexity is conveyed in this recently discovered statement from an 1894 issue of the *Washington Post* about the nature of the Zuni polity in the 1500s, by anthropologist Frank Hamilton Cushing:

Like the other Pueblos, the Zunians, when discovered, were found living in segregated towns, but unlike the other groups, they were permanently and closely confederated in both a political and hierarchical sense. All their subtribes and lesser towns were distinctively related to and ruled from a central tribe and town through priest-chiefs, representative of each of them, sitting under the supreme council or septuarchy of the “master priests of the house” in the central town itself.

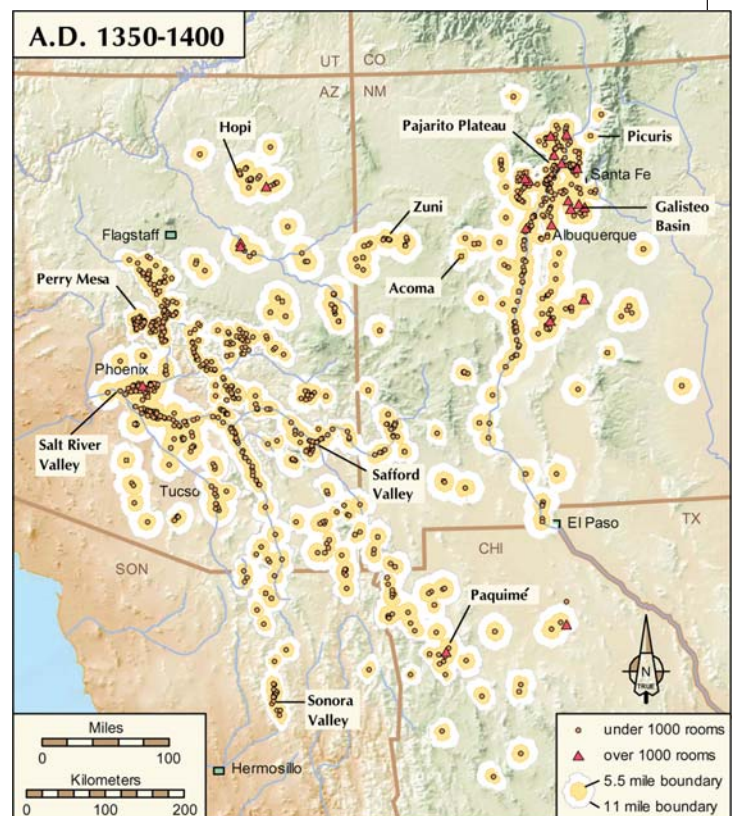
Cushing saw a uniqueness in Zuni organization, but we suspect that many of the other Pueblo clusters were organized in similar ways, and that some of these polities were at war with one another.



Map 1: A.D. 1200–1250. Population nodes are numerous and fairly widely distributed. Note that most population nodes cluster with other nodes within a continuous series of one-day travel distances. Approximately 75 percent of individual sites were either hamlets of 13 to 100 rooms or small villages of 101 to 250 rooms.



Population Maps: Using the analysis tools of a geographic information system (GIS), it has been possible to consider both elevation and distance in a single graphical approach to assess interaction among past populations. The GIS graphics express three levels of clustering. First, sites that lie within about 1,000 feet of one another were grouped to define local communities. Second, local communities that lie within about 11 miles of one another were grouped, as they represent areas in which residents could walk to a nearby community and return home in a day. Third, local communities within a day's walking distance (about 22 miles) were clustered.



Map 2: A.D. 1350–1400. The major population movement out of the Four Corners area after the late 1200s is clearly evident. Population clusters are clear around Hopi, Zuni, Acoma, and along the northern Rio Grande. Villages of more than 1,000 rooms are increasingly common.

Map 3: A.D. 1550–1600. The fundamental contrast between the northern (Puebloan) and southern Southwest is clearly evident. By 1450, the Mogollon Rim region was depopulated and the large settlements of the Hohokam region and along the modern international border had declined. The population of the southern Southwest is best approximated by the early observation of European explorers and missionaries. This map shows settlements of the Opatá and Pima Bajo of Sonora and western Chihuahua that may have represented as many as 60,000 people.

From Cushing to Compliance: Doing Archaeology at Zuni

Jonathan Damp, Zuni Cultural Resource Enterprise

THE SMITHSONIAN EXPEDITION to the Southwest in 1879 brought anthropologists Frank Hamilton Cushing and Matilda Coxe Stevenson to conduct research at Zuni Pueblo. Cushing's return to Zuni in 1888 as part of the Hemenway Expedition initiated archaeological research in the area. He was followed by such luminaries as Jesse W. Fewkes and Victor and Cosmos Mindeleff in the late 1800s, and Frederick W. Hodge, Alfred Kroeber, and Leslie Spier in the early 1900s.

In the 1960s, a collaborative effort between the National Park Service (NPS) and the Pueblo of Zuni carried out excavations and architectural renovations of the old Spanish Mission within the old portion of Zuni Pueblo (the Middle Village). This laid the groundwork for the Zuni Tribe's development of its own cultural resource management (CRM) program.

The Zuni Archaeological Conservation Team was established in 1975, after several years of training funded by the NPS through the Arizona State Museum. The role of the archaeology program at Zuni has continuously evolved, and there has also been a need to develop a program that could get outside funding to carry out the historic preservation goals of the Pueblo of Zuni.

Zuni Cultural Resource Enterprise (ZCRE) has conducted CRM projects since 1982, and in 2001, the Zuni Heritage and Historic Preservation Office became a Tribal Historic Preservation Office recognized by the NPS.

Doing archaeology at Zuni, and probably on most reservations, brings one into contact and conflict with a num-

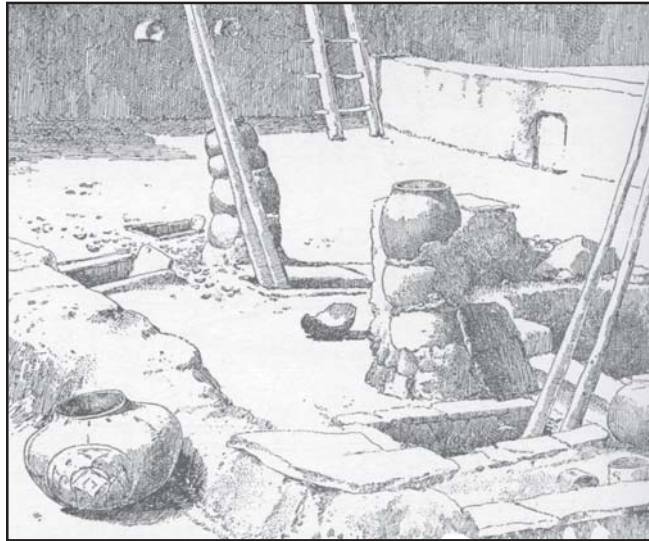
ber of perspectives. A successful program recognizes these perspectives, which owe their origins to preservation law, academic research, and tribal tradition. ZCRE and all of its forebears have attempted to strike a balance that achieves compliance, conducts appropriate research, and respects tradition. The desired outcome is an approach that recognizes multiple views of the past.

The opportunity to work with descendant communities and be involved in the full spectrum of anthropological inquiry provides archaeologists working at Zuni with unique perspectives that must be experienced and probably cannot be learned in an academic setting. Over the years, the local Zuni community has come to see ZCRE archaeologists as assets to the community,

providing valuable information for historic and cultural preservation while also uncovering new knowledge on the archaeology of Zuni Pueblo and the Zuni region.

Archaeologists at Zuni Pueblo have played key roles in protecting Zuni from land grabs as did Cushing during the late 1800s, in repatriating the War Gods, in land settlements, in protecting Zuni

Salt Lake, and in historic preservation of the Middle Village. Indeed, some of our recent research, conducted in a CRM context (see page 8), has dealt with early irrigation in the Zuni area and may be construed as representing significant statements about the protection of Zuni water rights.



Top: Victor Mindeleff recorded the architecture of Zuni in great detail in the late 1880s. This engraving shows details of roof openings. Bottom: Zuni Cultural Resource Enterprise documented over 10 feet of stratified deposits beneath the central plaza of Zuni Pueblo.

Zuni Language Distribution

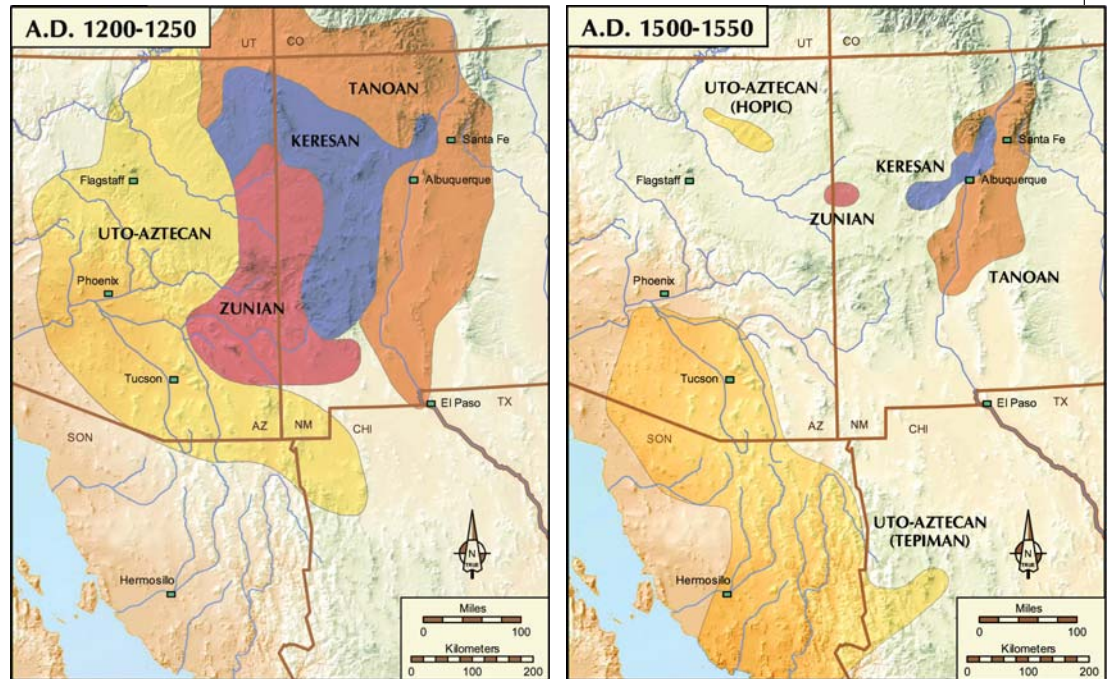
David A. Gregory, *Desert Archaeology, Inc.*

David R. Wilcox, *Museum of Northern Arizona*

AS SHOWN IN the article by Wilcox and others (see page 16), aboriginal populations in the Southwest were extremely widespread during the A.D. 1200 to 1250 interval, and then steadily retracted from that maximum distribution until the time of Spanish contact. The languages spoken by these populations experienced a similar retraction during this time.

Using the Coalescent Communities Database, the findings of seminar participants, and additional archaeological data, we have created hypothetical distributions of Zunian and other language groups from 1200 to 1600. Two maps are presented here: 1200 to 1250, and 1500 to 1550, the latter around the time of Spanish contact. While the advanced seminar to explore Zuni origins

did not yield final answers, we believe that maps such as these are useful outcomes that can be used in future anthropological inquiry and testing.



Left: Hypothetical distributions of language groups, A.D. 1200 to 1250. Note that Zunian speakers are shown in the Safford Valley, adjacent to Uto-Aztecan (Hohokam) speakers. This may account, in part, for the presence of Piman loan words in the Zuni language and vice versa. Right: Distribution of language groups, A.D. 1500 to 1550, at the time of Spanish contact.

See the Center for Desert Archaeology website for more information: <<http://www.cdarc.org>>

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Back Sight

AT A RECENT MEETING of a non-profit board on which I serve, a board member asserted: “Today, there are no longer donors, there are only investors.” Further, those investors are seeking “a return on their investment.” That statement came to mind as I read news about Harvard University medical researchers failing to report millions of dollars paid to them over several years by major drug companies. At about the same time, I received an inquiry from a colleague asking whether Native American “pressure” had dictated who participated in the advanced seminar that led to the publication of the *Zuni Origins* book. I found the juxtaposition of these events sufficiently unsettling that it shapes the rest of my essay.

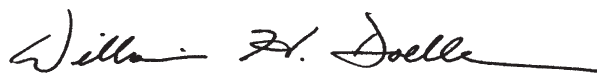
So, what about the funding for this research, and did the Pueblo of Zuni put any constraints on it? This research was initiated when the Center for Desert Archaeology received \$100,000 from a private donor. The goals had been outlined in a one-page statement prior to the donation, and the donor never imposed conditions of any sort on the research.

From the outset, we made a strong effort to keep Zuni tribal officials informed about this work. I accompanied the editors of the *Zuni Origins* book on three trips to Zuni. On two of the visits, we met with the governor and several council members, and immediately after the advanced seminar, we hosted a productive day-long session with the Zuni Cultural Resources Advisory Team. At no time were objections made to our research, nor were any constraints placed on us. To the contrary, the Zuni saw a positive aspect to this broad study by independent scholars. The outcome could strengthen the Zuni’s voice when the tribal government becomes involved with heritage issues beyond the boundaries of the Zuni Reservation.

While raising funds is essential to the success of the Center for Desert Archaeology, we work with potential donors to make sure they understand and share our mission to preserve the places of our shared past. By doing so, we have had substantial success in developing relationships with true donors—those who give in order to advance the mission of the

back sight (băk sīt) n. 1. a reading used by surveyors to check the accuracy of their work. 2. an opportunity to reflect on and evaluate the Center for Desert Archaeology’s mission.

Center, with no expectation of personal gain in return. In developing the *Zuni Origins* book, we steered clear of the kinds of unsettling relationships identified at the start of this essay, and we will continue to do so in the future.



*William H. Doelle, President & CEO
Center for Desert Archaeology*



The Pueblo of Zuni blends many modern facilities into the community while embracing a shared past of many millennia. This reservoir along the Zuni River is just upstream from the community hospital and airport.

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