



A People Apart: Factionalism and Conversion in Pueblo Mission Villages, A.D. 1620–1680

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**A People Apart:
Factionalism and Conversion in Pueblo Mission Villages, A.D. 1620–1680**

A dissertation presented
by
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to
the Department of Anthropology

in partial fulfillment of the requirements
for the degree of
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in the subject of
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Abstract

This dissertation investigates how Ancestral Pueblo villages in the U.S. Southwest responded to the imposition of Franciscan missions during the early Spanish colonial era (ca. A.D. 1620–1680). It sets out to investigate how narratives about missionization have been constructed, and to critically examine the ways that two phenomena – factionalism and religious conversion – have been deployed in explaining indigenous social dynamics during this period. It then analyzes evidence for links between mission residents and other Native groups and the landscape to evaluate established narratives about difference and conflict within mission villages.

In order to realize these goals, this study examines obsidian artifacts from the Ancestral Towa village of Pecos Pueblo (LA 625) and the Ancestral Hopi village of Awat’ovi (AZ J: 7:1[ASM]), two of the largest pueblos in the Southwest at the time of European arrival. The construction of large Franciscan missions has been linked to the residential division of these sites. Analysis of obsidian artifacts using portable X-ray fluorescence spectroscopy (pXRF) was conducted to investigate whether and how these spatial divisions relate to social conflict and differentiation. Patterns of obsidian procurement and exchange point towards relationships with the landscape and with other indigenous groups that could be impacted by factionalism and conversion.

The results suggest that missionization contributed to changes in how Pueblo villages interacted with the landscape and with other communities, but that these impacts were unevenly experienced between different mission villages and among groups within villages. Residential groups at Pecos were distinguished by the range of obsidian sources to which they had direct or indirect access, and by the strength of ties to significant places in the landscape. At Awat'ovi, obsidian procurement both increased and diversified over time. It may have helped sustain connections with important ancestral and mythological places, even as these places also became implicated in colonial labor regimes. Obsidian from distant sources may have arrived in conjunction with population movements that arose from the upheaval of colonial rule. This project consequently suggests rethinking how factionalism and conversion shaped indigenous responses to European colonialism in the Americas.

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I INTRODUCTION

European colonialism was in many ways cataclysmic for the Ancestral Pueblo peoples of the Southwestern United States. However, many Pueblo communities survived, and succeeded in retaining many elements of social practice and ways of knowing and interpreting the world that have often been lost to indigenous peoples around the world. Two of the largest Pueblo villages at the time of Spanish arrival in the sixteenth century did not outlast European colonialism. They are excellent case studies in the kinds of continuity and change that Pueblo communities experienced in the seventeenth century. These two communities were the Ancestral Towa village of Pecos Pueblo and the Ancestral Hopi village of Awat'ovi [Figure 1.1]. Both had existed for centuries, yet within a few generations after Spanish missions were established, one village was gone, and the other had entered a demographic freefall from which it would never recover. Two social phenomena have been invoked to explain what happened to these villages: factionalism and religious conversion.

A.V. Kidder, the pioneering archaeologist who excavated Pecos Pueblo a century ago, decades later floated the idea that missionization by Spanish Franciscans split the village between Catholic converts and indigenous traditionalists. In *Kiva, Cross, and Crown*, an exhaustively researched narrative history of Pecos from its origins to the present, the historian John Kessell built on this suggestion, proposing that the arrival of Franciscan missionaries in the early seventeenth century caused a profound factional rift in the village (Kessell 1987). In Kessell's view, Pecos had been already been divided for centuries between cosmopolitan traders

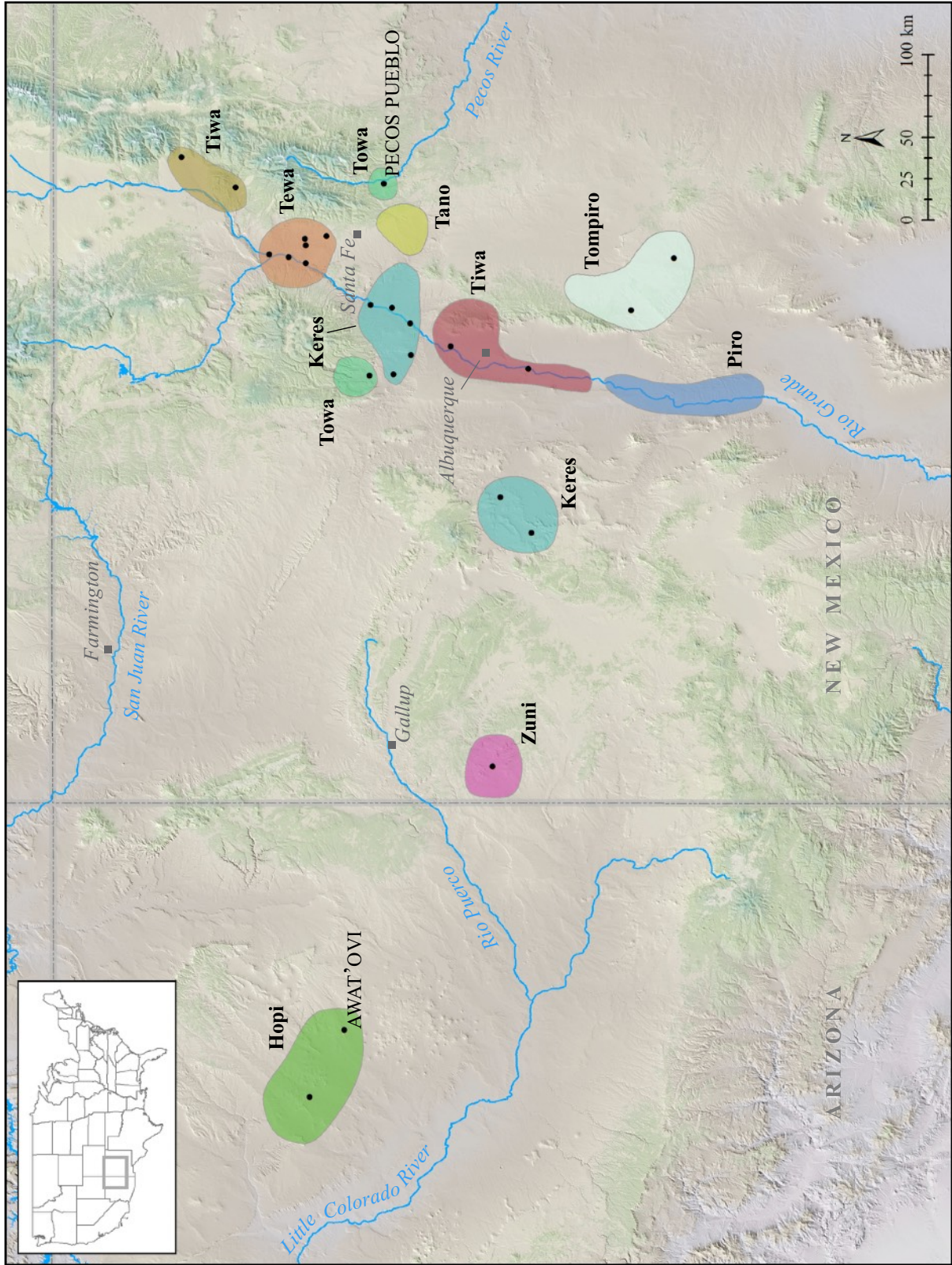


FIG. 1.1 Historic Pueblo language groups and settlements

and insular agriculturalists. The establishment of a Spanish mission, and the conversion of some Pecos people to Catholicism, inflamed existing animosities between these groups. Kessell suggested that irreconcilable differences between the outward-looking converts who embraced cultural, economic, and political ties with Europeans and the intractable traditionalists who rejected them led ultimately to the residential division of the community between two sectors, the North Pueblo and South Pueblo. The story culminates in acts of violence followed by the breakdown of broader cohesion, until Pecos was eventually abandoned by its few remaining inhabitants in the early nineteenth century.

The research at Pecos helped fuel the pursuit of comparable Pueblo sites. Kidder recalled that in 1917:

[he] was able, before entering the army, to devote a few weeks to the exploration of the Hopi country in northeastern Arizona, and to locate a site, the ruined pueblo of Awatobi, which resembled Pecos in that its occupancy embraced both the prehistoric and historic periods. Distinct evidences of stratification were noted. Such a site was desirable in order to provide data from a more or less distant region, to use for checking against the Pecos finds [Kidder 2000 [1924]:108].

Kidder's encouragement ultimately led to a major research expedition to Awat'ovi, sponsored by Harvard's Peabody Museum and led by J.O. Brew between 1935 and 1939. Brew and his team of researchers suggested that Awat'ovi stood out among Hopi villages for having embraced Franciscan missionization and converting to Catholicism (Montgomery et al. 1949). They also indicated that factions at Awat'ovi had split over the issue of religious conversion, and that such differences provoked broader conflicts within the Hopi world.

These narratives draw on a long tradition of outside observers, from colonial Franciscans to modern anthropologists, who have drawn attention to factional conflict and

religious conversion as forces that indelibly marked colonial-era Pueblo communities and that determined their future. In colonial accounts, factional competition was counted as evidence of heathenism:

All these people and their tribes are divided into the two factions of warriors and sorcerers. The warriors have attempted to bring every- one under their command and authority in opposition to the sorcerers. And the sorcerers have tried to sway everyone to their side, making it rain, preparing the land for good seeding, and doing other things that the warriors jeered at. Because of all this, there were continuous civil wars among these people, so bad that they killed each other and laid waste to entire pueblos. The devil, of course, had his usual harvest [Benavides 2012 [1630]: 35].

More recent episodes of factionalism in the late nineteenth and twentieth centuries have been analyzed as conflicts between ‘traditionalist’ and ‘progressive’ elements that are enacted through struggles over the acceptance or rejection of cultural, technological, religious, and political practices introduced by a dominant outside society – once, Spanish empire, and now the United States (White 1942; Dozier 1966).

Using these dichotomies to characterize intracommunity conflict in Pueblo societies resonates with more universal accounts of the effects of colonialism on Native American groups. For many Native Americans, the earliest and perhaps most intensive experience of colonialism was through missionization, as Europeans attempted to convert new subjects to Christianity and, at the same time, to incorporate them into imperial political and economic systems. Religious life was at the center of European domination and Native American responses to it. Accordingly, many conflicts within Native American communities that arose in the face of European

domination have been attributed to divisions between distinct religious identities – converts and non-converts.

And yet many scholars have argued that factionalism was *not* a product of forces unique to colonial domination, but was instead a fundamental characteristic of indigenous political organization and systems of authority (Linton 1936; Spicer 1962). For the Pueblos, factionalism has been claimed as the inevitable consequence of a distinctively acephalous, clan-centric sociopolitical system that lacked effective mechanisms for conflict resolution. This view, and the assumption that pre-contact Pueblo communities were similarly organized, has led to broad trust in the claim that factionalism was always a prominent driver of change in Ancestral Pueblo social organization and settlement patterns.

These narratives about communities like Pecos and Awat'ovi reflect a contradictory tendency in the literature on colonial Native North American societies, and on Pueblo peoples specifically. On the one hand, even as archaeological research illuminates the remarkable dynamism of Ancestral Pueblo cultures and social formations in the pre-contact past, there is an inclination towards collapsing the nearly five centuries of post-contact history into a single arrested image of unchanging Pueblo practices, identities, and beliefs.

On the other hand, contact and especially missionization are treated as total breaches of Pueblo cultural trajectories. As Mrozowski et al. (2015) observe, the development of anthropology as a way of understanding the Native American past led to viewing it as a process of long, gradual change punctuated by sudden rupture with European contact. This has consequences for the evaluation of change in Native American societies. During their slow, evolutionary development, change is seen as positive, but when interrupted by contact, change is

instead viewed as loss, cultural breakdown, and inauthenticity. This way of looking at things is problematic because it devalues the mechanisms and outcomes of changes that took place during the colonial period. Communities that changed significantly under colonialism are seen as inauthentic distortions of ‘true’ Native communities.

This view of change has contributed to problematic “negative master narratives” (Jordan 2002) or “terminal narratives” (Wilcox 2009) that have shaped much of indigenous history since contact. Ferris (2009:11) points to their relationship of such narratives with the pervasive power of the concept of acculturation in conventional constructions of indigenous pasts. These accounts have familiar elements: powerless Native societies, culturally and technologically superior European societies, inevitable decline and ruin, and Native communities without agency, able only to react. If change occurs in Native societies, it is because of contact; without contact, there is no change. Native people are “people without history” (Wolf 1982), and their histories are merely a backdrop to the main story of European colonization.

As Ferris (2009:168) observes, the term “contact” implies an opposition between monolithic Native and European entities that has little to do with the real complexity of relations not only between each Native and each European group involved, but also between a multitude of Native groups, between various European groups, and even more bewilderingly at the level of individuals and smaller sets of people within and across each of these assemblages of people. Silliman (2009:212) has questioned “the ways that we apply the dichotomous notions of change and continuity to colonial situations without enough regard to materiality, memory, and practice,” rooting the dominance of these notions in a North American insistence on viewing colonialism as

culture contact. The concepts of factionalism and conversion lend themselves to reductive dichotomies, are thus often invoked in ways that further entrench the narrow boundaries drawn around indigenous experiences of colonialism, as “[t]hese categories of ‘what is’ draw heavily on a legacy of understanding colonialism not as a complex entanglement of histories, identities, and power struggles but as cultures in contact with the only options being to change or to stay the same” (Silliman 2009:213). To counteract this tendency, archaeologists have become increasingly interested in examining what Ferris (2009:1) calls “changed continuities,” or how Native American communities negotiated colonialism in such a way that they “maintained identity and historically understood notions of self and community, while also incorporating substantial material changes and revision to those identities.”

In the case of Pecos and Awat’ovi, whatever notions of self, community, and place were held by their Native inhabitants have been masked by narratives that are heavily ethnocentric, explaining crucial events and dynamics through the use of concepts that are not rooted in Pueblo culture or ways of knowing. In fact, these concepts are themselves products of colonialism, and so to deploy them in articulating narratives about the past for Pecos and Awat’ovi can be seen as perpetuating, in some senses, the unequal power relations that have largely prevailed since the arrival of Europeans in the Southwest.

This project seeks to understand this part of the history of Pecos and Awat’ovi through concepts that are better informed by Pueblo knowledge. One way to approach how indigenous peoples of the Americas have conceived of their place in the world is through examining how they understand the organization of space, time, and history (Urton 1981, 1990). In recent decades, many researchers working in the Southwest have relied on “serious and sustained

engagement with contemporary descendant communities, Native epistemology, and indigenous knowledge” to examine the “cultural values, symbolic meanings, and social histories evoked by landscapes” (Liebmann 2017).

This project sought more substantive archaeological evidence of sociopolitical dynamics and landscape changes experienced by Ancestral Pueblo communities during the initial mission era (ca. A.D. 1620–1680). Rather than looking at social dynamics in mission communities in terms of Western models of political authority and religious belief, these dynamics can be viewed through changing relationships with the landscapes in which they dwelled. I examine obsidian artifacts to understand the interplay between how people within these communities related to each other and how they understood their place in a broader world of meaningful places and non-human actors.

Overview of the dissertation

After this introduction, the second chapter narrates the histories of Pecos Pueblo and Awat’ovi, with a focus on the period after Europeans entered the Southwest and Franciscan friars began to establish permanent missions in Pueblo villages. These narratives bring together evidence from archaeology, historical sources, ethnography, and traditional knowledge. I situate the events of the mission period in terms of a deeper indigenous past in order to understand how the actions that both reproduced and reshaped these villages after European contact were conditioned by past experience and the *longue durée*, but were not simply equivalent to previous or later episodes. In this I hope to help decolonize existing narratives about these sites (Silliman

2012), and reconsider the way that factionalism and conversion have been used as ways to explain the outcomes of colonization.

Chapter Three surveys contemporary themes in archaeological research on colonialism and missionization in North America. Early archaeologists investigated mission sites expecting to corroborate missionaries' own claims about what they accomplished, but later archaeology aimed at revealing discrepancies and contradictions between the historical and material records. Contemporary research has sought to de-center missions, examining them as part of a much broader landscape, especially when viewed from the perspective of Native rather than European ways of understanding the past. This trend in research – emphasizing, for example, hinterland communities, regional demographics, and sacred landscapes – has leapt ahead of attention to the internal complexity of indigenous communities at mission sites, in contrast with other colonial settings (*e.g.*, Voss 2008). Although the early genesis of mission archaeology in the Southwest has led many to assume that this aspect of the colonial past is thoroughly understood, in fact basic questions about such major sites as Pecos and Awat'ovi remain unanswered.

Chapter Four reviews the problem of factionalism in the study of the Ancestral Pueblo past. Factionalism was for a time an urgent anthropological problem, although interest has receded along with a retreat from more ardently structuralist approaches in the field. Ethnographically observed Pueblo cases played a prominent role in theoretical explanations of factionalism, but the majority of archaeologists and ethnohistorians tend to use the terminology of factionalism without grounding it in prior anthropological debates. There is a tendency to regard factionalism as a symptom of weakened or disrupted political systems, but scholars argue that more careful attention to the cultural premises of Native American politics supports a view

of factionalism as an important part of adaptation to change and a process by which social problems can be addressed.

Chapter Five examines the issue of religious conversion, which has been considered a driving force in Native American factionalism in colonial settings. Popular conceptions of conversion follow the lead of sixteenth- and seventeenth-century Franciscan missionaries in understanding it as the result of individual psychological crisis and rupture. This view has been rejected by contemporary scholars across multiple fields, who now understand conversion as a long-term, socially-embedded process. Indeed, the debate between these two paradigms has been ongoing since at least the sixteenth century. A still unresolved problem that came to the foreground in the evangelization of the Americas is the evaluation and verification of religious belief. Anthropologists argue that the very terms of this issue are politically loaded products of the colonial encounter. In Native American societies, religious beliefs and practices were simultaneously political beliefs and practices.

Chapter Six describes previous archaeological and historical research on the communities of Pecos and Awat'ovi, with a view to understanding how the assumptions informing past research influenced the narratives that emerged about each site.

Chapter Seven presents the results and interpretation of the analysis of obsidian and ceramic artifacts from Pecos and Awat'ovi. The results from Pecos do not tend to reinforce the notion of a radical break between the North Pueblo and South Pueblo, at least in terms of obsidian procurement and distribution. The disappearance of obsidian from less prominent sources in South Pueblo may reflect changes in social ties, but it may also relate to economic and technological challenges posed by colonial domination. At Awat'ovi, there is evidence of

continuity in lithic procurement and consumption that suggests the economic and social impacts of missionization were variable. These results illustrate the importance of examining individual communities in both long- and short-term perspective to challenge the ‘grand narratives’ that pervade both scholarly and popular understandings of colonialism and its legacy.

Finally, a conclusion presents a summary of what has been learned and suggests avenues for future investigation.

II HISTORIES OF PECOS PUEBLO AND AWAT' OVI

This chapter reviews the histories of Pecos Pueblo and Awat'ovi, the two Ancestral Pueblo settlements and Spanish mission sites that are the focus of this study. An overview of each site is provided, with a description of its geographic and environmental context, followed by an historical narrative based on currently available knowledge. For the pre-contact period, these narratives are based primarily on archaeological research, while the post-contact period narratives synthesize archaeological, ethnohistoric, and documentary evidence.

PECOS PUEBLO

Overview

Pecos Pueblo (LA 625) was an Ancestral Pueblo village in north-central New Mexico that, at the time of European contact, was one of the largest indigenous settlements in North America. Today, it is the centerpiece of Pecos National Historical Park, visited by about 40,000 people annually. At the time the Spanish arrived, Pecos' inhabitants likely knew it by another name, although that remains unclear. Bandelier (1881:114) recorded the Jemez name for the site as "Âqiu." This may be related to the name Cicuye, which is how the Tiwa peoples of the central Rio Grande referred to the village when they met the first Spanish expedition into New Mexico. The earliest written accounts thus refer to Pecos as Cicuye (Flint and Flint 1992), and Hewett (1904: 430) notes that the Tiwa-speaking people of the Pueblo of Isleta called Pecos "Sikuyé" into the twentieth century. Documentary evidence for the place-name Pecos first appears in 1598

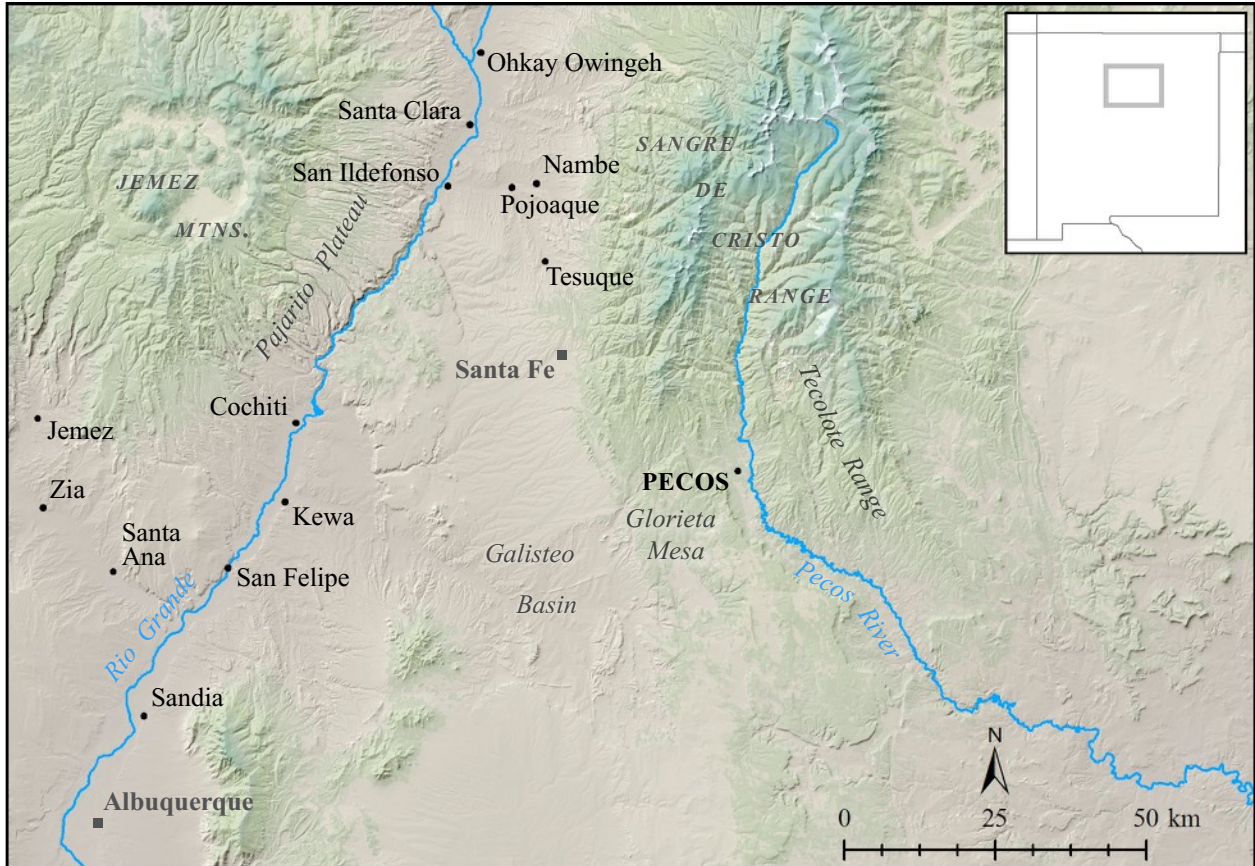


FIG. 2.1 *The northern Rio Grande and Upper Pecos River Valleys*

in an account of Oñate’s meeting with the Keres-speaking people of Kewa (Santo Domingo) Pueblo. Modern usage of the name Pecos may thus have Keresan origins; Bandelier (1881:114) recorded that Pecos is the Keres word for the inhabitants of Pecos, and the Keres place name is “Pae-yoq’ona.”

Geography and environment

Pecos Pueblo sits at the southern end of the Rocky Mountain range [Figure 2.1], where a series of peaks jutting down from Colorado into northern New Mexico has been known since the nineteenth century as the Sangre de Cristo Range. The Pecos River flows south out of the Sangre de Cristos, opening up into a wide valley, bounded on the west by Glorieta Mesa and on

the east by the Tecolote Range. The environment is an extension of the Southern Rockies ecoregion, in which steep mountains create marked elevational banding in vegetation types, ranging from grasslands to alpine forests. The Upper Pecos River Valley, at altitudes from 2,000 to 2,400 m, is among the lower elevations in the Southern Rockies ecoregion (Griffith et al. 2006). It is characterized by foothill woodlands and scrublands dominated by oak and, around Pecos itself, piñon-juniper forests. In the past, a wide variety of edible plants, large game such as bighorn sheep and elk, and various birds and fish were available (Cordell 1998; Head et al. 2002). Average precipitation in the past century is 40 cm annually, with almost 40% of the total falling during the late summer “monsoons” in July and August. Snowmelt feeds the river and provides irrigation water in spring.

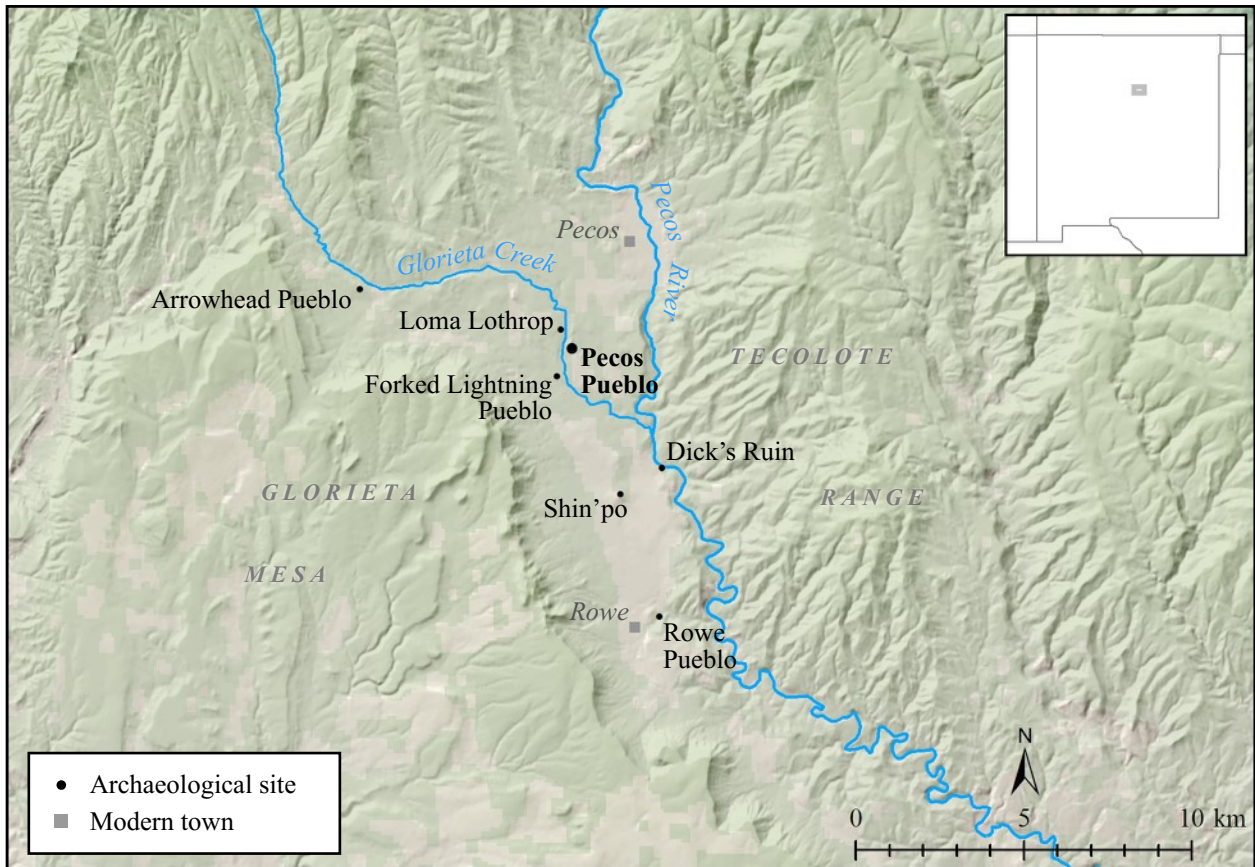


FIG. 2.2 Major archaeological sites in the Upper Pecos River Valley

Pecos Pueblo is situated on top of a small sandstone-capped *mesilla* just to the east of the Pecos River [Figure 2.2]. To the west of the village, a natural corridor, the Glorieta Pass, provides a connection between the Great Plains and the Rio Grande Valley. This geography contributed to Pecos' growth and significance as a community. It was not ideally situated for maize agriculture, since once every third year, on average, the growing season was too short (Spielmann 1991). Although it has been suggested that seasonal patterns at Pecos remained stable during a period of environmental uncertainty in neighboring regions from the thirteenth to fifteenth centuries, the evidence for this is ambiguous (Adams 2015:19).

Site history

The periodization use here follows the Wendorf and Reed chronological scheme, as used in recent major publications on the long-term history of the Northern Rio Grande region (Wendorf and Reed 1955). Table 2.1 provides an overview of the occupational history of the Upper Pecos River Valley.

Preceramic and Developmental Periods to A.D. 1200

The settlement history of the Upper Pecos Valley is incompletely understood, and there is little evidence of human activity prior to A.D. 900 (Spielmann 2010). Five pit houses dated to A.D. 800–950 have been found in the valley. These were large circular structures about 10 m across whose occupants left behind obsidian from the Jemez Mountains, possibly indicating interaction with people in the more densely populated Pajarito Plateau west of the Rio Grande (Nordby 1981).

TABLE 2.1 Occupational history of the Upper Pecos Valley (*after Capone 2010:13*)

Period	Dates	Settlement
Preceramic (Paleoindian and Archaic)	11,500 BC – AD 600	<i>Scant occupation</i>
Developmental	AD 600 – 1200	<i>Initial sedentary settlements, pithouses to adobe: Forked Lightning, Rowe</i>
Coalition	AD 1200 – 1325	<i>Sedentary pueblos: Rowe, Forked Lightning, Black-on-White House, Loma Lothrop, Dick's Ruin</i>
Classic	AD 1325 – 1600	<i>Arrowhead, Forked Lightning, Hobson-Dressler, Loma Lothrop, Pecos Pueblo</i>
Mission	<i>ca.</i> AD 1620 – 1680	<i>Pecos Pueblo mission</i>
Revolt	AD 1680 – 1692	<i>Pecos Pueblo</i>
Post-Revolt, colonial	AD 1692 – 1838	<i>European encroachment on Pecos Pueblo land and emigration to Jemez</i>

After these pithouses were abandoned around A.D. 950, there are again few traces of habitation in the valley. The archaeological record shows little activity until roughly A.D. 1200, and the reasons for this apparent hiatus are unknown. It is possible that the villages of Rowe Pueblo and Forked Lightning Pueblo were first established between 1000 and 1200, but we do not have evidence of the scale or organization of these settlements during that time. It may be that the valley was inhabited only sporadically between 950 and 1200, or was occupied seasonally by more mobile populations (Cordell 1998; Head et al. 2002).

Coalition Period, A.D. 1200–1325

Between A.D. 1200 and 1325, permanent villages grew to house substantial populations in the Upper Pecos Valley. Spurred in part by the diaspora from the Four Corners region, the

Upper Pecos Valley saw intensified agriculture and denser congregations of people. Survey data show six Coalition Period year-round villages along with dozens of seasonal and special-use sites. The habitational sites were already as large as 360 people, and the valley's total population numbered around 800. The villages appear to have been clustered along with non-residential sites. Their occupants did not depend strictly on agriculture, but on hunting as well, perhaps to a greater extent than populations along the Rio Grande (Head et al. 2002).

In the early Coalition Period (A.D. 1200-1250) there were two primary villages in the Upper Pecos Valley: Dick's Ruin (LA 276) and Forked Lightning Pueblo (LA 672), both probably established near the beginning of the era (Kidder 1958; Nordby 1981:8). Both villages were constructed of adobe, but we don't know much more about either of them. Dick's Ruin has been only cursorily documented, and Kidder stumbled unintentionally into Forked Lightning. Cordell (1998) suspects that there are more adobe pueblos underlying Classic Period villages. If this is true, then the size and extent of Coalition period populations were larger than what has been assumed.

It is possible that this influx of people originated among populations that dispersed from the Four Corners, but Cordell (1998:10) argues that because the Coalition period sites were accretive, and because particular places were occupied and reoccupied over time, it is more plausible that a population indigenous to the region expanded, rather than a wave of Mesa Verde 'refugees.' The ceramics at Forked Lightning are closely related to Santa Fe Black-on-white, which consistently dates to around A.D. 1200.

Inter-regional exchange networks linked these communities to the world outside the valley, especially the northern Rio Grande. Some ceramics at Forked Lightning had non-local

temper and pastes, probably from the Pajarito Plateau, where the ceramics themselves may have been produced. The same site also had obsidian from Jemez Mountain sources, including Cerro Toledo, Valles Rhyolite, and El Rechuelos. The contemporary Dick's Ruin had Cerro Toledo and El Rechuelos obsidian, but none from the Valle Grande. These imported goods illustrate likely trade ties with Rio Grande groups.

Beginning in the later Coalition Period (A.D. 1250–1325), villages in the Upper Pecos Valley changed to more closely resemble what Pecos Pueblo would later be. Rowe was just one of as many as six large pueblos, of fifty or more rooms, that either newly cropped up or grew in size in the Upper Pecos in the Late Coalition period. Black-on-white House, Shin'po, Loma Lothrop, and Dick's Ruin were established. Again, the origin of their inhabitants is unclear. They may have been seeking refuge from the heat and aridity of the Rio Grande Valley, or they were thriving local populations (Cordell 1998:10).

Rowe Pueblo (LA 108) provides a prime example of the development of such a village. Located about 7 km to the southeast of Pecos, the village is oriented around three plazas that fall along a north-south axis. The plazas were bounded by masonry roomblocks, the product of at least three and as many as six major construction episodes. Adobe architecture under the southernmost quadrangle probably represents an earlier phase of the village, but it can't be investigated without destroying the overlying masonry. There is a single, early kiva – in this period, many villagers may have been using ritual spaces at another site (Cordell 1998). Tree-ring dates from Rowe cluster in the middle of the fourteenth century. It was occupied for about a century, or at most 150 years, and frequently remodeled.

The ceramic assemblage at Rowe consists mostly of textured utility ware, made nearby, and local varieties of Pajarito Series Black-on-white. Much of the painted pottery was of the Santa Fe, Wiyo, and Galisteo Black-on-white types. There was also pottery from more distant communities, including Zuni and in the central and southern Rio Grande Valley, that may have found its way to the Upper Pecos through intermediary exchange. Cordell (1998) concludes that people at Rowe Pueblo were fairly closely linked to the Santa Fe–Pajarito province, which in turn was linked to groups in the northern San Juan basin, extending a sweeping but tenuous web of ties over northern New Mexico. Without evidence of differential distribution of trade wares, this vast region does not seem to have been broken up into polities or ethnic territories.

The origins of Pecos Pueblo itself likely date to the Coalition Period, but are otherwise somewhat obscure. Several early pueblos were established on the mesilla, but their archaeological traces were affected by frequent relocation, remodeling, and reuse of construction materials. Later overlying architecture and a lack of excavation have prevented a clear view of the organization of these early incarnations of the village (Kidder 1958:59). Several of them were in the northern half of the mesilla, and at least one and perhaps two emerged in the southern half.

Classic Period, A.D. 1325–1600

After 1325, substantial changes in material culture, the built environment, and sociopolitical organization mark the onset of the Classic period (A.D. 1325–1600). Though the sociopolitical organization of the greater Rio Grande region is a topic of intense debate, this was undoubtedly a time of transformation in inter-village politics and trade, as well as population growth and its attendant challenges. In the Upper Pecos, some villages such as Rowe and

Arrowhead were enlarged, and adobe architecture was replaced with masonry, while others, such as Forked Lightning, Dick's Ruin, and Shin'po, were abandoned. The overall number of sites increased to ten residential villages and around a hundred seasonal sites, with almost two hundred special-use sites. The total population more than doubled to around 2,000 people, with more than a quarter of them residing in Pecos Pueblo (Head et al. 2002).

Changing climatic conditions may have played a role in swelling the Upper Pecos population, as surrounding areas may have been subjected to increasingly erratic and unfavorable weather (Head et al. 2002; Capone 2010). Site clustering continued, while kivas grew larger and more numerous relative to the number of residential rooms. Glaze ware pottery appears, first through exchange and, by the end of Glaze I, as the result of local manufacture (Kidder and Shepard 1936). Pecos' relationship with Plains people, based on exchange of bison products for maize, appears to have developed in the mid-fifteenth century (Spielmann et al. 1990).

The large quadrangular pueblo that came to dominate the northern end of the Pecos mesilla was likely begun in the first half of the Classic period. Kidder claimed that it contrasted with earlier architecture in having been planned and built as a unit, largely for defensive purposes (Kidder 1958:63). Such coordinated planning is not well attested by archaeological evidence from Ancestral Pueblo sites, which were usually in constant flux as rooms were built, disused, and repurposed. It is true, though, that the pueblo was architectural elaborate, with numerous features to facilitate movement, including long covered galleries or corridors that allowed people to circulate within the pueblo (Kidder 1958).

It was also surrounded by a thick wall, often described as a defensive feature, although Kidder points out that it was so long that to defend it would have taken an absurdly large number

of people. Maybe, Kidder suggests, it was a “morale stiffener,” or that it, along with the other example of a pueblo-surrounding wall at Taos, “served more as fences than as fortifications,” to delineate space between the resident community and visitors such as the Plains groups who came to trade. He observes, as did Bandelier, that the wall also catches rainwater runoff and diverts it into a reservoir (Kidder 1958).

During the late fifteenth and into the early sixteenth centuries, the population at Pecos reached its peak of biological diversity, at least as indicated by skeletal morphometrics. This indicates a significant population influx that emanated from greater distances than previous groups that joined the village. Skeletal data indicate that the population of Pecos became increasingly biologically heterogeneous over time (Weisensee and Jantz 2010). While there is no evidence of biological links with Rio Grande pueblos, there do seem to have been ties with populations at Pueblo San Cristóbal. They may have had similar founding populations, or people from the Galisteo Basin moved up into the Pecos Valley at some point. Into the historic period, the population of Pecos enjoyed relatively good health and was better nourished compared to many other pueblos (Morgan 2010c:163).

Contact with Europeans, A.D. 1540–1598

Europeans’ first contact with the people of Pecos occurred elsewhere, at Zuni [*Table 2.2*]. Vázquez de Coronado went to New Mexico and arrived at Zuni in early July 1540. There, they met a man from Pecos Pueblo who they came to call Bigotes, because he wore a long mustache. Bigotes gave Coronado some hides, shields, and headpieces. In return, Coronado gave

some glass dishes, pearls, and bells. One of the Pecos men had a tattoo of a buffalo, a creature the Spanish had never seen (Levine 1999).

TABLE 2.2 Timeline of European contact and colonization at Pecos Pueblo

Date	Events
AD 1540	Coronado meets Pecos man nicknamed Bigotes at Zuni; Alvarado's detachment travels to Pecos and takes governor hostage
1541	Coronado returns to Pecos en route to Quivira
1584	Espejo expedition camps outside pueblo and captures two Pecos men
1590	Castaño de Sosa caravan demands food and attacks pueblo
1598	Oñate performs ritual of possession; first missionary assigned to Pecos
1617–1619	Return of missionaries; construction of first church
1621	Construction of mission complex begins
1680–1692	Pueblo Revolt; destruction of mission
1692	Return of missionaries

A detachment led by Hernando de Alvarado went back to Pecos Pueblo with Bigotes. Traveling in the company of the Pecos, the Spanish traveled through the middle Rio Grande, reaching Pecos/Cicuye in late summer or early fall (Sánchez 1997). Castañeda, who was among the Spanish contingent, decades later remembered a large, square pueblo surrounding a plaza, describing it as a citadel and emphasizing its military dominance, especially in conflicts with “Teyas” (possibly Comanches) who were said to have destroyed other villages found in ruins nearby (Winship 1896:524).

Castañeda wrote that Plains peoples, despite a history of conflict, had peaceful relationships with the people of Pecos, and camped at the village through the winter to trade. He

noted that the Plains groups were not allowed in the village at night but were compelled to camp outside (Winship 1896:453-454). It is not clear whether he meant under the eaves of the pueblo or outside the surrounding wall.

Trade with Plains people was also linked with trade with pueblos to the west, who exchanged products like cotton with Pecos, who in turn exchanged them, along with maize and ceramics, for buffalo products and other Plains goods. Ceramic evidence indicates that people from Pecos maintained ties with specific Plains groups over time that likely developed beyond trade into social and ritual relationships (Spielmann 2010:22). Plains groups probably learned to make pottery from Pueblo experts, some of whom were women brought into Plains groups as captives (Habicht-Mauche 2012).

At Pecos, Alvarado's company was received with music and gifts of textiles and turquoise (Winship 1896:491), probably from the nearby Cerrillos mines. Disappointed by unfulfilled promises of precious metals, Alvarado took Bigotes and the Pecos governor hostage. The Spanish were attacked but not harmed, and took the two captives back to Tiguex for half a year (Winship 1986:493).

The following spring, Coronado took his entire army past Pecos en route to Quivira, returning the two prisoners (Kessell 1987:21). On their return, persuaded of a Pecos plot against them, the Spanish found the pueblo less hospitable.

The next Europeans to arrive were the Espejo expedition in 1584, who camped a few hundred meters away from the village. Their requests for food were refused, and the people of Pecos remained inside their houses. Six soldiers went into the deserted plaza and fired shots. Then, an indigenous Mexican who had apparently been in Coronado's company came out and

asked the Spanish to stand down. They went back out to their camp, after which the Pecos people brought them large amounts of food. On their departure from the village, the Spanish kidnapped two Pecos men, one of whom was sent to Mexico City to be tutored by Fray Pedro Oroz, the commissary general of the Franciscans in Nueva España, where he was reported to be learning doctrine and teaching the Pecos language to some indigenous Mexicans so that they could return to New Mexico with Franciscan friars (Kessell 1987:43).

Subsequently, Castaño de Sosa illicitly led a caravan of settlers into New Mexico in 1590. They struggled en route, but just before Christmas, a scouting party encountered Pecos. The Spanish were offered a quantity of food, but when they went back to the village to obtain more, they were attacked from the rooftops. This prompted Castaño to return to ‘pacify’ the pueblo. When he could not persuade them to submit, he assaulted the village. According to his account, after a fierce resistance, the Pecos submitted (Kessell 1987).

Colonization and the Mission Period, A.D. 1598–1680

In early 1598, the Oñate expedition entered New Mexico with a cohort of Franciscan friars. Having established a headquarters in the Tewa pueblo of Ohkay Owingeh, Oñate set out with a large armed contingent to take possession of the pueblos, and reached Pecos in late July. With them was Juan de Dios, one of the Mexicans that had been taught the Towa language by the Pecos captive brought to Mexico City in 1584. Oñate’s company performed the Spanish formalities of possession, including planting a cross, firing a harquebus salvo, and reading the *requerimiento* aloud. The friars assigned the village its patron saint, Santiago (Kessell 1987:77–78). A few days later the first missionary, Fray Francisco de San Miguel, was assigned and sent

to Pecos, accompanied by Juan de Dios. Their actions at Pecos are unknown, and they withdrew within months, after Spanish soldiers were killed at Acoma (Kessell 1987:85). A decade later Pecos was reported to have joined with other pueblos in opposition to the Spanish (Kessell 1987:98).

Franciscans returned to Pecos sometime between 1617 and 1619, with the appointment of Fray Pedro Zambrano Ortiz as *guardián* (Kessell 1987:104). Rather than living in the pueblo itself, Zambrano evidently initiated the construction of an adobe church located about 400 m to the northeast (Ivey 2005). It likely took several years to complete, during which the friar may have used it as a residence (Ivey 2005:34). As it was nearing completion, however, Zambrano was replaced by Fray Pedro Ortega, who may have worked out an agreement with Pecos' leaders to move next to the pueblo itself (Ivey 2005:310).

The disused remains of one of the early villages on the mesilla, likely built around A.D. 1300 and abandoned in the late fifteenth century, were located just south of the occupied pueblo, which had been raised using salvaged materials of the earlier buildings (Ivey 2005:70-71). The Franciscans were permitted to reoccupy some of the dilapidated rooms, which they enlarged by dismantling Zambrano's church and reusing its materials, as well as by reclaiming old (fifteenth-century) Pueblo roof beams.

Ivey (2005:63) argues that the architectural history of Franciscan occupation at Gran Quivira (Las Humanas Pueblo), one of the Salinas missions, was analogous to the process of reconstruction of South Pueblo at Pecos. At Gran Quivira, Franciscans remodeled rooms on the west end of one of the Pueblo roomblocks, creating temporary spaces for a church and convento. There, older timbers had also been salvaged and reused in the new rooms.

These makeshift structures served as a temporary residence and church while Ortega planned and began work on a permanent church and convento at the southern end of the mesilla. It was the most ambitiously monumental church attempted in New Mexico until the late nineteenth century (Hayes 1974; Ivey 2005:310-311). Its scale was symbolic, but it was also intended to accommodate Pecos' large population of perhaps 2,000 people (Kessell 1987:122; Benavides 2012 [1630]:21). Meanwhile, Ortega launched a fierce anti-idolatry crusade, destroying *katsina* and other figurines. He also punished a Pecos man named Mosoyo for urging others to avoid Catholic rituals, sending him to domestic service (Kessell 1987:110) – effectively a form of enslavement. Conflict between the Franciscans and the colonial governor ultimately led to Ortega's removal from Pecos.

In 1621, Ortega was replaced by Fray Andrés Juárez, who proceeded with the construction of the church and convento. Ivey (2005:317) argues that Juárez first had a kiva built south of the convento, which he would use as a space for indoctrination and education. Ivey (1998) has made a case that Franciscans regularly appropriated indigenous sacred architectural forms as an evangelizing tool, but other scholars find this implausible given the Franciscans' vehement opposition to Native religious paraphernalia (Liebmann personal communication).

The church was completed within a few years, involving hundreds of thousands of adobe bricks and elaborate woodworking. The nave was 12 m wide and 40 m long, enclosed by walls that were 12 m high on average (Hayes 1974:20). Shortly after its completion, Alonso de Benavides described it as “temple, of particularly fine and distinct architecture and construction, into which a priest put extraordinary work and care” (Benavides 2012 [1630]:19). Juárez went on to greatly expand the convento on the south side of the church (Ivey 2005:320-323).

In 1630, Benavides wrote that 2,000 people lived at Pecos Pueblo: “[a]nd although these Indians are part of the Jémez nation, they are considered to be a people apart due to their isolation and the fact that they are cut off from the Jémez territory proper, even though they speak the same language” (Benavides 2012 [1630]:21). He characterized the Upper Pecos Valley as “[a]n incredibly cold land and not very fertile,” but indicated that the inhabitants could, with effort, grow maize there (Benavides 2012 [1630]:21).

At some point during this period, the Franciscans abandoned the remodeled rooms in the South Pueblo and moved into the new convento. By this time, Kessell suggests,

[s]ome of the Pecos, for reasons of their own, may have responded to Juárez’ forceful Christian ministry more positively than others. By the end of the century, a vicious intramural rift between progressive and conservative factions would tear the great pueblo apart. If the roots of this rift reached back before the Spaniards’ coming—perhaps to a fundamental division between an individualistic, liberal faction of traders influenced by contacts with other people and a more traditional, agrarian, community-oriented Pueblo faction—surely the ‘Christianization’ of Pecos by Andrés Juárez increased the tension. It is possible that a group of Pecos, previously joined together in one moiety, or as a clan, a kiva group, or society, decided at this time to align themselves more visibly with the invaders by renovating the ‘South Pueblo,’ almost within the shadow of Juárez’ church [Kessell 1987:132].

This suggestion is based on several factors: archaeological evidence for the seventeenth-century reoccupation of South Pueblo; the association of Pueblo politics with factionalism; and the political analysis of Benavides:

All these people and their tribes are *divided into the two factions of warriors and sorcerers*. The warriors have attempted to bring everyone under their command and authority in opposition to the sorcerers. And the sorcerers have tried to sway everyone to their side, making it rain, preparing the land for good seeding, and doing other things that the warriors jeered at. Because of all this, there were continuous civil wars among these people, so bad that they killed each other and laid waste to

entire pueblos. The devil, of course, had his usual harvest [Benavides 2012 [1630]: 35; emphasis added].

The archaeological evidence for the renovation and expansion of South Pueblo is problematic, but tends to favor the interpretation that at some point, beginning in the early seventeenth century, it was reoccupied by Pueblo families. They first rebuilt the remnants of the original fourteenth-century pueblo, then started to extend the roomblocks toward the south, approaching the massive church, with new architecture, resulting in a linear pueblo that was 120 m from end to end. Ivey (2005:72) argues that the reuse of adobe bricks from the Ortiz church of 1617–1619 in rooms at the southern end of this structure indicates that its growth was rapid, perhaps occurring within a decade. Ivey concludes that the sudden appearance of a large new pueblo at Pecos indicates a large influx of people, but that since there were no other pueblos in the Upper Pecos Valley at this time, this population could only have come from North Pueblo:

[I]t appears inescapable that these new families dismantled their rooms and brought the beams and even some of the masonry with them to help construct their new South Pueblo homes. We must suppose that by 1630 North Pueblo was considerably reduced in population, and some portion of its physical structure was dismantled down to the mound of earlier versions forming the base of the pueblo; all of these people and materials had moved to South Pueblo [Ivey 2005:72-73].

As this population shift continued, an additional set of structures, West Pueblo, was built just to the west of South Pueblo. By the middle of the seventeenth century, these new residential structures had grown large enough to accommodate perhaps half of the North Pueblo population. Ivey suggests that:

South Pueblo, rather than being a sort of poor, "Christian Pueblo" hanger-on at Pecos, nothing more than a suburb of North Pueblo, instead was the place of greatest power and influence on the mesilla during the seventeenth century, with North Pueblo a

half-empty, slum-like backwater occupied by apparently “unconverted” Pecoseseños – Pecos kin groups that refused to ally themselves with the Franciscans [Ivey 2005:73].

The suggestion that the North Pueblo residents rejected Franciscan ties may be supported by archaeological evidence. Caches of small “ceremonial pots” were found by Kidder in the plaza of the North Pueblo. Some of these were Black-on-white types, seemingly very old, “worn and battered”, but alongside seventeenth and eighteenth century types. Kidder suggested that they “must have been kept in use ceremonially during almost the entire history of the pueblo.” Nearby there was a broken sandstone slab, “carefully buried,” with a *katsina* painting on it (Kidder 1926:21-22).

While these changes in residential organization were taking shape, the quality of daily life for Native people at Pecos was deteriorating. Early Spanish observers had been impressed by Pecos’ massive stores of maize, but in the seventeenth century maize constituted a decreasing component of Pecos diets. Spanish demands for food and labor, such as building the monumental church, impacted agricultural production and depleted maizes stores (Spielmann et al. 1990). There is evidence that the best maize went to Spanish households, leaving lesser-quality maize for Native consumption (Trigg 1999).

Maize scarcity hindered exchange with Plains people, unraveling their longstanding relationship with Pecos, and the Spanish further interfered with their own demands for Plains products and their enslavement of Plains people (Kessell 1987:137; Spielmann 1989). Spanish authorities in New Mexico sought bison hides for clothing, shelter, and export to mining operations in Mexico, where they were turned in ore bags (Sheridan 1992; Spielmann 2010). In 1638, Governor Luis de Rosas was accused of taking blankets, hides, and skins from the Pecos in

exchange for allowing them to appoint traditional religious leaders, circumventing the efforts of the missionaries to suppress idolatries (Kessell 1987:157).

Meanwhile, Plains people depended on exchange with Pueblo villages for survival (Spielmann 1983). Encroaching Spanish settlement and the breakdown of these economic networks were factors in turning Plains-Pueblo relations more antagonistic. This may be reflected in evidence, in the form of conflict-related trauma in adult males buried at Pecos, of increased violence after A.D. 1515 (Morgan 2010).

Epidemic disease also began its assault on the Native inhabitants of Pecos. Multiple lines of evidence indicate that Pueblo populations began a precipitous decline after – and likely because of – the expansion of the mission system in the 1620s (Liebmann et al. 2016). Historical references to disease at Pecos during this period are scarce, but a catastrophic Pueblo-wide outbreak was recorded in 1640 (Kessell 1987:163). Reff (1993) argues that disease outbreaks likely interfered with traditional hunting rounds and increased dependence on Eurasian domesticated animals, although hunting had not been as important at Pecos as at many other Pueblo sites – most meat in the diet came from bison and turkey, rather than the deer, antelope, and rabbits more typical of Ancestral Pueblo diets (Kellner et al. 2010). In 1641, a census of the missions listed the population of Pecos as 1,189 (Scholes 1929a:48), which would represent a forty percent decline in merely two decades.

Revolt Period, A.D. 1680–1692

Inspired by a Tewa man named Po'pay, a coordinated revolt of Pueblos, Navajos, and Apaches overthrew the Spanish in August of 1680, killing 21 Franciscan missionaries and

hundreds of settlers (Liebmann 2012a). At Pecos, the formidable church was burned and its walls toppled, either by the fire or by deliberate action (Kessell 1987:239; Ivey 2005:346-347). The bells that had governed daily life for sixty years were shattered (Liebmann 2012a:75). Most of the convento next to the church was burned or torn down (Ivey 2005:347-348). Though the Pecos spared the resident Franciscan, Fray Fernando de Velasco, they likely did kill another young friar and a family of Spanish settlers. Pecos warriors joined others from pueblos in the Galisteo basin and the Rio Grande valley in a siege of Santa Fe (Kessell 1987:232).

Despite participating in these acts of rebellion, there are also indications that people from Pecos were troubled by Po'pay's revolutionary movement. Documentary evidence suggests that residents of the village had sent warning to both Fray Velasco and a Spanish officer weeks in advance of the revolt (Kessell 1987:227, 232). Kessell (1987:243) notes that the Spanish did not record any Pecos names in lists of revolt participants, despite mentioning many Pecos in the decade following reconquest. Kessell interprets this apparently conflicting record of Pecos involvement in the Revolt as the result of the competing influences of two factions, one opposed to and one sympathetic with the Spanish (Kessell 1987:232).

Reconquest to Emigration, A.D. 1692–1838

The clearest indication that such factions existed comes from documentary evidence of an incident sixteen years after the Revolt, and four years after the return of the Spanish to New Mexico. After several unsuccessful attempts, Spanish colonial rule was resurrected by Diego de Vargas (Liebmann 2012a). It was not long before Franciscans returned to Pecos. Its residents were recorded as welcoming the resumption of missionary life, and as having rebuilt a convento

for the return of a friar (Kessell 1987:272). They built a small chapel near the ruins of the former church, using the outer wall of the former convento (Ivey 2005:350).

At this point, the population of Pecos had diminished to around 800 people. Drought and pests caused crop failure in the fall of 1695 (Kessell 1987:280–281). After that hard winter, another major revolt erupted among the northern pueblos of the Jemez, Tewa, Tano, northern Tiwa, and some Keres pueblos, again with killings of Franciscan missionaries and the destruction of Catholic sacred objects (Liebmann 2012a:217–218). Vargas had been told that Pecos would join the rebellion, but they did not, although the Franciscans there claimed to have been insulted and threatened. In fact, a large contingent of Pecos warriors accompanied a Spanish inspection of the rebellion's outcome in the Tewa pueblos (Kessell 1987:285–288).

Soon after this second revolt, an incident at Pecos may have resulted from a crisis of factionalism. This event is primarily recorded in the accounts of a Franciscan friar, Silvestre Vélez de Escalante, more than seventy-five years after it was supposed to have occurred. According to this account, Pecos at the time of the second revolt was known to be split into opposing camps, one that was against the Spanish and one sympathetic to them. The anti-Spanish faction was led by an elder named Diego Umbiro. The Pecos governor, Felipe Chistoe, warned Vargas that Umbiro and a few other Pecos leaders were helping to coordinate another rebellion. Just after that meeting, a Jemez man arrived at Pecos with various Catholic objects that he claimed had belonged to a murdered priest. Chistoe invited Umbiro and his fellow Pecos agitators, along with the Jemez visitor, into a kiva. He queried them about the rebellion, and they responded that it was good to kill the Spaniards who were made “of different flesh.” Chistoe's people seized the rebellious elders and hanged them (Kessell 1987:288-89). The purported

rebels' kin sought revenge, attempting (unsuccessfully) to turn the pueblo against Chistoe. Being told, the Spanish governor Cubero threw them in jail, from which they escaped and fled to join the Jicarilla Apaches in the Sangre de Cristo mountains or in the Plains beyond. Frequent conflict between the two factions appears to have followed. Eventually, Chistoe's faction seems to have prevailed, and the others asked the Spanish authorities for permission to move away (Kessell 1987:229-30).

Through the seventeenth and early eighteenth centuries, the population of Pecos continued to decline. A variety of factors contributed, including "disease, incursions by Plains raiders, drought, and civil difficulties" (Capone 2010:14). The small remnant community ultimately emigrated to join the Pueblo of Jemez in 1838 (Levine 2004).

AWAT'OVI

Overview

Awat'ovi was among the largest Ancestral Hopi villages. It is located on Antelope Mesa, in the eastern part of the Hopi Reservation in northeastern Arizona. Its name is translated as *Bow-High-Place*, referring to the village's founding Bow Clan (*Aawatngyam*) and the settlement's position above steep cliffs leading up to the mesa top (Fewkes 1898:594; Whiteley 2002:151). The name has seen many orthographic variations over the centuries. The earliest historical reference by name written down by the chronicler of the expedition of Antonio de Espejo, which visited "Aguato" in 1583 (Pérez de Luxán 1929:96). In the late nineteenth and early twentieth centuries, archaeologists typically referred to the site as Awatobi. Brew and Montgomery (Montgomery et al. 1949:xxii) used the hispanicized "Aguatubi" to refer to the

Franciscan mission, while settling on Awatovi in all other cases. The current spelling, Awat’ovi, including the glottal stop, best reflects the pronunciation of the name.

Geography and environment

Hopitutskwa, the Hopi homeland, is a region of distinctive landforms created over millions of years as the Colorado River coursed across the uplifted sandstone bed of an ancient inland sea, carving out the Grand Canyon and leaving behind the relatively flat expanse of Black Mesa (Blakey and Ranney 2008). Volcanic activity formed a series of steep peaks to the south, known to the Hopi as *Nuva'tukya'ovi*, the “place of snow-capped mountains,” also known as the San Francisco Peaks (Glowacka et al. 2009). The four Hopi mesas – from east to west, these are Antelope, First, Second, and Third Mesa – extend from the southwestern edge of Black Mesa, and are separated by arroyos that drain into the Little Colorado River [Figure 2.3]. Geologically, they fall in the Arizona/New Mexico Plateau region, a landscape that transitions between more extreme neighboring ecoregions. The high-relief wooded tablelands and arid shrublands of the Colorado Plateau lie to the north, while to the west are the hotter, sparsely vegetated lowlands of the Mojave Basin and Range and, to the east, semiarid grasslands in the Southwestern Tablelands (Griffith et al. 2014). The environment of the Hopi Mesas is that of the Dinétah Tablelands ecoregion, characterized by plateaus, valleys, and deep canyons, where rainfall averages between 20 and 33 cm annually. Typical vegetation includes juniper, piñon pine, sagebrush, cliff-rose, Mormon tea (*Ephedra*), fourwing saltbush, blackbrush, Indian ricegrass, needle-and-thread grass, Western wheatgrass, and other prairie grasses (Griffith et al. 2014). The village of Awat’ovi was

built on the southern edge of Antelope Mesa, looking out from an elevation of 5,600 m over the seasonal arroyo of Jeddito Wash to the southeast.

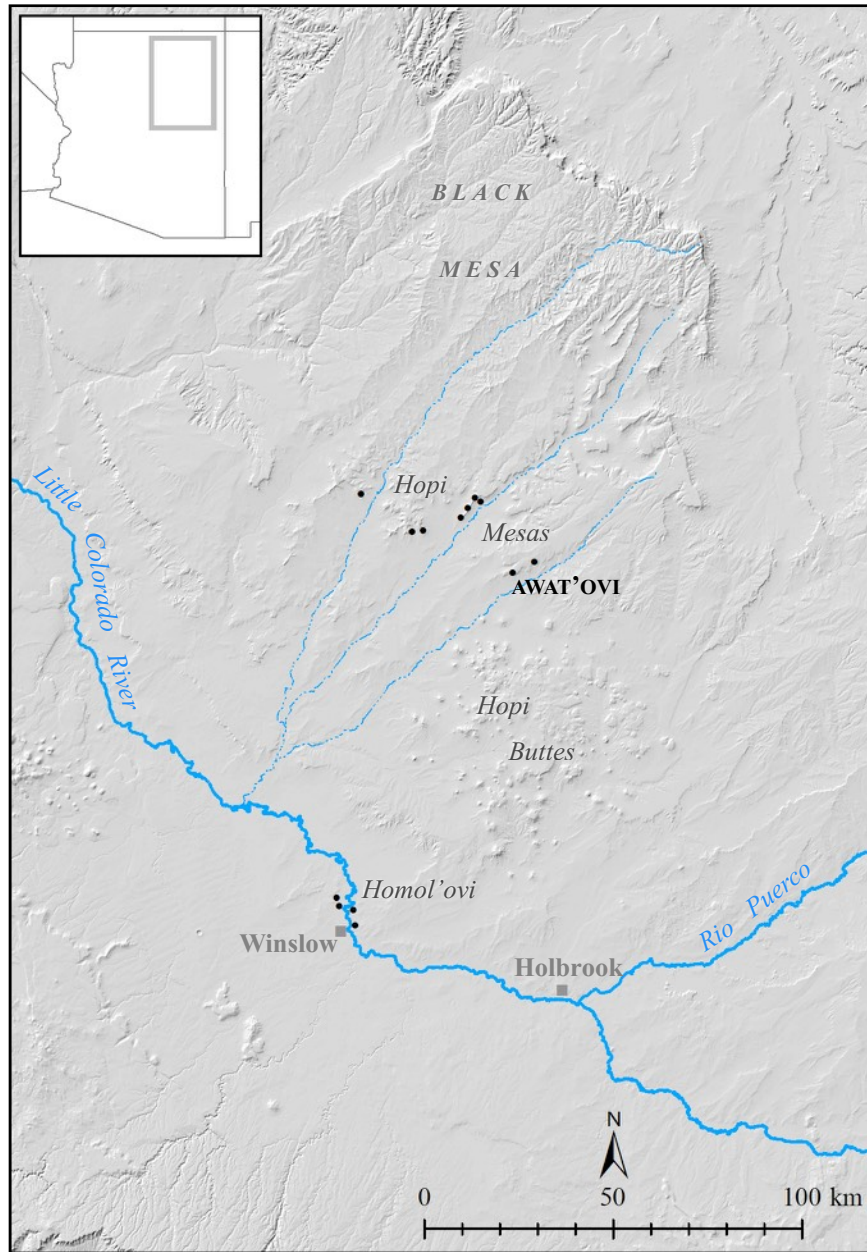


FIG. 2.3 *The Ancestral Hopi region*

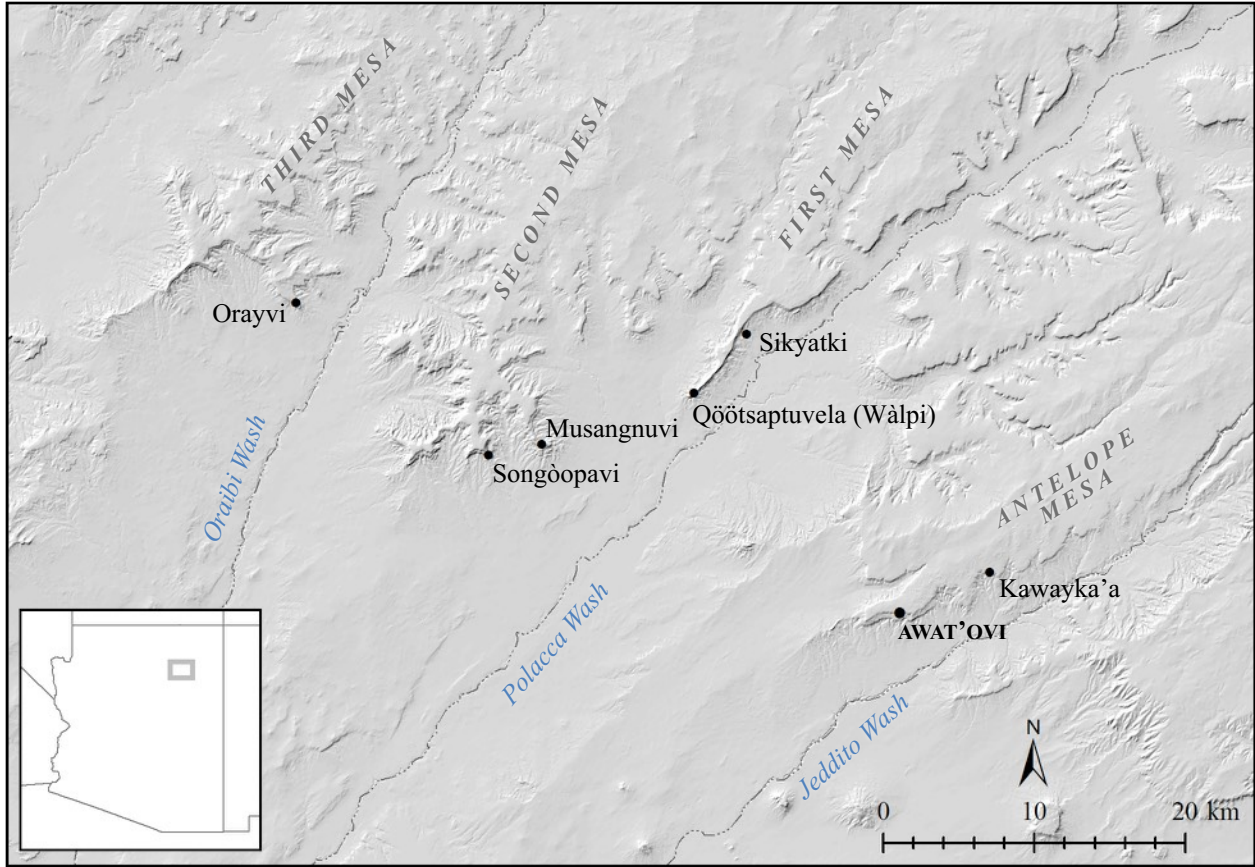


FIG. 2.4 *Settlements on the Hopi mesas ca. A.D. 1500 (after Sheridan et al. 2015:26)*

Site history

Early settlement to A.D. 1275

The ancestors of the people who built Awat’ovi settled in this region sometime before A.D. 1200 [Table 2.3]. Around 1300 B.C., people in the region who until then had been mobile hunters and gatherers built houses in cavities dug out of the earth and began to practice maize agriculture. For the next two thousand years, people lived in such pit houses, scattered across the landscape. During the Basketmaker III period, between A.D. 600-800, beans were added to the agricultural system, and the technological repertoire expanded to include pottery and the bow

and arrow (Bernardini 2011). It is difficult to assess what kinds of communities arose in this setting, and what forms of interaction connected the dispersed population.

At the close of the first millennium, the people of the Colorado Plateau began to collect in compact villages made of blocks of aboveground masonry rooms. A typical village had up to fifty rooms, housing at most a few dozen families. Populations shifted locally, and abandonment of a village was a normal conclusion to several decades' occupation. However, there are no signs that waves of migrants entered from beyond the region (Powell 2002; Bernardini 2011:207). Momentous changes unfolding elsewhere, like Chaco, did little to rattle the Ancestral Hopi world. Bernardini (2011:201-2) points out that settlement on the Hopi mesas, specifically, is more poorly understood than in other parts of the northern Southwest during this time. The

TABLE 2.3 Occupational history of the Hopi mesas (*after Adams 1996; Adams et al. 2004*)

Period	Dates	Settlement
Basketmaker–Pueblo II	1300 BC – AD 1100	<i>Pithouses</i>
Pueblo III	AD 1100 – 1275	<i>Four large (40–100 room) pueblos; most population in small pueblos along drainages or on mesa edges</i>
Early Pueblo IV	AD 1275 – 1400	<i>Population increase and village consolidation; six large villages on Antelope Mesa</i>
Late Pueblo IV	AD 1400 – 1540	<i>Village consolidation to Awat'ovi, Wälpi, Songòopavi, Musangnuvi, and Orayvi</i>
Contact	AD 1540 – 1620	<i>Historic Hopi villages</i>
Mission	AD 1620 – 1680	<i>Missions established at Awat'ovi, Orayvi, and Songòopavi, with visitas at Wälpi and Musangnuvi</i>
Revolt	AD 1680 – 1696	<i>Awat'ovi: Reoccupation of mission complex</i>

development of village society on the mesas has to be extrapolated from patterns documented in neighboring areas, such as the northern part of Black Mesa and the Kayenta Valley, where fluctuating settlement patterns reflect ongoing reorganization of the local population rather than immigration (Powell 2002). Surveys conducted by the Peabody Museum Awat'ovi project on Antelope Mesa recorded the existence of settlements from as early as Basketmaker III (Smith 1971), but more work remains to be done to work out the precise settlement history for these early periods.

The first residents of Awat'ovi built their homes there towards the very end of this period, sometime between the late A.D. 1100s and late 1200s, as evidenced by the Kayenta geometric Black-on-white wares found in the earliest strata of the Western Mound (Smith 1971:6). This came at the doorstep of a period of major transformation across the Hopi mesas, and the Colorado Plateau more broadly.

Early Pueblo IV, A.D. 1275–1400

By A.D. 1300 there were seventeen large villages on and around the Hopi mesas, with Awat'ovi the largest of them. The formation of these large villages, many of them with central plazas, roughly coincided with the development of a distinctive ceramic style known as Jeddito Yellow Ware, which acquired its unique color from clays found below the mesas and open-air coal firing. It was produced at eight to ten villages on Antelope Mesa, First Mesa, and Second Mesa, as shown by neutron activation analysis (Adams 2013). By 1325, Jeddito Yellow Ware had started circulating in exchange networks that began with local relationships between producer villages and nearby neighbors in on-mesa clusters, but whose reach ultimately extended as far as

the Rio Grande and the Upper Little Colorado Valley. Between A.D. 1350 and 1400, a trickle of migrants out of the Four Corners region swelled to a flood. Settlements began to cluster, and the largest villages increased to include several hundred rooms. The arrangement of villages in the landscape was probably reflective of fundamental changes in relationships between them, as the volume of exchange and interaction among them soared (Adams 2002).

Evidence does not suggest that this increasing frequency and intensity of interaction led to the emergence of hierarchical political organization or regional coordination, though this has been a hotly debated question (Duff 2008). Upham (1982) argued that settlement clusters reflected hierarchical political units in which elites managed surpluses and formed inter-district alliances. In contrast, Adams (1991) and Crown (1994) have argued that ideological rather than political ties gave form to connections within and between districts. The katsina cult, in particular, which first emerged around A.D. 1275, helped consolidate communities whose members were migrants of diverse origins. Around the same time, although covering a much larger area, Salado Polychrome ceramics were adopted as symbols of participation in a regional cult focused on fertility and weather control (Crown 1994). Use-wear on these vessels suggests that they made their way into peoples' homes and were regularly used in domestic contexts. At this point, cult membership was a household matter, rather than something enacted in large-scale public ceremonies. This was the broader social context in which the first residents of Awat'ovi established their own households on Antelope Mesa.

The effects of the increasing complexity of relationships both within and between Ancestral Pueblo communities on the Colorado Plateau during this time are illustrated by the Ancestral Hopi settlement cluster of Homol'ovi, situated in the the middle Little Colorado River

valley about 80 km south of the Hopi mesas. Seven primary villages were strung along a 30-km length of the river, where rich floodplain agricultural land compensated for the scarcity of other resources. For more than 150 years, this stretch of the Little Colorado supported a thriving population. Within the cluster, villages would grow rapidly to sizes of a thousand rooms or more, but were rarely occupied for more than fifty years (Adams 2002). The cluster was closely linked to Hopi, with some villages, such as Homol’ovi II, apparently founded by migrants from the Hopi mesas (Duff 2008:80). Throughout their lifespan, the Homol’ovi villages were actively engaged in exchange with Hopi mesa villages, trading cotton for tens of thousands of Hopi yellow ware ceramics (Adams 2013).

Late Pueblo IV, A.D. 1400–1540

The world that the people of Homol’ovi lived in seems to have undergone convulsive, and perhaps cataclysmic, change by A.D. 1400. Current archaeological evidence indicates that at the end of the fourteenth century, every Ancestral Western Pueblo village outside of the Hopi and Zuni reservations was abandoned, for reasons that are still unclear. Districts to the south of Awat’ovi – not only Homol’ovi, but Silver Creek, Chavez Pass, Sinagua, and Salado – were emptied as their populations migrated to the Hopi mesas, doubling populations there between A.D. 1350 and 1400 (Adams et al. 2004).

Important differences distinguished the newcomers to Hopi, who had lived in “cosmopolitan centers,” from earlier residents. Their experience and understanding of politics and other aspects of village life was very different from the people they were joining on the Hopi mesas (Bernardini 2011:207). Regional exchange of yellow wares came to a standstill, and the

pottery itself changed substantially in design and layout, until it became the type known as Sikyatki Polychrome (Adams 2013). The new style seems to have been related to an increase in commensal events that was associated with these episodes of migration (Mills 2007). Sikyatki Polychrome has been described as a local style that incorporated stylistic and iconographic ideas with far-flung origins (Hays-Gilpin 2013). It is, in essence, a cosmopolitan style that “suggests a geographically wide-ranging explosion of creativity that probably superseded linguistic boundaries” (Brooks 2016:164).

Awat’ovi is regarded as epitomizing this cosmopolitan moment. Hopi traditions indicate that some ceremonies and ritual knowledge at Awat’ovi had been acquired from representatives of Rio Grande Pueblos, including Keresans (Whiteley 2002:151). In some accounts, clans from the Rio Grande pueblos joined Awat’ovi late in prehistoric times after residing at Zuni (Courlander 1971; Dongoske and Dongoske 2002:116).

Sikyatki Polychrome also indicates that some pottery production, as well as mural painting, had probably become the work of specialists (Adams 2013:120). Based on INAA data, it is clear that the large villages on Antelope Mesa and First Mesa were contemporaneous centers of pottery production that exercised a high degree of independence. Ceramics produced at Awat’ovi could be confidently distinguished from those made at Kawayka’a, even though only 8 km separate the two villages. This indicates that the potters at each village employed a distinct production process (Bishop et al. 1988). Sikyatki Polychrome vessels were exchanged between villages on the mesas, although they almost never reached off-mesa communities (Bernardini 2007).

The flow of people to the Hopi mesas was followed by the abandonment of the Western Mound at Awat'ovi and the rise of a new residential sector, located about 150 m to the northeast, known as the Hopi Village (Brew 1939). The number of occupied rooms at the site increased from around 300 to between 800 and 1000 (Adams 1989:80). The Hopi Village included three sections, the 500, 600, and 800 series of rooms, arranged around a very large plaza. Noting the general eastward shift of residence, Brew (1939:106) indicated that the Western Mound remained partially occupied in the late precontact period, possibly by "a conservative element such as we see remaining in Old Oraibi today." However, from the beginning of the seventeenth-century onward, evidence indicates that all residential areas of Awat'ovi surrounded the large plaza in the eastern part of the site. This was essentially the arrangement of the village at the time of Spanish contact.

Contact with Europeans, A.D. 1540-1583

People from Awat'ovi may have first witnessed Europeans in A.D. 1540, when the expedition of Pedro de Tovar ventured out from Zuñi into Hopiland, or what the Spanish called Tusayan [*Table 2.4*]. In the dark, seventeen horsemen, the ex-soldier and Franciscan friar Juan de Padilla, and a few footmen reached the escarpment below an inhabited village. They were confronted at dawn by a party of Hopis, who indicated that the Spanish were not to approach the village. After a brief skirmish, according to a later Spanish chronicler, the Hopi exchanged gifts with the expedition (Brew 1949a:3–5). Brew believed that this village was Awat'ovi, but Hopi oral traditions and other historical evidence suggest that it was more likely further up Antelope Mesa at Kawayka'a, then the easternmost Hopi village. Later Spanish accounts of the Tovar

expedition, as well as Hopi oral accounts, indicate that rather than a scuffle, the Spanish initiated deadly violence, leaving the village in ruins (Sheridan et al. 2013:30). Although what happened at Kawayka'a in 1540 remains unclear, we cannot be sure about Awat'ovi's role in the first encounter between Hopis and Europeans.

TABLE 2.4 Timeline of European contact and colonization at Awat'ovi

Date	Events
AD 1540	Pedro de Tovar expedition; skirmish and gift exchange, possibly at Kawayka'a rather than Awat'ovi
1583	Antonio de Espejo expedition; ritual possession, feasting
1598	Permanent colony established by Juan de Oñate; missionary assigned to Awat'ovi
1629	Dedication of Mission San Bernardo de Aguatubi
1630s	Construction of mission complex
1680 – 1692	Pueblo Revolt; expulsion of Franciscans; Hopi reoccupation of mission complex
1962 – 1700	Return of Spanish; reestablishment of Awat'ovi mission; end of occupation

In 1583, Awat'ovi itself was definitely visited by Europeans, this time with the expedition of Antonio de Espejo, searching for silver mines. A detachment of ten men entered Awat'ovi, which appeared to be deserted, and entered the main plaza to formally take possession of the town with a harquebus salvo . A huge assembly of people then came out bearing an enormous feast, which they offered to the Spanish soldiers (Pérez de Luxán 1929:96-98; Sheridan et al. 2013:65-68). In light of the Hopi oral history discussed above, the complexity of this event for the people of Awat'ovi is easy to imagine. Over the next weeks, as the Spanish

traveled to take possession of nearby towns, the Hopi learned more about them, and demonstrated considerable hospitality before the visitors left again towards the east.

Colonization and the Mission Period, A.D. 1598-1680

The next Europeans who arrived at Awat'ovi signaled a longer-lasting presence in the Hopi world. Juan de Oñate, who established a permanent Spanish colony in New Mexico, went to Hopi in 1598, although it is not clear if he visited Awat'ovi (Brew 1949a:7). A Franciscan missionary was assigned to Hopi that year, although it appears that he never actually visited the area. Missionization was evidently delayed at Awat'ovi until after missions had been successfully imposed in Pueblo villages along the Rio Grande. When several Franciscans returned to establish missions at Hopi at the end of the 1620s, they began with Awat'ovi. Three friars arrived in the summer of 1629, on the feast day of St. Bernard, to whom they dedicated the mission (Brew 1949a:9). According to an account from a few years later, someone from one of the previously missionized pueblos had arrived to warn people that the Franciscans had malicious intentions and that they should refuse baptism. In a turnabout, after the Franciscans went through the streets singing and one of them, Fray Francisco Porrás, miraculously restored the sight of a blind boy, the entire village willingly submitted to baptism (Benavides 2012 [1630]:32-34). Benavides wrote in his *Revised Memorial* of 1634 that after Fray Porrás' miracle, the "conversion rose like foam" (Brew 1949a:10). This episode is perhaps a classic illustration of the genre of missionary propaganda, seemingly aimed at securing continued royal support. As Benavides himself makes clear:

Although Our Lord has worked many miracles in all of our previous missions, I have not referred to them as of yet. I have preferred instead to write a general history of that country, which with the grace of God I am doing. I have only wished to pass on to Your Majesty's attention the selected miracles caused by the hand of Our Lord this past year of 1629, just after it had pleased Your Majesty to provide us with more ministers [Benavides 2012 [1630]:34].

The Franciscans did manage to remain at Awat'ovi to begin installing a permanent mission. Awat'ovi has been generally portrayed by scholars as particularly receptive to Franciscan evangelization, an image that has been based on several Spanish accounts that describe large numbers of successful conversions in the village (Dongoske and Dongoske 2002:117). Brew and Montgomery consistently contended that the people of Awat'ovi were more welcoming to the Franciscans than other Hopis. They attach particular importance to the purported miracle. Brew (1949a:10) suggests that faith in the reality of the miracle would explain what he considers "the unusual strength of ... Christianity [at Awat'ovi] in comparison with that of the remainder of the Hopi." He also argues that Porras' character and "exceptional ability" contributed to the success of his conversions at Awat'ovi (Brew 1949a:11). Other information cited as evidence of Awat'ovi's conversion is the Franciscan friar Gerónimo Zárate Salmerón's report, compiled in 1627 or 1628, that 900 'souls' inhabited the village (Zárate Salmerón 1629). These claims are difficult to evaluate, given the propagandistic nature of many missionary reports from this period, and Zárate Salmerón's reports of high numbers of baptisms in the 1620s would be in keeping with Franciscan practice during a time when they pursued a policy of mass baptisms with minimal instruction. Other narratives of this period record that conversions led to internal conflict. Albert Yava, born Nuvayoiyava in 1888 to a woman of Tewa Village (Hano), wrote a memoir in which he portrayed the residents of Awat'ovi as immigrant outsiders to a core

Hopi identity and suggested that the village became divided between converts and traditionalists (Yava 1981; Brooks 2016).

Montgomery (1949:128) reasoned that the Franciscans, in the first stages of establishing a permanent presence, probably reused and remodeled some abandoned rooms in the southeastern portion of the site. He did not know at the time that this would prove to be a pattern of Franciscan encroachment into Pueblo villages, as demonstrated by Hayes' excavations at Las Humanas (Hayes et al. 1981). In Montgomery's account, the Franciscans then laid the foundations for an enormous church (Brew's Church 1), with an interior measuring 34 m long and 14 m across, on open ground at the south end of Awat'ovi's expansive plaza. Soon after completing the foundation, however, this structure was abandoned and a new, smaller church (Church 2) was begun just to the south. Montgomery (1949:129-136) gives several speculative reasons for the relocation, including Hopi resistance, proximity to inhabited dwellings, and the difficulty of transporting adequate roof beams (*vigas*). Finally, he suggested that the move was motivated by a desire to deliberately locate the church over a Hopi kiva as a demonstration of religious superiority. The altar of Church 2 was, in fact, built over at least one intact kiva that had been filled with clean, sandy soil (Montgomery 1949:136).

However, Ivey (1998:130-132) argues that the church was not intentionally placed over active kivas, but rather that the kivas were disused and the entire area had been given over to the Franciscans, who backfilled them for structural rather than symbolic motives. Brew (1949b:53) found that rooms belonging to the Church 2 complex were built over the foundation of Church 1, leading to his conclusion about the overall construction sequence. However, Ivey contends that the massive Church 1 was actually begun after Church 2, which was intended as a temporary

chapel, and given up only when it proved too large to complete. Later renovation and expansion of the complex would explain the rooms that overlay the foundations of the larger church. Which of these two hypotheses is correct remains an unresolved question, along with the issue of superposition.

Ultimately, the mission would become a sprawling complex featuring a pair of dramatic bell towers, a large convento, work areas, animal pens, and other living spaces (Montgomery 1949). As these structures arose, the population of Awat'ovi likely began to decline, largely due to infectious diseases, which impacted mission residents more severely than other Ancestral Pueblo people (Liebmann et al. 2016). The inhabited portion of the village contracted, as people continued to occupy and rebuild on some, but not all, of the late pre-contact roomblocks (Brew 1939). They began making and using new pottery types introduced or influenced by missionaries, as well as European-manufactured goods. They also began consuming European-introduced domesticates, such as sheep and goats, transforming the traditional diet of locally acquired animals such as jackrabbits, coyotes/dogs, and deer (Chapin-Pyritz 2000).

In the years after the foundation of San Bernardo de Aguatubi, additional missions were built at Orayvi and Songòopavi, and *visitas* at Wàlpi and Musangnuvi (Brew 1949a:12–13); the Orayvi and Songòopavi missions were later downgraded to *visitas* (Brew 1979:520). The historical record during the following decades is sparse, largely due to the destruction of documents during the Revolt. Records of several episodes at Awat'ovi survive. One involves a friar acting as *guardián* in the mid-1650s who was accused by the corrupt Spanish governor of plotting to have a Hopi leader killed by a pair of war captains in order to cover up an affair the friar was having with a Hopi woman. Then, to cover up the murder, he was said to have arranged

for the war captains to be tried and hanged (Sheridan et al. 2013:183-187). This same friar, during an absence, was impersonated by a young Hopi man named Juan Zuñi, who performed a mock Mass in an example of Hopi clowning, and was punished with servitude in Santa Fe (Brew 1949a:13–14; Sheridan et al. 2013:196–97). It may be that his performance constituted an act of resistance, challenging the authority and even the very presence of Franciscans at Awat’ovi, perhaps at the direction of Hopi religious leaders (Sheridan et al. 2013:196).

Beyond these compelling glimpses, however, the written record of seventeenth-century Awat’ovi is mostly blank. Hopi stories about this period record various forms of missionary abuse, especially of women, as well as the cruelty of efforts to suppress Hopi religion (Sheridan et al. 2013). A Hopi word, *Tota’tsi*, meaning ‘tyrant’ or ‘dictator,’ is often used in Hopi narratives to refer to missionaries of this period (Voth 1905; Sheridan et al. 2013).

Petroglyphs and rock paintings from the vicinity of Awat’ovi complicate narratives of Catholic conversions during this period. Few depictions of Christian iconography or the Spanish presence were created by Hopi artists, who instead continued to make images of traditional “religious symbols, clan histories, and clan identity markers.” It is possible that the Franciscans prohibited rock art depictions of Christian symbols, but the authors argue that it is more likely that this pattern reflects an attitude of “passive resistance” on the part of Hopis (Dongoske and Dongoske 2002:128–129).

If rock art shows continuity, the establishment of the mission at Awat’ovi brought other changes that appear in the archaeological record. It has been thought that the extraordinary Sikyatki Polychrome ceramic style came to an end, giving way to a type known as San Bernardo Polychrome that has been historically viewed as less skillful and more hastily produced (Colton

1956). As with Rio Grande glazewares, this shift has been explained as the consequence of a strained labor force and possibly a form of resistance to Spanish control. However, there are various problems with this assessment. There is evidence of a shift towards more expedient production of San Bernardo wares, especially in the use of a coarser fabric that allowed pots to dry faster during production and to be fired more quickly, with less control over temperature. However, most San Bernardo pottery did not have these characteristics. Traditional forms such as bowls and jars show continuity in production, while soup bowls, a form introduced by the Spanish, reflect expedient production methods. This may indicate that expediency was a means by which Hopi people met mission tribute demands, reserving higher quality production for vessels for their own use (Capone 1995).

There is little evidence from Hopi sites that were not subjected to missionization to compare pottery production from this time period. Furthermore, some distinguishing technical features of San Bernardo wares – irregular construction and imprecise design work – are also found in Sityatki Polychrome ceramics, and so can be ambiguous indicators of temporal difference. Earlier artifacts may easily, albeit erroneously, be attributed to the mission period (Hays-Gilpin 2013).

Revolt Period, A.D. 1680–1692

Hopis at the mission towns of Orayvi, Songòopavi, and Awat’ovi joined the Revolt in its first few days, killing missionaries and destroying churches (Scholes 1929a; Dongoske and Dongoske 2002:116; Liebmann 2012a:59). During the Revolt period, refugees from Tewa, Tiwa, Tano, and Keres pueblos came to Hopi, founding the villages of Hano (First Mesa) and Payupki

(Second Mesa), while Hopi villages below the mesas were relocated to the mesa tops (Dongoske and Dongoske 2002).

Hopi oral traditions provide some insight into these events. A narrative recorded in the early twentieth century at Orayvi recalls that after some initial conflict with Spanish incursions, the village welcomed missionaries with the usual hospitality offered to guests. Hopis assisted the missionaries with building assembly houses, complete with bell tower, and consented to baptism. Soon, the priests put the Hopis to work hauling water, insisting that they go to a distant spring, as well as bringing lumber and herding cattle. But when the priests began forbidding *katsina* dances and the use of ritual objects, interfering with the rain cycle, the Hopis began practicing their religious activities in secret. Conditions worsened and a debate was held; it was decided that the friar must be killed. They did so, signaling to the other mission villages that they should do the same. No Spanish came to punish them, so they tore down the churches and reused the beams and stones (Voth 1905:268–271). Although some of the details vary, comparison of different versions of this narrative illustrates that they may be understood as essentially historical (Wiget 1982).

An eighteenth-century account relates that when a group of Hopis at Awat'ovi took up Spanish weapons and confronted Fray José de Figueroa, he was defended by a Hopi man named Francisco, who had grown up in the mission. But when the Hopis gave Francisco a choice between taking the friar's life or losing his own, he shot the priest to death. The bodies of the dead missionaries were collected and burned in the mission chapel (Liebmann 2012a:59).

Archaeological evidence revealed that the residents of Awat'ovi remodeled and occupied the mission complex during the Revolt period, installing new walls in the large rooms

to make more typically Pueblo-scale spaces, and over time expanding the complex by adding new rooms to the exterior (Brew 1949a:22, 1949b:80). Sixty-nine extended burials, many accompanied by rosary beads, saint's medallions, Hopi pottery, and *pahos*, were placed in the church during the Revolt period (Montgomery 1949). The need to explain these burials is one reason that Brew (1949a:12) favored the argument that people at Awat'ovi were deeply attached to Catholicism.

After the Revolt, A.D. 1692–1700

Diego de Vargas set out from the former mission village of Halona (Zuni), which had been abandoned during the Revolt, in November of 1692, reaching Awat'ovi several days later. Spanish accounts relate that de Vargas' company was initially met with hostility, but subsequently permitted to enter the village and reconsecrate the church (Brew 1949a:19). After his departure, however, there were no Spanish colonists in the Hopi mesas, which had become a sanctuary for uprooted people from other Pueblo communities, as well as non-Pueblo Native groups.

A Franciscan friar reestablished a mission at Halona in 1699, and the following year at Awat'ovi. Some accounts relate that the Franciscans were invited to return by the residents of Awat'ovi, who volunteered to be baptized and to rebuild the church (Hackett 1937; Brew 1949a: 21). Spanish accounts of this enthusiastic reception to renewed missionization echo those of Pecos a few years earlier. Some Hopi traditions also hold that when the Spanish priests returned they were welcomed at Awat'ovi, but not anywhere else in Hopi (Dongoske and Dongoske 2002:117). The reconstruction of the mission after the return of Spanish rule is an element that

has been used to support an image of Awat'ovi, or groups within the village, as particularly receptive to Catholicism. Parts of the original friary were remodeled to serve as a temporary church (Brew 1949a:22). However, Awat'ovi was not occupied after approximately A.D. 1700. Discussions of events after the brief reestablishment of the mission may be found elsewhere (Brooks 2016).

III NEW DIRECTIONS IN MISSION ARCHAEOLOGY

Archaeological research on Spanish colonial missions has entered an exciting new chapter in recent decades, as it has turned towards a growing focus on indigenous experiences and perspectives, more nuanced understandings of complex mission communities, and situating missions within dynamic cultural landscapes. This chapter reviews recent developments in scholarship on missions and their role in Native experiences of the early colonial period in the Southwest.

Spanish colonial missions have been a topic of Southwestern archaeological research for over a century. Early researchers hoped that mission sites would provide a direct link between present-day and ancient Pueblo societies, and so would help confirm interpretations of the prehistoric archaeological record. Mission studies were strongly Eurocentric, privileging the written record and highlighting the ingenuity and accomplishments of missionaries. They were less concerned with the potential of mission sites to better understand Pueblo experiences of and responses to colonialism. As archaeological research on the Ancestral Pueblo past developed in subsequent decades, a growing disjuncture between prehistory and history led to the marginalization of mission sites. Until recently, investigators of the prehistoric and historic eras were motivated by few shared questions.

The excavations of Pecos Pueblo and Awat'ovi are iconic, both as milestones in the formation of North American archaeology and for their lasting imprint on the study of the Native populations of the Southwest. It is certainly true of Pecos, and arguably of Awat'ovi as well, that

the long shadows they cast over subsequent research have contributed to mistaken assumptions about how much is actually known about each site, and how thoroughly the findings of earlier investigators have been worked through (Ivey 2005). There is a perception that missions have been extensively studied and are generally well understood, but this is not accurate, especially in the Southwest (Ivey and Thomas 2005). Furthermore, mission archaeology in general has been primarily motivated by the pursuit of information needed for architectural reconstructions and by the requirements of cultural resource management (Van Buren 2010:160). There is much that remains to be learned about the missions themselves, and even more about the lives of Native people who were linked to them.

The questions that draw many archaeologists to mission sites in New Mexico have changed considerably in recent decades, and attention to a greater diversity of sites and landscapes of the early colonial period has helped counteract the historical tunnel vision that has sometimes afflicted mission archaeology. Site selection and research designs have changed in critical ways as currents in historical archaeology have turned away from emphasizing the accomplishments of European colonizers and the cultural degradation of Native Americans, and toward greater interest in indigenous agency, creativity, and strategy in the face of colonial oppression. Two themes have the greatest potential to enhance our understanding of how Native peoples experienced and responded to missionization: the complexity of Native communities that engaged with missions, and the broader landscapes in which missions were situated. In addition, both themes can benefit greatly from increasing the role that indigenous perspectives and traditional knowledge play in researching and interpreting the past.

MISSIONS AND SPANISH COLONIAL EXPANSION

Missions were among the paramount institutions of Spanish colonialism in the Americas. Accordingly, investigating mission sites has been a central objective of archaeological research on colonialism and its effects. After a brief overview of the role that missions played in Spanish imperial expansion into the Southwest, this chapter will review the early historiography and origins of the archaeology of this process, before turning to a discussion of current problems and approaches in the field.

The sheer scope and complexity of Spain's imperial project in North America confounds most attempts at a synthetic narrative. To date, the best systematic account of Spanish colonial expansion in the borderlands is David J. Weber's *The Spanish Frontier in North America* (1992), alongside the trio of volumes in the *Columbian Consequences* series, edited by David Hurst Thomas (1989, 1990, 1991).

Throughout the Americas, the Spanish were generally more successful at dominating Native peoples who lived in complex and sedentary societies than those who were more mobile and sociopolitically decentralized. Among the Native groups of the Spanish borderlands, there were few parallels to the great cities of central Mexico or the intricate bureaucratic empire of the Incas. The Pueblos of the Southwest most superficially resembled the sedentary societies that the Spanish had become familiar with, although the invaders would find their political organization confounding. In the Southeast, Native chiefdoms rested on more recognizable forms of authority and hierarchy. Military expeditions to New Mexico and Florida were driven by the promise of riches that did not materialize, and the colonies would have been abandoned had Franciscans not persuaded the crown that they represented an indispensable opportunity to Christianize masses of

indigenous people. Missionization thus became the existential purpose of colonization on the northern frontier of Spanish territory (Galgano 2005).

In the late sixteenth century, the secularization of the missions in central Mexico drove the Franciscans towards new territories on the imperial frontier. New Mexico had been explored by Francisco Vázquez de Coronado in the early 1540s, but no colony had been established. Spurred by the promise of mining riches, but also by Franciscan zeal, the Spanish returned to explore the region in the 1580s. A small band of friars led by Agustín Rodríguez reached the Pueblos in 1581, followed by Antonio de Espejo in 1582, and in 1590 by Gaspar Castaño de Sosa, who with 170 would-be settlers found his way to Pecos Pueblo. Lacking royal authorization, Castaño was arrested and the group was returned to Mexico. A permanent colony was established by Juan de Oñate and up to 500 others, including ten Franciscans, in 1598. By the end of the 1620s, there were fifty Franciscan friars in the Pueblo world, and as many as fifty churches and friaries had been built in Pueblo communities along the Rio Grande and adjacent districts. In 1529, a contingent of friars led by Estevan de Perea set out to complete the missionization of the Pueblos by traveling west to Acoma, Zuni, and Hopi (Weber 1992) [*Table 3.1; Figure 3.1*].

Missions constituted the vast majority of seventeenth-century Spanish settlements in the Southwest. Other settlement types were ranchos, haciendas, and towns, but there were only a handful of these prior to the Pueblo Revolt, in contrast with the dozens of missions that were established. Although settlers were officially restricted from living too close to Pueblo villages, in practice these constraints were regularly ignored as settlers sought to appropriate Native labor

TABLE 3.1 Selected pre-Revolt missions established in the Pueblo world. (*Drawn from Lycett 2005:105 and Barrett 2012:37–38*)

Numbers in the first column correspond with locations in Figure 3.1

	Pueblo	Mission	Date est'd.	Note
1	Ohkay Owingeh	San Gabriel del Yunque-Ouinge	1598–99	Cabecera
2	-	San Miguel (Santa Fe)	ca. 1610	Cabecera
3	San Ildefonso	San Ildefonso	1610	Cabecera
4	Kewa	Santo Domingo	1604–07	Cabecera
5	Katishtya	San Felipe	1609–10	Cabecera; visita of Santo Domingo, 1615–1621 and after 1660s
6	San Marcos	San Marcos	1610–11	Cabecera
7	Galisteo	Santa Cruz de Galisteo	1610–12	Cabecera
8	Sandia	San Francisco de Sandía	1610	Cabecera
9	Isleta	San Agustín de la Isleta	1612	Cabecera
10	Zia	Nuestra Señora de la Asunción	1613	Cabecera; possibly founded 1610
11	Nambé	San Francisco de Nambé	1613	Cabecera
12	San Lázaro	San Lázaro	1613	Visita of Galisteo
13	Chilili	La Natividad de Nuestra Senora	1613–14	Cabecera; visita after 1660s
14	Cochiti	San Buenaventura de Cochiti	1614	Visita of Santo Domingo; Cabecera 1637–1640s
15	Tamaya	Santa Ana de Tamaya	1614	Visita of Zia
16	Ohkay Owingeh	San Juan Bautista	1616	Reestablished ca. 1633
17	Cicuye/Pecos	Nuestra Señora de los Angeles de Porciúncula de los Pecos	1619	Cabecera
18	San Cristóbal	San Cristóbal	1621	Cabecera; after 1630, visita of Galisteo
19	Picurís	San Lorenzo de Picurís	1621	Cabecera; abandoned 1625; reestablished 1627
20	Taos	San Gerónimo de Taos	1621–22	Cabecera; reestablished ca. 1627
21	Giusewa	San José de los Jemez	1621	Cabecera; abandoned in 1630s
22	Patokwa	San Diego del Monte	1621–22	Cabecera; abandoned in 1623; refounded 1626–29

TABLE 3.1 (continued)

	Pueblo	Mission	Date est'd.	Note
23	Abó	San Gregorio de Abó	ca. 1622	Cabecera
24	Paa-ko	San Pedro	1620s	Visita
25	Pilabó	San Miguel de Socorro	1626	Cabecera
26	Quarai	Nuestra Señora de la Purísima Concepción	ca. 1626–28	Cabecera
27	Santa Clara	Santa Clara	ca. 1628	Cabecera; visita after 1660s
28	Acoma	San Estevan del Rey	ca. 1629	Cabecera
29	Hawikuh	La Purísima Concepción	1629	Cabecera; abandoned 1632; reestablished in late 1650s
30	Senecú	San Antonio de Padua	1629	Cabecera
31	Awat'ovi	San Bernardo de Aguatubi	ca. 1629	Cabecera
32	Orayvi	San Francisco/San Miguel de Oraibi	ca. 1629	Cabecera
33	Songòopavi	San Bartolomé de Xongopavi	ca. 1629	Cabecera
34	Musangnuvi	-	ca. 1629	Visita of Songòopavi
35	Wàlpi	-	ca. 1629	Visita of Awat'ovi
36	Tajique	San Miguel de Tajique	ca. 1629	Cabecera
37	Gran Quivira	San Buenaventura de las Humanas/San Isidro	ca. 1629	Visita of Abó; reestablished as cabecera in 1659–60
38	Tabirá (Pueblo Blanco)	-	ca. 1629	Cabecera; visita of Las Humanas by the 1660s
39	Tenabo	-	ca. 1629	Visita of Abó
40	Tzelaqui (Sevilleta)	San Luis Obispo	ca. 1627–28	Visita
41	Alameda	San José	1635	Cabecera; visita after 1660s
42	Pojoaque	San Francisco de Pojoaque	by 1641	Visita of Nambé or San Ildefonso
43	Jacona	-	by 1641	Visita of Nambé or San Ildefonso
44	Cuyamungue	-	by 1641	Visita of Santa Fe or Nambé
45	Tesuque	San Lorenzo de Tesuque	by 1641	Cabecera
46	Puaray	San Bartolomé	by 1641	Visita of Sandia
47	Halona (Zuni)	Nuestra Señora de la Candelaria de Zuni	by 1663–66	Cabecera

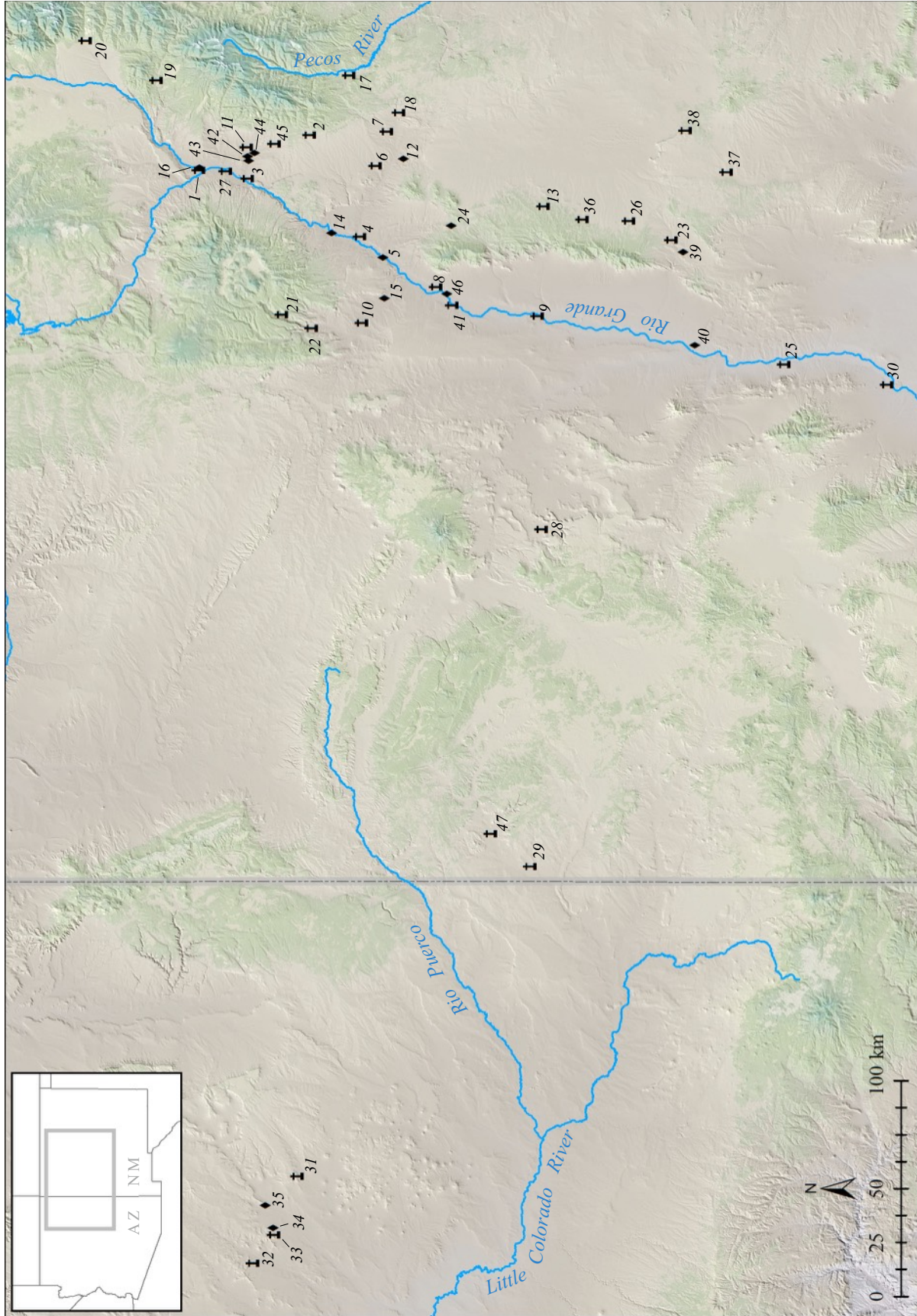


FIG. 3.1 Selected pre-Revolt missions established in the Pueblo world. See table 3.1 for key

and agricultural land, as well as natural resources. Settlers also failed to recognize other Native uses of non-agricultural land, such as hunting, resource gathering, and visiting sacred sites. The invisibility of these activities to colonial settlers led them to claim territory on the basis of being *tierras baldías*, or unimproved lands (Rothschild 2008).

As colonial settlement expanded over the course of the seventeenth century, the Pueblo settlement landscape contracted. Based on both archaeological and historical evidence, it is apparent that Pueblo villages decreased in number as well as in scale. While more than a hundred sites show signs of occupation during the fifteenth and early sixteenth centuries, only seventy were inhabited when the mission program was expanded around 1620. By the 1660s, this number had halved, and was reduced to at most twenty-seven by the time of the Revolt in 1680 (Lycett 2014:175).

The colonial mission as institution

The Spanish colonial mission was a kaleidoscopic institution that varied in space and time to encompass diverse sites, agents, and practices (Langer and Jackson 1995; Jackson 2000, 2009; Galgano 2005; Sandos 2004; Hackel 2005; Lycett 2002, 2005). It was the “quintessential” institution of the Spanish frontier, tailored to operate on the fringes of colonial power and to simultaneously effect social, cultural, and religious transformation of Native groups while minimizing costs to the state (Jackson 2009:330). Missions were “all-encompassing programs of directed cultural change designed to transform the ways native peoples lived as well as how and where they worshiped” (Sheridan 2006:8). While missionary efforts were explicitly motivated by evangelization, the system as a whole developed to reshape Native societies in the mold of a

‘civilized’ social order (*policía*), turning Native individuals into cooperative political subjects, especially as a means of appropriating Native labor.

In administrative terms, missions were organized as units that included both *cabeceras*, central settlements led by resident religious personnel, and *visitas*, satellite facilities that the friars visited only occasionally, which together constituted the congregational unit of the *doctrina* (Kubler 1940; Weber 1992:107). Cabeceras included most of the mission’s infrastructure, including a major church, a *convento* or friary, kitchens, workshops, stables, and other auxiliary facilities, while visitas were generally minimal, with perhaps only a small chapel (Lycett 2005:115). Cabeceras were typically located in the largest Native settlements, while *visitas* were set up in smaller, outlying villages, where populations were typically more dispersed (Galgano 2005:48). Both Pecos and Awat’ovi were, from the point of view of Spanish officials, *doctrinas* (Ivey 2005:20).

Native labor was required to build mission facilities, and the architecture was influenced by local materials, environments, and building traditions. This meant that in New Mexico, the missions were raised mostly by the labor of Native women, who were traditionally responsible for building houses and other structures (Benavides 1996 [1630]: 43). At first glance, the size of many churches and friaries appears disproportionate to the needs of missionaries and Native residents. Large investments of labor were made in the principal missions in anticipation of long-term functionality and to endow them with symbolically potent monumentality (Kubler 1940).

The church was the most visible part of a mission, but missionaries also relied on intervening in daily life in less monumental but potentially more consequential ways. A key

concern was constraining mobility and enforcing concentrated sedentism, a policy known as *reducción* or *congregación* (Jackson 1995:viii). The Spanish believed deeply in the interdependence of the built form of towns, urban communities, and social order (Kagan 2000; Wernke 2013; VanValkenburgh 2012). Accordingly, missionization entailed urbanization. Permanently settled Native communities could be deterred from hunting and gathering and steered towards agriculture centered around Eurasian domesticates (Pavao-Zuckerman 2011:229–30; Lycett 2012). This subsistence base would sustain a year-round laboring population to support the mission itself and to produce surplus for tribute (Barrett 2012:39). An urbanized Native labor force could be more readily recruited to meet colonists' demand for production. In the Southwest, the large villages in which many Ancestral Pueblo people lived presented the Spanish with what they understood to be an already urbanized population, and it has been argued that *reducción* played a smaller role in the region than in other frontier zones (Weber 1992:108).

The Franciscans subsumed these functions of missionization under the guise of a utopian Christian community, in what Sheridan (2006:6) has described as a “theocratic vision of communal order.” Franciscans operated on European ideas of authority, supplemented by their experience of Mesoamerican rulership. They pursued a strategy of winning over Native leaders, assuming that their subjects would come along. This worked better in the chiefly societies of the Southeast, but posed problems in the face of Pueblo political systems where leadership took a much less familiar form (Weber 1992). Thus, the principles these utopias were founded on were often utterly at odds with indigenous ideals of communal organization.

Much attention has rightly been paid to the inhumane treatment of Native people by missionaries, some of whom were explicitly malicious and exploitative, although others had benevolent, albeit misguided, intentions. Harsh punishments such as whippings for perceived misbehavior, unjustifiable labor demands, and the destruction of sacred objects and spaces were some of the leading causes of Native suffering in mission communities (Liebmann 2012a:34–39).

Because missions led Spanish expansion, they were the primary context for sustained interaction between many Native Americans and Europeans throughout the borderlands. For many Pueblo communities, the experience of seventeenth-century colonial rule was channeled through religious officials and their subordinates. A frequently reiterated view is that missions were “focal points of cultural interaction where Spaniards and indigenous populations experienced rapid cultural changes” (Walter 2007:187).

HISTORIOGRAPHY AND EARLY ARCHAEOLOGY OF MISSIONS

In the years before missions were investigated by archaeologists in the Southwest, they were not viewed as an important part of American history. The modern era of mission scholarship in North America is usually traced to the historian Herbert Eugene Bolton (1917), who pushed for a realignment of historical perspective, arguing that views of North American history were skewed by a culturally biased lens that focused on British rather than Spanish colonization. Bolton pointed out that the mythology of westward expansion had depended on downplaying the reality that, for much of the continent, deeper imprints were made by northward invasion. This reorientation entailed looking more closely at institutions – especially the mission,

central to Spain's imperial expansion – that had not previously been seen as particularly relevant to the origins and formation of the United States. Bolton framed his ideas around the geography of the Spanish Borderlands, typically understood as stretching across the United States from Florida to California (Bolton 1921). This frontier space was contiguous with, and indeed largely defined by, the distribution of missions.

Bolton contrasted British colonization, which he saw as devoted to the eradication of Native American populations, with Spanish colonization, which he argued was driven by humanitarian goals and aimed at more protective and even inclusive relations with Native Americans. Bolton and his many students saw missions as benevolent institutions, rarely questioning the claims of missionaries, while denigrating reluctant or resistant Native Americans as culturally inferior and unworthy of historical attention (Thomas 2012). Boltonian historiography strongly influenced the pioneers of mission archaeology, who went in search of evidence about the organization and operation of missions to complement missionaries' own statements about how they carried out evangelization.

Spanish missions in the Southwest captured the interest of archaeological researchers from nearly the beginning (Ivey and Thomas 2005). Bandelier visited Pecos in 1880, describing and mapping the site and interpreting some aspects of the relationship between the mission and the Pueblo architecture (Bandelier 1881). Initial research broadly supported the belief, established by historians such as Bolton and Scholes, that missionaries produced accurate accounts of their efforts, and that missions succeeded in dominating and converting Native peoples (Benavides 1996 [1630]; Bolton 1917). Taking a top-down view, scholars tended to

focus on institutional relationships connecting different parts of Spanish empire and on the experiences of Franciscan missionaries.

In the early twentieth century, missions were fundamental to the development of the direct historical approach (Steward 1942:337). Nels C. Nelson, working at Ancestral Tano pueblos in the Galisteo Basin, especially Pueblo San Cristobal, argued that the presence of missions promised the realization of “sound conclusions regarding the culture, character, and interrelations of the early historic Rio Grande villagers of the sixteenth and seventeenth centuries” that would, by “working back from the known to the unknown,” facilitate stronger interpretations of the prehistoric past (Nelson 1914:8–9). Researchers subsequently set out in pursuit of sites with indications of the longest unbroken occupational sequences. Both Kidder and Brew selected Pecos and Awat’ovi, respectively, because they believed these sites featured the longest uninterrupted occupations, and because the missions provided the crucial link in the chain of the ethnographic present, the historical record, and the ancient past (Ivey 2005; Davis 2008). In Brew’s account of the research at Awat’ovi, “the presence of the mission made certain the continued existence of the native town well into historic times and indicated that we might find at Awatovi a longer time span than at any of the other large pueblos along the Jeddito rim” (Montgomery et al. 1949:xix).

Early mission archaeology tended to confirm or reinforce the perception that missionization was successfully carried out as intended (Ivey and Thomas 2005). Archaeologists subordinated their interpretations to those of historians who generally assumed that missionization unfolded according to protocol, and that missionaries achieved uncomplicated dominance over Native communities. In general, archaeologists did not expect mission

excavations to overturn accepted narratives about missionization and the Pueblo past (Ivey and Thomas 2005:211). During this period, scholarly understanding of missions in the Southwest was strongly shaped by the historical scholarship of France Scholes, who Bolton had encouraged to focus on seventeenth-century New Mexico (Greenleaf 2000:323), and George Hammond (1927; Hammond and Rey 1953, 1966). Scholes' exhaustive archival research in Spain and Mexico revived an historical record that many had thought lost, and generated far more detailed narratives of missionization than had previously been available (Scholes 1929a, 1929b, 1930, 1936a, 1936b, 1937, 1942; Scholes and Bloom 1944, 1945).

Though their research goals were innovative in many respects, archaeologists investigating mission sites did not see their work as a means to challenge or complicate accounts based on documentary evidence. Excavators targeted missions in order to isolate chronological contexts; mission churches and associated structures were recognized as historically significant, but presented themselves first as intrusions into an otherwise continuous trajectory of indigenous cultural development. The direct historical approach predisposed archaeologists to look for continuities in Pueblo society and culture, rather than possible changes, and reinforced ideas of Native people as essentially timeless and unchanging.

The move to processual approaches in the 1960s in the Southwest displaced the direct historical approach, and thus nullified a primary rationale for mission research. As major archaeological research projects directed at missions ceased (Ivey and Thomas 2005:216), many of the interpretations and narratives generated by early research became frozen in place. The enormous datasets that had been collected were often underutilized, and analysis and publication were often delayed by decades or cut short. Although missions in a variety of regions had been

explored by archaeologists, there was little communication of findings across regions, so broad arguments about missionization did not emerge as fully as they could have (Graham 1998).

By the quincentennial of Columbus' arrival in the New World, the legacies of Spanish colonization had been reevaluated, and celebration of missionization gave way to condemnation. Missions could no longer be extolled as civilizing outposts willed into existence by intrepid, faith-driven friars. Instead, they were viewed as traps designed to ensnare Native people in an unforgiving regime of oppression, cultural evisceration, and demographic catastrophe. James Sandos (2004) has labeled these polarized schools of thought as "Christophilic Triumphantist" and "Christophobic Nihilist." Missionization was indisputably oppressive, cruel, and ruinous for Native communities in many respects (Hackel 2005). However, these often polemical views could mask the more complex reality of mission life as it was experienced by Native people. An effect of the Christophobic Nihilist perspective was often to reframe the archaeological record in similarly polarized categories.

In a review of mission archaeology, Graham (1998:28–29) argues that "[t]he bias in archaeology has been to emphasize the political role of Christianity as a religion of the state, and thereby to interpret pre-Columbian elements in religious material culture as resistance phenomena." This tends to marginalize the "cultural imagination" of Native peoples subjected to missionization. As Comaroff and Comaroff (1991:31) have asserted, while missionized peoples struggled to defend their autonomy, they simultaneously worked to "fashion an understanding of, and gain conceptual mastery over, a changing world."

APPROACHES TO THE ARCHAEOLOGY OF COLONIALISM

Mission archaeology has continued to shift towards a focus on the experiences and actions of indigenous people. In the late 1990s, the purpose of mission archaeology could be identified as improving “a general understanding of the role that Christian missions and missionaries played in the European displacement of indigenous peoples in the Americas” Graham (1998:25). While acknowledging the importance of studying Native experiences, researchers continued to highlight the agency of missionaries and the disastrous consequences of colonization for the missionized, struggling to consider the ways in which Native people could be authors of cultural change and creativity.

Panich and Schneider (2015:50) observe that the predominant interpretations of Spanish Borderlands missions proceed from viewing them as an institution akin to a prison. Corporal punishment, the regulation of behavior and space, pervasive social control – even of speech and gesture – are highlighted. Such images rely on the idea that Native people were involuntarily and coercively swept into instantiations of a regularized system governed by universal prescriptions, flattening significant variation in Native cultural, economic, and political organization.

Broad changes in archaeological approaches to colonialism – especially the shift away from colonizer/colonized dichotomies, an emphasis on indigenous diversity and agency, and recognition of colonialism’s ongoing consequences and lived experiences – have both influenced and been advanced by recent archaeology of missionization (Cipolla and Hayes 2015; Funari 2015). A more recent survey of mission archaeology illustrates how fundamentally the field has shifted its emphasis towards questions about Native agency and experience (Van Buren 2010).

Central themes that have emerged in mission archaeology over the last two decades include the variability of individual missions; indigenous identities; religious conversion; cultural innovation; resistance; and economic changes. Missionization is no longer viewed as just a process of domination or displacement, but as “the ways in which Spaniards and natives negotiated the evangelical and acculturative programs instituted at formal missions along with less well-studied aspects of religious negotiation that occurred in other contexts” (Van Buren 2010:159). Mission research has been influenced by new approaches in the archaeology of colonialism that are “characterized by an interest in the effects of European expansion on the full range of people who were caught up in this process, a rejection of the concept of discrete, bounded cultures, and an emphasis on the active ways in which individuals and social groups negotiated the processes set in motion by the conquest” (Van Buren 2010:152). Mission archaeology has lost much of its former insularity, forging connections with broader historical and postcolonial archaeologies, including archaeologies of identity and of landscape (Liebmann and Rizvi 2008; Voss 2008).

Beyond accommodation and resistance

Polarized views of missions impede consideration of the complexity of missionization and bolster ‘terminal narratives’ that situate missions at the end of Native history (Wilcox 2009). Viewing missions as sites of indigenous demographic and cultural destruction dovetails with a tendency to assign all indigenous actions to the categories of resistance and accommodation. Scholars of colonialism are interested in moving beyond reductive binaries that classify all forms of Native responses to colonialism in terms of accommodation or resistance. Certainly,

archaeologists have been alert to and interested in signs of resistance to missionization since the early days of mission research, and remain committed to exploring the nature and variety of ways that Native people counteracted efforts to regulate religious activities and daily life. As both the primary loci of colonial interaction for many indigenous groups, and as highly visible symbols of colonial oppression, missions were often flash points or targets in episodes of violent resistance to colonial rule, involving the destruction of churches, killings of missionaries, and attacks on iconic objects (Liebmann 2012a). Material evidence that has been identified at Pueblo mission sites speaks to both overt and violent resistance, such as broken church bells (Liebmann 2006, 2012a), as well as more covert resistance, such as surreptitious symbolism in pottery decoration (Mobley-Tanaka 2002; Spielmann et al. 2006). Understanding why resistance to missionization took different forms in different contexts remains an important research problem, as does the question of how resistance to various elements of missionization and colonization – from religious suppression to labor exploitation – coincided or diverged.

However, archaeologists are increasingly attuned to exploring these problems in ways that don't assume that Native resistance only manifested in adherence to 'traditional' practices and beliefs, in attachment to 'indigenous' material culture, or in violence – assumptions that restrict Native responses to reactionary rather than creative acts (Liebmann 2012b; Liebmann and Murphy 2011). Archaeologists studying missions have shared the general concern of scholars of the colonial period that the themes of domination and resistance filter out a wide variety of Native experiences and forms of agency. Resistance and rebellion have been emphasized in recent years as the "primary Native responses to Spanish brutality and oppression," but scholars should avoid "intrinsicly interpreting all acts of violence as outcomes

of the interplay between oppression and resistance” (Blair and Thomas 2014:26-27). As Schneider and Panich (2014:10) observe, in the context of missions, highlighting resistance has helped to counter narratives of indigenous subjugation and defeat, but has somewhat paradoxically reinforced the idea that mission communities were trapped in a system so powerful that they could not hope to escape. This tends in turn to reproduce the perception that missionized Native communities were enclosed, isolated, and homogeneous, discouraging research that seeks to understand their internal differences and connections with larger social and environmental spheres.

Mission histories tend to be either triumphalist celebrations of missionary persistence and devotion, or catastrophic tragedies of Native decline and ruin. These views are opposite extremes, but share a tendency towards negating the extent to which Native Americans participated in and shaped the form and outcomes of missionization, and the myriad reasons they had for doing so. Archaeologists have recently sought to counter triumphalist colonial narratives and images of missions as sites of dejected, defeated Native people by pursuing better understanding of Native agency. Agency is often invoked in the context of Native resistance, downplaying the fact that agency is also implicated in accommodation and collaboration. More importantly, agency is of course enacted in myriad ways that are not merely responses to colonization, and do not fit into scholarly categories. Scholars of colonialism are thus working to be more attentive to the incongruities, contradictions, and ambivalences of Native agency.

Variability in local contexts

In conjunction with exploring the diversity of Native responses to missionization, scholars have also been documenting the diversity of missionization itself. Earlier scholarship tended to proceed from the assumption that well-trained Franciscans created fairly uniform missions across the frontier (Ricard 1966), often inducing archaeologists to work to make the empirical evidence fit ideal templates sketched from historical accounts (Van Buren 2010).

However, it is by now a truism that colonial missions were highly variable, and that missionaries, often depicted as severe and dogmatic, displayed surprising fluidity in attempting to bring about the religious and social transformation of indigenous peoples. As both archaeologists and historians have diversified their inquiries into less-explored regions and a broader range of sites, they have continued to expose unexpected dimensions of variability in how missionization unfolded along with Spain's imperial expansion (Jackson 2009). Marked differences are now apparent not only between regions, but also within them, as "[t]he missionary project was everywhere made particular by variations in the structure of local communities, in the social and theological background of the evangelists, and in the wider politico-economic context and precise circumstances in which the encounter took place" (Comaroff and Comaroff 1986:1–2).

Deagan (1993:88–89) discusses the variability of mission strategies in the face of different Native settlement patterns and political and agricultural practices. In much of the Southeast, societies were organized into hierarchical chiefdoms where people lived in villages for much of the year. This worked well for the Franciscans, in contrast with places like California and Texas where they attempted to congregate more nomadic groups.

Missions varied widely in size, wealth, personnel, duration of use, the degree of integration with indigenous settlements, and relationships with other components of imperial expansion. Despite elaborate prescriptions, missions in practice were in many ways improvisational. They were regulated by centralized but distant colonial authorities, both ecclesiastical and civil, who themselves were frequently at odds and working at cross-purposes (Scholes 1943; Kessell 1987). Individual friars introduced their own innovations, shortcuts, and distortions. Consequently, actual practices at missions often departed from prescriptive ideals. There is some evidence of this in the historical record of friars being pulled from service or tried for misconduct. Still, earlier scholars who tended to accept the truth of what missionaries reported they were doing would probably be startled by archaeological evidence revealing the inconsistency of evangelization and the ways that missions conformed to indigenous society rather than the other way around.

Correspondingly, the nature of indigenous agency, identity, and daily practice in mission communities can scarcely be generalized, even at the regional level. Gathering many local histories is essential to understand how missionization and responses to it contributed to shaping modern indigenous communities (Orser 1996; Liebmann and Preucel 2007; Mills 2008). The archaeological diversity of Spanish missions – even of missions of only a single religious order, such as the Franciscans – is at odds with ‘grand narratives’ of colonialism in which powerful institutions do not have to yield and flex when they meet the uneven terrain of the indigenous world (Senatore and Funari 2015). Historical accounts of missions from then and now often present missionization as a single story that was repeated in many places.

Unchallenged, this story can obscure the many distinct cultural practices and local histories that emerged each time Native people encountered missionaries.

RECENT MISSION ARCHAEOLOGY

Graham (1998) surveys the Spanish Borderlands and the Yucatan region of Mexico, Guatemala, and Belize. Missions of La Florida and the Southeast have been the most cohesively researched, she argues, with collaboration between archaeologists and historians, in part because the lack of standing colonial architecture made locating sites challenging. At least eight major sites have been published, but there had by the time of writing been no excavation in Native settlements or pueblos of mission sites (Graham 1998:33). In Texas, where missionization did not begin until the end of the seventeenth century, there has been a fair amount of research by public universities, and since many mission sites are on public land, this has helped ensure publication of results.

Archaeological investigations of Spanish missions have been conducted across the borderlands. Investigations in La Florida and the Southeast have been influential, building on an important tradition of historical archaeology in the region (Deagan 1990, 1993; Thomas 1993). Over multiple decades, the American Museum of Natural History's investigations of Mission Santa Catalina de Guale, off the coast of Georgia, have been a particularly significant demonstration of the value of archaeological research on missions (Thomas 1993, 2012). Though relatively little recent mission archaeology in Texas has been published, various projects have been carried out as part of cultural resource management (Fox 1991; Walter 2007). Currently, the

eighteenth-century missions of California are the subject of a flourishing research effort (Sandos 2004; Milliken 2008; Schneider 2015a, 2015b; Reddy 2015; Panich 2016).

Themes of recent research

New turns in historical and archaeological work on colonialism in the Americas are countering the Eurocentric biases of earlier mission studies and rekindling interest in missions as sites for investigating the past in indigenous terms. Among the themes that archaeologists have used to dislodge entrenched narratives are more expansive accounts of Native agency, internal complexity of mission communities, mission communities' ties with other Native groups, relationships with the landscape, and increasing understanding of hinterland sites contemporaneous with missions (Schneider and Panich 2014).

Some of the archaeological data from mission sites that seem to yield the most sure-footed interpretations are those that relate to directed cultural change, the impacts of disease, and assumed relations of power between Europeans and Native peoples (Schneider and Panich 2014:10). Gathering archaeological data from sites beyond the missions themselves is one way to address this bias, but so is finding new ways to approach the abundance of already available (and often neglected) data from mission sites.

Landscape

Among the most important factors driving archaeological innovation and creativity in recent decades has been the emergence of landscape as a theme linking many different areas of inquiry. Among the benefits of the "landscape approach to the human past has been the

dismantling of the notion, often implicitly held, that settlements were islands in the midst of a sea of uninhabited or unused space” (Ur 2009:180). Taking up this concept, archaeologists have increasingly sought to illuminate how colonialism shaped Native experiences outside its most recognized points of impact. Students of missionization have developed more holistic understandings of colonial Native lives by de-centering missions in the landscape.

Indeed, the broader mission landscape has become a defining theme of new mission research, as encapsulated in a recent volume edited by Schneider and Panich (2014) that includes case studies from Georgia, Florida, Texas, California, and New Mexico. Mission inquiries that expand beyond the immediate vicinity of the church and convento to consider broader landscapes associated with or impacted by missionization have been identified as a way to more clearly highlight Native agency in mission encounters. An emphasis on mission sites that excludes more distant places – where colonial authority was attenuated or ephemeral – may overlook important locales where indigenous autonomy was enacted (Schneider and Panich 2014; Panich and Schneider 2015). Missionization’s consequences were felt at a constellation of sites other than the *cabeceras*, or principal missions, including neophyte rancherías, *visitas*, outlying enterprises like ranches and mines, Native villages free of missionaries, and hinterland refuges, resource zones, and exchange venues. In the Pueblo world, other important sites in mission hinterlands include rock art, shrines, field houses, and pathways. While connections to such places have often been acknowledged in mission studies, they are rarely the focus of research. In addition, scholars have rotated their perspective to examine how Native people “incorporated the Spanish mission system into dynamic indigenous landscapes,” rather than

treating missions as “irreversible entry points of Indigenous people into colonial society” (Schneider and Panich 2014:5–6).

This reoriented viewpoint does not deny that missionization affected fundamental aspects of time and space for indigenous communities. The depredations of disease, exploitation, and religious suppression worked in tandem with pervasive experiential changes. Sheridan (2006) argues that missionization relied on the fragmentation of indigenous space and time. Movement, once wide-ranging and seasonal, became cramped and circumscribed, ritual space was dismantled, and agricultural land was chopped up into fields, to be assigned to individuals and the mission itself. Time was broken up into weeks, days, hours, marked by the inescapable clamor of bells (*see also* Liebmann 2012a). Sheridan considers how missions shaped the production of space in the O’odham world, linking them to a long-term process in which capital became the dominant “author” of contemporary landscapes. At the same time, he observes, missions could impede, if not prevent, the eradication of Native landscapes in the face of voracious capitalist enterprises.

Subsistence and settlement practices of Native peoples strongly shaped the way that missionaries attempted to reorganize space. Where Native communities were sedentary agriculturalists, as in Florida and New Mexico, missions were often inserted into pre-existing spatial schemes. This meant that, for example, churches would be located in relation to Native council houses, kivas, or plazas, and indigenous people would retain control over the organization of domestic space (Panich and Schneider 2015:50). But where Native people were more mobile, missionaries created new settlements and tried to concentrate indigenous populations within them. As a result, there were a variety of spatial patterns of missionization. In

some cases, missionaries concentrated only on the principal Native towns, ignoring outlying villages. Colonial authority was markedly concentrated in a few places but absent in much of the countryside. Elsewhere, such as in Texas, seasonally mobile groups incorporated missions into their seasonal rounds. The frequent migrations and seasonal dispersals of Puebloan peoples in the Southwest meant that the relative importance of a given mission was in constant flux. In other areas, such as Baja California, missionaries were simply unable to transform settlement patterns. They allowed people to remain in their villages and established missions without significant residential populations (Panich and Schneider 2015:50).

In the traditional view of California missions, as with missions elsewhere in North America, missions are viewed as “tightly controlled social spaces to which native peoples were inextricably bound” (Panich and Schneider 2015:48). They find that, in contrast, there was significant variation in how Native people organized and used space distributed across the landscape, as “[s]patially, native autonomy ranged from intra-site organization to regional settlement patterns and economic connections, to the maintenance of sites of cultural importance and commemoration” (Panich and Schneider 2015:49). These are categories of social practice in which missionaries specifically sought to intervene. However, the authors emphasize that even within a particular group, people may have exercised different degrees and forms of autonomy, and that such variation might have been shaped by attributes like age, gender, and status.

Consideration of the broader landscapes of missionization must also include how they intersected with the landscapes inhabited and used by Native groups who were affected by colonization even while remaining largely outside the mission system itself. In the Southwest, such groups included the various Apache peoples who surrounded much of the Pueblo world.

Enslavement, territorial loss, and ecological change due to introduced livestock, for example, pressured these groups into different relationships with Pueblo people that altered existing patterns of movement, kinship, and exchange. Raiding of missions and other settlements by mobile peoples whose subsistence was being undermined may have interrupted Pueblo travel and resource procurement (Liebmann 2012a, 2017).

One of the most prominent links between missionization and landscape are Native subsistence practices. While the impact of missions on subsistence activities has been well documented, the picture of subsistence practices that sustained traditional aspects of the landscape is still emerging, often drawing on evidence that has eluded earlier archaeological approaches.

It has often been argued that missions led to more circumscribed, less diverse forms of Native engagement with the landscape. Lycett (1989) argues that demographic decline following colonization would have had a strong impact on Pueblo economies, including land use, labor organization, and resource acquisition. Population decline would cause agricultural scheduling problems, and decrease the economic stability of individual households. With much of the overall labor base gone, those who could remain to work agricultural fields would have to devote a larger portion of their time to basic subsistence needs. Extensive forms of procurement and production, such as rainfall dependent agriculture in upland settings, would be curtailed. Logistically challenging expeditions to procure resources would be more infrequent, and settlements would rely on increasingly localized resource catchments. “The end result,” he writes, “would have been an economy focused on the immediate foraging radius and primary agricultural zone of the Pueblo settlements” (Lycett 1989:120).

Recent archaeological work has shown that these expectations were not always met. Schneider (2015b) found that Coast Miwok people in the northern San Francisco Bay region continued pre-contact patterns of mussel harvesting after missions were established, and that seasonal shellfish gathering was “often resilient and an important structuring mechanism” for people contending with colonialism. At some missions, the seasonality of shellfish gathering inverted seasonal patterns in Catholic ceremonies like baptism, as gleaned from mission records, showing a fascinating interplay between traditional cycles of landscape interaction and engagement with mission life. Such studies, which recognize the links between ‘prehistoric’ sites and mission communities, challenge prevalent claims that missions rapidly and profoundly transformed Native lifeways. As a related example, Reddy (2015), shows that at a Gabrieliño/Tongva community adjacent to Santa Monica Bay, the imposition of a Spanish mission in the nearby Los Angeles Basin did not prevent the persistence of certain traditional foodways linked to ceremonial events like funerals and feasting.

In other cases, Native people adapted forms of subsistence introduced via missions to traditional patterns of mobility and subsistence. In the Pimería Alta, the ancestral lands of the O’odham people that straddles southern Arizona and northern Sonora, missions were the point of introduction of Eurasian livestock, which by the eighteenth century were well established at most missions and on their way to becoming the “dominant economic activity of missionized Native Americans” (Grimstead and Pavao-Zuckerman 2016). It appears, based on isotopic data from faunal remains, that O’odham people incorporated cattle into longstanding seasonal rounds from the lowland desert to mountains for hunting and foraging. Cattle might have accompanied them

to graze freely in the mountains, and the Ancestral O’odham might have adapted existing water management strategies to provide reservoirs for cattle.

These findings illustrate that one challenge for examining the dynamic landscapes surrounding missions are chronological frameworks that classify sites and materials as ‘prehistoric’ and ‘historic,’ which can make important ways that Native people engaged with the landscape after missions were established invisible.

Documentary evidence indicates that a primary concern for missionaries working with traditionally mobile populations was to interrupt these practices and enforce sedentism. At missions in California, Native people were explicitly prohibited from returning to ancestral homelands without explicit permission (Lightfoot 2005), and similar proscriptions were imposed in Southwestern missions. Their concerns reflect not only what missionaries believed about ‘civilized’ life, but also that these forms of Native engagement with the landscape were ongoing.

The food and shelter that missions provided could entice Native people to remain more sedentary, but when missions could not provide these basic benefits, year-round residency made little sense. In such conditions, Native people would return to traditional subsistence, “incorporating the mission into their seasonal rounds when food supplies there were more abundant” (Walter 2007:195).

Archaeological evidence of traditional foodstuffs and hunting implements can show that neophytes relied on resources that official mission policies did not allow for. Missionaries were not just concerned about mobility because stability helped them enforce Catholic practice, but because they were aware of the entanglement of subsistence and ritual, and that movement

for hunting and foraging entailed visits to illicit sacred places and interaction with non-missionized groups.

Research into trails and pathways that may have been used by Native people during the mission period is critical to landscape perspectives. The existence and significance of such trails is often overlooked by conventional archaeological approaches. They can be difficult to identify and document, and are easily destroyed by development.

However, trails were and still are an integral part of the cultural landscape of many Pueblo groups, linking villages to resources and to sacred places. In addition, they are often entwined with the history both of ancestral movement as well as events recorded in origin and migration narratives. They often integrated ritual pilgrimages with resource procurement and trade journeys. One example is the Hopi Salt Trail, forged by mythical characters, and traversed by Hopi men to obtain salt and perform rituals in the Grand Canyon (Ferguson et al. 2009). Many of these trails are inherently sacred, even when they are regularly used in the course of non-sacred activities.

In many cases, these qualities would likely characterize trails used to access obsidian sources. For the Jemez people, for example, the routes used to reach obsidian collecting areas in the Valles Caldera also connect them to areas for hunting, plant gathering, ceremonial activities, and pilgrimage retreats and initiations (Liebmann 2017).

A landscape approach to missionization also involves considering flows of materials and objects through Native networks of interaction and exchange. Archaeologists have long been interested in the ways that forms of material culture were transformed as a result of missionization. As Native people were pressed into production at the behest of missionaries, new

kinds of objects emerged that brought together elements from different social and cultural domains. Sometimes this occurred in ways that “challenge[d] preexisting power relations,” a practice that anthropologists have termed *hybridity* (Bhabha 1994; Liebmann 2015:323–324). One of the iconic manifestations of hybridity in Pueblo mission communities are ceramic forms, most notably soup plates, that mimicked Spanish vessels using Pueblo technology (Dyer 2010; Liebmann 2015:331–334). At the same time, artifacts in mission contexts – such as those, like obsidian, that are frequently classified as unambiguously ‘indigenous’ or ‘traditional’ – may be overlooked as objects related to the negotiation or contestation of existing power relations.

Missions were important places in the movement of objects in the colonial world. They hosted exchange between Europeans and Native Americans, as well as between different Native individuals and groups. They were conduits for the entry of objects produced in distant locales – including other continents – into local networks of exchange and consumption. While research has often focused on the exchange networks of colonial Europeans, new work is being done to show how Native people pulled missions into their own systems of exchange, procurement, and interaction. This process often sustained aspects of Native landscapes, even as the materials that moved through these networks contributed to social and cultural change.

In California, the presence of shell beads and bead-working tools in mission sites points toward the continuance of pre-existing trade in marine products, and glass beads found deep inland also suggest far-reaching exchange networks (Allen 1998; Arkush 1993). Coastal Yokuts traders may have been centrally involved in the movement of Euro-American goods to Native groups of more inland regions as far as the eastern Sierra Nevada (Arkush 1993). Before Europeans arrived in the region, professional traders from Yokuts “tribelets” transported products

like elk and deer hides, baskets, and marine shell beads east over the Sierra Nevada, bringing back things like obsidian, moccasins, and pine nuts obtained from groups on the eastern side of the mountain range. Spanish explorers arriving in the 1770s brought large quantities of glass beads, which quickly spread through existing trade networks to Native groups further inland. Arkush (1993:625) notes that glass beads had a transformative impact on Native Californian societies, rapidly replacing shell beads as coastal groups were subjected to missionization and other colonial domination. Beyond trading, people fleeing missions who returned to their ancestral villages or joined other Native groups likely carried European material culture with them.

In some cases, these goods had a strong impact on Native politics. In the Southeast, for example, missions became a tool in ongoing political struggles among different chiefdoms (Thomas personal comm. 2016; Galgano 2005). Missions could supply valuable resources, for example European goods that were valuable trade items. According to Blair (2015:11), one of the causes for the emergence of factionalism in colonial encounters is access to trade goods that symbolize “external connections and access to power” and are also useful for redistributive economic practices (Hall 2009).

Scholars in some regions, particularly the Southeast, have emphasized the impact of indigenous demand for goods supplied through European economic networks. While Pueblos in mission communities did rely on Eurasian domesticates for food, demand for other kinds of goods appears to have been comparatively minimal. Documentary evidence indicates that colonists supplied metal knives to mission pueblos in exchange for processed hides and other craft goods (Kessell 1987), but archaeological evidence from mission sites does not point

towards a prestige economy involving such goods. European demand for indigenous crafts, meanwhile, may have played an important role in transforming production and trade activities among Pueblo groups (Lycett 2005:106), but the nature and extent of such transformations are not well understood.

There has been an emphasis on how trade in goods categorized as European contributed to indigenous cultural change, a view that has been subjected to various critiques (e.g. Rogers 1990; Spector 1993), while there have been fewer efforts to understand change through the study of non-‘European’ trade goods.

Native communities

Another major theme for mission archaeology is exploring more nuanced and granular understandings of Native communities, especially at the village level. Though this theme has been significantly less developed than the theme of landscape, moving away from such reductive binaries as colonizer/colonized and accommodation/resistance has drawn attention to diversity, difference, and discord within Native communities. Some of the key areas of inquiry are the nature of authority, the organization of labor, and status differentiation in mission communities.

Past views of missionized Native villages often interpreted them through models of community influenced by notions of the closed corporate peasant community, which was understood as both induced by colonial crises as well as specifically created by missionization (Wolf 1957). This characterization derived in part from documentary evidence that missionaries sought to create corporate forms of community by isolating Native communities and enforcing self-sufficiency. Missionaries sought to isolate neophytes from two societies they thought of as

corrupting – other Native people who might pull them back into idolatrous ways, and the corruption that could be found in Spanish frontier society. Consequently, Europeans were officially prohibited from living in mission communities, while Native people were typically prohibited from leaving them without dispensation (Sheridan 2006:59–60). In later periods, as Spanish settlement and competition for land and resources increased, missions became less about advancing the frontier than about protecting what remained of the corporate land base of indigenous communities (Sheridan 2006:62). Radding (1997) has called this a moral “colonial pact” which indigenous leaders viewed as a reciprocal exchange of labor and military service for protection from enslavement and the loss of land.

As it was originally formulated, this vision of the corporate Native communities produced by missionization tended to obscure both the nature and the very existence of internal conflicts in indigenous communities (Wolf 1986:164). However, it continues to echo in many characterization of mission communities, which are often assumed to be bound by identity, especially shared religious identities. It is evident that delineating what constitutes a ‘mission community’ is a challenging issue, since their boundaries were porous. This makes it especially problematic that historians as well as anthropologists frequently use the term ‘converts’ to refer metonymically to mission communities.

In reality, mission communities were internally complex in terms of political and economic organization as well as social identity. Many mission communities included a multiplicity of Native ethnic identities, whether as the consequence of Spanish-instigated population reorganizations or the result of displacement and movement caused more indirectly by colonial disruption. Missions often functioned as refuges, incorporating diverse groups of

Native people forced by the broader economic and environmental consequences of colonization into communal configurations because there were no other options for survival (Lightfoot 2005).

The internal differentiation of Native residents has rarely been examined archaeologically at mission sites. Among the few to have received this kind of investigation, Mission Santa Catalina de Guale stands out, where Blair (2015) identified at least five distinct “neighborhoods” located around the mission compound. He argues that these neighborhoods were engaged in different practices around ceramic production and consumption. Most strikingly, the residents of the northern part of the mission pueblo seem to have been using different raw materials in their pottery than those of the southern neighborhoods. He attributes this intra-site variation to the processes of aggregation that led to the community’s formation. Rather than strictly separated “communities of practices,” he suggests that these are groups carrying on previous forms of pottery making and consumption but modified by the interaction and sharing that would take place in the mission village.

Authority

Dispensing with the notion of mission communities as thoroughly subjugated, investigators have paid more attention to the persistence of Native authority and how missionaries were drawn into Native politics, processes that may be reflected in the archaeological record. Wernke (2013:294), exploring the first stages of missionization in the Colca Valley of Peru, argues that its unfolding was conditioned by local communities’ long experience of “dealing with aggressive foreigners – not just reacting to them oppositionally, but pulling them into their *own* [emphasis original] politics,” an effort that involved the strategic,

rather than habitual, production of ‘community’ by Native groups. In the Southeast, the ability of Franciscans to carry out any kind of missionary program was dependent on the authority and support of Native hereditary chiefs, who coopted friars as ambassadorial intermediaries able to negotiate between indigenous groups and the state, frequently in ways that bolstered traditional political hierarchies. Chiefly power within Native communities was reinforced as the colonial system provided “a tributary exchange system in which access to indigenous land and labor was channeled through hereditary chiefs” (Blair and Thomas 2014:30). The effects of articulation between Native and colonial politics were different in the Southwest, where such hereditary authority was not prominent. Sheridan (2006:52) argues that as O’odham individuals were appointed to offices such as *gobernador*, *alcalde*, and *fiscal* within the colonial system, O’odham society became factionalized by competition for these positions and by “cultural and political tensions ... within individuals.” He speculates that families who were more sympathetic to the missionaries were rewarded with better lands and access to mission goods and food surpluses.

Labor

The emphasis on religion and culture in mission analyses often downplays the centrality of labor exploitation as a basic aspect of mission life (Silliman 2001). In New Spain, as in other Borderlands regions, imperial marginality, absence of capital, and lack of mineral wealth made indigenous labor the most valuable resource of the colonial enterprise. Missions were both dependent on indigenous labor for their own operations, as well as a principal means of organizing indigenous labor for diverse interests in the colonial economy (Spielmann et al. 2009; Trigg 2005). A key element of Franciscan utopianism was the ideal of communal labor. Pueblo

people in mission communities were required to pay tribute and support the missionaries, who often engaged in entrepreneurial activities of their own. Missions received some financial support from the state, but depended on supplemental income from inducing Native people to produce agricultural and craft surpluses. Native people were forced to support the missions by growing corn and other foodstuffs, gathering resources such as nuts and salt, managing livestock, processing materials such as hides, producing pottery and other crafts, and transporting goods long distances between colonial outposts (Spielmann et al. 2009). The income generated from these efforts often went to procure elaborate religious objects, luxury vestments, and exotic goods such as Chinese porcelain, which has been found in numerous missions, including seventeenth-century contexts at Abó, Quarai, Las Humanas, Tabira, and Awat'ovi, despite being supplied with Mexican majolicas as well as the work of Pueblo pottery producers (Pierce 2016:83). Meanwhile, the control of labor in missions was made highly visible by the construction of monumental churches. In the Southwest, this aspect of labor organization intersects with gender in ways that haven't been fully explored, as colonial observers reported that women were responsible for architectural construction (Benavides 2012 [1630]:39). Radding (2007) has shown that the communal labor envisioned and demanded by missionaries was only fractionally realized. Missionaries struggled to enforce their demands because laborers could so easily flee their oversight.

Social dynamics and landscape

Liebmann (2017) has recently brought attention to the problems raised when ethnographically documented symbolic meanings invested in the landscape by Native people are

used to find “similar or identical” meanings in archaeological landscapes. When performed uncritically, this transposition of meaning by way of analogy frequently yields “synchronic, seemingly static interpretations” that give little opportunity to address questions about how meanings come into being or change over time. Since meanings depend on context, archaeologists interested in landscape should be interested in the processes whereby meanings are produced, transformed, and jettisoned over time.

For Native peoples of the Southwest, it has been argued that a critical aspect of the relationship between meaning and landscape has been the construction of landscapes *as* memory (Küchler 1993; Ferguson 2002; Anschuetz 2007). In this view, landscapes are not surfaces on which memories are inscribed; instead, landscapes “form an essential part of the memories themselves” (Ferguson 2002:4). Instead of bearing the traces of an irretrievable past, landscapes draw out stories, emotions, and experiences associated with the past, such that the past can be relived “not only to learn from it but *also to repeat it*” (Anschuetz 2000:2, 2007:131, emphasis original).

This project seeks to understand in what ways missionization may have been a catalyst for the transformation of meanings given to places, objects, and events in the environment, using obsidian procurement as a point of entry into this question. Rather than assuming that changes in the landscape were experienced uniformly within mission communities, landscape changes intersected with the internal dynamics of these communities. Thus, this project explores these issues in tandem, linking the analysis of intracommunity politics to extramural landscapes.

IV **FACTIONALISM AND THE PUEBLO PAST**

Beginning in the late nineteenth century, outsiders who visited and studied Pueblo communities in the Southwest were struck by the apparent pervasiveness of internal conflict. Many of the pueblos had splintered – or were in the process of splitting – into oppositional factions [*Table 4.1*]. The disputes wedging these divisions apart were serious and intense, although they often seemed to arise from trivial incidents. Hostility simmered, in some cases decade after decade, evidently without progress towards resolution. Neighbors opposed neighbors, kinship ties were strained, and despite Pueblo peoples' peaceful reputation, violence sometimes flared. In some cases – most notoriously, the Hopi village of Orayvi – the social fabric could not hold. The community tore apart and the village was abandoned. In other villages, conflicts were eventually resolved. The internal rifts closed, but slowly, against grinding resistance, and their traces were never fully erased.

ANTHROPOLOGICAL APPROACHES TO FACTIONALISM

Several decades after many of these Pueblo factional conflicts were recorded, anthropologists engaged in a major debate about factionalism. The term had been used loosely, and there was strong disagreement about why factionalism happened, how it worked, and what its consequences were. Factionalism occurs in nearly all societies, yet it does not occur everywhere in the same form, or for the same reasons. In the eyes of anthropologists,

TABLE 4.1 Ethnographically observed episodes of Pueblo factionalism

Pueblo	Dates of Events	Selected References
Cochiti	1920s–1950s	Lange 1959; Fox 1961
Isleta	1880s–1940s	French 1948; Smith 1968
Jemez	1970s–1980s	Ball 1990
Laguna	1870s	Parsons 1928; Ellis 1959
Orayvi	1880s–1900s	Titiev 1944; Levy 1992; Whiteley 1998, 2008; Cameron 1992; Wyckoff 1990; Krutz 1973
San Ildefonso	1918–1930s	Whitman 1940, 1947
Santa Ana	1920s	White 1942
Santa Clara	1890s–1930s	Dozier 1966; Norcini 2005
Taos	1910s–30s, 1940s	Parsons 1936; Siegel 1949; Fenton 1957; Siegel and Beals 1960; Collins 1967; Stewart 1984
Zia	1920s–1940s	White 1962
Zuni	1890s–1960s	Pandey 1967

factionalism seemed to be a characteristic of small-scale, ‘traditional’ societies which intensified when they became enmeshed in modern states. These contexts raised two major themes of debate. One is the tension between structure and history. Was it the traditional, ‘premodern’ social organization of these communities that resulted in factionalism, or was it the product of unique sets of circumstances and individuals? Second, as these small-scale traditional groups were inexorably transformed by and through their entanglements with states, what part did factionalism play in those transformations?

One common feature of anthropological studies of factionalism is that they focus on political processes within communities facing rapid change, typically as a consequence of becoming incorporated into states and empires. Historical archaeologists are particularly

interested in how communities have confronted the wildly transformative global changes that have characterized the last five centuries. A survey of the anthropological literature reveals that consensus has yet to be reached about some fundamental issues surrounding factional processes. The historical depth and character of factionalism, particularly in indigenous communities within colonial or post-colonial states, has been strenuously debated, as has the significance of variables such as social and economic organization, systems of governance, forms of leadership, cultural values, communal and individual behaviors, religious systems, kinship structures, and personality traits. While anthropologists – and particularly archaeologists – often highlight enduring, relatively stable aspects of social relations and identity, volatile, short-term social dynamics such as factionalism may have significant and long-term effects on the course of sociocultural change.

In the mid-twentieth century anthropological debates about factionalism, one task was to arrive at a formal definition of the terms *faction* and *factionalism*. A minimal definition of a faction that many scholars have embraced is “a loosely ordered group in conflict with a similar group over a particular issue” (Boissevain 1964). In his view, factions are temporary. They exist to contest a specific issue, and they are non-corporate. Social networks, as Boissevain (1964) points out, make people vulnerable to factional entanglement, as they may have to take sides in order to maintain ties with people already drawn into the conflict. Many researchers think factions are almost entirely shaped by those who lead them and their social ties. The overwhelming centrality of an individual leader is, according to Bujra (1973), largely what distinguishes a faction from a more institutional political group such as a party. Factions arise around leaders; parties choose leaders from among their members. Factions are thought more

likely to arise when other forms of leadership in a community are weak or unstable. A consistent theme in ethnographic studies of factionalism is the inability of community leaders – chiefs, mayors, etc. – to compel people to do things (Boissevain 1964). Theoretically, factional leaders hold similar positions in society. Leaders of comparable standing are not inhibited from competition or conflict by rules of conduct that might apply to individuals of different social strata. This is the basis of the assertion that factionalism is “unlikely to involve a questioning of the structural basis of power itself” (Bujra 1973).

Bujra (1973) observed that factions seem to lack “ideological commitment.” One explanation is that this derives from the social position of factional leaders. Since challenging the fundamental basis of a social system risked losing their own position, leaders were supposed to manufacture petty, meaningless conflicts. Factional participants believed in nothing beyond the rightness of their faction’s claims. Based on these views, anthropologists once concurred that factionalism was destructive and destabilizing – a tendency that kept “traditional,” “small-scale” societies from climbing a neoevolutionary ladder. Factionalism would always rear up before the institutions of developed societies could get purchase. It was dysfunctional, and of no ultimate benefit.

Neoevolutionary theory suggests that political complexity has dampened factionalism’s disruptive effects. It’s only in “traditional” societies that factionalism becomes a severe problem. Factionalism was once dismissed as a peripheral concern in the anthropological analysis of sociopolitical change. It was regarded as symptomatic of societal collapse or stagnation, a ‘game’ played by elites seeking to distract others from urgent social problems. It was unlikely to cause

change, since a ‘conservative’ faction usually seemed to emerge victorious, with a mandate to reinforce established social practices and structures.

Factionalism as dynamic and adaptive

Alternate views emerged that factionalism can be adaptive and useful. It is often a productive way of working things out to cope with challenges, and it offers a means to critique basic premises of social life. As Salisbury and Silverman (1977) explain, anthropologists once emphasized politics as the maintenance of social order. Factions were regarded negatively because they undermined the unity of the wider group. As theoretical interest shifted from the maintenance of stability to the productive potential of conflict, factionalism warranted new examination. The frame of investigation expanded from isolated, pre-industrial polities to colonial and postcolonial villages. Factions within these communities clearly had links both with “traditional groupings and with state super-structures” (Salisbury and Silverman 1977:5).

More importantly, theoretical views on factionalism shifted from viewing it as dysfunctional to focusing on it as “a dynamic and adaptive means through which individuals and groups within society mobilized resources and competed with one another to adjust to, cope with, or alter changing environmental, technological, social, and political circumstances” (Reid 2004:xx). They no longer linked factionalism to only certain rungs of a neoevolutionary ladder, but observed that factionalism plays a role the politics of all societies and, in both the short and the long term, can influence change in significant ways. These perspectives drew attention to “the interaction and confrontation of multiple non-corporate sub-groupings,” showing that informal and fluid groups could contribute to change in ways typically attributed only to more

established political entities such as parties (Salisbury and Silverman 1977:6). In fact, factions could counteract the stasis or inertia that other aspects of political systems might impose:

[F]actionalism has an inherent dynamism. Factional confrontations are rarely balanced; one side gains and the other loses ground on every occasion. Each confrontation changes the terms on which the next confrontation will take place. In any confrontation the strategy of one side, or a particular combination of individuals in one faction, does not produce an exact mirror-image or collection of individuals on the other side. Reactions are, in fact, oblique and groupings are systematically unlike. Factionalism, in short, produces actions and reactions that do not simply balance out, but by opposing groups obliquely, it gives a net movement to the whole society, even if this is in a direction no faction intended it to go [Salisbury and Silverman 1977:7].

This view of factionalism as dynamic and creative conflicts with many of the ways that scholars continue to characterize factions. One of the most common tropes in ethnographic writing on factionalism is the identification of factions as either “progressive” or “conservative” (Adams 1957). Other terms are used in place of these, but one faction is typically identified as pushing for change, innovation, or the adoption of ways of doing things from an external source such as a surrounding state, while the opposing faction is dedicated to preserving (or restoring) ‘traditional’ ways of doing things and maintaining a political status quo. This image of factions as groups engaged in complementary opposition ignores the oblique nature of factionalism that Salisbury and Silverman highlight above.

Native American factionalism

Factionalism has played a particularly important role in studies of Native American experiences of, and responses to, European conquest and colonialism. Decades of anthropological research on indigenous responses to colonialism have given us a rich picture of

how adaptation to change is itself a transformative process. However, factionalism has not always been included as an adaptive strategy used by Native Americans. Rather, it has typically been described as a weakness of Native American social systems that rendered them vulnerable to colonial domination. In explaining the course of colonialism in the New World, factionalism has been held to be endemic and innate to Native American societies, rather than specifically a result of colonial domination. Linton (1936:229) dismisses the possibility that factions have any political or social value:

Among American Indians the pattern of factionalism is certainly deep-seated. In some cases two factions have survived for generations, changing leaders and the bases of their disputes and winning some individuals from each other, but remaining distinct social entities in constant opposition to each other. This opposition seems to be their main reason for existence, their policy and declared grounds for opposition shifting with the circumstances. In many cases any cause which is espoused by one will immediately be resisted by the other.

Factionalism has also been viewed as a dynamic that undermined Native American resistance and resilience, facilitating European domination and the loss of traditional culture (Fenton 1955). Factionalism has thus been used to help explain the success of European colonizers in dominating powerful and numerous indigenous societies of the Americas. Colonialism was viewed as exacerbating these societies' tendencies toward factionalism, preventing coherent resistance efforts and thereby accelerating the pace of subjugation (Spicer 1962:31). In the bulk of historical writing on the topic, Native factions are categorized and labeled according to their purported attitudes towards colonizing forces. This way of identifying factions has often been bolstered by similarly dichotomized views of collaboration and accommodation as the polar and mutually exclusive opposites of resistance and rejection. These

also become conflated with binary religious identities, as Native Christian ‘converts’ are posed against non-Christians.

Although many scholars continue to view Native American factionalism as a pre-existing and inherent social trait, many acknowledge that colonialism gave new impetus to factionalism in specific ways (Fenton 1955). An important consideration for colonial factionalism is the constraints that colonial authorities and economies imposed on the movement and land use of Native communities. Fenton (1957) notes in passing that before the U.S. incorporated New Mexico, the Pueblos had relative freedom to relocate when conflicts arose. Boundaries imposed by the state and by private land ownership in the nineteenth century increasingly confined Native communities. In the seventeenth century, Spanish authorities strove to consolidate indigenous villages through *congregación* and to limit the movement of mission residents. The limitations of colonial power in New Mexico at that time made such constraints flexible, but settlement data indicate that they did have an effect (Barrett 2012). Another element of colonial rule that would impact factionalism is attempts at formalizing Native political roles and practices and integrate them with colonial administrative system. This may have contributed to factionalism by opening the potential for multiple avenues to power – both through “traditional” channels and through new forms or positions of authority endorsed by colonial rule.

PUEBLO FACTIONALISM

Because of the abundance of ethnographic work that described factionalism, the Pueblos have become particularly associated with this political process. Kluckhohn (1962:316) wrote that "factionalism seems to be an inherent propensity of Pueblo social organization," while

Dozier (1966:184) observed that “factionalism appears to be characteristic of all Pueblo communities.” Following the views of Native American factionalism discussed above, Pueblo factionalism has been viewed as symptomatic of political dysfunction. In particular, factionalism has been attributed to the failure of ‘normal’ Pueblo social structures to adapt to changing circumstances. Eggan, for example, argued that dual organizations in Pueblo societies “in a broad sense are devices to organize and regulate rivalry and opposition in order to serve the purposes of the group as a whole” (1950:302). He distinguishes between moieties, which regulate marriage, and ceremonial dual divisions. Pueblo ceremonial divisions are connected to seasonally-variable activities, and work to divide ceremonial responsibilities, thereby channeling competition over ceremonial power and authority. However, Eggan suggests that when groups become too large or conditions change, dual organizations often fail to adapt. Consequently, “[t]he rise of factions—ad hoc dual divisions—frequently results from the failure of the formal social organization to control opposition in any effective way” (Eggan 1950:303).

White (1942:188) argued that “Reactionaries” and “Progressives” existed as general factions among Southwestern Native groups. He contrasted modern intra-pueblo conflicts between these factions with the seventeenth century, when he asserted that pro- and anti-Spanish factions were separated between pueblos, rather than within them.

What is unique in the arguments for Pueblo factionalism as an essential trait is how they derive from assessments of Pueblo culture. They are based on the idea that Pueblo culture does not allow for diverse attitudes, beliefs, and behaviors. Fenton (1957) and Spicer (1962) presented influential arguments based on this premise. Fenton, using Taos as an example, described the ‘traditional values’ of Pueblo society as centered on community work, unanimity,

and considerateness. Taos was a conformist society in which those who strayed from traditional values suffered exclusion and recrimination. Gossip, and its power to shape “public opinion,” curtailed people’s actions, rather than formal controls. Accusations of witchcraft flew at those who failed to conform (Fenton 1957).

Spicer’s discussion of factionalism still echoes strongly in the literature. For him, Pueblo governance since pre-contact times was based of “the principle of unanimity” (Spicer 1962:491–92). The work of government was to reach a common view on a crisis or issue through discussion. There were no alternatives – those who could not bring themselves to join the consensus were made to leave the community.

Dozier (1966) built on these claims and extended them into an argument about Pueblo cosmology. The root cause of factionalism for him was the “highly authoritarian” nature of Pueblo society. Nonconformism had harsh consequences. Factionalism actually prevented sociocultural change: “malcontents” in a community were “skimmed off,” leaving behind those who defended the status quo. This was all because the most important belief for the Tewa was that the world is essentially orderly. The cooperation of human beings is required to keep it that way. Uncooperative behavior not only disrupts communal life but has cosmic reverberations (Ortiz 1969). Dozier (1966:175) argues that “[f]orced participation in all communal activities and the prohibition of all deviant behavior, though designed to discourage the rise of dissident groups, have often had the opposite effect and have resulted in frequent factional disputes.”

These arguments have recently been challenged by anthropologists and historians. Norcini (2005) points out how anthropologists have historically analyzed Pueblo factionalism through models of culture change that emphasized processes of acculturation and assimilation.

These models often led factions to be seen as reactions to pressure from a dominant external society, from Spanish colonizers to the expanding United States. Furthermore, factionalism was determined to be a societal flaw or political disintegration that rendered Pueblo societies vulnerable to the loss of traditional culture and identity.

Ethnographic accounts of Pueblo factionalism

The following section reviews accounts of factionalism in the ethnographic literature on modern Pueblo communities to illustrate how these terms and concepts have been used in constructing narratives about conflict.

Cochiti

At the end of the nineteenth century, several Cochiti youths attended the Carlisle Indian School in Pennsylvania. Two of them, on their return to the pueblo, became leaders of a “Progressive” faction, which ostensibly favored the abandonment of traditional Pueblo religion and culture, the adoption of a model of government based on non-Native examples, and strict adherence to Catholicism. Most of the followers of the Progressive faction were members of the Pumpkin Kiva, one of the two in the dual-kiva division of the pueblo. Tensions arose in the 1920s when this faction refused to acknowledge the authority of the pueblo’s secular officials. In response, the “Conservative” faction confiscated agricultural lands used by the Progressives. Although the factional conflict quieted with the eventual deaths of the most prominent Progressive leaders, the faction persisted, manifested primarily in its refusal to recognize the

authority of officials in the traditional religious hierarchy. Nevertheless, the two factions went on to coexist and cooperate in most aspects of daily life (Lange 1959:30–32).

The return of veterans after World War II complicated this arrangement. Many of the veterans were from Conservative families, and retained many of their views, but also became advocates of improving living conditions and reorganizing certain aspects of the political and religious system. They thus combined strong nativism with advocacy of some forms of change (Fox 1961). Fox (1961:175) argues that Cochiti factional membership should be understood as the product of three distinct variables: nativism, progressivism, and Catholicism.

Isleta

Factionalism at Isleta was observed from the 1870s into the 1940s, beginning with a crisis of succession after the death of a cacique, and an attempt to reform the secular leadership of the pueblo. Governing decisions in the pueblo were made by a council of elder office-holders, but the efforts of some governors and the cacique to exclude council members who they did not get along undermined the system of authority and led to the formation of two factions, which at some point became known as ‘Progressives’ and ‘Conservatives.’ Disagreement centered around economic problems, such as issuing permits to non-Native vendors at feast days and managing income from leasing pueblo lands to outsiders. The cacique attempted to take control of the selection of governors and the membership of the council, while his opponents – many of whom had been educated at schools in Santa Fe – insisted on open elections and the preservation of the council’s authority (French 1948). Sustained conflict around this issue kept factional tensions alive until the adoption of a constitution that formalized the political organization of the pueblo

in 1952 (Spicer 1962:497–98). French (1948:35–45) attributed factionalism at Isleta to several factors, including unresolved differences between Pueblo and non-Pueblo models of governance, the reluctance of factional participants to engage publicly with their opponents, a cultural conservatism that prevents reform, and the effects of economic entanglement with non-Native ranchers. For Spicer (1962:498), the problem was “the impossibility of settling serious disputes within the framework of Pueblo community organization.”

Laguna

Factionalism at Laguna led to the departure of a large segment of the population in the late nineteenth century. Beginning in the 1850s, several non-Native Protestant missionaries and settlers resided and played important roles in the pueblo (Ellis 1959). In Parsons’ account, three of the settlers married into Laguna families in the 1870s and contributed to the formation of a “progressive” group within the pueblo (Parsons 1928). One of them had married the daughter of an important figure in the religious hierarchy, and influenced his conversion to Protestantism. This caused conflicts among the Laguna religious authorities. Eventually, the larger “conservative” faction left the pueblo with its ritual paraphernalia and migrated to the nearby village of Mesita, from which a subgroup made a further migration to Isleta in the late 1870s (Parsons 1928; Ellis 1959). Ellis (1959:328–29) argues that “Protestant-White influence unquestionably was one of the strongest forces” influencing factionalism during this time, but that the factional tensions were pre-existing. They may have arisen from conflict between clans and medicine societies, as well as from competition among the various societies, combined with the cosmopolitan composition of the Laguna population. Furthermore, the eventual split

followed from the leaders of the conservative faction attributing an ongoing drought to failure to adhere to Pueblo religious traditions in the face of pressure from Protestant “progressivism.”

San Ildefonso

San Ildefonso is split into two factions, the North People (*Pimpieinai t'owa*) and South People (*Agompieinai t'owa*), who reside separately in the North and South plazas of the pueblo. Whitman (1947) observes that although the split was “caused largely by economic pressures, the people think of it in religious terms.” At the turn of the twentieth century, the pueblo surrounded a single plaza (what would become the North Plaza). At the time, quality of life was very poor, which people attributed to the post-Revolt relocation of the pueblo from its previous site (where the South Plaza would be established). The move was said to have resulted from the machinations of ill-intentioned ritual specialists (Whitman 1947:9–10).

In 1918, the religious and secular pueblo leaders decided to return the pueblo to its original site. The cacique, or the head of the religious hierarchy, was joined there by a few families, but many others, including the subsequent governor, rejected the relocation. Religious leaders among the South Plaza group argued that the North Plaza holdouts were violating codes of good religious conduct, and the dispute eventually became violent, capped by the North Plaza’s seizure of key ritual paraphernalia and an assault on the cacique in 1930. The following years were marked by the North Plaza’s control of political authority and, as a result, the unequal distribution of income and lands between the two factions. Finally, the election of a new governor was disputed, with the South Plaza refusing to recognize the results of an election that they viewed as improper. Thus, a governor from North Plaza was elected without the

participation of the South Plaza, who maintained their own officials. Ultimately, the two plazas came to operate essentially as autonomous pueblos, with the North Plaza establishing its own religious hierarchy and kiva (Whitman 1947:11–12).

Tamaya (Santa Ana)

White (1942:188–89) provides a brief sketch of an episode in the early 1920s, when a “progressive” man from Acoma brought his family to Santa Ana. He began to gather a “group of progressively inclined individuals” that led to a “rather vigorous dissension” within the pueblo. Some views of the conflict based it in religious disagreement, with the Acoma man protesting that he was not permitted “the ‘American right’ of freedom of worship,” while others were disturbed that people were abandoning traditional religious practices. However, others among White’s informants indicated that the fundamental issue was that the Acoma man was too aggressive in accumulating wealth, and was doing so at the expense of others within the pueblo. Ultimately, he was induced to move away. White (1942:189) asserts that although conflict between ‘progressives’ and ‘conservatives’ subsequently subsided, as time passes and older members of the pueblo die, “[e]ventually the conservative party will collapse. When that time comes, Tamaya will cease to exist as an integrated community, socially, politically, and ceremonially.”

Santa Clara

Like other Tewa pueblos, Santa Clara is organized into moieties that alternately assumed responsibility for ceremonial events and day-to-day governance. The Santa Clara moieties are

called Summer and Winter. In the late nineteenth century, a “progressive” set of families within the Winter Moiety raised increasing opposition to pueblo authorities. They protested the centralization of decisions about the timing of planting and harvesting, the compulsory participation in communal labor and ceremonies, the prohibition of “Western” dress, and restrictions on employment outside the pueblo. In the 1890s, the “conservatives” of the Summer Moiety took over the government of the pueblo and occupied all positions of secular authority until the 1930s. During this time, the two factions continued to reside together, but essentially severed all ties and, with rare exceptions, operated autonomously. The conflict ended in 1935, when an elective form of government and a constitution were instituted under the Indian Reorganization Act. Dozier suggests that the separation of religious and secular authority under this new system was critical to resolving the factional dispute (Dozier 1966). Although this system has thus sometimes been viewed as the product of assimilation to non-Native forms of governance, Norcini (2005) argues that, in fact, the Santa Clara constitution addressed the issues that contributed to factionalism and retained important aspects of traditional Tewa political practice. In this view, factionalism was one part of a process of strategic decision-making that allowed Santa Clara to adapt in the face of radically changing circumstances.

Taos

Sometime in the late nineteenth century, the peyote cult was introduced at Taos through contacts with Plains groups in Oklahoma. Some members of the pueblo, particularly younger men with positions in the Taos religious hierarchy, joined the growing Native American Church. Peyote rituals were understood to have weather-influencing and medicinal effects comparable to

those of traditional kiva rituals (Parsons 1936; Fowles 2004:700). Although there seem to have been few conflicts related to peyote use until the late 1910s, eventually the kiva elders removed the participants in the peyote cult from their positions in the religious hierarchy, and some were publicly punished. It has been argued that this factional dispute was the product of threats posed to the existing religious establishment by a new set of ritual knowledge and practices (Parson 1936; Fowles 2004). Stewart (1984), on the other hand, argued that the main driver of factionalism at Taos was interference in the affairs of the pueblo by U.S. government officials and other outsiders. In his view, these outsiders – the Bureau of Indian Affairs, Christian missionary organizations, and wealthy non-Native artists led by Mabel Dodge – were opposed to peyote use and to the Native American Church, and encouraged conflict within Taos as a means of suppressing it.

Zia

During the late 1920s, some people at Zia became involved in the Pentecostal Assembly of the World, an evangelical sect based in Albuquerque, which led them to reject traditional Pueblo religion as well as Catholicism. Some of the leaders among this group occupied prominent positions in Zia religious societies. They attempted to convert others among the pueblo, but never gained a large following. The converts had refused to participate in dances or certain communal activities such as repairing kivas and hunting. The council thus decided that they would no longer be permitted to use pueblo lands. Eventually, the “Holy Rollers,” as they were dismissively called by ‘traditionalists,’ were forced out of the pueblo or moved away on their own (White 1962:67–78).

Zuni

In the late nineteenth century, Protestant missionaries established a presence at Zuni, including a school. The conversion of some Zuni to Protestantism, and the reaction of Catholics within the pueblo, led to the formation of pro- and anti-Catholic factions. According to Pandey (1967), conflict between these groups was exacerbated by competition among various groups of non-Native outsiders – including missionaries, teachers, U.S. government employees, and merchants – who were active in Zuni life. In his view, the opportunities that these outsiders offered to Zuni within the pueblo challenged the authority of its religious leadership. In particular, the establishment of a Catholic mission in the 1920s was opposed by the majority of priests in the Zuni religious hierarchy, who also identified as Protestants. However, Pandey (1967:205) argues that despite the terms used to describe it, factional membership was not determined by ideology, but rather by individual personalities and kinship relations.

Pandey (1967:234–35) argues that factionalism at Zuni arose when theocratic governance proved ineffective, and “individuals whose deviance or divergence could not be accommodated by traditional techniques of social control started to attract like-minded adherents into definite social groups.” Factionalism was thus a means by which “the traditional Zuni theocracy is adapted to accommodate the impact of political and economic changes.” These changes are the fundamental origin of factionalism, rather than inherent attributes of the Zuni political system.

Orayvi

The most widely referenced occurrence of factionalism in a Native American community took place at the beginning of the twentieth century at the Hopi village of Orayvi.

Orayvi was located on southern tip of Third Mesa, the westernmost of the four Ancestral Hopi Mesas. Half of the Hopi population lived at Orayvi in 1900; with 1,000 residents, it was the largest Hopi town by a sizable margin (Whiteley 2008:3). It was also the most autonomous, being the furthest from the Hopi branch of the U.S. Bureau of Indian Affairs and the trading post at Keam's Canyon. However, in the late nineteenth century, the Hopi were facing increasing pressure from the encroachment of Navajos, Mormons and other white settlers, and U.S. government oversight. In this context, two factions emerged within the Orayvi community, one known as "Friendlies" (*Pahannanawaknaqam*, or "those who want to go along with the white man's way") and the other as "Hostiles" (*Qapahannanawaknaqam*, "those who do not want to go along with the white man's way") (Whiteley 2008:4). Opposition intensified until, in 1906, the Hostiles were forcibly removed from their homes by the Friendlies, led by the new Kikmongwi, or village chief. The exiled Hostiles formed new villages elsewhere on the mesa. Eventually, some Friendlies became alienated from the Kikmongwi; some formed a new villages below the mesa, while others established homes adjacent to an existing village. Ultimately, six "fragment communities" resulted from the disintegration of the principal Hopi town (Whiteley 2008:6).

The Orayvi split has been more heavily analyzed than perhaps any aspect of Pueblo history since the 1680 Revolt. Mischa Titiev produced the first of these analyses in 1944, based on extensive fieldwork with participants. He located the cause of the split in characteristics of the Hopi social system, in which matrilineal clans had a very high degree of autonomy and, in Titiev's view, undermined the political unit of the village (1944). Whiteley (2008:9) correctly observes that Titiev's argument is strictly functional and ahistorical, which makes it appealing as an explanation of village abandonment and settlement shifts in the archaeological record.

Bradfield (1971) argued that population growth at Orayvi, followed by a combination of drought and flooding that destroyed much of the available agricultural land, led to unsustainable pressure on the resource base that consequently split the village. However, the historical record indicates that the sudden loss of land took place some years after 1906 (Whiteley 2008:9). Another explanation, offered by Richard Clemmer (1978), is that the split was caused by ideological differences, especially over government interference in education and land distribution, and over Mennonite missionaries' attempts to convert Hopis. These differences are the source of the designations of the two factions in 1906. This analysis has been sharply criticized by some Hopis as a proxy position in more contemporary political disputes (Sekaquaptewa 1982). Whiteley (2008:10) objects that while these ideological differences were indeed real and significant, they require an additional explanation of how ideological positions were distributed and acted upon.

The social unit that played the primary role in how factions formed was the household, not the clan or any larger social classification. This is supported by Cameron's (1992) architectural analysis of Orayvi, tracking the abandonment of houses following the split. Based on photographic evidence, she finds that within a few years following the ejection of the Hostiles, the entire eastern part of the village had been dismantled, concentrating occupation in the western part. This made it look like all the Hostiles had resided in the eastern end of the village. Yet census data show that not all the households that were forced to leave were residents of the eastern part. Residents of the eastern part who stayed in Orayvi relocated to be closer to the ceremonial facilities in the western part. Decision-making, Cameron concludes, was based on households, not corporate groups.

Whiteley (1988, 2008), based on ethnographic work at one of the villages formed in the split's aftermath, Paaqavi, concluded that the split was not the result of structural or external conditions, but rather a deliberate political act. A group of Orayvi's *pavansinom*, responding to what they viewed as the preconditions of a body of prophecies, set the split in motion in order to radically change the structure of society and bring about the destruction of the village.

There are several important archaeological implications to draw from the case of Oraibi. One is that patterns of village reconfiguration may be misleading, and that it is dangerous to assume that spatial organization is a good reflection of political groupings. Another is the importance of historical factors that may not be observable in the archaeological record. The imposition of external authority, enforced acculturation, reassignment of resources, and aggressive missionization were decisive factors in triggering the internal political actions that led to the split (Whiteley 2008: 829). Similar factors, although in different manifestations, influenced the trajectories of Ancestral Pueblo villages in the colonial era. Finally, the social consequences of factionalism/fissioning were significant, especially in terms of residential patterns and ties with other groups.

On the other hand, the ethnographic record gives us cases in which ideological differences do play an important role in factional conflict. The Hopi case is a prime example of this, where the "Hostiles" have completely rejected the 'conveniences' of modern technology, which they associate with non-Hopi values and perceive as a challenge to Hopi identity. These include electricity, running water, etc. "Friendlies" have incorporated these new technologies and objects into their lives. As an archaeological analogy, this would be a case in which factional

differences hinge on a profound ideological disagreement that is materialized in everyday household life.

IMPLICATIONS FOR THE STUDY OF THE PUEBLO PAST

The cases discussed above highlight many of the hallmarks of how anthropologists and other contemporary observers have described and analyzed Pueblo factionalism. In these accounts, factionalism often cuts against the grain of corporate groups within the community. It pits “traditional” values and practices against “modern” ones, establishing a division between “conservative” and “progressive” factions. The impetus comes from the introduction of new practices, beliefs, and material culture – from evangelical Christianity to blue jeans – but is attributed to some defect in the pueblo’s indigenous system of governance. Finally, there is often an attempt to use external authorities or institutions to gain leverage in the factional conflict.

An unresolved question is how ethnographically observed factions relate to factions in the colonial and pre-contact past. Factionalism that predates the formation of the ethnographic record remains poorly understood. Although it is frequently invoked in archaeological accounts of pre-contact settlement patterns and community dynamics, the evidence tends to be ambiguous. Archaeologists have not yet extensively studied changes in how intra-community conflicts were expressed, enacted, and resolved in the Pueblo world across time.

The arrival of Europeans and the subsequent domination they imposed on Ancestral Pueblo communities resulted in a major sociopolitical transformation. We have a much better understanding of how this happened at broader scales, including changes in settlement patterns, interregional interaction, landscapes, resources, and demographics. We know something about

the changes that took place in the daily lives of Pueblo people, including their diets, labor, and ritual practices. At the level of the community, however, our knowledge is more fragmentary. The historical and ethnographic literature suggests that we should expect complex political responses, conflict, and heterogeneous experiences, actions, and identities within communities. The bulk of what we know about Pueblo factionalism derives from cases that occurred after the Pueblos had already endured three centuries of colonial domination. Factionalism has been held up as a political dynamic within Native American groups that influenced the course of colonialism in crucial ways. For the Pueblos, factionalism has been inserted into the narratives of conquest and colonization, but the reality is that the evidence is often minimal. We can't be confident about understanding how Pueblo politics shaped their history after the Spanish arrived unless we gather better evidence from the archaeological record.

Pre-contact factionalism

Some archaeologists have argued that factionalism was a ubiquitous political force in the precolumbian Americas, a view that seems to be broadly accepted (Brumfiel 1994). The basis for this belief may rest on theoretical rather than empirical foundations. In conventional neoevolutionary thought, the earlier phases of sociopolitical development are defined, in part, by the absence of the institutions and forms of authority that would guard against factional disruption. Factionalism is thus inevitable at these stages. "Learning to live in villages" entails communities large and diverse enough to engender political conflict, but perhaps without the means to resolve or contain it.

However, demonstrating the validity of this claim has been a challenging problem given the relatively ephemeral nature of factionalism. Direct evidence is difficult to identify, and most researchers point towards outcomes like village fissioning to discern factionalism in the archaeological record. In addition, archaeologists have been somewhat haphazard in their treatment of factions and factionalism. Although most agree that a faction is a subgroup within a larger group, beyond that the term is deployed idiosyncratically. Polities within a macroethnic group are sometimes called factions in the same edited volume as descriptions of factions within a village of a few dozen people (Brumfiel 1994).

From a theoretical standpoint, an interest in factionalism has been an important aspect of evaluating and questioning established models of sociopolitical change (Brumfiel 1992).

Brumfiel (1994) takes up the thread from the anthropological debates of the 1970s to argue that factionalism is an important aspect of archaeological approaches to political development because it indicates that competition and conflict among non-elites can strongly influence the course of social change.

Brumfiel (1994) provides some ideas about how archaeologists can identify factions. Leaders gain factional followers through alliances that are often established with the exchange of valuable or exotic goods. The “intensity and organization of alliance building may be visible in the frequency and distribution” of such objects (Brumfiel 1994:10). Another possible line of evidence is encountering non-local goods in non-elite contexts. Ethnographic models indicate that factional membership is socially diverse. Leaders must form alliances not just with elites but with non-elites as well. This might result in characteristic patterns of artifact distribution – for example, if all households in a community had obsidian from the same source or sources, this

might point to distribution from a single source. That source, potentially, is a leader seeking to build a following (Brumfiel 1994:10).

One case in which archaeologists have emphasized the significance of factional politics is in the Mississippian world (Anderson 1994; Blitz 2009). The evidence is largely in the built environment. Groups constructed platform mounds that reflected the authority of chiefs and anchored political territories. Construction took place with changes in leadership. Thus, “the building and abandoning of platform mounds expressed the factional politics that brought people together or pulled them apart” (Blitz 2009:15). This political process has been characterized as an interplay between *fusion* and *fission*. Perhaps such mounds can be read as evidence of factional processes. When mounds were built in places that hadn’t previously had them, perhaps they reflect factions spun off from larger communities. In contrast with claims that factions are either non-ideological or are not differentiated by ideology, Byers (2006) proposes that factions at Cahokia were centered around competing ideologies. These were what he terms “ideological cult factions.” He claims there were ‘autonomist’ and ‘centralist’ factions at Cahokia that were “committed differentially to the range of world renewal rituals performed in Cahokia” (Byers 2006:484).

In the Pueblo world, archaeologists have made several claims about pre-contact factionalism, largely centered on Chaco Canyon. Competition among ritual leaders may have led to establishment of dissident communities (Van Dyke 2008) or the ultimate collapse of the phenomenon (Ashmore 2007). Fowles (2012) has suggested that the collapse of Chaco may have been advanced by factions that rejected hierarchy in favor of egalitarianism.

In a later example, Fowles (2004) posits that an episode of factionalism induced by contestation over religious change led to the abandonment of the Ancestral Tiwa village of T'aitöna. He argues that an unfinished Great Kiva constructed in the village's plaza reflects a crisis, in which religious leaders within the village or members of recently arrived immigrant groups sought to challenge the established "religiopolitical" system. This hypothesis challenges integrationist models of religion, which hold that Pueblo religion functions to enforce communalism (Fowles 2004:714–15).

Pueblo factionalism in the colonial era

There has been relatively little analysis of colonial-period factionalism in Pueblo societies. Liebmann et al. (2017) have suggested that factionalism was an important social process shaping the Pueblo Revolt period. They argue that important differences distinguish pre-contact and colonial factionalism. Specifically, the incorporation of "non-state actors into state-level societies" led to new factional forms shaped by cross-cutting relationships among Pueblo and non-Pueblo, as well as Native and non-Native groups (Liebmann et al. 2017:150).

At the Revolt-era Ancestral Jemez site of Patokwa, an attack by Ute raiders in 1683 appears to have prompted a factional split within the village, with one group urging relocation to a more defensible location, and the other refusing to relocate. There may have been pre-existing political fractures that had emerged with settlement reorganization during missionization and, with the Revolt, the sudden removal of the colonial political system that channeled political competition (Liebmann 2012a:98–99).

With the reestablishment of Spanish rule in the 1690s, and the failure of the second Pueblo Revolt of 1696, many Pueblo people may have fled to join non-Pueblo Native groups, including Navajos and Apaches. Brugge (1969) has suggested that this resulted in factionalism among Navajos, as conflicts arose over how to manage relationships with Pueblo newcomers as well as with the returning Spanish. Meanwhile, Ute, Navajo, and Apache raids on Pueblo villages seem to have increased factional tension as pro-Revolt leaders were criticized for having undermined the relative security that Pueblo communities enjoyed under Spanish protection (Liebmann 2012a:100).

Summary

Factionalism should not be seen as defect or weakness of traditional/indigenous sociopolitical systems. Scholars increasingly argue that factionalism should be understood as a process of social and political creativity (Reid 2004; Liebmann et al. 2017). It is an important political process that can be constructive response to change. It is problematic to view factionalism as innate quality specific to particular social structures or systems, and without specific historical context. Therefore, we can't simply transpose cases from the twentieth century as uncritical models for intracommunity dynamics in the seventeenth century.

V RELIGIOUS CONVERSION IN COLONIAL MISSIONS

Religious conversion was the keystone of Spanish imperialism in the New World. From nearly the moment of discovery, conversion justified violent conquest and supported the legitimacy of Spain's claims to the vast territories of the Americas. A lengthy Iberian legal tradition dating back to the Crusades tied the justification of military conquest to a responsibility for conversion of non-Christians (Muldoon 2015). Priests accompanied the conquistadors, who themselves often professed religious fervor. Soon after Cortés arrived in Tenochtitlán, a stream of Franciscan, Dominican, and Augustinian missionaries followed with the express purpose of converting Native populations to Catholicism. These mendicant orders flourished in Mexico until depopulation, colonists' demands for Native labor, and worries about losing control led the Crown to replace them with secular clergy in the 1570s. Displaced from central Mexico, Franciscans looked to the frontier to rededicate themselves to the pursuit of conversion (Weber 1992:94–95). New Mexico disappointed Spanish colonists searching for material riches, but its large village-dwelling Native populations promised the fulfillment of Franciscan dreams.

Colonial Franciscans thought of religious conversion as a deeply personal and often mystical transformation that yielded wholeheartedly dedicated believers. They looked to biblical and historical precedents such as the conversions of Saul on the road to Damascus or of St. Augustine. They especially looked to the conversion of St. Francis, a wealthy young man who, following a mysterious illness, underwent a psychological breakdown and became intensely religious. This provided the missionaries with a model of conversion as a fundamentally

individual experience that was utterly transformative. In Native American individuals, and thus in Native American societies, they sought “an absolute and complete rupture with the whole past” (Ricard 1966:35).

This concept of conversion was historically less stable than many might think, and was being transformed by European encounters with New World peoples. Before the sixteenth century, conversion referred to personal transformations like those of Paul, Augustine, and Francis, as well as the conversion of pagans to Christianity, but at a time when religion was understood principally as a matter of practice rather than belief (Keane 2008). In the period just before the discovery of the New World, ‘conversion’ was more regularly used by Europeans to describe turning from ordinary life to intense religiosity than it was to talk about people moving between faith communities (Van Engen 2003). During the Iberian *reconquista* it was a legalistic and institutional concept, referring to Jewish *conversos* or the formation of attachments to different church institutions (Gerbner 2015).

Ideas about conversion shifted with European imperial expansion and the discovery of masses of people apparently unfamiliar with Christianity. The idea of conversion as turning from one religion to another was influenced by a shift in how Europeans thought about religion that resulted from their encounters with New World peoples. Sixteenth-century Europeans divided the world between people with religion (a category comprised mainly by themselves) and those without religion (Native Americans). As they learned more about Native American practices and beliefs, however, they increasingly understood conversion to involve not only introducing Catholicism, but also eradicating the deeply entrenched ‘idolatries’ of indigenous belief systems. Debates arose between Protestants, who believed religious transformation could only come from

divine inspiration, and Catholics, who claimed that conversion could be brought about by human intervention and evangelization (Van Engen 2003).

Drawing on medieval traditions, Franciscans imagined evangelization in militaristic terms; for them, it was a battle between God and Satan, and their duty was to expand God's territory on earth (Ricard 1966; Keane 2007:113-14; Christensen 2016). Many of the Franciscans who advanced the frontier were schooled in millenarian thought, and some were extremists who, by the initial decades of the sixteenth century, had come to believe that the contest they were engaged in would see its conclusion during their lifetimes¹ (Phelan 1970; Tavarez 2011). This attached a particular urgency to their efforts.

The Franciscan conversion process

At the outset of their conversion campaigns in the 1520s, the Franciscans embraced mass baptism of Native populations, assuming that baptism had the power to induce them to abandon old traditions and reject Satan. With few friars and large Native populations, this seemed an efficient approach. Later, as it became clear that Native people were continuing to practice the old ways and were reinterpreting Catholic symbols to fit into existing beliefs, the missionaries realized that baptism with little instruction was not working. More intensive methods of indoctrination and religious suppression were needed (Burkhart 1989; Jackson 2013). Although this lengthened the process of evangelization, once Native people were adequately prepared, conversion itself would still be a rapid and radical experience leading to sincere belief.

¹ For more about the doctrinal particularities of the Franciscans, see Phelan (1970).

Franciscans went to great lengths to bring about conversions and ensure their sincerity. The process began with installation ceremonies in which towns were renamed and assigned patron saints, drawing indigenous residents into the church calendar and bestowing them with a Christian protective entity. Language barriers made imitation the key instructive technique. Missionaries directed Native people to mimic them as they performed religious rituals. They conscripted Native laborers to build churches and residences to facilitate indoctrination. Eventually, neophytes had to study and memorize prayers, articles of faiths, commandments, and the answers to questions that missionaries use to test them (Galgano 2005).

Missionaries attacked indigenous forms of leadership and authority that challenged the project of conversion. They came into greatest conflict with shamans and medicine men, who the missionaries tried to undermine with claims that their spiritual instruments were more powerful. They worked hard to convert and co-opt leaders who might influence their followers, and they especially focused on younger generations (Gutierrez 1991). Converting Native youth weakened the influence of “skeptical older villagers who were less receptive to the friars’ message and more suspicious of the missionaries’ growing prestige” (Galgano 2005:55). Missionaries deliberately sought to break up kinship ties and other social networks that they saw as impediments to conversion. They tried to bring about ideological changes, especially the concept of the individual, without which such essential notions as sin and divine forgiveness were ineffectual. Confession and marriage bolstered the ideology of individualism, which contributed to breakdowns in communal solidarity and social networks (Gruzinski 1992:98).

Conversion as the basis of factionalism

Working from the ethnohistorical record, scholars point to conversion as a powerfully disruptive phenomenon within indigenous groups in the colonial Americas. Conversion and factionalism are frequently linked in historical accounts of Native American societies. Many indigenous factions appear to have been divided by religious differences. It is common to find conflict described as occurring between religious ‘traditionalists’ and converted Native Christians. In many cases, the issue of conversion is presented as the root cause of factional conflict. Spicer (1962:492) explicitly identified conversion as a primary cause of factionalism in Southwestern Native societies.

Archaeologists regularly follow historians in drawing lines between Christians and non-Christians, separated by “a type of societal polarization, with the infidels presumably espousing traditional native values and religion and showing less affinity for Spanish goods” (Weisman 1992:165). Geiger (1940:79–81), for example, identifies the 1597 Guale rebellion in southeast Georgia as a conflict that “pitted Christian Indians against those that rejected the Spaniards and their religion.”

These kinds of narratives are reductionist. They depend on accepting the concept of conversion as it developed out of Christian theology. They define Native American identities and actions by their relationship with Europeans and their beliefs, rather than by categories that Native Americans themselves might have deemed more relevant and meaningful.

CONTEMPORARY MODELS OF CONVERSION

Even as decades of research have explored the enormous complexity of religious change and persistence in the colonial Americas, the idea of religious conversion as personal and radical transformation of beliefs remains embedded in ways of narrating and thinking about this time period. This can be called the *interiorist* model of conversion.

The most influential modern articulation of this model is that of William James (1902), who recast the supernatural forces of early modern belief systems as psychological ones. He defined conversion as “the process, sudden or gradual, by which a self, hitherto divided, and consciously wrong, inferior and unhappy, becomes unified and consciously right, superior and happy” (James 1902:160). He also argued that “[t]o say a man is ‘converted’ means that religious ideas, peripheral to his consciousness, now take a central place, and that religious aims form the habitual centre of his energy” (James 1902:276). James believed that conversion resulted from processes of the unconscious mind as it sought restoration and healing. But his model of conversion excluded the historical and cultural factors that shape religious experiences (Wulff 1997).

Recent decades have seen a revival of interest in religious conversion. Most researchers incorporate the Jamesian emphasis on radical change in the basis of a person’s ways of thinking about the self and the outside world (Snow & Machalek 1984; Ullman 1989; Dein 2010). The idea of spiritual or religious transformation is often used in place of conversion to highlight that cognitive changes derive from changes in the importance and nature of the sacred in a person’s life (Pargament 2006:18).

Although fitted to the rubrics of modern social, psychological, and medical thought, these views of conversion follow in the same lineage as those held by sixteenth- and seventeenth-century missionaries. They are shaped by numerous historical and cultural assumptions, many inherited from Christian theological tradition. These include ideas about the self and the individual, the domain of the sacred, and the concept of religions as distinct, bounded entities. These intrinsic assumptions make conversion a problematic analytical concept in studying the history of Native Americans under colonialism.

Much of the modern scholarship on conversion has decoupled it from its theological and historical origins, obscuring the extent to which it is specifically historical and specifically Christian. However, many scholars, including archaeologists, continue to use an interiorist model of conversion that draws on the elements discussed above in explaining the Native American past.

NATIVE CONVERSIONS IN THE COLONIAL AMERICAS

Ricard's classic *The Spiritual Conquest of Mexico*, first published in French in 1933 and in English in 1966, looked at the development of conversion efforts in the sixteenth century mostly through the lens of documents written by missionaries and Spanish officials. He did not devote much attention to indigenous perspectives, and was less skeptical about missionaries' claims about conversion than historians who followed him. Subsequent scholars, most influentially Burkhart (1989) and Lockhart (1992), turned to sources written in Nahuatl and other indigenous languages to better understand how missionized peoples creatively interpreted their own traditions alongside elements of Catholicism. These scholars showed how indigenous ways

of thinking and social organization shaped their reception of ideas, symbols, and practices that missionaries tried to impose (Stresser-Péan 2010). They challenged the belief that conversions were fully realized on a large scale, and that religious practices among ‘Christianized’ Native peoples adhered to the teachings of missionaries.

These revisions of the history of colonial evangelization helped spur a rich debate about the nature of religious practice and cultural change in Native American societies. There is an abundant literature exploring indigenous religious change through the lenses of terms like syncretism and hybridity. Despite the increasingly nuanced and complex narratives that have emerged from this debate, many of the scholars participating in it have held on to an interiorist model of conversion.

One problem that has dogged this model of conversion since the sixteenth century is the issue of authenticity. The ethnohistoric and archaeological evidence collected by scholars working towards indigenous perspectives on evangelization suggested that missionaries’ claims about conversion, both knowingly and not, were frequently misleading. Greer (2003:176) points out that many historians have faithfully echoed the rhetoric of “rival religious colonizers,” who often exaggerated or simply fabricated their descriptions of successful conversions of indigenous peoples. The idea of a “sudden and fundamental transformation of individuals and societies” is a “perennial missionary fantasy.”

Functionalism and syncretism

The growing consensus around the unreliability of missionaries’ claims about conversion and Native peoples’ undermining of evangelization bolstered functionalist

explanations for indigenous acquiescence to missionization. Native people were argued to have accepted or tolerated the imposition of Christian religious practices as the cost of gaining access to resources and protection that the missions could provide. If these were the motivations to participate in Christian religious activities, then the kinds of cognitive/psychological transformations that are conventionally associated with conversion were unnecessary.

Such narratives often emphasized the superficiality of Christianization and the persistence of an unchanging core of indigenous cultural traditions, often characterized as syncretism. In the case of the Pueblos, this view is most prominently associated with Dozier. Dozier (1958:442), a member of the Tewa pueblo of Santa Clara, analyzed Catholic influences on Rio Grande Pueblo religion, and argued that Spanish religion was “grafted on as a coexisting system,” so that “while the explicit features of the two religious systems are separate, the Indians regard both systems as serving the same fundamental ends.” Dozier remarked that Pueblo dances – whether oriented around cults, societies, or the whole community – are “wholly free” (Dozier 1958:443) of non-Native elements, and have been carefully kept that way. He also says that rituals surrounding life passages are kept in separate Native and Catholic spheres. He suggests that early colonial attempts to eradicate Native ceremonial practices trained the Pueblos to keep them hidden and secret.

This is an example of what Orta (2004:2) has described for the Andes, but which also applies as general anthropological pattern, as a tendency to see “a fragmented, syncretic history of partial assimilation, localized resistance, and clandestine survival by which a marked Andean core endures within the perimeter of imposed Christian forms.” However, the intervening histories of ‘traditional’ rituals often involve phases of abandonment and more recent revival.

Orta (2004) points out that much of the syncretism literature takes the encounter of conquest and the early decades in which the colonial system was consolidated as the period when syncretism crystallized, overlooking subsequent cultural trajectories. Because many scholars rely on the conventional, event-oriented idea of conversion, they often “seek a recognizable end-point to religious interaction at which a stable synthesis is presumed to have occurred” (Griffiths 1993:3), rather than considering a longer temporal perspective. Furthermore, syncretism may work to describe these histories but is poorly equipped to explain what changes, what does not change, and why (Laugrand 2012:8).

Challenging 'the new iconoclasm'

Responding to this skepticism, Axtell (1988) argues with historians who have claimed that European missionaries' efforts to convert Native Americans were exaggerated and ineffective. This skeptical line of thinking holds that missionaries were unable to communicate the essential tenets of Christianity across linguistic, conceptual, and cultural barriers. Missionaries' claims about true conversions were generally propagandistic or misinformed. Trigger argued that genuine Christian faith was impossible unless Native societies achieved the hierarchical political organization to which Christian theology was conceptually bound (Axtell 1988:104).

Axtell attributes these historians' skepticism—what he calls “the new iconoclasm”—in part to reproduction of colonial-era Catholic-Protestant competition, but mostly to the emergence of an Indian activist movement in the 60s and 70s, and the dominance of non-religious scholars who thought religion was socially irrelevant, and those of a “pro-underdog persuasion who think

—or rather hope—that inscrutable Indian protagonists and ‘patriots’ have an infinite capacity for putting one over on the white man” (Axtell 1988:105).

Axtell grants that there are reasons to doubt sixteenth- and seventeenth-century Native conversions, including poor instruction, superficial acquiescence to Christian practices in exchange for food or protection, and the persistence of “familiar cultural habits” including subsistence and medicinal practices. He acknowledges that numbers of conversions were indeed exaggerated, but argues that they cannot be treated as total fictions. Backsliding or apostasy was common, he contends, because the standards of behavior established by missionaries were so comprehensive and exacting that to meet all of them was extremely difficult. At the same time, those Native individuals who do seem to have met these expectations over the long term were likely to have been motivated by genuine belief rather than mere obedience.

Axtell gives four reasons why missionaries were successful in achieving *‘bona fide’* conversions: missionaries were highly educated and trained for their task; they often managed to implant themselves in Native communities, where they demonstrated their spiritual power through the use of European technology and scientific knowledge (while Native shamans were undermined by their inability to counter epidemic disease); they enforced strict requirements for baptism and church membership; and they worked to sustain converted communities on an extended basis rather than just through the initial missionization.

Axtell calls syncretism a “red herring” that is not well supported by historical evidence. If converts persisted in traditional practices, this was allowed by missionaries, as well as “translated piecemeal as isolated elements rather than religious complexes or systems.” Lastly, Axtell rejects the ‘cultural materialism’ of claims that Indians only converted for food,

protection, or status. While these may have been benefits of conversion, they aren't incompatible with individual transformations of belief, and the "explanation of conversion" should not be confused with "the validity or quality of the result" (Axtell 1988:119).

Colonial conversion as healing

Axtell concludes that most Native Americans who converted did so because Christianity satisfied "new emotional needs and intellectual hunger" that arose from the unprecedented experiences and challenges of the colonial era. Native modes of interpreting and explaining the world could not resolve discrepancies between traditional knowledge and new realities. Those Native people who experienced the most severe disruption were the most ready to convert, because "Christianity... offered answers to their most urgent questions, balm to their frayed emotions, and techniques of prediction and control to replace those they had lost" (Axtell 1988:120).

These arguments reflect sociological theories based on the idea that people are rational actors who consciously make choices about their beliefs (Smilde 2007:45). These theories view religion as functioning for empowerment – in other words, they ask what does religion *does* for the people who practice it. They see religious activity as the outcome of self-interested and benefit-maximizing choices made within the frame of religious 'markets.' A common thread in such approaches is that they "explain culture in terms of instrumental rationality" (Smilde 2007:48).

Such explanations of conversion's effectiveness and authenticity invoke the notion of healing that characterizes modern psychological models. Other scholars have also argued that

turning to Christianity was a spiritual response to the tumult of displacement, the destructive injustice of colonial power, and the ravages of infectious disease. In this context, conversion was an “adaptive response to trauma” (Rubin 2013:23). This argument proposes that religious change was fundamentally a strategy of survival. Assuming new identities and forging hybrid traditions may have helped make incomprehensible events understandable. Rubin argues that colonial Reformed Protestantism’s proposition that suffering was redemptive was particularly useful to traumatized Native people. Cipolla (2013:4) has also suggested that colonial suffering made Christianity more appealing to Native people.

Authenticating conversion

Axtell provides little evidence for his claims about the authenticity of conversion other than suggestions about sustained changes in the behavior of ‘converts.’ He runs up against the same epistemological problem that confronted sixteenth- and seventeenth-century missionaries, who acknowledged the impossibility of directly knowing the unobservable – that is, what a person thinks or believes. For William James, the most meaningful evidence of conversion is the testimony of converts themselves. Some seventeenth-century missionaries, such as Eliot, also believed this, recording and promulgating conversion narratives told by Native Americans.

However, the nature of colonial power provided incentives for Native people to mislead others about their beliefs. Leone (2014) argues that “[c]onversion can be ‘faked’ in all religions, since in every religious tradition conversion is signified or communicated through signs that can be intentionally produced: words, gestures, behaviors, rituals, and so on.” He argues that studying the ways that ‘fakery’ is practiced can give insight into cultural change, since

“knowledge about how to produce the signs of conversion is something that can be taught, learned, and transmitted from generation to generation but also reformed, transformed, and deformed.” Colonial missionaries claimed the ability to see through any fakery. They believed exterior behavior would prove the sincerity of converts’ inner transformations. However, their attempts to police indigenous behavior reveal a lack of confidence in the causal relationship between interior conversion and outwardly visible changes.

External acts and internal beliefs

In the colonial era, the Spanish and other Europeans understood people to be composed of an inner and an outer self. Missionaries looked to people’s outward expressions – especially involuntary ones like gesture – for signs of their internal spiritual condition (Brown 2000:132). They carried confessional manuals and other prescriptive literature that explained the theory a person’s external bodily attitude and actions are a direct index of interior faith. These books pressed the claim that “a person was not allowed to believe in God but not act like it. Nor should they act as though they believed in God, yet not feel it on the inside” (Brown 2000:148). For example, Native American consumption of wheat bread, which was essential to Catholic ritual and identity (Trigg 2004), and dressing in European-style clothing (Loren 2014:256) were read as evidence of spiritual transformation. Traditional dress and adornment posed a threat to conversion efforts. Worries about appearance flustered colonial authorities in New Mexico, where they tried to restrict traditional Pueblo clothing and adornment for fear that it promoted heathenism and made it difficult to distinguish between the ‘converted’ and ‘unconverted’ (Brown 2000:165).

However, Native people learned to manipulate these attitudes about appearance and belief to liberate themselves from missionary strictures. Native New Englanders would sometimes wear English clothing as a way to ‘pass’ in society, but not maintain that appearance in private. Loren (2014:258) indicates that this “brought about fear as the distinction between converted and unconverted, ally or not, was more malleable than initially imagined.” Colonial concerns about the ambivalence of appearance reinforced the conviction that conversion must be an absolute and total transformation. Conversion, as Salisbury (2003:257) argues, was useful especially to missionaries hoping to deny any gray area between Christian and non-Christian practices or beliefs.

Challenges to the conversion concept

At its core, conversion is a construct that emerged from and served to advance the colonizing agendas of Europeans. Various scholars have therefore found cause to reject the concept of conversion on a fundamental level, while others urge reconceptualization. Their objections dovetail with arguments in the anthropology of religion, which has also been built on analytical categories derived from colonial encounters. Some of the key points in this line of thinking are the rejection of religions as bounded and monolithic, and the indivisibility of religion and politics.

Some scholars have argued that conversion, because it is ethnocentric and reductive, should be rejected as an analytical concept in anthropological and historical research (Comaroff and Comaroff 1986, 1991). Anthropologists generally acknowledge that complete transformation or Christianization is impossible because it is always shaped by indigenous categories and

“language ideologies” (Laugrand 2012:5). Some conclude flatly that “complete religious conversion—prescribed change or pure transmission, if you prefer—was and is impossible to achieve” (Mills and Grafton 2003:xi). Peter Gose (2003:141) rejects conversion as an analytical concept, arguing that it “forecloses too many interesting questions by dichotomizing, codifying, and objectifying religious traditions.” Similar objections have been raised by historians (Salisbury 2003).

There have been calls to shift the emphasis of conversion studies from probing for evidence of ‘successful’ transformation to trying to understand the nature of religious change. The binaries to which conversion is frequently reduced – real or fake, successful or failed, “a sign of assimilation or evidence of covert resistance” – should be rejected in favor of attention to change, invention, and diversification (Greer 2003:176–77). Anthropologists interested in conversion have increasingly focused on the influence of Native views and the transformation of local cosmologies (Laugrand 2012). Mills and Grafton, surveying the field, remark that “[w]hat Peter Gose calls ‘submerged realities’ seem to be everywhere.... Local Christianities emerged as features of the landscape where conversions were attempted” (2003:xiii).

These local realities are often obscured by an “intellectual ethnocentrism” that uncritically applies non-Native religious categories to historical events (Morrison 2002:17). The arguments that Axtell, Rubin, and others have made about how Christianity met the emotional needs of indigenous people that arose from challenges of European power, technology, and diseases are, in Morrison’s view, based on theology rather than on local evidence. They make little attempt to understand the ways in which Native Americans evaluated new religious concepts and practices – how they “reasoned *from* tradition, *about* Catholic religious claims, and

for their own reasons” (Morrison 2002:158, emphasis original). To consider this issue, scholars must critically examine scholarly categories of religion: “[t]erms such as God, worship, spiritual, natural, cultural, and supernatural cannot be applied to Native American religious traditions; at least, such terms ought not be applied without empirical justification” (Morrison 200:159).

Various anthropologists and historians of religion have argued against conventional views of religion as fundamentally a matter of beliefs. The thrust of these arguments is that the idea of religion as a separate category of social life and as essentially rooted in beliefs rather than practices is distinctly Western and modern. The concept of ‘religion’ “as a set of beliefs, practices, and institutions that can be separated from other spheres of life and compared with other distinct religions around the world” (Wenger 2009:5) is alien to the Pueblos and many other Native American groups (Fowles 2012). No such term existed in indigenous languages of the Americas, and Europeans struggled to construct the terminology of religion in Native languages (Pharo 2007). For Native American people in the colonial period, this way of thinking about religion may well have been incomprehensible.

As discussed above, the debate over conversion has revolved around questions about what people believe. In recent decades there has been a growing challenge to the way that this kind of question shapes the anthropology of religion. Scholars such as Asad (1993), Dubuisson (2003), Keane (2007, 2008), and Fowles (2012) have argued against the objectification of religious experience. They argue that defining religion as being about what individuals believe about the problems of existence is specifically Christian, European, and modern. Landau (1999) argues that the very idea of religion as a distinct category came from European encounters with difference. The domain of religion emerged as a rubric for Christian Westerners to compare the

practices of other peoples to their own. While they noticed that non-Western practices looked basically the same as their own, they insisted that these alien practices were not guided by “the light of Truth.” Confronted with the similarity of religious practice, differences in personal beliefs became the defining boundary between Europeans and Others, giving rise to the field of religion, and the classification of beliefs and practices into *religions*. Demanding proof or evidence of people’s beliefs “can be the prerogative of power” (Asad 1993), as it was for colonial missionaries. Keane (2008) argues that anthropologists’ insistence on the primacy of beliefs rather than practices thus echoes and reconstitutes aspects of colonial power relations. It would be good, he suggests, to study the materiality of religion without necessarily demanding that it serve as evidence of “something hidden” – namely, belief (Keane 2008:S110).

TOWARDS INDIGENOUS PERSPECTIVES ON CONVERSION

Moving away from these views of religion and the reductive binaries they entail, and turning instead towards complex local narratives, leads to more interesting questions about how people in the past understood conversion and what kinds of social processes it might have related to, such as ethnogenesis and religious innovation.

Ethnogenesis

In some cases, new ethnic identities emerged in the wake of conversions as Native groups navigated a tumultuous world of competing colonizers and indigenous rivals. In mission towns whose residents originated in various Native groups, participation in Christian rituals may have helped bind the community together. A Catholic identity, often made visible through

adornments like rosaries worn in the hair, could be politically as well as spiritually useful. Such identities “looked outward as well as inward,” helping “defin[e] relations with others” (Greer 2003:183). They could signal the breakaway from other Native groups while also forging ties with other convert communities.

Such new identities were valuable when the bases of existing identities – such as kinship, language, tradition – had been shattered. Christian practices such as prayer could serve as a “medium of collective identity” for newly formed communities made up of people who viewed each other less as tied together by shared kinship, language, or culture, and increasingly as fellow practitioners of a common Christian faith (Rubin 2013:29). Accordingly, the emergence of Christian Native communities could constitute moments of ethnogenesis.

Religious innovation and experimentation

Christianity may also have been useful not because it was radically different from Native religious traditions, but rather because of the ways in which it overlapped with them. Greer (2003:185-187), discussing the Iroquois, observes that Catholic rituals could do little to meet needs, such as healing, over which Native supernaturals held sway. Greer concludes that there were two intact and parallel traditions among the Iroquois at the same time. But if Christianity didn't have such functional utility, it was a way to explore “the liminal experience” of “crossing the threshold into the realms of the divine” through “mystic-ascetic practices” (Greer 2003:188). He relates various Iroquois episodes of intentional exposure to extreme cold or other “mortification of the flesh.” There were precedents for this kind of thing in both Christian and Iroquoian traditions. Greer exhorts us not see what happened as a “bland and

shapeless mix” of these traditions, but “an intense, sharply defined spiritual experiment created through an active engagement with elements of both” (Greer 2003:191). This relates to Smilde’s (2007:52) model of *imaginative rationality*, which proposes that people use religious concepts and images to get a grip on difficult, “inchoate” problems of experience, such as drug abuse, crime, and violence.

Time and transformation

In ethnographic contexts, “[i]ndigenous converts usually prefer to stress their new Christian identity and reject any form of continuity with the past” (Laugrand 2012:5). The distinctively Christian ideology of conversion as a total transformation, a personal experience that is explicitly about breaking with the past, can be embraced by people who intentionally wish to escape the constraints that the past can impose. While missionaries undoubtedly did seek to enforce rupture with the past, and to destroy evidence of it (at least as far as sacred objects and sites were involved), conversion could be examined as a process of selective rejection or reevaluation of the past. This can be especially challenging for anthropology, which in many ways has been a “science of continuity” that struggles to take seriously ideas of time in which both personal and cultural histories may be marked by “radical discontinuities” (Robbins 2007:6).

The traumas of colonialism did gravely challenge indigenous traditions, social orders, and the old ways. Faced with the severity of these crises, it is no wonder that people sought radical solutions. While revitalization movements such as Taqi Onkoy in Peru and the Pueblo Revolt in the Southwest doubled down on the past, resurrecting it in new forms, other Native

peoples might have looked to a radical break with the past. If the world had been turned upside down, what good were the old ways? They may have been intrigued by the missionaries who claimed to be able to usher in radical discontinuities, both in their own lives and in cosmic time.

Even as anthropologists challenge or reject the theology of conversion, they “tend to preserve the ideological model of conversion as a complete break with the past,” replacing the transition to Christianity with the transition to modernity as the object of interest and inquiry (Laugrand 2012:4). Christianity is understood as modern partly because of some of its values, such as “human emancipation, agency, and self-mastery” (Laugrand 2012:11) and individualism. In many cases, these aspects are linked to the desire of colonial missionaries not only to break with, but to eradicate the indigenous past. As Keane (2007:114) observes, “[m]issionization is often seen as an effort to wrest individuals from particular social worlds in order to cast them—or entire societies—into a translocal community of coreligionists.” The missionary project required “the multiplied capacity of the individual to step outside of certain demands of kinship and aspects of custom, to elude the hand of the past” (Keane 2007:149).

However, Native people may have embraced the socially transformative aspects of Christianity without being fully invested in it as a set of beliefs. They may have seen it instead as a means of challenging existing conditions and critiquing the ways things are. Mills and Grafton (2003) argue that we should pay greater attention to such internal processes by emphasizing “what many people in the past would themselves have understood as conversion—namely the significant transformations which were fervently sought and sometimes achieved by individuals and groups *within* or just apart from dominant social and religious communities rather than in the borderlands *between* cultures.” This may be an unfamiliar vantage point for anthropologists,

whose discipline has been concerned with learning about, protecting, and memorializing the traditional and the local. This emphasis on cultural continuity has tended to lead anthropologists to write about religious conversion with an emphasis on “localization, indigenization, and syncretism” (Robbins 2003:221). For their subjects, however, “[t]he possibility of conversion can seem to promise an Archimedean point by which the very foundations of society itself can be examined and criticized... Christianity seemed to its converts to promise social liberation” (Keane 2007:51).

For Ancestral Pueblo people confronting the challenges of colonialism, these views of conversion are intriguing, especially in light of other examples of social and cultural critique. Whiteley’s examination of the Orayvi prophecies suggests that they provided a means to challenge and restructure existing conditions (Whiteley 1988). Similarly, Catholicism may have provided a new set of ideas to think with and act on for Pueblo peoples. Could the converts at New Mexico missions have been interested in criticizing the foundations of Pueblo society? Such examination and critique may have echoed much earlier incidents of critical examination, such as those leading to the rejection of hierarchy at Chaco (Fowles 2012).

VI PREVIOUS RESEARCH AT PECOS AND AWAT' OVI

The research projects that generated most of the archaeological knowledge about Pecos and Awat'ovi occurred in the formative decades of North American archaeology. Although the work at Awat'ovi began nearly two decades after the work at Pecos, the origins, design, and personnel of these two projects were closely interwoven, and they shared a similar scope and objectives. In both cases, the missions and the colonial period were a decidedly secondary aspect of the investigations, perhaps presaging the relatively slow development of historical archaeology in the Southwest compared to other parts of North America. Missions, in particular, despite being the primary sites of Spanish colonialism during the seventeenth century, have largely been neglected, for a variety of reasons including academic research priorities and the needs of cultural heritage, preservation, and tourism. It may be an exaggeration to assert that Pecos is “without a doubt the most mistreated surviving archeological site in the southwest” or that “[n]o mission in the American southwest has ever been completely excavated in a manner that would meet even the lowest standards of modern archaeology” (Ivey 2005:15–16), but it is true that much less is really known about missions located at Ancestral Pueblo villages than many archaeologists and historians have assumed (Ivey and Thomas 2005).

PECOS

Archaeological research

Pecos' historical significance and archaeological potential were recognized as early as the late nineteenth century. In North American archaeology, Pecos is most famous as the site at which Kidder introduced modern stratigraphic excavation and recording techniques. Most of what we know about the pueblo itself comes from the decade of research that he conducted before the Great Depression. Subsequent archaeology has expanded our understanding of the mission complex and the broader Upper Pecos Valley region, but there has been much less additional investigation of the Ancestral Pueblo community at Pecos [Table 6.1].

Early Archaeology, 1880s–1900s

The first systematic archaeological research at Pecos Pueblo and in the valley surrounding it was carried out in 1880 by Adolph Bandelier. He made, over the course of a short stay, plans and sections of the pueblo and mission remains, and, on the basis of his observations, developed a cultural sequence for the Pecos region that prefigured the prehistoric, protohistoric, and historic periods often used in contemporary Southwestern research (Bandelier 1881, 1892).

In the early 1900s, Edgar Hewett spent “short vacations and odd days” studying Pecos, building on Bandelier's work (Hewett 1904). Most importantly, Hewett obtained F.W. Hodge's notes from interviews with the last Pecos “survivors,” the elderly Agustín Pecos and his recently deceased uncle José Miguel, who had witnessed the abandonment of Pecos over six decades earlier, and who had spent the rest of his life at Jemez. Hewett discussed the variety of sites found in the Upper Pecos Valley and outlined a process of settlement aggregation from dispersed

TABLE 6.1 Previous investigations at Pecos Pueblo (*after Penman 2002:54*)

Date	Investigator	Type of investigation	Reference(s)
1880	Adolph Bandelier	mapping, description	Bandelier 1881
1904	Edgar Hewett	ethnographic	Hewett 1904
1915–1929	A.V. Kidder	excavation	Kidder 1924, 1926, 1932, 1936, 1958
1939–1940	John Corbett, CCC	excavation, stabilization	Ivey 2005
1952	Fred Wendorf	excavation	Ivey 2005
1956	Stubbs, Ellis, and Dittert	excavation, mapping	Stubbs et al. 1957, Ivey 2005
1966–1969	Jean Pinkley	excavation	Hayes 1974
1969	James and Dolores Gunnerson	survey, excavation	Gunnerson and Gunnerson 1969
1970	Alden Hayes	excavation	Hayes 1974
1971–1974	Gary Matlock	excavation, stabilization	Ivey 2005
1976	Larry Nordby	excavation	Ivey 2005
1979	John Kessell	historical	Kessell 1979
1981	Christopher Ruff	skeletal analysis	Ruff 1981
1984	Emlen Hall	historical	Hall 1984
1988	Judith Habicht-Mauche	artifact analysis	Habicht-Mauche 1988, 1991
1990	Katherine Spielmann	skeletal analysis	Spielmann et al. 1990
1996	Courtney White	architectural analysis	White 1996
1995–2000	National Park Service	large-scale survey	Head and Orcutt 2002
1997	Eden Welker	artifact analysis	Welker 1997
1998, 1999	Frances Levine	historical	Levine and LaBauve 1997, Levine 1999
1993–1998	James Ivey	architectural analysis	Ivey 2005
2002	Shawn Penman	artifact analysis	Penman 2002
2010	Michèle Morgan et al.	skeletal analysis	Morgan 2010a

smaller pueblos to a single settlement, which he says is corroborated by ‘traditional’ evidence recorded from the Jemez informants. He argues that this concentration was prompted by defensive needs, as Pecos flourished and then came under increasing assault from the “predatory tribes,” such as the Comanches, who came out of the Plains to the east (Hewett 1904:435-6). These outlying settlements, according to tradition, resulted from a series of clan migrations from different regions. Several clans, including the original settlers of Pecos Pueblo itself, were said to have come from the north, while other sets of clans came from Jemez to the west (including the inhabitants of Rowe pueblo) and from the Jumanos pueblos to the south (Hewett 1904:433-435).

A.V. Kidder, 1915–1929

A decade later, Pecos became the focus of the largest North American archaeological research project to that time. Hewett’s protégé Alfred (A.V.) Kidder, supported by Phillips Academy in Andover, MA, and by the Robert S. Peabody Foundation for Archaeology, chose Pecos as the ideal target of a large-scale research design aimed at generating a regional chronology for the entire Rio Grande region. He selected the site based on its survival into the historic period, which could be compared to its prehistoric occupation, and its deep middens, which could reveal an unbroken sequence of cultural remains (Schwartz 2000), although he would later be disappointed to learn that it was not the pristine archive of the Southwestern past that he anticipated (Kidder 1958:307).

Kidder led field research over ten seasons, from 1915 to 1929, during which he excavated an estimated 12-15 percent of the entire site as well as several others in the Upper Pecos valley (Kidder 1932). The first and most of the second seasons, in 1915 and 1916, were

devoted to digging trenches in the large refuse deposits on the eastern side of the mesilla, employing stratigraphic excavation techniques, which he had only a year before witnessed at Nels C. Nelson's work at San Cristóbal Pueblo in the Galisteo basin (Kidder 1926:4; Schwartz 2000:12). On the basis of these trenches, Kidder defined a continuous ceramic sequence for the site. In 1915, Jesse Nusbaum cleared and stabilized the standing architecture of the mission church. In 1916, test pits were dug in the North Pueblo¹ (Kidder 1926). Research was suspended during World War I, resuming in 1920, when transecting trenches were dug across the North Pueblo and eight rooms cleared in the South Pueblo (Ivey 2005:44). More rooms and trenches were excavated in and around North Pueblo in 1922, 1924, and 1925, and in this last season a section was cut through the South Pueblo² (Kidder 1926:25; Ivey 2005:50-51).

Kidder's project led to a series of seven publications in the 1920s and '30s, including his own synthesis of Southwestern archaeology and preliminary report on the excavations (Kidder 1924). Other volumes covered an ethnographic study of pottery-making (Guthe 1925), an ethnography of Jemez Pueblo (Parsons 1925), a study of the human remains at Pecos (Hooton 1930), and two volumes on ceramics (Kidder and Amsden 1931; Kidder and Shepard 1936). This last volume was among the most influential, as Anna O. Shepard's groundbreaking technological analysis of the ceramics made it possible to identify production centers and techniques, and to track pottery exchange. Kidder published an additional volume on the other artifacts (Kidder 1932).

¹ Kidder often referred to this sector as the "North Building" or "Quadrangle."

² "South Building" or "South House" in Kidder's designation.

Kidder began working in Maya archaeology in 1929, which kept him from assembling a final report on the Pecos excavations and completing a detailed analysis of the architecture and burials. Almost three decades later, he published a kind of synthesis as *Pecos, New Mexico: Archaeological Notes*, in which he expressed regret that he had not taken better field notes and had forgotten, over the course of forty years, what some of his earlier observations had once meant (Kidder 1958:xii). Though this volume did bring together much of what had been learned about Pecos, Kidder himself did not produce a conclusive account of the project as a whole. Perhaps the most conspicuously absent report is one that would cover the occupational sequence and architectural development of the North Pueblo, which remain understood only in outline (Ivey 2005).

Although visionary in many ways, there were also boundaries to Kidder's thinking that mark him as a man of his time. His devotion to honing a scientific approach to archaeology dulled his curiosity about the humanity of the past. By his own admission, he was interested in "pottery and other sorts of artifacts rather than in their makers," which he attributed to a Harvard education that taught archaeology and ethnology as entirely separate enterprises (Kidder 1958:307). In contrast with his mentor Hewett, he rejected any suggestion that Pueblo traditional histories had historical or interpretive value, accusing "the living Pueblos" of being "notably lacking in historical interest." For him, the only reliable sources of knowledge about the prehistoric past were archaeology and linguistics (Kidder 1958:129).

For various reasons, Kidder's large-scale excavations at Pecos yielded a body of data that resists the kinds of problems that motivate today's archaeologists. His research was, as he himself acknowledged, not animated by anthropological questions. The decades-long hiatus he

took between excavating the site and reckoning with the entirety of his findings led, in the end, to only a partial synthesis. Kidder hoped that the records of the excavations would allow someone else to undertake a fuller study of the site, but nobody did, some of the notes were misplaced, the artifacts have been moved around, and in any case the record-keeping was not as thorough as Kidder, long after the fact, remembered it to have been.

Later Investigations, 1930s–Present

Archaeology in the decades following Kidder's departure from Pecos focused mostly on other sites within the valley, although some work was done on parts of Pecos Pueblo that had not been extensively investigated (Eininger 2002). Ground was broken at a few nearby large pueblos, while at Pecos, more work was done on the South Pueblo, where Kidder had only made some exploratory forays. However, the research lacked the scientific emphasis as well as the resources that had energized the Andover excavations, so the records are perfunctory. In addition, the development of Pecos as a touristic destination and its designation as a site of increasingly national, rather than local, heritage led to archaeology aimed at enhancing visitors' experiences (and spotlighting their own presumed history) more than at solving problems of the Pueblo past.

In the 1930s and '40s, occasional excavations were conducted at sites like Arrowhead Ruin (a pueblo of about 100 rooms) and Shin'po (Hill House), but the results were poorly recorded. From 1938 to 1940 substantial excavations were carried out in up to 100 rooms of the South Pueblo's northern end, but these were primarily aimed at making the architecture more aesthetically appealing to visitors on the occasion of the quadricentennial of the Coronado

entrada (Eininger 2002). Ivey's 2005 report provides a painstakingly detailed account of the South Pueblo excavations of this period.

In 1956 Stubbs and Ellis excavated parts of the so-called Lost Church, known also as the Ortiz Church, which they determined had been built sometime before 1620 but had not been completed, and that some of the construction material had been salvaged and re-used in buildings on the mesilla (Ivey 1996:3-13). When Pecos National Monument was established in 1965, government-sponsored research on the mission complex came to the forefront. As Nordby (1990:23) argued, the demands of display, interpretation, and stabilization helped bring about a shift in archaeological emphasis from the Puebloan past to "historical and Euro-American" themes. In the following half-decade, Jean Pinkley and Alden Hayes directed excavations in the church and convento, but they tried to do more than time and resources permitted. The outcome was a lesser contribution than what could have been (Ivey 2005; Eininger 2002). The significant results of this work were the discovery of the fourth church (Hayes 1974) and features within the convento, including a tower and, most controversially, a kiva, whose origins and meaning remain subjects of disagreement (Ivey 1998).

Beginning in the 1970s, surveys and excavations in the valley surrounding Pecos shed light on longer-term settlement patterns and population dynamics. Gunnerson's surveys of the park identified at least 9 and perhaps as many as 23 Apachean sites around Pecos Pueblo, most notably a "burned, pole and clay daub dome-roofed structure in association with Puebloan and Apache ceramics" east of the Pecos church (Eininger 2002; Gunnerson 1970; Gunnerson and Gunnerson 1970). He also identified a number of Pueblo shrines. Lentz (1971) surveyed and mapped petroglyphs, finding 45 panels near the pueblo. Nordby completed the first systematic

survey of the Upper Pecos Valley, recording over 200 sites of various cultural affiliations. A full report was never completed but some of the findings were reported (Nordby 1992, 1993).

There was very little substantial archaeological work around Pecos Pueblo until the investigations conducted by UNM, NMSU, and NPS at Rowe Pueblo at the end of 1970s (Anschuetz 1980; Cordell 1998; Morrison 1987; Wait 1981; Wait and Nordby 1979). This work was important because it gave us a much clearer view of social conditions in the region before Pecos became the overwhelmingly dominant population center that it did.

Many cultural resource management projects were undertaken in the 1980s and 1990s. Welker's 1997 dissertation compares Pecos Pueblo and San Marcos Pueblo to understand how aggregated communities were maintained. Penman (2002) wrote a thesis on 'colonowares' at Pecos, arguing that the presence of such wares at non-mission 'Native' sites was indicative of 'non-directed acculturation,' or the voluntary adoption of European pottery-making practices by Pueblo peoples.

Prior to the repatriation of the massive collection of human remains from Pecos, an in-depth study was done by a team of researchers. This was published as *Pecos Revisited* (Morgan 2010a).

Historical research

In addition to archaeological investigation, historical research has been crucial in shaping our understanding of Pecos Pueblo. The dominant resource remains John Kessell's (1987) comprehensive history of the village, based on his exhaustive pursuit of every documentary mention that it received. The work also gives a good look at colonial New Mexico

in general, with particular attention to the frequently combative relationship between secular and religious Spanish authorities during the colony's development and decline.

Significant ethnographic and historical research on Pecos and groups traditionally affiliated with it was carried out by Frances Levine. Levine (1999) provides a more streamlined history situated in a more ethnohistoric approach, in an attempt to glean more of how Pecos' Native inhabitants understood the place and community in which they lived.

For later Pecos history, Hall (1984) examines the contestation of the Pecos Pueblo land grant from 1800 to 1933. Although not strongly relevant to the problem at hand, the intricacies of legal disputes between Native and non-Native claimants to the pueblo and its surrounding lands provide some insight into conceptions of place and territory that bear the imprint of prior configurations.

The decline and ultimate departure of the Pecos community from the pueblo in the nineteenth century are partly responsible for the lack of recorded traditional histories and mythology specific to Pecos Pueblo itself. We simply do not have the kinds of origin stories and other accounts of the past that exist for other Pueblo communities, including Hopi.

Summary

Eininger (2002) cites "pueblo development, community aggregation, Pueblo-Plains relations, the role of trade, and Spanish settlement" as the principal themes of archaeological research at Pecos over time. She notes that the pueblo, mission, and mesilla have received a vastly disproportionate amount amount of attention in comparison to the rest of the Upper Pecos Valley. This has made it more difficult to understand the area's long-term history and the

organization and significance of the broader landscape both in the pre-contact and historic past. At the same time, even though there has been a lot of archaeological work at the pueblo and mission, most of it was either from an earlier era of research methods or was poorly documented and recorded, so the reality is that the degree of understanding of the site is not as high as the volume of excavation would indicate.

AWAT'OVI

Archaeological research

Awat'ovi, like Pecos, was recognized early on as a major site with significant research potential [Table 6.2]. Early work was specifically motivated by the pursuit of archaeological verification of traditional narratives about the site. The large-scale excavations of the Peabody Museum expedition in the late 1930s sought to establish a long-term occupational sequence, comparable to those being developed in other areas of the Pueblo world. Unlike Pecos, fieldwork at Awat'ovi ended after major excavations took place, and the site did not become a tourist destination. Visits to the site are restricted by the Hopi Tribe.

Early Archaeology, 1880s–1900s

Archaeological research at Awat'ovi was initially motivated by interest in the events that ended its existence as a community, but this interest was soon displaced by the dawning scientific approach to Southwestern culture history that Kidder was developing at Pecos. As at Pecos, archaeologists began documenting Awat'ovi in the 1880s. Victor Mindeleff visited in

TABLE 6.2 Previous investigations at Awat’ovi

Date	Investigator	Type of investigation	Reference(s)
1884	Victor Mindeleff	mapping, description	Mindeleff 1891
1892, 1895	Jesse Walter Fewkes	mapping, excavation	Fewkes 1893, 1895, 1898
1900	Charles Own	excavation	Davis 2008
ca. 1900	Frank Russell	survey	Davis 2008
1917	A.V. Kidder	reconnaissance	Kidder 2000[1924], Davis 2008
1935–1939	J.O. Brew	excavation, survey	Brew 1937, 1939, 1940, 1949; Montgomery et al. 1949
1942	John Hack	environmental, geological	Hack 1942b
1949	Ross Montgomery	architectural analysis, historical	Montgomery 1949
1951	Barbara Lawrence	faunal analysis	Lawrence 1951
1952	Watson Smith	architectural analysis	Smith 1952
1954	Richard Woodbury	artifact analysis	Woodbury 1954
1971	Watson Smith	artifact analysis	Smith 1971
1978	James and Carol Gifford, Watson Smith	artifact analysis	Gifford and Smith 1978
1978	Stanley Olsen and Richard Wheeler	faunal analysis	Olsen and Wheeler 1978
1995	Patricia Capone	artifact analysis	Capone 1995
2008	Hester Davis	historical	Davis 2008

1884, making a plan and drawings of some of the wall remnants, and in 1891 published a description of the site (Mindeleff 1891).

The year following that report, Jesse Walter Fewkes began research at Awat’ovi specifically to “test the story of its destruction” (Fewkes 1893:363). Fewkes mapped the site, noting the division of the site into an older western sector and more recent (mission-era) eastern sector, and conducted excavations in a number of rooms, including a kiva that he believed was

associated with the Awat'ovi legend [Figure 6.1]. When human remains were found in the kiva, he stopped the excavations for fear of alienating the Hopi (Fewkes 1893:373). He returned a few years later to expand his earlier excavations, especially in the mission, although still with a view to corroborating the legend (Fewkes 1898).

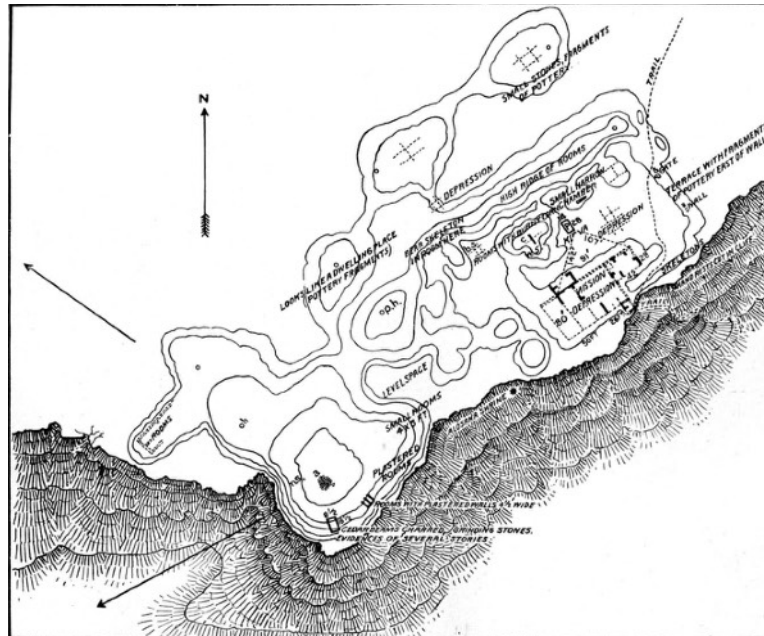


FIG. 6.1 *Ground plan of Awat'ovi drawn by Fewkes (1898), Plate CVII*

In 1900, the Field Museum's Charles Owen dug rooms and dozens of graves, probably in the Western Mound. Around the same time, Frank Russell, who had long been affiliated with the Peabody Museum and who seems to have been working on its behalf at the time, included Awatovi in a survey of the Little Colorado district (Davis 2008). Neither researcher published his findings.

A.V. Kidder, 1917

Kidder visited Awatovi very briefly in 1917. Having already begun the Pecos excavations, he was particularly attentive to the pottery he saw on the surface at Awat'ovi, probably considering how a chronology might be constructed to parallel the one he was working on for the Pueblo world's eastern edge. He dug with the Peabody Museum's Bill Claflin elsewhere on Antelope Mesa, but not at Awat'ovi, in 1923. According to Davis (2008), this early visit left an impression on Kidder and was what led him to encourage others at the Peabody to return to Awat'ovi a couple of decades later. As with previous archaeologists, Claflin was interested in the destruction narrative, but he had spent time and made connections at Hopi, and was interested in providing work for Hopi during the Depression (Davis 2008).

Peabody Expedition, 1935–1939

As a larger-scale Peabody project took shape, the motivation initially was the mission and early historic occupation, but its scope was expanded to aim at deep chronology linking ethnological present in an unbroken chain to earliest Hopi settlements (Smith 1992:152–53). Brew explicitly compared the site to Pecos, claiming that Awat'ovi would outdo Pecos in providing an uninterrupted sequence. The budget was approved in 1935, and a one-year permit approved by Department of Interior in the same year. However, the 1934 Indian Reorganization Act changed how archaeologists had to work with Native American tribes, complicating Brew's authority to conduct research in subsequent years (Davis 2008).

The first field season took place in the fall of 1935 with a crew of Hopi workers from First and Second Mesas. The team surveyed Antelope Mesa, recording and collecting pottery

from 61 sites (including Awat'ovi and five other large sites already known), ranging from Basketmaker III to the historic period. They chose Awat'ovi as a candidate for further investigation, identifying remains of the mission and the earlier settlement of the Western Mound. They excavated a transecting north-south trench, 2 meters wide and 233 meters long, across the middle of the site, revealing 106 rooms and 5 kivas which Brew dated to the fifteenth and sixteenth centuries. The rooms in the trench were generally filled with refuse, and Brew interpreted the stratigraphy as evidence that mission-period rooms had been built over the remnants of a larger, late prehistoric occupation (Brew 1937).

In August 1936, Brew returned with a larger team to excavate the Western Mound in an attempt to learn more about the earliest, and least known, phase of occupation. 131 rooms were excavated in 50-cm levels, revealing the sequence of Black-on-white, Jeddito Black-on-orange, Jeddito Yellow Ware, and Sikyatki Polychrome pottery. They also encountered kivas with painted murals. Finally, they dug nineteen tests in various parts of the site, including the mission area, where still more Sikyatki rooms were found underneath the seventeenth-century structures. One of these tests indicated that people may have been living in the western part of the site during the Mission period (Brew 1937).

The Peabody expedition returned to Awat'ovi from July to November 1937, excavating in the mission complex, the "historic town" on three sides of the main plaza, and additional tests, including two kivas (Brew 1939). In the mission complex, 72 rooms were excavated, including half of the friary and the church, which revealed evidence for Hopi reoccupation during the Revolt. 100 burials were also excavated, many of which contained perishable objects such as

baskets and textiles. By the end of the season a total of approximately 500 rooms had been excavated at Awat'ovi over the course of the Peabody expedition.

Beginning a few years after the final season, a series of reports from the Peabody expedition were issued over the course of more than three decades. These covered the physical environment, geology, and coal mining (Hack 1942a, 1942b), the Franciscan mission (Montgomery 1949), faunal remains (Lawrence 1951; Olsen and Wheeler 1978), the kivas and kiva mural decorations (Smith 1972, 1952), lithics (Woodbury 1954), utilitarian ceramics (Gifford and Smith 1978), and the decorated ceramics up to Jeddito Yellow Ware (Smith 1971).

Smith's exhaustive report on the decorated ceramics of the Western Mound was made possible by the fact that when they were working in the mound in 1936, they had classified and counted every excavated sherd and tabulated them by 50-cm levels, a process that involved as many as 5,000 sherds a day during the height of the excavations (Brew 1937:132-33).

Brew himself published several short reports in journals (Brew 1937, 1939, 1940) and contributed to Montgomery's volume on the Franciscan mission, but never produced a full synthesis of the Awat'ovi research, having turned his attention elsewhere (Davis 2008:189). A detailed report on the burials was planned but never produced (Webster 1997:335).

Later Investigations, 1980s–Present

The vast assemblage of artifacts collected by the Peabody expedition and curated by the Peabody Museum have provided the basis for important subsequent research. Bishop et al. (1988) performed a compositional analysis (INAA) of 169 samples of late prehistoric Hopi yellow ware from the sites of Awat'ovi, Kawayka'a, and Sikyatki to understand the organization

of production and patterns of exchange. Their findings revealed significant patterns of difference in ceramic composition at the regional, village, and intravillage levels. Several dissertations have analyzed materials from Awat'ovi to investigate the impact of colonialism on Pueblo societies. Capone (1995) used networks of ceramic production and exchange at Awat'ovi and the Jumano/Tompiro site of Abó to show how Pueblos resisted the cultural programs of missionization in some ways, while in others actively engaging in social transformation. Webster (1997) studied artifacts related to textile production and compared them with evidence from Pecos and Hawikuh in order to understand changes in Pueblo textile production and exchange during the colonial period. Chapin-Pyritz (2000) conducted analysis of faunal remains to examine the impact of European domesticated animals on Hopi subsistence practices and bone tool use.

VII DATA AND ANALYSIS

This chapter presents the results of the analysis of obsidian artifacts from the sites of Pecos Pueblo and Awat'ovi. Artifacts were analyzed using portable x-ray fluorescence (pXRF) in order to assign them to geochemical groups that, in turn, could be linked to geological sources of obsidian. The advent of accessible and affordable geochemical characterization of lithic materials such as obsidian has given archaeologists in the Southwest an important tool to investigate connections among groups of people and between people and the landscape over time.

RESEARCH OBJECTIVES

The objective of this research was to gain insight into the relationship between mission community dynamics and the broader mission landscape through understanding changes in obsidian procurement and distribution. Obsidian was an important resource with a variety of uses and meanings for Ancestral Pueblo peoples. Its functional and symbolic roles were subject to a variety of potential impacts arising from Spanish colonialism, including technological replacement, changing patterns of movement and interaction in the landscape, and changing views of the meanings and associations of resources within landscapes of memory and signification.

To achieve this objective, the research involved identifying the geological sources of obsidian at Pecos and Awat'ovi in order to assess whether and how procurement and use of this

material changed after Franciscan missions were established in Ancestral Pueblo communities. It was hypothesized that the processes of factionalism and religious transformation would impact how members of these communities obtained obsidian from the landscape or from other Native groups, as well as patterns of obsidian circulation and consumption within each community. Temporal variation in obsidian procurement would reflect changes brought about by missionization, while intrasite variation in the distribution of obsidian from different sources would respond to political dynamics and shifts in group identities.

Historical information and previous archaeological research indicate that increased labor stress, reduced mobility, and demographic decline were associated with missionization. Thus, it was expected that missionization would result in obsidian procurement practices shaped by greater expediency and reduced access to diverse materials. However, intracommunity differences in affiliation or involvement with missions may have modulated the intensity of these expected impacts.

OBSIDIAN

Obsidian is a silicic or rhyolite glass formed when volcanic lavas with the correct chemical composition are rapidly cooled. Since its atomic structure is entirely disordered and therefore isotropic, it can be fractured in any direction into flakes with extremely sharp edges. Although the formative conditions for tool-quality obsidian occur rarely, two phases of silicic volcanism during the middle to late Tertiary and Upper Cenozoic periods resulted in high-quality obsidian in numerous locations across the Southwest (Shackley 2005).

Ancestral Pueblo obsidian use

Ancestral Pueblo use of obsidian was widespread and has been an important topic of Southwestern archaeological research. Obsidian met a broad range of utilitarian needs for Ancestral Pueblo peoples, including hunting, processing hides and other materials, and craft production (Shackley 2005). Obsidian weaponry was also used in warfare (LeBlanc 1999).

While earlier obsidian studies focused on economic and technological issues, sourcing studies have been increasingly motivated by questions about social relationships, migration and mobility, and landscape (Graves 2005; Taliaferro et al. 2010; Arakawa et al. 2011).

Archaeologists have interpreted the presence of non-local obsidian in sites as evidence of direct contact with people living near sources, special trips to the sources, and/or down-the-line exchange (Baugh and Nelson 1987; Peterson et al. 1997; Taliaferro et al. 2010). Regardless of the specific means, for many Ancestral Pueblo communities, obtaining obsidian “involved significant social effort and strategic planning” (Peterson et al. 1997:231).

Obsidian was one of a variety of lithic materials used by Ancestral Pueblo peoples. Basalt, andesite, and pedernal chert (chalcedony) were also involved in tool production throughout Ancestral Pueblo history. Diverse lithic materials traveled significant distances both within and outside the Pueblo region. At Pecos Pueblo, archaeologists have recovered artifacts of materials from the Great Plains, such as Alibates flint, Tecovas and Edwards Plateau cherts, and quartzites (Kilby and Cunningham 2004). Ancestral Pueblo groups also made efforts to procure numerous other mineral resources, such as turquoise (Hull 2012), hematite, and selenite.

Meanings associated with obsidian

Mineral objects of various kinds – including crystals and petrified wood – had ceremonial and medicinal significance, sometimes serving as effigies for animals and landforms, particularly mountains (Parsons 1939:329–330). In addition to their utilitarian functions, flaked lithic objects were also important symbolic items. Projectile points of all lithic materials were included in collections of objects – sometimes described as altars – used in ceremonies (Fewkes 1899; Woodbury 1954:140). Points, often worn as amulets, were described as “lightning stones” or associated with lightning in narratives about past events in which projectile points imbued with the power of lightning take on a protective role. (Parsons 1939:332-333). The question of how Ancestral Pueblo peoples categorized the array of lithic and mineral resources in the landscape has led to a growing literature that draws on archaeological, ethnographic, and traditional knowledge (Anschuetz 2007).

Obsidian, however, likely held a special significance that distinguished it from other lithic materials. While valued for its exceptional versatility and utility, it also likely stood apart from other lithic materials because of particular symbolic meanings related to mountains, lightning, rainfall, and fertility. These associations may have roots in the deep past, as exploration of higher-elevation hunting and foraging zones may have led to increased use of and familiarity with obsidian in the Archaic period (Vierra 2013).

For some contemporary Pueblo groups, obsidian has an especially prominent association with lightning. The fact that many prominent mountains in the Southwest are volcanic and home to obsidian sources suggests a relationship involving weather-controlling deities, mountains, and obsidian. In traditional belief, obsidian is the result of lightning striking the ground, and the

abundant presence of obsidian at higher elevations is a product of greater rainfall and lightning storms than in down-valley locations (Ford 1968:122). Lightning, which announces the coming of rain, endows fields with special fertility when it strikes them (Tyler 1964:236). Obsidian thus traditionally bears a relationship with, and is a marker of, lightning, rainfall, and fertility (Liebmann 2017). Volcanic activity has cultural significance to the Hopi, signifying punishment and a rebuke to people who may have gone astray from the “true Hopi path” (Anyon 2000:19). Volcanoes and the lava flows associated with them are thus regarded as a form of spiritual sanctuary.

The presence of obsidian tools and nodules in burial contexts going far into the Ancestral Pueblo past suggests that obsidian’s ritual significance was deeply rooted (Peterson et al. 1997). Burials often included bundles of objects, sometimes referred to as medicine bundles, that included obsidian points; Kidder describes these as “almost always broken; as well as greatly worn, doubtless by long exposure to rubbing against other stones in a pouch” (Kidder 1932:42). These bundles typically also contained unusually shaped stones of other types (Kidder 1932:106). While obsidian appears infrequently in Southwestern mythology, its use had declined significantly by the time these myths were recorded by ethnographers. When it does appear in ethnographic accounts, obsidian plays an important role in healing ceremonies, hunting, and tool-making among hunting and gathering groups (Shackley 2005:109).

An important but relatively little explored topic is how patterns of obsidian procurement may also be indicative of persistent and meaningful landscape relationships, or connections between a group and particular places or sets of places. The mythology of obsidian, especially its associations with lightning strikes and agricultural fertility, suggests that the presence of obsidian

could imbue a place with meaning. The mountains where some of the most utilized obsidian sources occur play important roles in origin narratives and the organization of cosmic space for various Pueblo groups (Glowacka et al. 2009; Liebmann 2017). As Anschuetz explains:

The harvest of particular plant, animal, and mineral resources from certain locations for use on site, at some distant shrine, or back in a community center might be dictated by the need to perpetuate timeless traditions in accordance with a group's construction of its landscape as memory. The people bring the life energies of material resources from the distant realms of their natural world to mix with those of their communities' centers as a part of pilgrimage and through the characteristic act of carrying certain plant and animal products back to their villages [Anschuetz 2007:152].

Impacts of colonialism on obsidian procurement and use

The arrival of the Spanish and the imposition of colonial rule altered Pueblo peoples' relationship with obsidian, both through reshaping the overall economy as well as bringing about changes in the realms of technology, ritual, and symbolism. Restrictions on mobility, changes in subsistence and dietary practices, the suppression of traditional rituals and beliefs, and the introduction of metal tools are some of the key factors that affected obsidian procurement, usage, and meaning. The extent and effects of these changes are not well understood. Although there is a considerable body of obsidian research in North America, only a small component of it has focused on post-contact lithic practices. Recent investigations have begun to correct this imbalance, and the literature on the topic is growing, although research has tended to examine cases in Mesoamerica more closely than those in North America. At present, the procurement and use of obsidian in colonial contexts has been documented in scattered contexts, pointing the way towards more detailed regional studies (e.g., Millhauser et al. 2011; Rodríguez-Alegría et al. 2013; Silliman 2005; Stemp et al. 2011; Panich 2016; Liebmann et al. 2017).

Missionization affected various aspects of indigenous economies and lifeways that could impact and disrupt the acquisition and use of obsidian. Loss of territory, restricted mobility, directed cultural change, and demographic changes would contribute to the breakdown of indigenous exchange networks and technological practices. It is often assumed that the European introduction of metal tools led to the swift abandonment of indigenous lithic technologies (Panich 2016:521). Cobb (2003) argues that this assumption has been too readily accepted, often because of the faulty premise that metal tools were unquestionably functionally superior to their lithic counterparts. More importantly, researchers should beware a utilitarian bias that ignores the symbolic and social dimensions of technology (Lechtman 1984). Stone tools persisted in many forms, and for many reasons. The role of obsidian and other lithic materials in indigenous societies after European contact does not follow a set pattern. Their use generally did decline as contact with Europeans intensified, but “not in necessarily predictable ways” (Cobb 2003:5), and in some cases persisted well into the nineteenth century (Silliman 2005).

Economic changes

Indigenous economic relationships that involved obsidian did not always break down in the face of colonial disruptions. Indigenous people continued to exchange and use obsidian. It has been found in multiple mission contexts throughout California, as well as from other colonial sites like the mercantile outpost of Fort Ross (Gonzalez 2011) and the large ranch of Rancho Petaluma (Silliman 2005).

One reason for this is that lithic tools gave some indigenous people in colonial settings the ability to circumvent markets, thereby exercising greater economic autonomy. In many cases,

indigenous possession of metal tools and weapons was restricted, and indigenous communities rarely had the means to produce or repair their own metal implements. Lithic technology gave indigenous groups significantly greater control over the means of production than metal technology did (Rodríguez-Alegría 2008).

Obsidian and other lithic materials likely remained important to Ancestral Pueblo communities in the mission era because New Mexico's position on the periphery of European exchange and transportation networks made metal tools relatively scarce. Metallurgy was not practiced by Ancestral Puebloan people. There does seem to have been at least one tentative and largely unsuccessful attempt by Europeans to exploit New Mexico's mineral resources and produce metals for use in adornment during the seventeenth century (Thomas 2008), but production of metal tools did not occur in the Southwest. Any tools available would have been produced elsewhere and transported from Mexico. However, a lack of published information about metal tools in Southwestern villages during the colonial period makes it difficult to assess patterns of technological replacement.

Mobility

Attempts to restrict mobility were central to missionization efforts in many districts, which might have impeded people from traveling to important geological sources or making the long-distance exchange journeys that were important pre-contact conduits of obsidian. An important issue is how colonial constraints on mobility affected Native peoples' ability to acquire raw materials or meet with exchange partners. For many Native communities, the use of obsidian technology was predicated on long-distance travel and/or exchange, because obsidian sources

were often far from settlements. Colonial policies that affected long-distance movement, therefore, would lead to the reasonable conclusion that obsidian became a scarcer resource for Native communities where colonial restrictions were most forcibly implemented. The resulting scarcity may have made obsidian more valuable, in a narrow economic sense, within such communities. This may have led to changes in how obsidian was related to the maintenance and display of status differences, even as the introduction of new, competing technologies, such as metal tools acquired through exchange networks with Europeans, may also have been implicated in these issues. Variability in the colonial system itself also affected ongoing use of lithic tools. Frontier missions that were far from other colonial centers or had limited access to supplies may have seen greater continuities in lithic procurement and use (Cobb 2003:7).

Demographic decline

Demographic instability had a broad range of effects on Pueblo economies, as the loss of available labor made extensive agriculture and procurement less feasible. Logistically challenging expeditions to procure distant resources would have been more difficult and likely curtailed by the demands of basic subsistence (Lycett 1989:120).

Symbolism

There has also been debate about how the social value and symbolism of obsidian might have been affected in the colonial period. Some researchers have cast doubt on obsidian and similar lithic materials as “socially valuable” materials in late pre-contact or early colonial times (Graves 2005), in contrast with others who hypothesize that the social value of these materials

may have increased or at least taken on new inflections during this time period. Obsidian may have served as a link to places in the landscape for increasingly displaced peoples, and as it served as a marker of indigenous identities that were under assault or thrust into complex, destabilizing settings (Silliman 2005). In some cases, such as nineteenth-century Rancho Petaluma in northern California, Native laborers continued to use lithic tools in domestic contexts. This may have contributed to the construction of identities in a multi-ethnic context that were a form of resistance to capitalist hegemony (Silliman 2003, 2005). Conversely, when indigenous people sought to emphasize new identities that distanced them from the past, lithic technologies may have held associations that they wished to minimize.

Obsidian at Southwestern mission sites

There has been little analysis of lithic assemblages from mission-period Ancestral Pueblo sites in the Southwest. Lithic artifacts, including obsidian, have been found in abundance in the course of archaeological work at mission sites that were built alongside or over Pueblo villages. Lithic collections from Pecos Pueblo (Kidder 1932), Awa'tovi (Woodbury 1954), Hawikuh (Hodge et al. 1966), Giusewa (Toulouse 1937), San Marcos Pueblo, and the Salinas missions exist, but most have been incompletely studied, often in ways that are now notably outdated. At San Marcos Pueblo, an analysis conducted by Gabs and Compton (2008) found little technological change following the arrival of the Spanish, and no evidence of replacement by metal tools. To date, however, there has been no thorough study of post-contact lithic procurement or practices at any Southwestern mission site.

Procurement

The procurement of resources like obsidian, whether through direct means or through exchange, was a basic part of Ancestral Pueblo life. Understanding how such resources were acquired gives insight into how communities functioned (Earle 1999), as well as how they might have interacted with other groups and with the landscapes they inhabited.

Communities could acquire obsidian by traveling to sources and procuring it directly, by exchanging goods with groups that had access to obsidian sources, or by participating in down-the-line exchange networks. In the period before European contact, many Ancestral Pueblo communities probably acquired obsidian through well-established exchange relationships. The regional economy of the protohistoric Rio Grande region was characterized by extensive exchange of a variety of goods, including ceramics, foodstuffs, lithics, and intangible goods such as medicinal knowledge, dances, music, and stories. These exchanges fell short of constituting a regional system in which goods traveled through networks in complementary directions, or a single good linked the entire region. Instead, different goods moved through different networks of varying scales. Nearly all sites in the region had access to obsidian, but it generally was low in volume relative to other lithic materials (Creamer 2008). Differentiating among obsidian procurement mechanisms is complicated by problems of equifinality and non-exchange movement of goods, such as household mobility (Taliaferro et al. 2010).

Archaeologists have investigated how decisions about resource procurement are influenced by cost. Least-cost estimates based on geographic modeling can establish baseline expectations for direct procurement of a resource by a given community. Assuming that people sought to minimize energy and time spent on procurement, and that there are no social

constraints, the obsidian sample from a site will either consist mostly of the least costly source or, if there are multiple sources with comparable costs, amounts from these sources in proportion to their relative costs (Taliaferro et al. 2010). At a regional scale, such opportunistic procurement results a distance-decay or fall-off distribution pattern: as distance to an obsidian source increases, the relative abundance of material from that source decreases in any given assemblage (Renfrew 1977).

If observed distributions of obsidian do not conform to these baseline expectations, then it is likely that procurement costs are not only a function of distance, or that assumptions about how people managed their time and effort are flawed. In the case of obsidian, a potential factor is variation in the utility and desirability of different obsidians, based on factors such as quantity and quality at each source (Taliaferro et al. 2010:538). Attributes like size, inclusions, transparency, and color were almost certainly factored into procurement decision-making. Another consideration is that direct procurement may have occurred in conjunction with travel/movement for other reasons, like hunting excursions or exploiting other patchy resources, so decisions may have been based on proximity of a variety of resources. Material from distant sources may be present as a result of journeys to procure other materials in areas where obsidian is also available (Peterson et al. 1997:237-38).

Past research indicates that procurement patterns were frequently shaped by social factors. The exchange relationships through which obsidian moved have generally been held as indicative of more comprehensive social relationships between prehistoric Southwestern groups. For groups that did not live near sources, direct procurement probably involved social relationships as well. Groups acquiring obsidian are likely to have had “strong social ties with

populations in the source region that enhanced the circulation of this material or permitted its direct procurement” (Duff et al. 2012:3004).

The relatively low volume of obsidian that moved through direct procurement or exchange may not correspond with its social significance. It has been argued that exchange is socially as well as economically driven, serving to build and sustain relationships between interacting groups and, at a local level, demonstrate differences in status (Saitta 2008:151).

Exchange with groups near sources could be shaped by kinship ties and/or as part of more comprehensive exchange relationships. For some groups, obsidian acquisition and exchange networks may have been based on family or simple reciprocal ties. Exchange through these networks met both domestic and ritual needs for a variety of non-local or unevenly distributed resources. Intravillage distribution of obsidian would occur through smaller-scale networks based on kinship or informal social ties, rather than through hierarchical or redistributive relationships (Peterson et al. 1997: 237-38).

Shared rituals could also shape patterns of obsidian movement. Mills et al. (2013) have suggested that in certain instances obsidian circulation and ceramic networks show a strong relationship. As both obsidian and ceramics served as important ritual components, exchange relationships involving these goods could be facilitated by mutual ritual participation.

Another category of relationships involving different groups as well as places are those that could emerge from migration events. As people visited relatives, or sought to communicate information about their new homes, they may have transported objects as “tokens of attractiveness” of a migration destination (Arakawa et al. 2011). Obsidian, given its associations

with particular places in the landscape, may have been a particularly expressive medium for relaying such information.

Obsidian procurement could also be shaped by sociopolitical organization and organization of the economy. In some cases, obsidian distribution may have been more centralized, as particular villages and/or high-status individuals assumed control over its movement and consumption. Restricting the availability and use of obsidian could contribute to its role as “conspicuous ritual paraphernalia” (Peterson et al. 1997:237). If so, obsidian may have moved as a prestige or non-utilitarian good through exchange relationships between elites of different communities. These relationships might have made source proximity a less important procurement factor. In fact, the impact of source proximity might have been inverted in these circumstances, if the ability to acquire goods through long-distance exchange or direct procurement from distant places signaled power and prestige (Graves 2005:30).

A related question for the protohistoric period is how obsidian procurement and exchange worked within the economic and political organization of village clusters. At the Jumanos Pueblos in central New Mexico, Graves (2005) found that overall access to obsidian as well as the primary sources exploited varied among neighboring villages over time, suggesting that they were largely independent in forming and sustaining long-distance socioeconomic relationships. Source preference, therefore, may be a useful indicator of social and/or political autonomy.

Taliaferro et al. conduct a rigorous least-cost-path analysis of obsidian procured by Mimbres-area groups. They argue that travel time may not have been a very important factor for groups that were already exercising high levels of mobility (Taliaferro et al. 2010:545). For later

periods, as aggregation increased and mobility likely decreased, travel time may have become a more significant consideration in obsidian procurement.

OBSIDIAN SOURCES

The major primary obsidian sources in the Southwest have been well documented over the course of several decades (Shackley 2005). Primary sources are those locations in which obsidian formed volcanically and has been exposed through geological processes. Primary sources occur in the volcanic regions of western New Mexico, Arizona, California, and the northern Mexican states of Sonora and Chihuahua. More than 40 sources and source groups in the Southwest have been documented, primarily by Shackley. Five obsidian source regions have been identified in the Southwest based on temporal and spatial distinctions. These are: northern Arizona, west/central Arizona, eastern Arizona/western New Mexico, northern New Mexico, and northwest Mexico. For this study, the most relevant source regions are those in northern and eastern Arizona, and in northern and western New Mexico [*Figure 7.1*].

Secondary sources or deposits are locations such as gravels, rivers, and stream beds, to which workable obsidian nodules have traveled through erosion and transport via hydrological systems. A key consideration in any discussion of obsidian procurement is the question of secondary deposits. Obsidian from some sources in the Jemez Mountains, such as Cerro Toledo Rhyolite, can be found in gravel deposits in the Rio Grande Valley and elsewhere. It is possible that people in the past obtained raw materials from these secondary deposits, rather than from the primary deposits. Archaeologists have relied on factors such as artifact size to draw inferences about primary vs. secondary deposit exploitation. Obsidian in secondary deposits is usually

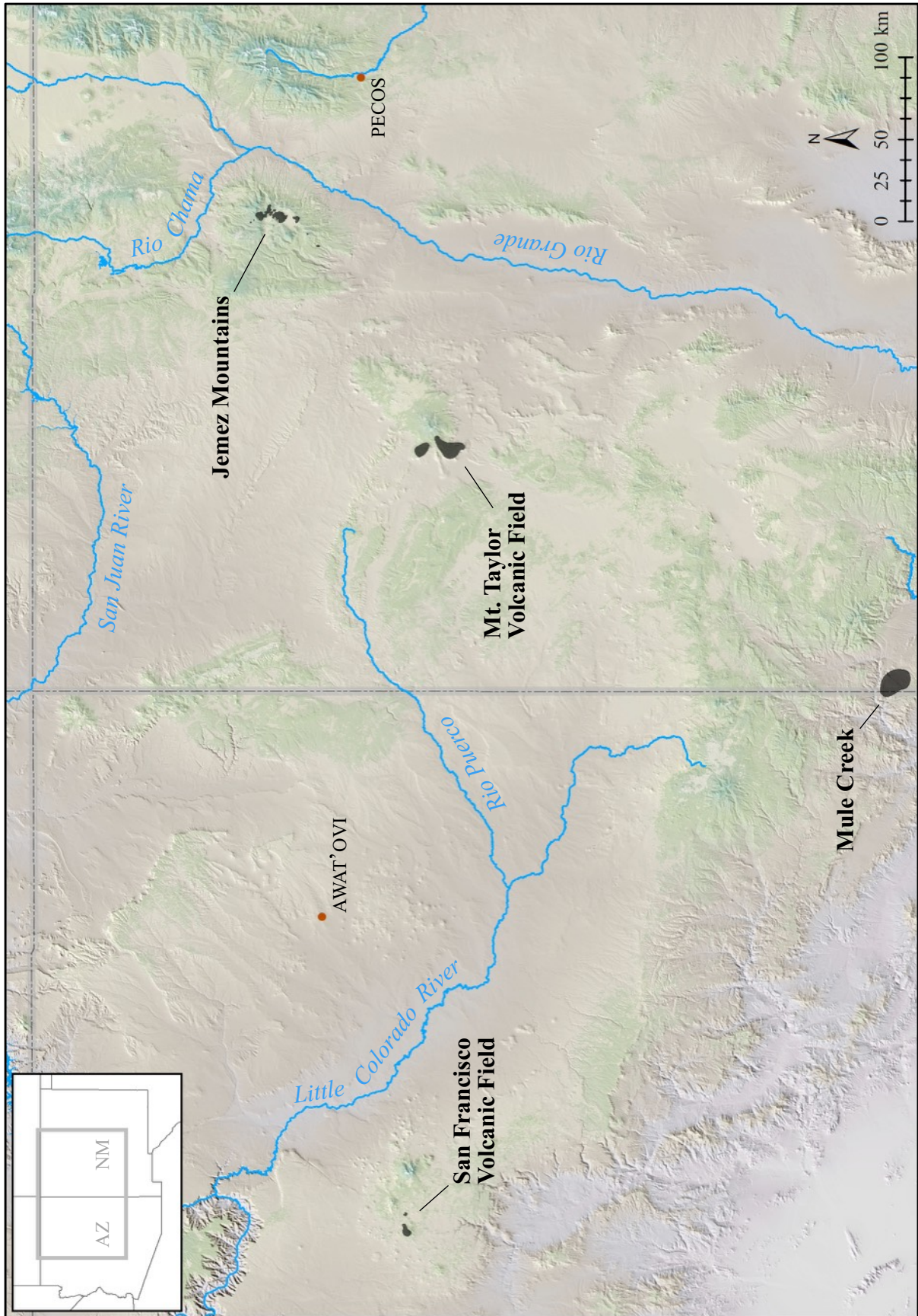


FIG. 7.1 Southwestern obsidian source areas discussed in the text

gravel-sized and suitable only for the production of smaller objects.

Jemez Mountains

The Jemez Mountains, located in northern New Mexico, contain one of the largest and most historically significant concentrations of obsidian sources in the western United States [Figure 7.2]. These were the predominant obsidian sources for many Native groups throughout northern and central New Mexico, and obsidian from this group is widely distributed in archaeological contexts beyond the Ancestral Pueblo world (Glascok et al. 1999; Shackley 2005:64). Jemez obsidian had a deep history of significance for many Ancestral Pueblo people. It was the primary obsidian used by people living in the Mesa Verde region from A.D. 600–1280 (Arakawa et al. 2011). At Chaco Canyon, there was a shift from using the most local source (Mt. Taylor) in Basketmaker III to Jemez sources by late Pueblo II (Duff et al. 2012). Duff et al. (2012:3004) state that a shift over time toward the use of Jemez sources is a general pattern throughout the northern Southwest.

The Jemez Mountains are the easternmost obsidian source exploited by indigenous groups at a regional scale in the Southwest. Obsidian from No Agua Peak near Taos was used in the past, but its quality was low and there is no evidence that it was used beyond the immediate area (Shackley 2017). This means that for a sizable portion of the Ancestral Pueblo population – those living in the northern Rio Grande and surrounding areas – Jemez obsidian was the most important resource. Shackley (2017) states that the obsidian from El Rechuelos, Valle Grande, and Cerro Toledo is of nearly unsurpassed quality for tool production.

There are at least four different obsidian sources in the Jemez group that have been studied geologically and archaeologically (Shackley 2005). The nomenclature of these sources has changed over time. Here, the most current nomenclature, as indicated by Shackley (2017), has been used.

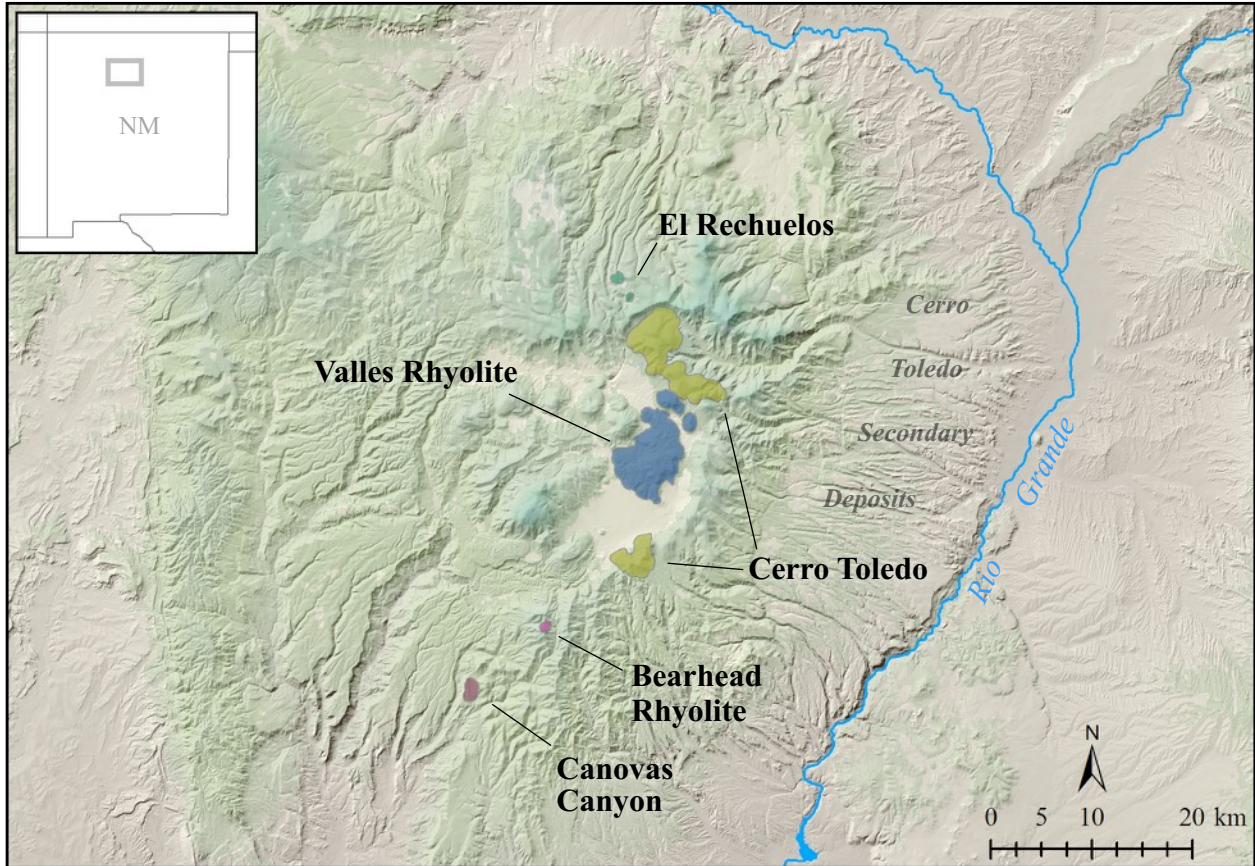


FIG. 7.2 *Obsidian source groups in the Jemez Mountains*

Valles Rhyolite (Cerro del Medio)

Valles Rhyolite, also known as Cerro del Medio, is located within the massive caldera of the Jemez range. This obsidian is of high quality and is found in large nodules. The fabric is variable, and can be visually identical to either of its neighboring sources, El Rechuelos and

Cerro Toledo. Unlike these sources, however, Valles Rhyolite materials are contained by the caldera and have not been found to enter secondary contexts (Shackley 2017). Past procurement required travel to the caldera or exchange with groups that had direct access to the caldera.

Cerro Toledo

Cerro Toledo Rhyolite is found in several locations in the Jemez Mountains. Cerro Toledo itself is located on the northeast side of the caldera, and Rabbit Mountain and related outcrops are located on the south side of the caldera. Obsidian from both locations erodes into drainages and is found in abundance outside the mountains. From Cerro Toledo it has been deposited in Rio Grande alluvium north of Santa Fe, and from Rabbit Mountain it is carried toward the southeast, eventually being deposited in the Rio Grande and transported further towards the south. The quality of Cerro Toledo obsidian is highly variable, ranging from high quality aphyric (containing no phenocrysts) glass to “glass with large devitrified spherulites that make knapping impossible” (Shackley 2017). Ancient toolmakers regularly tested Cerro Toledo obsidian at the sources to determine its quality. Shackley argues that its inconsistent quality may explain why Cerro Toledo obsidian is frequently found in lower-than-expected quantities in archaeological assemblages.

El Rechuelos

El Rechuelos is located a few kilometers north of the north rim of the caldera. This locale has been referred to as Polvadera Peak in the past, but the obsidian used in the past came from small domes north, west, and south of the peak, rather than from the peak itself (Baugh and

Nelson 1987). Unlike Cerro Toledo Rhyolite, El Rechuelos obsidian's geological distribution is small. It has a distinctive fabric that is "uniformly granular." Devitrified spherulites that would interfere with toolmaking almost never occur in this obsidian, making it desirable from a utilitarian perspective. Shackley (2017) notes that El Rechuelos obsidian is generally very prominent in archaeological collections from sites in northern New Mexico.

Canovas Canyon

Canovas Canyon Rhyolite is located approximately 16 km south of the caldera rim. This source is older and consequently is found in only small marekanites (rounded pebbles) less than 2 cm in diameter. This is a high quality tool stone but its small nodule size and proximity to sources with larger nodules probably limited its exploitation in the past (Shackley 2017).

Bearhead Rhyolite (Paliza Canyon)

Bearhead Rhyolite is widely distributed in archaeological assemblages in New Mexico, and figures prominently in Revolt-period sites in the Jemez Mountains (Shackley et al. 2016; Liebmann 2012a). It ranges in color from smoky gray to almost transparent, and is comparable in tool-making quality to other Jemez Mountains sources (Shackley et al. 2016:60).

Secondary deposits of Jemez obsidian

Secondary deposits of Cerro Toledo Rhyolite and El Rechuelos are available in Rio Grande Quaternary alluvium that was closer to Pecos Pueblo and other Rio Grande communities than their primary sources. Cerro Toledo Rhyolite was especially available in such deposits in

locations such as the Puye Formation, just west of the town of Española, which sits below the domes at higher elevations. Importantly, the enclosed topography of the Valles Caldera means that Valles Rhyolite (Cerro del Medio) is almost entirely unavailable outside the caldera itself. Only a few very small (less than 12 mm diam.) nodules have been found to the south of the Jemez mountains (Shackley 2016). This is significant in that nearly any artifacts produced from Valles Rhyolite would have to come from material originally procured in the Valles Caldera.

San Francisco Volcanic Field

The obsidian sources of the San Francisco Volcanic Field [Figure 7.3], located in Coconino National Forest in north-central Arizona, were comparable in importance and breadth

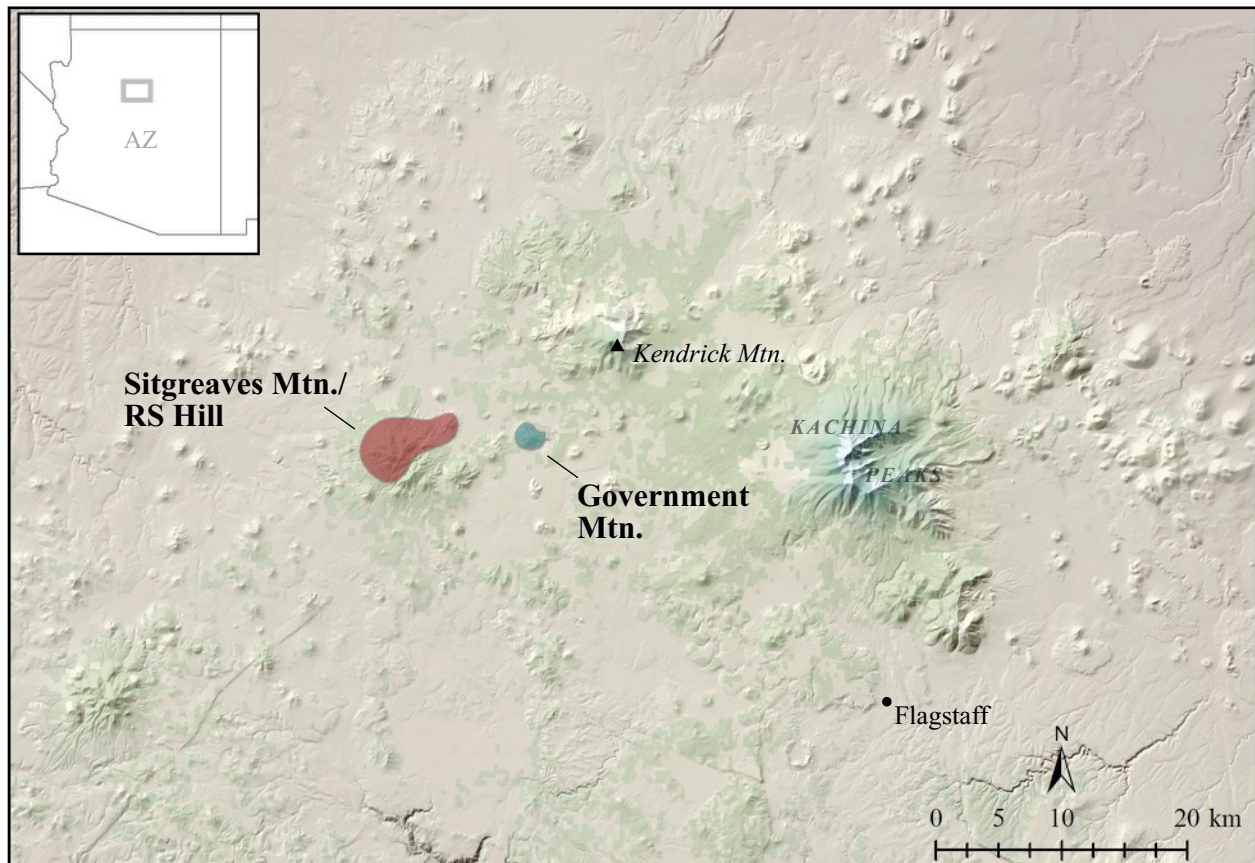


FIG. 7.3 *Obsidian sources in the San Francisco Volcanic Field*

of distribution to obsidians from the Jemez mountains. The volcanic field corresponds with the San Francisco Peaks, a series of three 3,600 m summits within Coconino National Forest. Three geographically clustered sources, Government Mountain, Sitgreaves Mountain, and RS Hill, yield similar but not identical obsidians that were exploited by Ancestral Pueblo groups.

Government Mountain

Shackley (2017) describes Government Mountain as “perhaps the best known contemporary obsidian source in Arizona.” It is a single dome surrounded at its base by alluvium that includes obsidian nodules that commonly reach sizes up to 15 cm, despite centuries of collection at the site. The obsidian is aphyric, but the fabric is visibly granular because of the inclusion of “microphenocrysts of alkali feldspar and iron oxide” and exhibits a “cloudy gray” color. There is little secondary deposition, limited to around 2 km around the base of the dome, mostly on its southern side (Shackley 2017).

Sitgreaves Mountain

The largest mass of obsidian in the San Francisco Volcanic Field is Sitgreaves Mountain, located to the west of Government Mountain. Obsidian is available in large (up to 20 cm diam.) nodules densely distributed in alluvium on the slopes and around the base of the mountain. The fabric is mostly opaque, slightly granular and vitrophyric, and occasionally contains phenocrysts that can interfere with tool production (Shackley 2017).

RS Hill

RS Hill is a comparatively smaller rhyolite dome that yields very large (up to 35 cm diam.) nodules of vitrophyric, granular obsidian. The glass is blacker and more vitreous than Government Mountain, and is better for tool production. Abundant debitage provides evidence of extensive on-site reduction of these nodules. There is limited secondary distribution down Spring Valley Wash to the south (Shackley 2017).

Mt. Taylor Volcanic Field

The Mt. Taylor Volcanic Field [Figure 7.4] is a cluster of volcanic centers located in northwest New Mexico, north of Acoma Pueblo and northwest of Laguna Pueblo. Two sources,

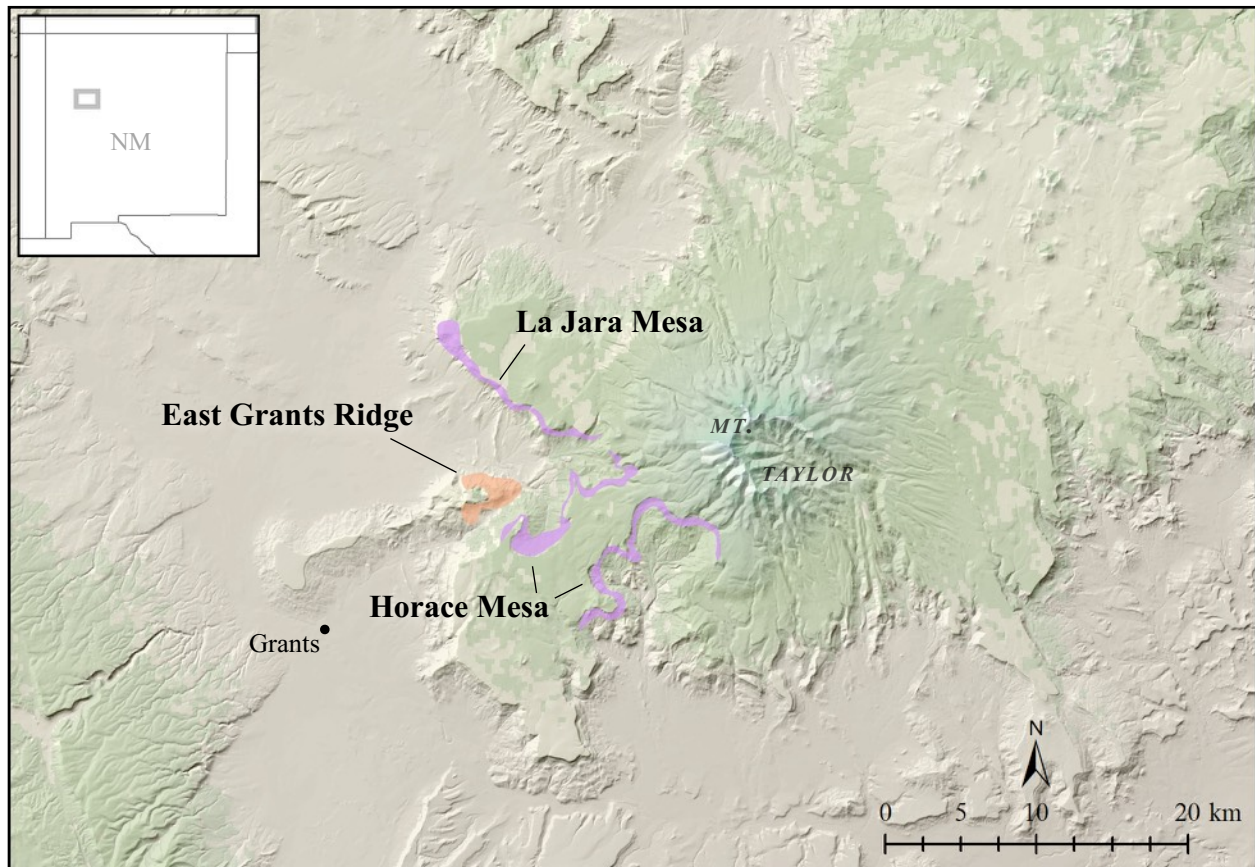


FIG. 7.4 *Obsidian sources in the Mt. Taylor Volcanic Field*

Horace Mesa and La Jara Mesa, resulted from the same ash flow and yield nodules of aphyric obsidian up to 8 cm in diameter that are well suited for tool production. Horace Mesa extends southwest from the Mt. Taylor cone, while La Jara Mesa lies to the northwest. Between them, another source at East Grants Ridge yields a distinct obsidian that is adequate but not as good for toolmaking, and seems to have been less preferable in the archaeological past (Shackley 2017).

Mule Creek

Mule Creek is a geographically extensive source centrally located on the border between Arizona and New Mexico [Figure 7.5]. It yields medium-sized nodules, up to 10 cm in diameter, with glass that varies widely in color and is generally adequate for tool production despite being

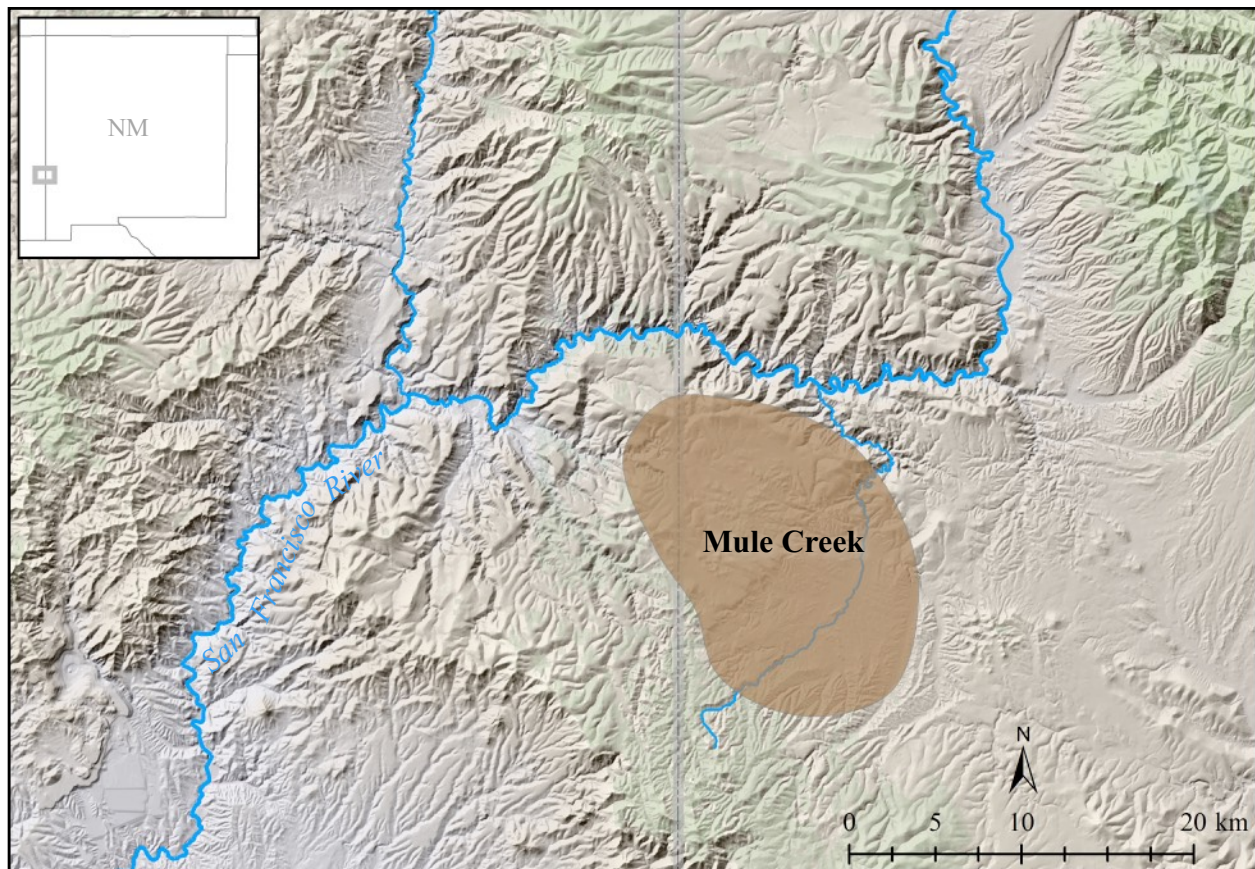


FIG. 7.5 *The Mule Creek obsidian source area*

very brittle. There may have been secondary deposition via the San Francisco and Gila River watersheds (Shackley 2017).

Cultural significance of obsidian source locations

The Jemez Mountains are an important place in the cultural landscapes of many Southwestern Native groups, including Rio Grande Pueblos as well as Hopi, Zuni, Navajo, Apache, and Ute communities (Anschuetz 2007). They figure prominently in origin stories told by people of the Pueblo of Jemez, who refer to them as *Wavema*, “the father of all northern mountains.” They are the home of spirits, ancestors, and supernatural creatures, the source of rainfall and water, and a source of ritual and medicinal plants and animals (Liebmann 2017). Hopi and Zuni cultural-historical narratives refer to specific villages on the eastern slopes of the mountains, and sites in or near the Valles Caldera are recorded as locations for Zuni hunting, plant collection, and sacred activities (Anschuetz 2007:143). Zuni people make pilgrimages to collect obsidian from the Jemez mountains, and there is a specific name in the Zuni language for this obsidian (Price Steinbrecher 2015:70).

Specific obsidian sources within the Jemez Mountains are known to have spiritual and symbolic significance for Pueblo peoples. Cerro del Medio, the major source of Valles Rhyolite, is known to the Jemez as *Gee way kia shin* (“Shining Rock Hill”). Its obsidian is specifically chosen for use in prayer and religious ceremonies (Liebmann 2017). Hopi people recall a history of travel to the Valles Caldera to obtain obsidian, describing these materials as important shared resources, and indicate that connections maintained through this kind of movement helped establish trade routes and relationships (Price Steinbrecher 2015:49). In the landscapes of the

Tewa Pueblos of Nambé, Pojoaque, San Ildefonso, San Juan, Santa Clara, and Tesuque, *Tsikumu* (“Obsidian Covered Mountain”) is the mountain linked to the cardinal direction of the west (Anschuetz 2007:143). This mountain, also known as Cerro Chicoma, is one of the sources of Cerro Toledo Rhyolite.

The San Francisco Peaks are visible from modern and Ancestral Hopi villages, and occupy a prominent place in the Hopi cultural landscape. Emory Sekaquaptewa has described the San Francisco Peaks “as a ‘monument shrine,’ explaining that features of the land, such as mountains and springs, are monuments in the sense that their profound spiritual greatness and importance make them not only a solid presence in the sense of a church but also a spiritual force in the landscape” (Glowacka et al. 2009:552). Numerous shrines, ancestral villages, and trails attest to past and present Hopi activity in this area, which is also important as a place to collect eagles and plants (Anyon 2000:15). These peaks are the symbolic homes of the *katsinam* in the southwest, one of the Hopi cardinal directions. This is linked to the peaks’ role as one of the four cardinal places where clouds begin and live before traveling to Hopi country to deposit rain (Glowacka et al. 2009:556). Trips to shrines on the mountainsides also involve collection of Douglas fir branches, which are brought back to use in dances, costumes, and ceremonies (Glowacka et al. 2009:559).

Mt. Taylor is an important place in the Hopi cultural landscape, in a role that is similar to that played by the San Francisco Peaks. In fact, the same Hopi name, *Nuvatukya’ovi*, refers to both landforms. Mt. Taylor represents the cardinal direction of the northeast, linked to the color white, and is the home of the *katsinas* in that direction. Other Hopi names for Mt. Taylor derive from other Puebloan languages, which points toward the mountain’s importance to various

groups, especially Acoma and Laguna. Additionally, important events in Hopi myth occurred at Mt. Taylor, and it is linked to particular religious personages, clans, and societies (Anyon 2000:16).

METHODOLOGY

The ability to inexpensively and non-destructively identify the geological sources of obsidian found in archaeological sites using X-ray fluorescence spectrometry (XRF) has facilitated new ways of using this artifact category to understand past social and cultural processes. Other sourcing methods, such as neutron activation analysis (NAA), measure more elements but have long-term destructive effects on samples and are less accurate for some important diagnostic elements than XRF (Shackley 2005:90). Handheld, portable XRF (pXRF) instruments have quickly advanced in capability and accessibility, and are close to becoming an indispensable piece of the archaeological toolkit.

These instruments use either a miniature X-ray tube or a sealed radioactive source to excite a sample with X-ray photons. The sample then emits secondary X-ray photons that are characteristic of the atoms that make up its material, and the instrument's detector records this X-ray spectrum for analysis (Potts 2008). For this study, obsidian artifacts were analyzed using a Bruker Tracer III-V+ handheld pXRF spectrometer, courtesy of the American School for Prehistoric Research in Cambridge, Mass. The instrument features a Si-Pin detector with a typical resolution of 190 eV at 10,000 cps and an x-ray tube with a Rh target and maximum voltage of 40 kV.

The analytical procedure follows that used in other recent obsidian sourcing studies using comparable instruments (Duff et al. 2012; Panich 2016). Each obsidian artifact was analyzed for 180 s with the x-ray tube operating at 40 kV and 30 μ A. The instrument was optimized for obsidian analysis by the use of Bruker's green-labeled filter – made of copper, titanium, and aluminum layers – to remove background radiation and improve sensitivity for relevant portions of the spectrum (Ferguson 2012). Spectrum data were generated for the elements iron (as FeT), manganese (Mn), niobium (Nb), rubidium (Rb), strontium (Sr), titanium (Ti), yttrium (Y), and zirconium (Zr). These elements include those – especially Sr, Ti, and Y – known as incompatibles, which are concentrated and stabilized in glasses and are likely to be consistently distributed within a given source (Shackley 1988).¹ The resulting sample data [*Appendix A*] were then assigned to geochemical groups and compared with published values for obsidian sources [*Appendix B*].

Analysis was performed on-site by the author at laboratory facilities at PNHP and PMAE. The instrument, settings, and procedures used for analysis of artifacts from both Pecos Pueblo and Awat'ovi were identical.

¹ For further details on the underlying chemical and geological premises of this approach, the reader is referred to Shackley's (2005) knowledgeable and thorough discussion.

Pecos

Description of collections

The sample of 358 obsidian artifacts analyzed in this study from the collections at PNHP all came from the archaeological site of Pecos Pueblo (LA 625). They were recovered during excavations by various researchers associated with the excavations discussed in the previous chapter. The majority (n = 276) of artifacts were collected during Kidder's excavations, with the rest of the collection contributed by subsequent investigators.

Recovery considerations

The excavations conducted by Kidder and Brew at Pecos and Awat'ovi, respectively, recovered fairly substantial quantities of obsidian artifacts. However, both projects pre-dated the more rigorous approaches to lithic technology that emerged from processual archaeology. The publications and field notes of the excavators indicate a preference for finished and diagnostic forms, and for unusual or large artifacts (Kidder 1932). While the collections do contain some debitage, in neither case was there a systematic effort to record and analyze lithic production.

During Kidder's excavations, modern recovery methods such as screening were not used. Kidder's publications and notes suggest the criteria used to make decisions about the recovery of lithic artifacts. He observed the presence of "enormous quantities" of debitage and simple flake tools, and that obsidian was the most common material in this category (Kidder 1932:40). However, the excavators did not attempt to quantify or otherwise record this component of the archaeological record. It is difficult and in all likelihood impossible to reliably estimate recovery

rates or assess biases in the lithic collection from Pecos or Awat'ovi with respect to attributes such as type, size, or production stage.

Previous analyses

Kidder did not consider the lithics from Pecos to be particularly significant. He argued that Southwestern lithics were poorly made, largely because of raw material inferior to that of other North American regions. Pecos itself seemed to have more abundant and diverse lithics than other Pueblo sites, which Kidder attributed to contact with Plains cultures (Kidder 1932:13). He performed a formal and technological analysis of knapped tools, primarily projectile points and knives, drills, and scrapers.

Kilby and Cunningham (2002) conducted a study of lithic materials from the full-coverage inventory survey (1994–1999) of Pecos National Historical Park. This study included a sample of roughly 150 artifacts collected from the surface at Pecos Pueblo which were analyzed using energy-dispersive XRF at UC Berkeley (Shackley and White 1998). These surface collections are not included in the study here.

Current state of collections

Obsidian artifacts from Pecos Pueblo are stored in New Mexico at a dedicated facility at Pecos National Historical Park, under the supervision of the National Park Service. The majority of artifacts were collected by Kidder and are in the collection of the Robert S. Peabody Museum in Andover, Mass., but are stored at and managed by PNHP. Artifacts repatriated to the Pueblo of Jemez under the Native American Graves Protection and Repatriation Act (NAGPRA) are stored

at and managed by PNHP. Any other artifacts, including the majority of the South Pueblo materials, belong to NPS/PNHP.

Analysis conducted

A total sample of 358 obsidian artifacts from Pecos Pueblo were analyzed. The artifacts were then assigned to geochemical groups. The geochemical groups were then compared to the most current published XRF data for Southwestern obsidian sources, provided by Shackley (2017). A subset of 100 sample readings were sent to Shackley for independent analysis; his source assignments were in agreement with my own (Shackley 2016).

In order to understand the distribution of obsidian artifacts within the site, a geodatabase was created using Esri's ArcGIS software system. High-resolution scans of Kidder's original field maps, which are archived at the Laboratory of Anthropology in Santa Fe, NM, were obtained. These are the plans which were produced by Kidder's team while they were working in the field, and therefore are more detailed and accurate than later published maps that were redrawn from them.

The individual pages of the maps (fourteen in total) were stitched together using Adobe Photoshop to correct slight scanning distortions. The composite map was then georeferenced to high-resolution Google Earth imagery. In the future, a more accurately georeferenced map could be produced, but this will require on-the-ground investigation. Many of the walls and other archaeological features that Kidder documented have been reconstructed or otherwise modified since the 1920s (Ivey 2005), and may no longer correspond with the locations drawn in the field at that time. Ideally, it would be possible to locate the stakes used to establish Kidder's

excavation grid. It is unclear whether any of these stakes remain in the ground. The plans were then digitized, and the digitized features were linked with the records of individual artifacts, which were provided by the curatorial staff at PNHP.

RESULTS

The following section describes the obsidian data from Pecos Pueblo. First, the archaeological distribution and context of the artifacts was evaluated, based on catalog information, published reports, maps, and archival sources such as field notes. Second, the geological sources of obsidian used in the artifacts are discussed. Third, the technological types or forms of the artifacts are presented, followed by the relationship between artifact form and geological source.

Archaeological distribution

Curatorial staff at PNHP identified 358 obsidian artifacts in the collections that could be associated with the North and South Pueblos at Pecos Pueblo [Figure 7.6]. These were distributed within the site as follows [Table 7.1]. 282 (79%) of the total sample of obsidian artifacts were recovered from contexts in the North Pueblo, while 70 (20%) came from South Pueblo contexts. An additional six artifacts do not have recorded provenience data.

The artifacts that can be most precisely located within the site are those associated with specific features. 156 of them were found in association with burials, kivas, or rooms. 26 artifacts were found in association with human remains or funerary contexts. These will be discussed in more detail in the following section. Kidder also excavated a number of kivas in

their entirety (Kidder 1958). Seven of these (numbered 1, 4, 7, 8, 12, 14, and 16) yielded sixteen artifacts in the sample. 114 artifacts are recorded as coming from room contexts. Rooms are numbered, and sometimes a level is noted. 61 of these artifacts are from 39 different North Pueblo rooms. 54 of them are from 12 different South Pueblo rooms. Kidder (1958) explains that the Andover project generally avoided excavating deeply in North Pueblo rooms for fear of collapsing the architecture. They had hoped to stabilize some of the walls to allow for full excavation of more domestic contexts, but were ultimately stalled by a lack of resources. This may explain why the records for the room contexts do not include an excavation level or depth.

The artifacts not associated with features are either surface finds or were excavated from Kidder's many trenches, and are identified by locations on Kidder's grid. 119 are recorded by grid location. In a few cases there is a depth recorded or an associated wall, but for the most part this information was not recorded. It's unclear whether these are surface or excavated finds. 11 artifacts are recorded as coming from the surface in or around the North Pueblo, with 2 additional possible surface finds that are ambiguously recorded. 29 artifacts are recorded as coming from trenches. Finally, there are 16 artifacts that are recorded as coming from the South Pueblo with no additional provenience information.

Based on Ivey's analysis of the excavation history, we can cautiously assume that obsidian from contexts in South Pueblo rooms below the north end of the mound is likely to be associated with the post-contact period. However, the possibility cannot be discounted that they originated in midden deposits associated with the Glaze I-III pueblo that was abandoned and rebuilt at the north end of the mound.

If there were lithic workshops or specialized production or waste disposal areas at Pecos, they were not identified or recorded by the Andover project. This is an obstacle to understanding the nature and organization of lithic production at the site.

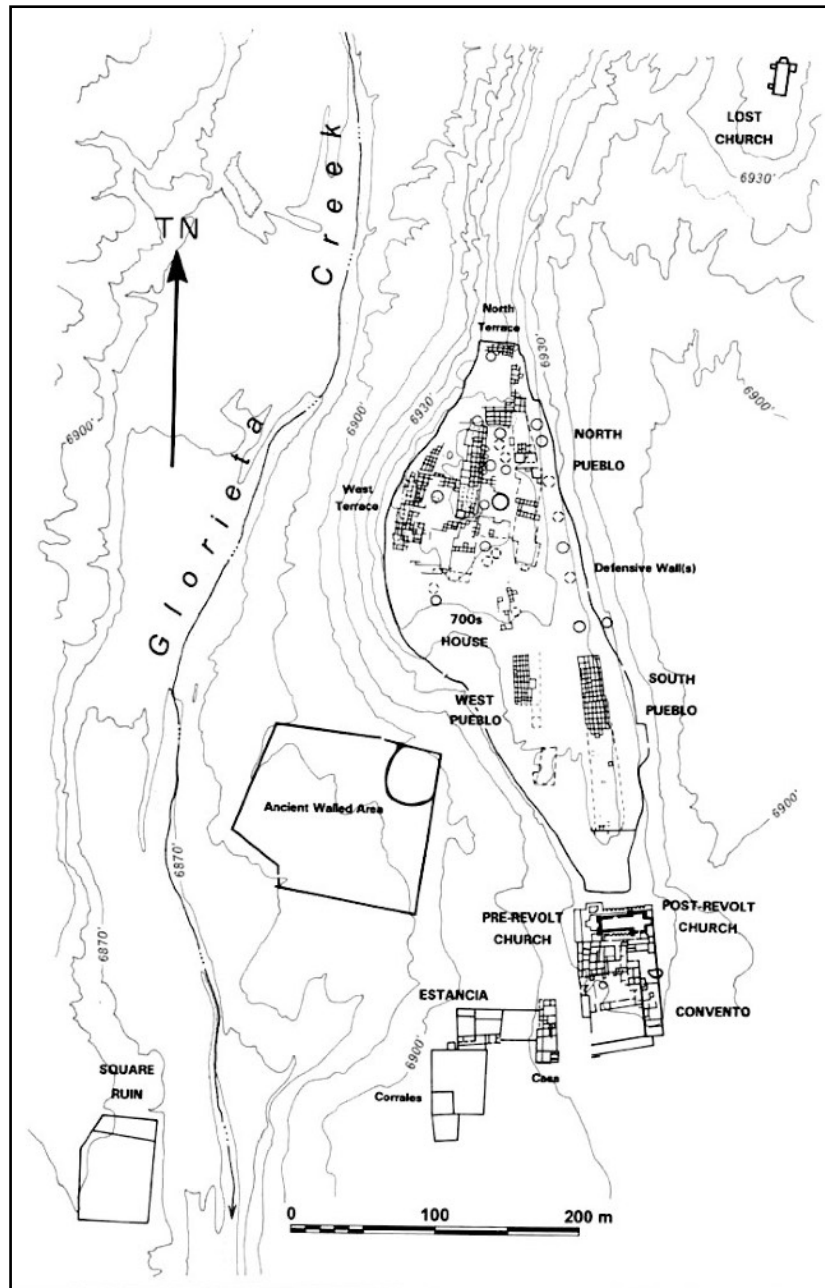


FIG. 7.6 Pecos site plan (Head and Orcutt 2002)

TABLE 7.1 Archaeological contexts of provenienced obsidian artifacts at Pecos Pueblo ($n = 337$)

Context	Number of artifacts	Percent of sample
Funerary	26	7.7%
Kivas	16	4.7%
Rooms	114	33.8%
Grid locations	119	35.3%
Surface finds	13	3.9%
Trenches	33	9.8%
Unknown	16	4.7%

Geological sources of assemblage

All 358 obsidian artifacts identified in the catalog were located and analyzed using pXRF. All artifacts in the sample were assigned to chemical groups corresponding with geological sources of obsidian [Table 7.2]. In order of prevalence, these sources were Valles Rhyolite, Cerro Toledo, El Rechuelos, Canovas Canyon, Mt. Taylor, and Government Mountain. 174 artifacts were of Valles Rhyolite, 145 from Cerro Toledo, 26 from El Rechuelos, 11 from Canovas Canyon, and one each from Mt. Taylor and Government Mountain. There were no artifacts that corresponded with unknown sources or presented outlying XRF spectral data.

Of the total sample of obsidian artifacts from all Pecos Pueblo contexts, 319 (89% of the total) were from two sources in the Jemez Mountains, Valles Rhyolite (Cerro del Medio) and Cerro Toledo [Fig. 7.7]. Valles Rhyolite was slightly more prominent than Cerro Toledo at a ratio approaching 5:4.

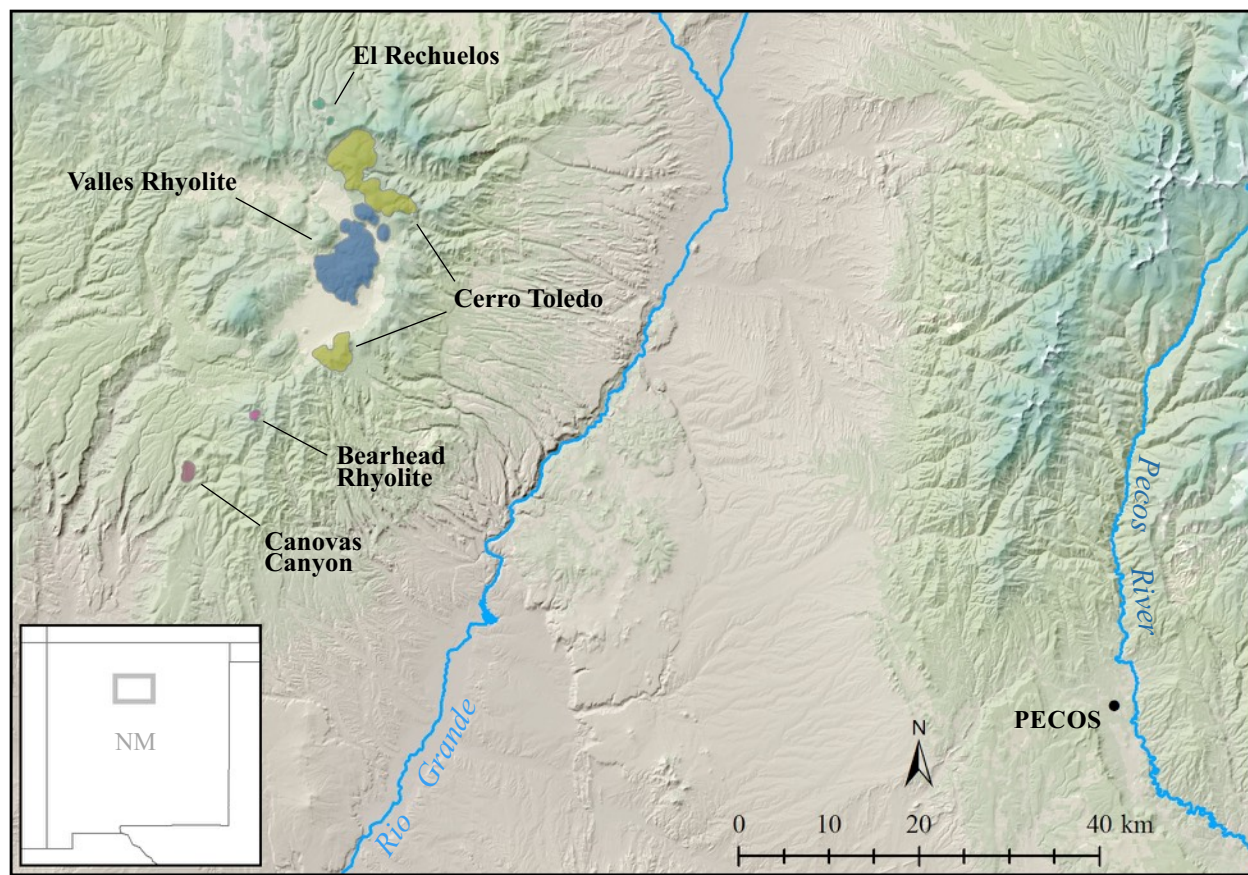


FIG. 7.7 *Pecos in relation to Jemez Mountain obsidian sources*

TABLE 7.2 Geological sources of obsidian artifacts at Pecos Pueblo ($n = 358$)

Source	Number of artifacts	Percent of assemblage
Valles Rhyolite	174	48.6%
Cerro Toledo	145	40.5%
El Rechuelos	26	7.3%
Canovas Canyon	11	3.1%
Horace/La Jara Mesa	1	0.3%
Government Mountain	1	0.3%

TABLE 7.3 Geological sources of obsidian artifacts from North Pueblo contexts ($n = 245$)

Source	Number of artifacts	Percent of assemblage
Valles Rhyolite	123	50.2%
Cerro Toledo	93	38.0%
El Rechuelos	21	8.6%
Canovas Canyon	6	2.4%
Horace/La Jara Mesa	1	0.4%
Government Mountain	1	0.4%

TABLE 7.4 Geological sources of obsidian artifacts from South Pueblo contexts ($n = 77$)

Source	Number of artifacts	Percent of assemblage
Valles Rhyolite	38	49.4%
Cerro Toledo	37	48.1%
El Rechuelos	1	1.3%
Canovas Canyon	1	1.3%
Horace/La Jara Mesa	-	-
Government Mountain	-	-

Variation by technological type

The technological analysis and typology of the artifacts performed by the original excavators was not revisited for this study [Table 7.5]. Types listed here may depart from standardized approaches to classification such as that developed by Sullivan and Rozen (1985).

The majority of the artifacts analyzed were projectile points, demonstrating the recovery bias of earlier excavations. In a sample of 21,088 flaked lithic items observed in the Pecos CRIS, 627 (2.97%) were classified as projectile points (Kilby and Cunningham 2002). Here, there were 142 (39.7%), indicating a drastic overrepresentation of projectile points. Other functional lithic

items are also overrepresented in this sample, and debitage is highly under-represented.

However, the CRIS data include items of all lithic materials. Only 9.1% of these were obsidian, and it is not clear how preferentially obsidian was utilized for specific types like projectile points. What does seem certain is that it would be difficult to draw inferences from the proportions of functional types in this sample, because it is not representative.

TABLE 7.5 Pecos: Variation by technological type

Technological type	Site overall	North Pueblo	South Pueblo
Biface	3	3	-
Core	1	1	-
Debitage	69	69	-
Flake	28	24	4
Knife	35	26	9
Nodule	2	2	-
Other tool	18	16	2
Projectile point	142	89	53
Raw material	32	32	-
Scraper	22	20	2
Unidentified	6	-	-

Form by geological source

Breaking down each technological type by obsidian source shows that materials from different sources may have been preferentially used for different types of tools [Table 7.6].

Relative to the overall proportion of Valles Rhyolite and Cerro Toledo, projectile points show a bias toward Cerro Toledo, while other tools show a bias toward Valles Rhyolite. It is intriguing that El Rechuelos obsidian projectile points are overrepresented, versus the overall assemblage,

by nearly a factor of two. Perhaps this material had special qualities or significance that made it more appealing for projectile point production.

TABLE 7.6 Pecos: Form by geological source

Source	Projectile points	Nodule/core/raw material	Debitage	Other tools (scrapers, knives, flakes)
Valles Rhyolite	58	13	38	61
Cerro Toledo	63	15	29	36
El Rechuelos	19	-	1	6
Canovas Canyon	1	7	1	2
Horace/La Jara Mesa	-	-	-	1
Government Mountain	1	-	-	-
<i>Total</i>	<i>142</i>	<i>35</i>	<i>69</i>	<i>106</i>

Contextual data

In combination with obsidian data, ceramic data that point to exchange relationships and interaction with other Native and non-Native groups are useful for understanding intra-community differences and landscape connections. Additionally, ceramics help establish more chronologically controlled archaeological contexts to facilitate comparison of pre- and post-mission patterns in obsidian procurement and distribution. Since both Pecos and Awat'ovi have well-defined ceramic sequences, it was expected that ceramics would provide the clearest temporal context for obsidian found in association with them. Finally, changes in ceramic technology may relate to aspects of raw material acquisition and labor organization that overlap with obsidian procurement.

Ceramic types and chronology

The Pecos Pueblo ceramic sequence is situated within the broader regional trajectory of Rio Grande glaze wares, which were distributed over a large area of north-central New Mexico along the Rio Grande Valley, the Galisteo Basin, and extending east to the Pecos River (Mesa 1933, 1934, 1935; Creamer 2008). Although Kidder's original ceramic sequence has essentially stood in place, its chronological correlation has been refined over time as more dendrochronological and contextual information has become available (Kidder 1924; Kidder and Amsden 1931; Kidder and Shepard 1936; Wendorf and Reed 1955; Powell and Benedict 2002). Although the northern Rio Grande glaze ware types are currently assigned date ranges, there is ongoing debate about their precision (Powell and Benedict 2002).

Until the fourteenth century A.D., people in the Upper Pecos River Valley primarily used Black-on-white corrugated wares similar to counterparts in the rest of the northern Rio Grande region. Glazed pottery, which originated in the Galisteo Basin, became prominent at Pecos around A.D. 1375. A sequence of Pecos glazeware types – numbered I through VI by Kidder – followed, marked mostly by changes in rim shape and painted decoration. Glaze I is a red- or yellow-slipped ware with a thin black glaze that was produced in the Galisteo Basin (Powell 2002). Locally-made variants emerged at Pecos by about 1425. Glazes II through IV, with lighter-colored yellow to red slips, thick black glaze, and red-filled decorative figures, were produced and consumed locally (Shepard 1942:154-155). Beginning around A.D. 1515, Glaze V is distinguished by thick rims, poor-quality whitish slip, and heavy glaze, continuing the red-filled figures of earlier types (Capone 2010:16), and was traded widely to regions including the Galisteo Basin, upper Rio Grande Valley, Jemez Valley, and even as far as the Southern Plains

(Habicht-Mauche 1987, 1988; Creamer 2008:104). Glaze V was only produced at Pecos, and there was little importation of other ceramics during the Glaze V period (Shepard 1936). The last type in the glaze ware sequence is Glaze VI, which features a poor-quality light-colored slip and thick, “runny” glaze, dropping the red filling (Capone 2010:16). Glaze VI used nonlocal igneous rock temper almost exclusively, and was produced in the Galisteo basin (Shepard 1936). Glaze V was previously thought to be diagnostic of the late protohistoric and very early mission periods, while Glaze VI was considered to have resulted from a decline in ceramic production resources and skill during the mission period. Now, however, Glaze V is understood to span the period from A.D. 1515–1700, and is consequently less reliable as a marker of the pre-/post-contact boundary.

Production

There has not been enough compositional or technological research on post-contact ceramics from Pecos to assess how local producers were forced to make decisions about raw material procurement, expediency, and other aspects of the production process. Researchers working at other mission pueblos, particularly in the Salinas area, have found evidence that Pueblo pottery makers moved towards more expedient approaches to production during the mission period (Capone 1995). It is so far unknown whether similar changes occurred at Pecos.

Trade connections

Some differences between the North Pueblo and South Pueblo, in terms of evidence of extra-community interaction and exchange, emerge from the ceramic data. Rio Grande

glazewares might reveal differences in relatively local exchange relationships, especially with pueblos of the Galisteo Basin. Capone (1995) found that missionization had a significant impact on ceramic production and exchange networks at Abó. Further work on Glaze V and VI pottery might show that at Pecos, these impacts were unevenly felt by groups within the community. Unfortunately, the conditions of the site would make such analysis problematic. Kidder (1936) expressed uncertainty about changes during the Mission period because the Glaze V and VI deposits had been heavily affected by erosion.

There is ceramic evidence of Pecos' involvement in trade networks linking it to other Pueblo communities during the historic period, including Acoma, Zia, and Hopi. Hopi polychromes are known for having been traded over long distances throughout much of the Ancestral Pueblo region (Capone 1995:329). These were by far the most abundant of the trade ware varieties recorded by Kidder, constituting 50% of the reported total (Kidder 1936:344). 140 sherds of Hopi yellow ware were examined by Hargrave, who found that 88 were Jeddito Black-on-yellow or "undecorated Sikyatki Polychrome," while 52 were characterized as "definitely" Sikyatki Polychrome (Kidder 1936:367). Kidder indicates that most of these were found in Glaze III and Glaze IV deposits, suggesting that exchange networks involving Hopi polychromes were most active before the sixteenth century. However, at the time of excavation of the middens Kidder had not learned that Jeddito Black-on-yellow and Sikyatki Polychrome were distinct types. He therefore lumped them all together as Hopi, and was unable to determine the association of each style with any Rio Grande glazewares (Kidder 193:368-369).

The presence of Gobernador Polychrome, made by Navajo potters in the Upper San Juan region during the seventeenth and eighteenth centuries, indicates other far-reaching connections.

A single vessel of “Hawikuh Recent Glaze” (Hawikuh Polychrome) dated to A.D. 1630–1700 was found in the middens. Kidder concluded from the general absence of this type that “little Zuñi pottery was moving thus far eastward in the sixteenth and seventeenth centuries” (Kidder 1936:373-74). One intriguing difference is that numerous sherds of Tewa Polychrome were found in North Pueblo contexts. This style is associated with the pueblos of the Tewa Basin, where the Chama River and Rio Grande converge north of Santa Fe. It starts to become prominent in assemblages towards the end of the Mission period, just before the Revolt (Wilson 2012). In contrast with the North Pueblo, no Tewa Polychrome ceramics appear to have been recovered from South Pueblo contexts. However, these trade ware types span the periods before and after the Revolt, so their presence alone is not enough to assess changes associated with the establishment of the mission. They may point towards possible long-distance exchange activities being conducted during the early mission era, but further research is necessary to understand their significance.

Residents of South Pueblo appear to have had access to various goods with origins beyond the Pueblo region, especially majolica ceramics produced in Mexico. Types identified by Gilmore (1989) included Puebla Polychrome, Huejotzingo Blue Banded, Tumacacori Polychrome, Aranama Polychrome, and Abó Polychrome. In Room 12, towards the north end of South Pueblo but not in the area believed to have been remodeled by the Franciscans, parts of a Fig Springs Polychrome plate and one Puebla Polychrome sherd along with debitage and a single biface, all of Cerro Toledo Rhyolite. There seem to have been relatively few majolicas or other long-distance imports in North Pueblo contexts. Several sherds of Puebla Polychrome and Puebla Blue-on-white were found, primarily on the surface. The evidence is suggestive, but far

from conclusive, that South Pueblo residents were more involved in trade networks linked to the broader Spanish colonial economy.

Burial contexts

A total of 26 obsidian artifacts were found in association with human remains or funerary contexts. The Andover project opened approximately 2,250 graves, although the human remains were often not removed. The remains of 1,017 individuals excavated from Pecos Pueblo were ultimately identified (Morgan 2010b:29-30). The large majority of burials were located in or around the North Pueblo. In the records, burials are numbered, and the depth of the burial below the surface was recorded in inches. Slightly over half (52%) of individuals were associated with funerary objects (Morgan 2010b:35). It does not appear as though burials in the South Pueblo were excavated, and it is unclear whether they were encountered (Morgan 2010b). Kidder dug a small test to the south of the structure in 1925 and found “several” extended burials at a shallow depth that he determined to be of “historical” date (Ivey 2005:64). It is unclear what became of any artifacts associated with these burials. A number of burials containing the remains of 176 individuals were found in the church or other mission contexts (Morgan 2010b:32). However, it is not clear how many of these are associated with pre-1680 contexts, and most are associated to the final, eighteenth-century church (Bruwelheide et al. 2010).

Human remains were removed from burials in which 18 of the 26 obsidian artifacts were found. Based on ceramic evidence, these burials span the entire occupation of Pecos Pueblo, from Black-on-white to Glaze VI. The B/w through Glaze IV burials contained nine obsidian

objects, primarily projectile points but also knives and a scraper. The Glaze V and VI burials contained five obsidian artifacts, again primarily projectile points.

Demographically, of the 17 individuals buried with obsidian objects, 10 were adult females, 3 were subadult males, 1 was a child of indeterminate sex, and 1 was an adult male. The age and sex of the other individuals could not be determined.

TABLE 7.7 Obsidian from funerary contexts at Pecos

Source	B/w – Glaze IV (pre-contact)	Glaze V – VI (post-contact)
Valles Rhyolite	4	3
Cerro Toledo	3	2
El Rechuelos	1	-
Canovas Canyon	1	-

Awat'ovi

Description of collections

The sample of 319 obsidian artifacts from Awat'ovi were excavated by the Peabody Museum project under Brew. Thanks to the helpful efforts of PMAE curatorial staff, a thorough review of the Awat'ovi collections was made to locate all obsidian associated with the site. Some of the material had not been fully catalogued, and it is possible that a few objects were not located in the search. Barring these potential exceptions, the analyzed sample represents the entirety of the obsidian assemblage collected and retained by the PMAE researchers at Awat'ovi.

Recovery considerations

Excavation units during the Peabody excavations were mainly defined by rooms, as well as by test pits or trenches subdivided in 2-m squares. These were excavated by 50-cm levels, although the levels would be adjusted if a floor or “discontinuity” was encountered. Depths were measured from a reference point at the surface of each unit, and the absolute elevation of each reference point was recorded on the field maps. Most of the material excavated was the contents of middens or of fill deposited in abandoned or remodeled architecture. It appears that all flaked lithic objects recovered were sent to the Peabody Museum (Woodbury 1954:9-11). However, the Peabody researchers were not explicit about the criteria used to identify ‘artifacts.’ They clearly recognized “intentionally shaped tools,” cores, and “flakes put to various uses” (Woodbury 1954:120), but they may not have regarded debitage and other lithic materials as worthy of recovery.

Previous analyses

The analysis of the lithic and mineral artifacts from Awat’ovi was carried out and reported by Richard Woodbury, who commented on the “surprising lack of chipped stone artifacts at all the Jeddito sites,” including Awat’ovi (Woodbury 1954:120). He independently created a classification system for the “chipped stone implements” according to form, such as “notched points,” “serrate points,” and “drills,” indicating the size range, materials, and provenience counts of each subcategory. While his work generated important information about subsistence and daily life at Awat’ovi, this research was conducted in the context of efforts to establish baseline knowledge about Ancestral Pueblo culture, and by current standards its insights are limited.

Since the publication of Woodbury’s report, there does not appear to have been subsequent published research on the lithic assemblage from Awat’ovi. Findlow et al. (1975) conducted obsidian hydration analysis of a sample of artifacts sourced to the San Francisco Volcanic Field, including an unidentified number from Awat’ovi, but this was aimed at improving methodology rather than recovering sociocultural information. Ultimately, the Awat’ovi lithic collection is still a product of early twentieth-century archaeological practice, requiring careful ‘museum archaeology’ to proceed with further analysis.

Current state of collections

Obsidian artifacts from Awat’ovi are stored at and curated by the Peabody Museum of Archaeology and Ethnology in Cambridge, Mass.

Analysis conducted

I analyzed 319 obsidian artifacts from Awat'ovi, using the same instrument and following the same procedure used to analyze the Pecos artifacts.² I created a geodatabase of the site using ArcGIS, based on published excavation and site plans (Montgomery 1949; Smith 1971), which I georeferenced to high-resolution Google Earth imagery. In the future, it would be ideal to digitize and georeference the original field maps produced during the Peabody expedition, which include data not reported in publications. Ground-truthing the digitized plans, however, may conflict with the policies of the Hopi Tribe regarding research at Awat'ovi.

In keeping with the policy of the Hopi Tribe regarding archaeological and anthropological research, a consultation with the Hopi Cultural Resources Advisory Task Team (CRATT) was made at the Hopi Cultural Preservation Office in Kykotsmovi, AZ in August 2016. The members present at the meeting expressed no objections or concerns about the analysis of these artifacts.

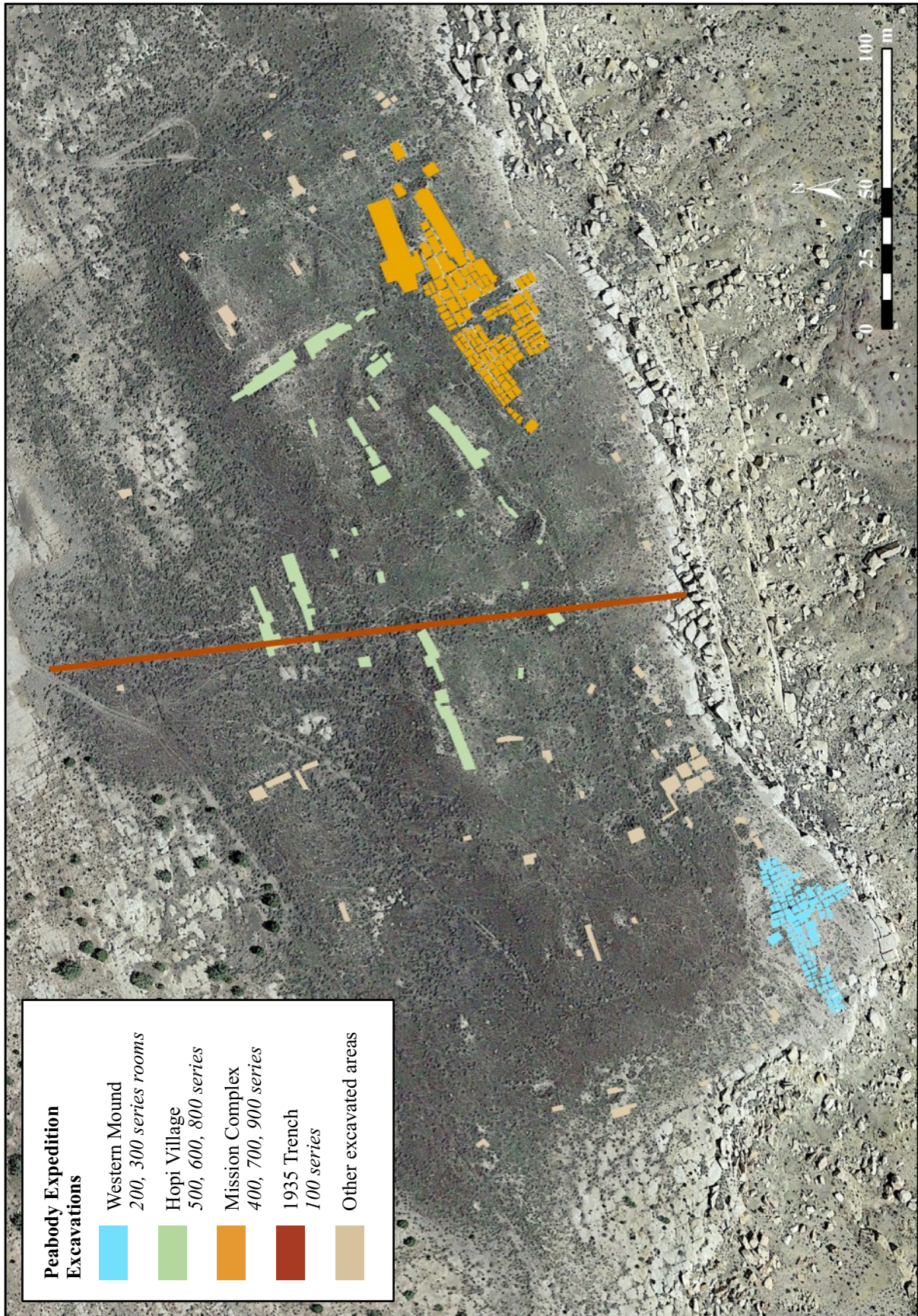
RESULTS

The following section describes the obsidian data from Awat'ovi, according to the same structure that was used for the Pecos data.

Archaeological distribution

The 319 obsidian artifacts from Awat'ovi that were analyzed were distributed within the site as follows [Table 7.8]. Unlike Pecos, where there was more limited recording of

² Shackley did not examine data from the Awat'ovi assemblage.



Imagery: Google

FIG. 7.8 Site plan of Awat'ovi showing areas excavated by the Peabody Expedition

archaeological context, excavated materials from Awat'ovi generally have a recorded location and excavation level, as described in the account of archaeological recovery methods above.

163 artifacts were surface finds, with no additional provenience information recorded. Woodbury (1954:120) notes that “[i]t was the practice of several members of the staff to save all stone artifacts found on the surface during their activities at the site, and in the course of five seasons there was hardly a part of the entire site not carefully gone over this way.”

The rest of the artifacts can be assigned to identifiable contexts. 15 were recovered in test excavations. 7 were recovered from an unidentified location recorded as Ruin 3. The majority of the provenienced artifacts ($n = 130$) were associated with room contexts. Excavated rooms at Awat'ovi were numbered in series of 100 distinguished by spatial association, so each room in an architectural cluster or roomblock would have a number beginning with the same digit in the hundreds place [Fig. 7.8]. Rooms 1-102 were dug in the 1935 transecting test trench (also referred to as Trench I). The Western Mound is made up of the 200 and 300 series of rooms. The church and convento complex contains the 400, 700, and 900 series. Series 500 and 600 are located north of the mission complex. The 800 series is located near the center of the archaeological site, roughly halfway between and a little north of the Western Mound and the mission complex. These last three series constitute what Brew (1939) called the “modern town” and what recent researchers have called the Hopi Village (Chapin-Pyritz 2000:22).

In addition to room number, the level in centimeters below the surface was recorded in most but not all cases. Rooms excavated in test pits followed a different numbering system, with each test pit having its own series of rooms beginning with 1. Fifty-nine of the room contexts with obsidian were dug in test pits, and the other 71 come from rooms assigned to series.

Six artifacts came from the 200 series of rooms in the Western Mound. Twenty-six were from the 400 series and 21 from the 700 series, for a total of 47 from the mission complex. Seventeen came from the 500 and 600 series. Four artifacts were recovered from the 1935 test trench (Trench I). Three of these are recorded as coming from the Central Plaza.

TABLE 7.8 Archaeological contexts of obsidian artifacts at Awat'ovi ($n = 319$)

Context	Number of artifacts
Surface	163
Rooms	130
<i>Western Mound</i>	6
<i>Hopi Village</i>	24
<i>Mission Complex</i>	47
Other test excavations	22

Geological sources of assemblage

In total, 319 obsidian artifacts from Awat'ovi were analyzed. Of these, 312 were assigned to chemical groups corresponding with geological sources of obsidian [Table 7.9]. Seven artifacts with outlying elemental values were not assigned to geological sources.

Of the total sample of all assigned obsidian artifacts ($n = 312$), 89% were from Government Mountain. In order of prevalence, the sources were Government Mountain (278), Valles Rhyolite (20), Sitgreaves Mountain/RS Hill (5), Mule Creek (5), and Bear Springs Peak/Canovas Canyon Rhyolite (4) [Fig. 7.8].

TABLE 7.9 Geological sources of obsidian artifacts at Awat’ovi ($n = 312$; unassigned artifacts excluded)

Source	Number of artifacts	Percent of assemblage
Government Mountain	278	89.1%
Valles Rhyolite	20	6.4%
Sitgreaves Mtn. / RS Hill	5	1.6%
Mule Creek	5	1.6%
Canovas Canyon	4	1.3%



FIG. 7.9 *Awat’ovi in relation to nearest obsidian sources*

Contextual data

Ceramic types and chronology

The ceramic sequence of the mid-to-late Pueblo IV through historic periods from Awat'ovi includes several highly recognizable changes that have allowed researchers to make chronological distinctions between different archaeological contexts within the site. Sometime around A.D. 1325 or 1330, as large, plaza-oriented pueblos aggregated on the Hopi Mesas, Hopi potters began making a ware known as Jeddito Yellow Ware, which gained its distinctive color from the use of coal fuel for firing (Smith 1971:592; Adams 2013). Potters at Awat'ovi, along with other villages on Antelope Mesa and Third Mesa, produced a variety known as Jeddito Black-on-yellow, with black-painted geometric designs that borrowed stylistically with earlier types (Smith 1971:516).

At the turn of the fifteenth century, Jeddito Yellow Ware underwent a transformation and became what is known as Sikyatki Polychrome. Their color settled on a more standardized pale yellow, and the decorations became more curvilinear and asymmetrical, incorporating a greater diversity of colors, themes, and layouts. The vessels grew in size, with more unusual and technically challenging shapes (Adams 2013:120; Hays-Gilpin 2013). Unlike many stylistic transitions in Ancestral Pueblo ceramics, this one seems to have been abrupt (Hays-Gilpin 2013:183). Production of Sikyatki Polychrome has been dated to between A.D. 1385 and 1629. Hays-Gilpin (2013) provides a thorough summary of the style, its background, and social context. The distinguishing characteristic of SP is “the addition of red lines or solids to black or brown iron-manganese paint on an unslipped yellow ground” (Hays-Gilpin 2013:176).

The end date of Sikyatki Polychrome production corresponds with the establishment of Spanish missions at Hopi, when potters at Awat'ovi began producing a yellow ware type known as San Bernardo Polychrome. This has often been characterized as a degenerate form of Sikyatki Polychrome, distinguished by thicker walls and sloppily-painted decorations (Colton 1956). Some of its distinguishing features are new forms inspired by European ceramics, the use of dung rather than coal in firing, and an array of Spanish decorative elements such as eight-pointed stars and Maltese crosses (Wade and McChesney 1981:44). They also lack clear depictions of traditional religious symbols (Copeland 2012:12). Capone (1995) has found that aspects of San Bernardo ware production were more expedient than for Sikyatki Polychromes. However, Hays-Gilpin (2013:183) has cautioned that the transition between Sikyatki Polychrome and San Bernardo Polychrome is probably more complex than is commonly assumed.

Contexts of exotic obsidian

The ceramic artifacts collected from Awat'ovi by the Peabody Museum expedition are housed in the Peabody Museum collections storage facility in Cambridge, MA. There are 3,625 ceramic object numbers in the Awat'ovi collection that share archaeological contexts with the obsidian artifacts analyzed. A total of 415 of these objects were examined to determine ceramic type in order to provide more precise chronological control over the obsidian collection. In particular, the relatively specific provenience for Awat'ovi ceramics facilitated examination of each context in which exotic (*i.e.*, from sources other than Government Mountain) obsidian was found. Woodbury (1954:213-217) provides a suggested chronology of the excavated rooms at Awat'ovi. Using the ceramic data that were verified by examining the collections, these

chronological assignments could be more precisely linked to individual obsidian artifacts [Table 7.10].

Very few exotic obsidian artifacts were recovered from Pueblo IV contexts. In Test 14, just east of the Western Mound rooms, 1 Sitgreaves Mtn./RS Hill knife and 1 Valles Rhyolite scraper were found in Pueblo IV contexts, as determined by the dominance of Jeddito Black-on-yellow ceramics. One other Valles Rhyolite flake was found in a possible Pueblo IV context in Test 32; however, the location of this unit is uncertain. Only one obsidian artifact was found in a Late Protohistoric context: a Canovas Canyon scraper in the 1935 transecting trench.

Most of the exotic obsidian artifacts came from contexts dated by associated ceramics to after the establishment of the mission. Five of these came from Hopi Village contexts, while six came from contexts in the mission complex.

TABLE 7.10 Contexts of exotic obsidian at Awat'ovi

Context	Ceramic period	Obsidian artifacts (count)
<i>Western Mound</i>		
Test 14, Room 2, 70-100 cm	Pueblo IV	Sitgreaves Mtn/RS Hill knife (1)
Test 14, Room 3, 0-50 cm	Pueblo IV	Valles Rhyolite scraper (1)
Surface	Indeterminate	Valles Rhyolite flake (1)
<i>Hopi Village</i>		
Room 523, 50-100 cm	AD 1620-1700	Valles Rhyolite knife (1)
Room 529, 150-200 cm	AD 1620-1700	Valles Rhyolite projectile pt. (1)
Test 22, Rm. 1, 100-150 cm	AD 1620-1700	Valles Rhyolite projectile pt. (1)
Test 28, Rm. 2, 0-75 cm	AD 1620-1700	Valles Rhyolite flake (1)
Test 41, Rm. 2, 100-122 cm	AD 1620-1700	Valles Rhyolite flake (1)
Trench I, Rm. 5, 100-150 cm	Late Protohistoric	Canovas Canyon scraper (1)
<i>Mission Complex</i>		
Room 768 (Mission Church)	AD 1620-1700	Canovas Canyon flake (1)
Room 427, 0-50 cm	AD 1620-1700	Canovas Canyon scraper (1)
Room 477, 50-100 cm	AD 1620-1700	Valles Rhyolite flake (1)
Room 493, 0-75 cm	AD 1620-1700	Sitgreaves Mtn./RS Hill flake (1)
Test 30, Rm. 2, 0-75 cm	AD 1620-1700	Valles Rhyolite flake (1)
Test 64 (Barrack/Stables), 0-100 cm	AD 1620-1700	Mule Creek projectile point (1)
<i>Other areas</i>		
Test 32	Pueblo IV – Late Protohistoric	Valles Rhyolite flake (1)
Ruin 3 (identity uncertain)	Indeterminate	Valles Rhyolite flake (2)
Surface	Indeterminate	Valles Rhyolite flake (7) Mule Creek flake (4) Sitgreaves Mtn./RS Hill flake (3) Canovas Canyon flake (1)

INTERPRETATION

This study contributes to a deepening understanding of change and continuity in the movement and consumption of obsidian by Native peoples in the Americas during the historic period (Silliman 2003, 2005; Graves 2005; Rodríguez-Alegría 2008; Millhauser et al. 2011; Scheiber and Finley 2011; Stemp et al. 2011; Loendorf et al. 2013; Rodríguez-Alegría et al. 2013; Panich 2016; Liebmann 2017). The obsidian data from Pecos and Awat'ovi indicate that at both sites, there is evidence of continuity in obsidian procurement and distribution from late prehistoric through early colonial times. However, in both cases, missionization was accompanied by some significant differences in the sources of obsidian acquired by groups within each village. These changes may reflect sociopolitical dynamics within these communities, as well as shifts in their relationships with the broader landscape.

Pecos

Most of the obsidian used at Pecos as a whole originated in the Jemez Mountains. For the site overall, it is notable that Valles Rhyolite is more abundant than Cerro Toledo, given the latter's readier availability in Rio Grande alluvium. This suggests that social factors, rather than strictly economizing choices, influenced overall obsidian procurement at the site.

Intrasite spatial variation

The residential division of the Pecos community between the North and South Pueblos does not appear to relate to fundamental differences in the procurement or distribution of obsidian. However, there are indications of significant differences in source representation, and it

does seem to have altered access to at least one important source. This suggests that changes within Pecos had consequences for relationships with other Pueblo groups, as well as with the broader landscape.

Looking at intrasite variability reveals divergent acquisition and exchange networks between North and South Pueblo. 50% of North Pueblo obsidian is from Cerro del Medio, and 38% from Cerro Toledo, for a total of 88% of the overall sample. This is consistent with long-term trends and with previous analyses of late prehistoric procurement patterns in the Upper Pecos Valley (Kilby and Cunningham 2002). In South Pueblo, 97% of obsidian came from these two sources in nearly equal proportions. The predominance of the two major Jemez sources is broadly in line with expectations, as it has been established that these were the primary regional sources of obsidian (Shackley 2005).

In addition, residents of North Pueblo appear to have had access to a more diverse array of obsidian sources than residents of South Pueblo. Artifacts in North Pueblo came from six geological sources from as far away as Government Mountain in Arizona. But only two artifacts in the South Pueblo sample came from sources other than Cerro Toledo and Cerro del Medio.

Another prominent difference is in the availability of obsidian from El Rechuelos. This was a lesser but still significant source for people in North Pueblo, making up 9% of the total. However, El Rechuelos obsidian was not available or not used by people in South Pueblo. In addition, over 90% of El Rechuelos obsidian analyzed was in the form of finished artifacts, suggesting that processing occurred elsewhere – unlike obsidian from Cerro Toledo or Cerro del Medio.

Temporal trends

However, the relative amounts of Valles Rhyolite and Cerro Toledo obsidian within these two site sectors are significant in the context of long-term obsidian procurement patterns. In early villages within the Upper Pecos Valley, roughly equal amounts of Cerro Toledo, Valles Rhyolite, and El Rechuelos obsidian were used. Over time, El Rechuelos obsidian decreased, while Cerro Toledo became the dominant source, with Valles Rhyolite an important but less-utilized source. In all of the large villages surveyed by the Pecos Cultural Resources Inventory Survey (CRIS), Cerro Toledo constituted a larger proportion of the obsidian assemblage than Valles Rhyolite (Kilby and Cunningham 2002). This makes sense in light of the availability of Cerro Toledo obsidian from more accessible secondary deposits in Rio Grande alluvium.

The North Pueblo assemblage is a unique deviation from this pattern, with substantially greater representation of Valles Rhyolite than Cerro Toledo. As previously discussed, Valles Rhyolite obsidian was effectively unavailable outside the Valles Caldera. The inversion of the expected pattern of procurement suggests that North Pueblo residents were involved in particularly strong ties with places or groups associated with the Jemez mountains.

Interestingly, this pattern echoes a similar trajectory in obsidian procurement at the Jumanos village of Pueblo Blanco. From the mid-1400s to the mid- to late-1500s, Pueblo Blanco received more Cerro Toledo obsidian (46% of the total assemblage) than Valles Rhyolite (37%). Around the end of the sixteenth century until the Pueblo Revolt, procurement turned markedly towards Valles Rhyolite (72%), with Cerro Toledo constituting only a small portion (18%) of the obsidian artifacts for this period (Graves 2005:27).

In contrast, the Pecos South Pueblo assemblage is more consistent with a continuation of trends in obsidian procurement from the Early to Middle Classic Period in the Upper Pecos Valley. At Arrowhead Pueblo (LA 251, ca. A.D. 1370–1450) and Loma Lothrop (LA 277, ca. A.D. 1315-1450), between 85–95% of surface-collected obsidian came from Cerro Toledo and Valles Rhyolite. At both sites, greater proportions came from Cerro Toledo, at Arrowhead representing around 67% and at Loma Lothrop around 83% of the total obsidian from these two sources (Kilby and Cunningham 2002). After 1450, these sites were abandoned, and it is assumed that their residents aggregated at Pecos (Head et al. 2002).

One possible interpretation of these assemblages is that South Pueblo people were more involved in the mission and were consequently less free to take long trips or interact with other Pueblo groups, and this impacted their freedom or ability to acquire Valles Rhyolite. As noted above, Cerro Toledo obsidian would be a markedly more expedient choice, as it could be acquired from much closer deposits. North Pueblo people may have deliberately sought to maintain connections with areas or groups less closely affiliated with Spanish missionaries.

The pattern at South Pueblo is also comparable to another Jumanos village, Gran Quivira, where from the Middle Classic to the Revolt Period, obsidian assemblages were dominated by Valles Rhyolite and Cerro Toledo. Throughout this time, more Cerro Toledo than Valles Rhyolite obsidian was acquired, with a slight shift over time towards (but not reaching) equilibrium (Graves 2005:26).

The CRIS survey showed that the use of El Rechuelos obsidian decreased over the long term compared with Valles Rhyolite and Cerro Toledo Rhyolite (Kilby and Cunningham 2002). El Rechuelos obsidian throughout the Upper Pecos River Valley lacks cortex, which may

indicate that it was reduced elsewhere. This could have been because the source was further away, but El Rechuelos was only 5% further away than the heavily used Valle Grande source, so this is not a completely convincing argument. Based on a very small sample of obsidian artifacts, Kilby and Cunningham compare Upper Pecos sites across time to find a long-term decrease in the prevalence of El Rechuelos obsidian. It made up a third or more of the obsidian assemblages from sites like Forked Lightning and Dick's Ruin, but a small fraction of the overall obsidian at Pecos Pueblo.

The long-term decline in El Rechuelos' importance or, perhaps more accurately, availability as an obsidian source might mean that access to it was already tenuous by the late protohistoric and mission periods. It might therefore be looked at as a sensitive indicator of disturbances within the Pecos community.

Sociopolitical implications

Graves (2005:29) argues that variation in obsidian assemblages among the Jumanos pueblos indicates autonomy in obsidian procurement, and that residents of these villages established and maintained different sets of exchange relationships with other Pueblo groups. If so, this may also have been the case at Pecos Pueblo. Residents of North Pueblo and South Pueblo do not appear to have coordinated obsidian procurement, whether directly or through exchange. Alternatively, if procurement was cooperative, then patterns of distribution within the overall site introduced variability in the two assemblages. Perhaps the residents of North Pueblo preferentially received Valles Rhyolite. Another possibility is that these differences reflect temporal variability, in which case there is evidence of a change in access or exchange

relationships before or during the reestablishment and expansion of South Pueblo. This would contribute to a picture of social transformation accompanying changes in the residential organization of Pecos.

The burial contexts point towards some important possible questions surrounding obsidian and gender at Pecos. Although the sample size is small (14 objects from datable burial contexts), this subset again reflects the declining diversity of obsidian sources over time. In the Black-on-white through Glaze IV burials, 6 of 7 individuals are adult females, along with 1 probable subadult male. In the Glaze V and VI burials, there were 3 subadult and 1 adult males, along with a child. There was no significant overrepresentation of either males or females in the represented populations when broken down by age and ceramic period (Morgan 2010b:33-34). The finding that earlier burials with associated obsidian were heavily skewed towards adult females, while later burials were mostly younger males, may point towards gendered meanings of obsidian objects – at least insofar as they were considered as funerary objects – that changed over time.

Obsidian that was potentially more time- and travel-intensive to procure complicates the picture of changes in labor organization brought about by colonization. In general, scholars have argued that mission-era demands on Native labor were high, and that people had to curtail more time-consuming forms of subsistence and production. Ceramic evidence from multiple mission sites shows that producers made more expedient choices in making at least some types of vessels (Capone 1995). Yet in at least some cases, obsidian procurement does not seem to reflect constraints on time and effort to acquire materials from more distant sources. This may indicate that symbolic factors were weighed in trade-offs.

Regional connections

Shackley (2016) notes that Government Mountain obsidian has not been previously identified at Pecos. Although it is unwise to read too much into the presence of a single artifact, it does speak to connections linking the eastern and western margins of the Ancestral Pueblo world, especially given that late prehistoric/early historic Hopi pottery such as Sikyatki Polychrome also reached Pecos.

An additional element worth considering is the link between Pecos and Valles Rhyolite in light of Pecos' historical relationship with the Pueblo of Jemez. The origins and nature of Pecos' pre-contact relationship with Jemez is very poorly understood. In historic times, we know that Pecos and Jemez shared membership in the Towa language group and that the small Pecos community remaining in the eighteenth century was incorporated into the Pueblo of Jemez, as previously discussed. Given that members of other Pueblo ethnolinguistic groups also relied heavily on Jemez sources of obsidian, it is unclear whether Pecos enjoyed some special association or privilege or was otherwise different in its ability to visit and/or obtain materials from the Valles Caldera and surrounding areas.

Awat'ovi

Nearly all of the obsidian used at Awat'ovi was from a single source: Government Mountain in the San Francisco Peaks area. The overwhelming prevalence of Government Mountain obsidian may not be surprising, given the proximity of the source and its general prominence in archaeological assemblages (Shackley 2005). Government Mountain obsidian had

been one of the primary resources moving through Hopi trade networks for at least several centuries (Harry 1989; Adams 2002).

The presence of a small but not insignificant component of Valles Rhyolite obsidian is more remarkable. A straight path from Awat'ovi to the Jemez Mountains is at least 325 km, and the actual travel distance would be significantly longer. Additionally, as noted previously, Valles Rhyolite is effectively unavailable outside the Jemez caldera.

The presence of Mule Creek obsidian at Awat'ovi is somewhat unexpected. During the period from A.D. 1300–1450, Mule Creek obsidian primarily traveled west of the source into the southeastern Hohokam region, especially to communities along the Upper Gila River, in amounts higher than expected from a distance-decay prediction. This may have had to do with robust exchange networks through which Salado Polychrome ceramics were also moving (Mills et al. 2013:5789). However, Mule Creek obsidian also reached communities midway between the source and the Hopi mesas, which may have been the pathway by which it reached Awat'ovi. However, since all the Mule Creek artifacts from Awat'ovi were surface finds, it's difficult to draw further conclusions from their presence.

It is surprising that there was no Mt. Taylor obsidian at Awat'ovi. It's also remarkable, given the quantities of Government Mountain obsidian found, that so few artifacts from other sources in the San Francisco field were present. Perhaps this was due to a technological preference for Government Mountain obsidian, although there are few indications that this obsidian was greatly superior to that from nearby sources. In that case, the preference for the Government Mountain source may relate to this place's significance in the Ancestral Hopi cultural landscape. However, the absence of Mt. Taylor obsidian complicates this interpretation.

Since Mt. Taylor is attested as an important place in the contemporary Hopi cultural landscape, and plays an important role in the organization of mythical and ritual space, if obsidian procurement choices were influenced by places with such meanings, then we would expect Mt Taylor obsidian – yet there was none in the sample. Perhaps in the past Hopi exploitation of Mt. Taylor sources was restricted by other groups, such as Acoma and Laguna, with claims on those places.

Intrasite spatial variation

Very few excavated and provenienced artifacts came from the 200 and 300 series of rooms in the Western Mound, where the dense earlier occupation of the site was located. Test 14, located just east of the Western Mound, contained 19 artifacts, all of which but two were from Government Mountain. One was from Sitgreaves Mtn./RS Hill, and another was Valles Rhyolite.

A much larger quantity of obsidian artifacts – 47 objects in total – came from the mission complex. Two of the Valles Rhyolite and two of the Canovas Canyon Rhyolite artifacts were recovered from the mission complex.

The obsidian assemblage from the mission complex raises several possibilities. One is that these were recycling or scavenging from refuse elsewhere in the site. Another is that Native people associated with or working in the mission continued to acquire obsidian through long-distance exchange networks. A third possibility is that these artifacts are associated with the Revolt-period reoccupation of the mission complex, and that they point to long-distance contact and interaction during this period.

Temporal trends

According to Woodbury (1954:136), “obsidian is only from later horizons ... at Awatovi.” The dating of contexts in Test 14 is somewhat ambiguous, and probably spans the late protohistoric into the historic period. This supports the idea that overall obsidian acquisition at Awat’ovi may have been less during Pueblo IV times than it was during the mission period, and that obsidian acquired in earlier periods was overwhelmingly from San Francisco sources. Some possible implications of this trend are that obsidian was less valued or utilized in earlier periods at Awat’ovi; that journeys to obsidian source areas were less frequent; or that trade involving obsidian was lower in volume. Additionally, it raises questions about long-term changes in Ancestral Hopi relationships with and views of the San Francisco Peaks.

The presence of Jemez Mountain obsidian in mostly later contexts at Awat’ovi relates to Hopi recollections of journeys undertaken in the past to collect this obsidian. Most of this obsidian was Valles Rhyolite, so it would have involved travel to the Valles Caldera or trade with people who had access to this obsidian.

Sociopolitical implications

In general, the obsidian data from Awat’ovi suggest that some significant changes in procurement and exchange occurred from the Pueblo IV through the Revolt periods. This is interesting to compare with the findings of previous researchers who have noted the relative stability of Hopi exchange networks in the protohistoric period. Mills et al. (2013) have indicated that Hopi shows a more sustainable social network during this time, even as networks in neighboring regions disintegrated. These obsidian data indicate that while social networks may

have shown continuity in some aspects, elements within these social networks were more dynamic. In addition, social network models do not fully account for changes in landscape relationships.

These results contribute to understanding the long-term importance of the San Francisco peaks to Hopi peoples. These mountains can be seen from the Hopi mesas, and in the past were the symbolic dwelling place of the *katsinam* associated with the southwest cardinal direction. The highest peak of the group was traditionally called *Aaloosaktukwi* or *Aaloosakvi*, names that are linked to the deity *Aaloosaka* and thereby to *Aa'alt* (Two-Horn Society), a religious society of Awat'ovi, and to the Bow Clan, who migrated to the Hopi mesas from the Southwest and are traditional leaders of *Aa'alt*. The San Francisco peaks are a highly significant feature in Hopi cosmology and today remain part of the sacred landscape as shrines, as homes of the *katsinam*, and as places where the Hopi gather important ritual materials such as Douglas fir branches (Glowacka et al. 2009).

Hopi oral traditions recall being forced by missionaries to bring logs from distant places. One of the sources of large timber could have been the forested slopes of the San Francisco Peaks (Wiget 1982:191), which at other times was a traditional source of pine boughs for dances and ceremonies. Edmund Nequatewa (1990 [1936]) refers specifically that Hopi men from Songòopavi were sent on arduous and often fatal journeys to the San Francisco Peaks to bring pine and spruce beams (*see also* Sheridan et al. 2015:37–38, 122). How might such tasks demanded by missionaries have related to other kinds of movement in this landscape, such as visiting obsidian sources at Government Mountain?

The lack of burial data from Awat'ovi make comparison with the Pecos dataset difficult. Woodbury (1954:140) notes that the only two *in situ* points at Awatovi were with church burials, one on left arm and the other on a left knee, although he neglects to indicate what material these points were made from.

Regional connections

The obsidian data are also interesting when evaluated in light of known relationships between Eastern Pueblo peoples, including Jemez, and the Awat'ovi community. It has been long understood that there was a significant increase in Eastern Pueblo influence on Hopi communities in general after missions were established (Dongoske and Dongoske 2002). The increase in transport of Valles Rhyolite and Canovas Canyon obsidian to Awat'ovi in the seventeenth century may reflect new or changing ties with the landscapes of the Jemez Mountains in the context of missionization, although it remains unclear whether these changes would have occurred before or during the Pueblo Revolt. The influx of Eastern Pueblo refugees during the Revolt Period may have been a vector by which Jemez Mountains obsidian reached the Hopi region in greater quantities.

The fact that no Cerro Toledo obsidian was identified in the Awat'ovi assemblage is additionally interesting, given the knowledge that Hopi people have a tradition of making pilgrimages to the eastern slopes of the Jemez Mountains where Cerro Toledo obsidian is most abundant. If these pilgrimages were occurring during the span when Awat'ovi was occupied, perhaps they did not include obsidian collection. Alternatively, this tradition may have emerged after Awat'ovi ceased to be occupied.

It would be interesting to understand the relationship, if any, of obsidian with other mineral objects found at Awat'ovi, which include turquoise and argillite (both non-local) as well as selenite (a form of gypsum). In addition, mica was found, but only found in the mission and adjoining Hopi rooms. Woodbury (1954:146) suggests that mica was brought by the Spanish to decorate ecclesiastical objects and then possibly reused by Hopis during the Revolt period.

VIII CONCLUSIONS

This project set out to question key aspects of widely acknowledged narratives about what happened in Ancestral Pueblo villages when Franciscan missionaries helped impose Spanish colonial rule in the seventeenth century. The analysis of obsidian artifacts from the sites of Pecos Pueblo and Awat'ovi revealed evidence of activities and relationships within these communities that complicates the stories that are usually told about them. Obsidian speaks to the ways that people in Pecos and Awat'ovi were connected to the broader landscape, including other Native groups, a wide variety of resources, and an array of significant places. The data generated by this project indicate that our understanding of social dynamics in colonial mission villages is still incomplete.

A recurring theme in accounts of colonialism's impact on Native North Americans, including the Pueblos, is that the Spanish mission system undermined the social integrity of Native communities, in large part because enforced religious conversion contributed to political instability and factional conflict. Outside observers, from Spanish colonial chroniclers to contemporary anthropologists, have long associated the Pueblos with factionalism (Spicer 1962; Dozier 1966). Some have insisted that factionalism is inherent in Pueblo societies, whose political organization and cultural values determine an incapacity to resolve certain forms of conflict (Spicer 1962; Benavides 2012 [1630]). Others, meanwhile, have argued that factionalism is a product of colonial domination or sociocultural change induced by the broader context, or

that it is the result of a particular interplay of external pressure and patterns of strain within communities (Siegel and Beals 1960).

Factionalism has often been considered a political defect of indigenous societies characterized by their lack of resilient forms of governance or by their devotion to traditional modes of authority that fail to adapt to changing circumstances. This motif plays into what Michael Wilcox (2009) has called “terminal narratives” – accounts of colonialism that highlight the victimhood of indigenous societies by emphasizing cultural breakdown, loss, and destruction at the expense of survival, persistence, and innovation. Increasingly, anthropologists and historians are challenging the premises of views of factionalism as failure, instead analyzing factionalism as an aspect of creative and adaptive political practices (Bujra 1973; Whitely 1988; Reid 2004; Liebmann et al. 2017). Yet this shift in perspective has not yet been fully brought to bear on the interpretation of colonial-era factionalism.

Differences in religious practice and identity are a consistent theme in ethnographic accounts of Pueblo factionalism, and are often linked to the religious change that resulted from the Spanish colonial project of forced conversion to Catholicism. Many archaeologists and historians studying the colonial Americas continue to rely on interiorist models of religious conversion that have been challenged or abandoned by scholars working in other fields. Scholars such as Asad (1993), Dubuisson (2003), Keane (2007, 2008), and Fowles (2012) have argued against the objectification of religious experience, pointing out that the criteria scholars typically use to evaluate the religious experiences of colonized peoples are rooted in specifically Christian, European, and modern perspectives. They examine the problems that arise from treating religions as monolithic entities, tracing the colonial origins of the broadly encompassing

categories used to corral a vast array of ambiguous, unstable, and locally specific manifestations of beliefs and practices concerning the sacred.

Scholarly reliance on the concepts of factionalism and conversion often facilitates the division of Native people into conveniently identifiable groups that consequently act in predetermined ways. When people are sorted into categories dictated by the concerns of European colonizers – converts and non-converts, allies and antagonists – their actions seem to follow from those classifications. But these are precarious and deceptive categories that often fail to predict, as well as mask the reality of what people in the past did, how they related to each other, and how they understood their position in the world.

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Pecos Pueblo and Awat'ovi were among the most prominent indigenous settlements of their time in the Southwest, and arguably in North America. They loom large over archaeology's development as a discipline in the United States. Pecos has been a popular tourist destination for a century or more. Because of their historical significance, and the scale and influence of the archaeological research undertaken under A.V. Kidder and J.O. Brew, it is reasonable to assume that both Pecos and Awat'ovi are well-understood sites. It is reasonable to assume that the basic historical narratives about their colonial transformation are solidly grounded in archaeological and historical evidence, bolstered by robust analogies to modern Pueblo societies. In fact, as a review of the development of these narratives has shown, those assumptions are flawed.

Kidder suggested, among other possible scenarios, that Pecos' ultimate abandonment in the eighteenth century could have been caused by "internal rifts," such as Titiev had documented at Orayvi (Kidder 1958:317). This was a speculative explanation that Kidder did not explore in

any detail, nor did he connect it to archaeological evidence. Kessell made conflict between pro- and anti-Spanish factions at Pecos a central motif of his narrative of Pecos, which remains a principal source for researchers. The most concrete evidence presented for the existence of such factions comes from the history of New Mexico compiled by Vélez de Escalante in the late 1770s, based “on the authority of documents since lost” (Kessell 1987:538). This account is linked to the execution of Diego Umbiro during the revolt of 1696, mentioned in Vargas’ contemporary diaries (Kessell 1987:288–291). Indications of earlier factionalism at Pecos in the documentary record, such as the warnings given to Spanish authorities on the brink of the Revolt, are at best equivocal. In Kessell’s narrative, they serve as a prelude to the incident involving Felipe Chistoe and Diego Umbiro. Were it not for this episode – the meaning of which is itself unclear – there would be less incentive to weave a conflict between cosmopolitanism and insularity into Pecos’ long-term history. Kessell is careful to indicate that each suggestion of factionalism is only a possibility, but in the aggregate these suggestions amount to an assertion.

This story about Pecos has transformed from a *plausible* explanation to one that is taken as the *most likely* explanation of how missionization affected the community. Many scholars who regard the seventeenth-century history of Pecos as more or less settled may not be fully aware of the conjectural nature of Kessell’s invocation of factionalism. Among the problems with the confidence placed in this version of Pecos’ history is that it has become the paramount example used to illustrate how missionization and religious conversion incited Pueblo factionalism during the seventeenth century (e.g., Gutiérrez 1991).

Ivey’s reanalysis of the archaeology conducted on the colonial-era component of Pecos demonstrated persuasively that a large residential structure, which did not exist when Europeans

began to arrive in the sixteenth century, grew rapidly around the time that a Franciscan mission was established just south of the pueblo (Ivey 2005). He explained this shift in the spatial organization of residential architecture as a consequence of factionalism precipitated by conversion, in which a “Christianized” contingent was drawn towards the mission while a traditionalist opposition adhered to the existing plaza. This narrative came directly from Kessell. While Ivey’s interpretation of the archaeology presented an architectural sequence that might have been produced by religious conversion and factionalism, it did not reveal additional archaeological evidence, *per se*, of either process.

This project was aimed at discovering how archaeological evidence might improve our understanding of changes in the social organization of Pecos and Awat’ovi during the early mission period. It examined how Pueblo people living through this tumultuous and challenging era were linked with the landscape and with other Native groups. Movement in the landscape, pilgrimages to significant places, and the collection of resources such as plants and minerals were significant components of Pueblo religious practice. Obsidian is an ideal way to trace these connections, because we can track its movement with XRF. In the past, obsidian circulated extensively throughout the Southwest, and today it is a highly meaningful material for many contemporary Pueblo people. Its volcanic origins mean that its sources are in mountains, locations that are linked to origin places and beings that govern rainfall and agricultural fertility. Obsidian is especially associated with lightning, which links it to rain-bearing clouds.

Key obsidian sources utilized by Ancestral Pueblo groups were in the Jemez Mountains in New Mexico and the San Francisco Peaks in Arizona. These places have been identified as

important parts of the landscape, linked to migration stories, to the activities of the *katsinas*, and to clouds and other natural phenomena on which survival in the Southwest depends. Many Pueblo communities today have close ties with these places, making pilgrimages to gather ritual materials, perform ceremonies, and visit shrines and other places associated with origin stories and ancestral memory.

A total of 677 obsidian artifacts from Pecos Pueblo and Awat'ovi were analyzed to understand how the movement of obsidian from sources to these communities was affected by the establishment of missions, and by social dynamics within these two villages. The legacy nature of these datasets required additional research and analysis to determine the archaeological contexts of the obsidian artifacts. Their organization and identification has largely remained in the state it was left by the original analysts at least 65 years ago. Archival research at the Laboratory of Anthropology in Santa Fe, where most of Kidder's original field notes and excavations plans are stored, as well as unpublished reports and field notes in archives at Pecos National Historical Park aided identification.

With the resulting data it is possible to begin constructing new narratives about the Native communities at Pecos and Awat'ovi in the seventeenth century. At Pecos, the mission does appear to coincide with the origins of a division in the residential architecture. There is evidence of social differentiation between the residents of the North and South Pueblos. People in North Pueblo appear to have maintained stronger connections with places in the Jemez Mountains, either directly or by way of exchange relationships with Rio Grande pueblos. People in South Pueblo showed less diverse connections with the landscape and with other pueblo communities. However, rather than undergoing an abrupt or dramatic transformation, the flow of

obsidian to South Pueblo remained fairly stable from preceding periods, even as residents were linked to new networks connected to Mexico and Europe.

An intriguing aspect of this difference may be relationships with other Pueblo groups. It may be that North Pueblo groups had access to El Rechuelos obsidian, for example, because they engaged in exchange or other forms of interaction with Tewa groups in which people in South Pueblo did not participate. Evidence for these relationships includes the fact that El Rechuelos obsidian appears to have arrived via trade as finished artifacts, rather than being produced at Pecos. The Tewa pueblos were located in close proximity to the El Rechuelos source. Its comparatively small size may have made it easier to control. Finally, Tewa pottery found in the North Pueblo, and its absence from the South Pueblo, bolsters the likelihood that robust trade relations with Tewas were not shared across the divide between the two sectors at Pecos. This is particularly interesting in light of ethnohistoric evidence of enmity and warfare between Pecos and Tewas during the seventeenth century (Kessell 1987), as well as the Tewas' role as the center of Revolt-era resistance. The Revolt leader Po'pay was Tewa, and Black Mesa, on the Rio Grande between San Ildefonso and Santa Clara, was the last stronghold to fall to Vargas (Liebmann 2012a).

The South Pueblo at Pecos and the Hopi Village at Awat'ovi have both been characterized as communities of 'converts.' The divergence in obsidian procurement patterns between them indicates that their relationship with the Franciscan missions did not yield identical changes in relationships with the landscape or other Native groups. At Awat'ovi, the establishment of the mission did not prevent Hopi residents from continuing to procure obsidian from the San Francisco peaks to the southwest. They evidently went on traveling to a landscape

of immense significance in Hopi cosmology and identity. The nature and meaning of these journeys, however, may have changed. Hopi people recall that labor demanded by the missionaries included long journeys to the San Francisco peaks to collect roof beams for the church (Nequatewa 1990 [1936]; Sheridan et al. 2015:37–38, 122). These arduous expeditions may have become entangled with travel to shrines and places where traditional ritual materials, as well as obsidian, were collected. Meanwhile, obsidian procurement from more distant sources, especially the Valles Caldera, seems to have increased in the seventeenth century, possibly as people from Jemez and pueblos along the Rio Grande migrated to Hopi, or as Hopi people moved in new ways through the landscape.

Additional possibilities are brought into relief by comparing the results of this project to other recent findings of research on obsidian procurement that spanned the late pre-contact and colonial periods. Liebmann (2017) has recently analyzed obsidian from a number of sites in the Jemez region. Across thirty ancestral Jemez sites, a majority (52.8 percent) of obsidian artifacts ($n = 1173$) were made from Valles Rhyolite material. Between A.D. 1300 and 1600, the proportion of Valles Rhyolite material in Jemez assemblages very nearly tripled. During two periods – Glaze D/E (A.D. 1500–1598) and the Revolt Period (A.D. 1680–1692), Valles Rhyolite procurement was roughly twice as high as during periods of Spanish rule (A.D. 1598–1680 and after 1692). This suggests that Jemez people increased their interaction with the Valles Caldera landscape during times when they did not face Spanish domination. It may be that effects of colonization, including the introduction of Eurasian domesticated animals and the loss of Pueblo agricultural surpluses to taxation, led to increases in raiding by nomadic Native groups that interfered with Jemez communities' ability to safely visit the Valles Caldera (Liebmann 2017).

The obsidian procurement data from Ancestral Jemez sites are intriguing when brought into conversation with the data from Pecos and Awat'ovi. The trajectory of Valles Rhyolite obsidian from Jemez sites in closer proximity to its source parallels that of more distant Pecos from late pre-contact times to the colonial period. This may indicate that as Jemez people developed closer ties with the Valles Caldera, they became increasingly important intermediaries between this landscape and other Pueblo groups. Another possibility is that ongoing exchange and interaction between Jemez or Rio Grande pueblos and other Pueblo groups was a conduit for increasing amounts of Valles Rhyolite obsidian. Alternatively, Jemez were not the only communities to develop closer ties with the Valles Caldera during this span of time. People from Pecos and Awat'ovi may have strengthened their own, perhaps comparable relationship with this landscape. It is worth recalling here that the Pecos elders interviewed by Hodge at the end of the nineteenth century referred to sets of Pecos clans that originally migrated from Jemez (Hewett 1904:433–35). It is also intriguing that Valles Rhyolite obsidian appears to have become more prominent at Awat'ovi after the establishment of the mission, while at Jemez sites during the same period, Valles Rhyolite decreased relative to other obsidians. If Jemez had forged strong bonds with the Valles Caldera shortly before Spanish colonization, perhaps displaced Jemez people who found refuge with Hopi after colonization brought with them obsidian that represented and commemorated the importance of the landscape they had departed.

These findings raise questions about how missionization might have contributed to the generation or transformation of meanings about the sources of raw materials in the landscape, and the journeys, activities, and interactions associated with obtaining them. This project began to investigate whether obsidian procurement changed because of how people related to missions

and to each other, but it also became apparent that this question could be looked at from the other direction: is there evidence that missionization changed people's perspective on the landscape, as indicated by the types of obsidian they were acquiring and using? How might ethnographically documented relationships with obsidian have been influenced by colonial experiences? Consultation with Native groups indicates that archaeologists should increasingly consider obsidian procurement in ways that move away from strictly economic models. Distance-decay predictions and least-cost models are built on culturally-specific foundations that can be challenged by indigenous perspectives. Obsidian was part of perceptions of the landscape, in the sense used by contemporary archaeologists that brings together human meaning and environment (Ur 2011:836).

These observations point towards the potential for advances in mission archaeology undertaken in collaboration with heritage stakeholders and descendant communities (Liebmann 2017). The results of this project reinforce the lesson that the ethnographic present and the archaeological past are related but not identical. For example, while Mt. Taylor is an important place for Hopi people today, obsidian from sources around Mt. Taylor was not preferred or accessible to people at Awat'ovi. Archaeology that incorporates indigenous viewpoints and knowledge can thus help show that these viewpoints are living things, not timeless and immutable. Obsidian acquisition arguably gave new meaning to the places where it came from and the routes taken to get it in the mission period, as the journeys became more difficult and probably rarer, and as these locations remote from Spanish oversight became refuges. It is plausible that the significance of obsidian itself, if it was linked to the significance of where it came from, shifted too. Such shifts would also be affected by how obsidian and other lithic

materials came into technological conversation, as it were, with metal and other materials new to the Pueblo world. Today, archaeologists rely on XRF to identify different obsidians. Pueblo people likely recognized differences among these obsidians according to their own criteria, though we may never know exactly what these were.

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The historical narrative of Pecos in the seventeenth century takes its shape, ultimately, from ethnographic analogy based on episodes of factionalism in Pueblo communities from the late 1800s to the mid-twentieth century. However, the ethnographic analogy from the modern pueblos to Pecos was not applied analytically or in accordance with the standards of modern archaeology (Wylie 1985). While it has long been recognized that Pueblo villages responded differently to Spanish colonization, our understanding of how groups *within* Pueblo villages also responded differently has been constrained by the reductive nature of factionalism and conversion as they have been deployed in interpretation. The idea that Native groups across North America, including the Pueblos, split into factions because of disputes that pitted change against continuity, modernity against tradition, or Christianity against Native belief systems, is frequently repeated by historians and archaeologists. These dichotomous views of how indigenous people responded to colonialism can lead archaeologists to misread the material record of practice, memory, and identity (Silliman 2009). Such polarization contributes to the devaluation of the recent past in archaeological storytelling, as researchers radically simplify the last four centuries in order to bolster interpretive models (Liebmann 2012b). They either emphasize colonization as an abrupt interruption of indigenous history, or seek to highlight the indigenous resistance and agency that produced cultural continuity (Silliman 2012).

All too often, factions or groups within Native communities are made to embody and carry the burden of these narratives. The historical and ethnographic record of factionalism indicates that it involves a much more complicated set of concerns than those surrounding relationships with outsiders, and often have to do with struggles over power and meaning within a community. It is certainly the case that Spanish colonization created conditions in which the ways that power and authority worked in Native communities were destabilized, and that colonization provided new fields – including Catholicism – in which differences and power struggles could be worked out.

Missions have often been looked at from perspectives that privilege European ways of understanding religious change and social relations. Factionalism and conversion, as they are usually presented, cast missionaries as the primary actors and Native people as only able to react. Posing the question of how missions changed Native religious belief and practice, or how missions caused political crises in Native communities, might fairly be read as extending, in a sense, the missionaries' dominance over the societies we are working to understand.

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The research presented in this dissertation leads to the conclusion that, based on obsidian evidence, the histories of Pecos and Awat'ovi during the seventeenth century involve more ambiguity and complexity than previous narratives have described. There is support for a significant distinction between the North and South Pueblos, but there is not evidence that this distinction was merely a continuation of pre-existing factional differences. The anthropological literature on factionalism does not support assumptions about this kind of continuity.

Factionalism was contingent on the historical conditions in which it emerged, not on reified

ideological orientations. While this interpretation allows for the possibility that conversion did influence the formation of the South Pueblo group, conversion did not necessarily determine their relationships with others within Pecos.

Analyzing these histories as the outcomes of binary models of factionalism and religious conversion produces explanations of how people within these communities negotiated colonialism that are too simple. At Pecos, there are grounds to question the projection of factionalism into the pre-contact past, or at least continuity between the factionalism of A.D. 1620–1680 and factionalism of earlier or later periods. Labeling seventeenth-century residential groups at Pecos as ‘Progressive’ and ‘Conservative’ factions is anachronistic and reductionist. Religious conversion and factionalism at Pecos and Awat’ovi were not inevitably co-occurring phenomena. Franciscan conversion efforts did not necessarily produce shared identities and experiences across the Pueblo world, but had different outcomes and meanings for different individuals and groups.

In the course of conducting this research, a number of avenues for future investigation became apparent. First, the ceramics from later periods at Awat’ovi deserve a full-scale analysis. Smith (1971) carried out an extraordinarily thorough analysis of ceramics from deposits up to A.D. 1375, but his plans to complete a second volume covering the rest of the sequence were never realized (Hays-Gilpin 2013:180). The mid-to-late Pueblo IV and mission-period ceramics from Awat’ovi have not been analyzed as a collection. Several decades ago this would have been difficult, because the materials were separated in different locations within the Peabody Museum and would have required extensive reorganization in order to even begin a systematic study (Wade and McChesney 1981:548). However, this is no longer the case, as the collections have

been properly inventoried and relocated to modern storage facilities. A specialized study of these materials would be a major contribution to Ancestral Hopi research. In particular, San Bernardo ware is not well understood, and should be revisited by a ceramicist who can bring the latest analytical approaches to bear. Second, no detailed architectural history or intra-site analysis of the North Pueblo at Pecos has been conducted (Ivey 2005). An architectural history and archaeological analysis of North Pueblo comparable to what Ivey has done for the colonial component of Pecos would be invaluable. Third, the lithic assemblages of Pueblo mission sites deserve greater attention, and much work should be done to investigate general post-contact lithic practices in the Southwest.

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This case study is a point of departure for broader reconsideration of how factionalism and conversion are understood in the scholarship of missions and the colonial past in the Americas. Using factionalism as a broadly descriptive concept for conflict between indigenous groups is troublesome, as is using factionalism to classify and explain variation in how indigenous groups responded to Europeans. Many archaeologists continue to rely on interiorist models of conversion that are probably not the most effective way to understand how Native North Americans engaged with and interpreted the varying forms of Christianity that were imposed on them by missionaries, or that reached them by other means.

One way for archaeologists to continue to explore how conversion might be understood is to increase the scope of comparison both temporally and geographically. For example, how do Native responses to top-down approaches to conversion, perhaps best exemplified by the *reducción* program in the Andes (Wernke 2013; Quilter 2011; VanValkenburgh 2012), compare

with responses to other forms of missionization? To what extent has the portrait of colonial missions as totalizing programs of sociocultural transformation been borrowed from specific circumstances and applied to contexts in which this notion is historically inaccurate? While missions across the Spanish Borderlands have been compared (e.g. Galgano 2005), there still has been little evaluation of missions across other regions affected by Spanish imperialism. This can be attributed in part to regional imbalances in the quantity and nature of archaeological investigation of missions and other colonial sites, but the rapid growth of historical archaeology in Latin America is providing the data necessary for this broader synthesis (Funari 2015).

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Finally, this project speaks to the ongoing task of resisting the enduring and embedded power of colonialism's grand narratives. It challenges the ways in which the established narratives about Pueblo mission villages depend on binaries that insist on and sustain the dominance of the colonizer. Binary characterizations of Pueblo factions – whether as pro- or anti-Spanish, as Christian or non-Christian, as Progressive or Conservative, as cosmopolitan or insular – reflects a colonial discourse that situates modernity against tradition in defining and fixing the indigenous Other (Said 1978; Bhabha 1994). It forces all politics, competition, and conflict, all decisions, social groupings, and actions into a rubric in which relations with – and the concerns of – the colonizer are paramount. As Orta (2002:711) has observed, “[s]cholars concerned with missionization have tended analytically to reinscribe oppositions between local and global, indigenous and foreign.” Emphasis on such oppositions obscures more subtle differences in relationships with Europeans within Pueblo communities that were certainly crosscut by other levels of identity and social organization. Mission communities like Pecos and

Awat'ovi were like most communities – diverse, internally differentiated, and sometimes fractious. This project has provided a starting point for a fuller recognition of the lives of their residents.

APPENDIX A XRF DATA FOR OBSIDIAN FROM PECOS AND AWAT'OVI

KEY	<i>Obsidian Source</i>	<i>Code</i>
	Canovas Canyon Rhyolite	CC
	Cerro Toledo Rhyolite	CT
	El Rechuelos	ER
	Government Mtn.	GM
	Horace/La Jara Mesa	HM
	Mule Creek	MC
	Sitgreaves Mtn./RS Hill	SM
	Valles Rhyolite (Cerro del Medio)	VR
	Unassigned	-

TABLE A.1 Elemental concentrations and source assignments for obsidian artifacts from Pecos Pueblo. All measurements are in parts per million (ppm).

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00001	1330	282	4612	52	12	13	142	6	23	80	46	ER
PECO-00001	1332	554	8683	125	20	21	193	3	58	187	90	CT
PECO-00003	163	451	7539	113	20	23	190	2	58	174	89	CT
PECO-00009	321	540	8555	114	21	18	189	1	56	183	89	CT
PECO-00010	408	579	7182	114	20	16	178	1	51	169	91	CT
PECO-00011	425	459	8413	104	21	23	189	1	65	186	90	CT
PECO-00011	442	746	8105	109	18	21	189	1	55	178	84	CT
PECO-00011	465 <i>a</i> *	357	8064	79	17	19	142	6	42	166	51	VR
PECO-00011	465 <i>b</i>	459	7007	88	21	16	140	6	43	157	46	VR
PECO-00014	18663 <i>a</i>	679	7948	96	21	24	181	2	59	180	88	CT
PECO-00014	18663 <i>b</i>	333	7982	97	17	16	145	5	42	163	50	VR
PECO-00014	18664	411	8318	106	21	23	181	-0	57	176	88	CT
PECO-00014	18673	644	7764	115	20	23	191	1	57	182	91	CT
PECO-00014	18675	552	7939	152	23	14	180	1	57	167	89	CT
PECO-00014	18676	503	7707	137	18	17	145	8	40	184	53	VR

* Indicates that multiple artifacts share a catalog number and were individually analyzed

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00014	18678	377	4354	61	15	20	136	6	22	71	46	ER
PECO-00014	18682	570	10824	135	24	21	188	5	46	234	62	VR
PECO-00014	18688	454	7444	134	15	22	169	-1	60	177	83	CT
PECO-00014	18689	488	7198	144	20	21	175	4	54	175	85	CT
PECO-00014	18691	507	8169	110	20	24	186	1	59	182	88	CT
PECO-00014	18693	493	7697	103	21	24	192	1	64	185	88	CT
PECO-00014	18702	357	7575	157	23	13	155	6	44	173	58	VR
PECO-00014	18752	410	8193	78	18	12	159	4	43	172	53	VR
PECO-00014	19219	542	7798	66	16	16	154	6	41	172	54	VR
PECO-00014	19220 <i>a</i>	752	7294	98	24	20	182	1	59	180	87	CT
PECO-00014	19220 <i>b</i>	383	8602	99	20	16	155	4	40	181	54	VR
PECO-00016	21213	539	8425	100	13	26	193	2	57	177	91	CT
PECO-00016	21214	598	8227	116	23	20	191	2	58	177	89	CT
PECO-00016	21215 <i>a</i>	636	8017	156	21	22	176	0	60	174	93	CT
PECO-00016	21215 <i>b</i>	401	7961	117	19	12	140	5	39	172	54	VR
PECO-00016	21223 <i>a</i>	731	8303	101	23	12	146	5	43	178	55	VR
PECO-00016	21223 <i>b</i>	674	8216	111	18	26	193	2	60	181	89	CT
PECO-00016	21223 <i>c</i>	599	8414	173	26	15	192	2	55	171	89	CT
PECO-00016	21228	485	8274	81	18	15	148	6	44	173	51	VR
PECO-00016	21236	643	8296	92	19	24	194	3	59	188	98	CT
PECO-00016	21238	579	8292	113	24	22	195	2	65	171	94	CT
PECO-00016	21240	504	8935	85	18	16	155	5	43	169	51	VR
PECO-00016	21245	451	7891	90	19	14	147	6	43	165	51	VR
PECO-00016	21246 <i>a</i>	767	7759	111	24	23	186	2	57	181	98	CT
PECO-00016	21246 <i>b</i>	292	7755	101	18	16	154	5	44	170	55	VR
PECO-00016	21246 <i>c</i>	437	7836	87	17	19	146	6	42	165	55	VR
PECO-00016	21246 <i>d</i>	418	7448	98	20	13	143	8	41	154	53	VR
PECO-00016	21246 <i>e</i>	485	8580	106	21	24	200	1	59	171	95	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00016	21246 <i>f</i>	512	7790	114	26	20	195	1	53	177	86	CT
PECO-00016	21246 <i>g</i>	469	9413	77	19	14	150	5	44	174	48	VR
PECO-00016	21246 <i>h</i>	373	7966	79	16	17	151	6	41	176	51	VR
PECO-00016	21246 <i>i</i>	454	7934	95	16	18	151	6	43	184	53	VR
PECO-00016	21247	619	7968	95	22	23	191	2	61	183	90	CT
PECO-00016	21248 <i>a</i>	645	8220	104	27	20	196	2	65	176	89	CT
PECO-00016	21248 <i>b</i>	766	7178	99	21	20	178	1	58	172	93	CT
PECO-00016	21252	531	8358	105	24	19	193	1	58	182	95	CT
PECO-00016	21256	476	8617	123	19	17	194	1	65	189	92	CT
PECO-00016	21258 <i>a</i>	515	9216	87	19	15	153	4	42	167	54	VR
PECO-00016	21258 <i>b</i>	319	8686	101	14	15	159	4	43	175	51	VR
PECO-00016	21258 <i>c</i>	541	8194	118	26	26	184	0	57	173	88	CT
PECO-00016	21260	286	8229	78	15	13	148	7	46	156	55	VR
PECO-00016	21262	556	7923	118	21	25	191	-0	58	182	91	CT
PECO-00016	21263 <i>a</i>	430	8608	124	19	17	160	7	42	165	52	VR
PECO-00016	21263 <i>b</i>	538	5303	61	12	15	110	37	19	107	47	CC
PECO-00016	21266	320	8481	86	17	18	156	5	43	211	53	VR
PECO-00016	21269	259	8087	86	18	14	149	4	37	163	54	VR
PECO-00016	21272	550	7851	117	25	19	189	2	64	169	88	CT
PECO-00046	9210	718	7484	113	20	17	177	2	56	167	83	CT
PECO-00046	9481	321	5022	51	14	20	138	42	20	104	44	CC
PECO-00046	9482	537	6086	56	16	20	117	46	17	112	50	CC
PECO-00046	9485	451	5281	60	14	18	108	33	23	101	51	CC
PECO-00046	10420 <i>a</i>	395	5052	70	13	15	109	44	18	107	48	CC
PECO-00046	10420 <i>b</i>	406	12068	66	15	21	111	44	22	105	54	CC
PECO-00046	10422	541	8215	103	21	14	154	5	44	178	55	VR
PECO-00046	10426	577	8967	150	23	24	193	2	64	181	91	CT
PECO-00046	10427	597	8864	125	24	22	194	1	62	171	88	CT
PECO-00046	10439	446	8635	106	23	23	187	1	62	179	92	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	10443	307	8119	80	16	16	142	4	43	172	50	VR
PECO-00046	10444	603	8142	131	21	28	193	1	59	183	90	CT
PECO-00046	10450	562	9977	116	24	23	201	2	59	179	90	CT
PECO-00046	10454	386	4485	66	17	16	142	5	21	75	44	ER
PECO-00046	10458	366	7531	87	17	9	140	5	39	168	51	VR
PECO-00046	10475 <i>a</i>	431	8712	103	23	19	189	3	59	180	88	CT
PECO-00046	10475 <i>b</i>	345	7417	81	17	10	140	7	40	163	52	VR
PECO-00046	10475 <i>c</i>	389	8103	78	20	13	148	6	40	165	53	VR
PECO-00046	10475 <i>d</i>	479	8527	112	17	20	197	1	57	177	99	CT
PECO-00046	10482	563	8115	125	19	19	190	1	56	171	90	CT
PECO-00046	10504	484	7791	74	18	11	140	5	40	159	49	VR
PECO-00046	10505 <i>a</i>	442	7868	88	19	18	144	5	41	171	51	VR
PECO-00046	10505 <i>b</i>	423	8782	81	21	20	152	5	41	173	55	VR
PECO-00046	10505 <i>c</i>	487	8213	82	17	15	146	6	44	164	50	VR
PECO-00046	10505 <i>d</i>	284	7999	76	16	19	148	6	44	198	51	VR
PECO-00046	10506	466	7691	103	21	20	177	2	53	174	84	CT
PECO-00046	10507	497	7595	114	24	17	180	3	57	174	90	CT
PECO-00046	10516	466	7149	148	23	15	172	2	48	163	87	CT
PECO-00046	10527	418	4388	46	15	10	135	7	18	74	47	ER
PECO-00046	10560	501	7911	80	20	22	192	1	56	174	86	CT
PECO-00046	12400	392	8258	94	16	15	154	4	43	172	52	VR
PECO-00046	12403	421	8969	118	15	21	183	2	63	165	87	CT
PECO-00046	12404	466	4600	80	23	21	148	6	23	89	46	ER
PECO-00046	12415	371	8335	96	17	14	157	5	37	163	56	VR
PECO-00046	12424	375	8098	94	17	15	147	4	42	170	52	VR
PECO-00046	12450	525	7970	111	20	22	189	3	55	179	87	CT
PECO-00046	12452 <i>a</i>	319	8081	90	13	16	139	6	41	167	55	VR
PECO-00046	12452 <i>b</i>	114	8204	81	23	16	146	6	40	165	47	VR
PECO-00046	12455	524	8116	113	25	25	188	2	62	182	94	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	12457 <i>a</i>	503	7606	84	16	19	150	4	44	178	54	VR
PECO-00046	12457 <i>b</i>	545	7315	90	17	16	145	5	39	159	53	VR
PECO-00046	12457 <i>c</i>	280	8207	70	14	14	140	5	44	156	48	VR
PECO-00046	12457 <i>d</i>	402	8130	83	14	17	143	4	43	163	51	VR
PECO-00046	12462	203	7993	77	17	18	142	6	42	173	53	VR
PECO-00046	12463	631	7609	117	25	23	184	1	56	170	89	CT
PECO-00046	12467	453	7539	91	20	13	146	4	39	166	55	VR
PECO-00046	12487	475	8353	111	21	25	191	2	58	182	92	CT
PECO-00046	12491	829	8924	142	24	21	189	2	63	184	91	CT
PECO-00046	12492	638	8024	106	22	20	185	1	64	176	90	CT
PECO-00046	12500	693	7859	90	21	17	149	4	44	175	51	VR
PECO-00046	12504	399	6871	77	15	13	139	5	38	156	48	VR
PECO-00046	12527 <i>a</i>	391	7812	96	20	13	159	5	35	169	54	VR
PECO-00046	12527 <i>b</i>	398	8583	101	14	23	154	3	40	172	56	VR
PECO-00046	12540	447	4360	65	17	18	145	6	23	77	43	ER
PECO-00046	12546	640	8435	101	20	23	192	1	60	190	90	CT
PECO-00046	12548	569	6693	73	16	3	96	83	20	87	51	GM
PECO-00046	12595	505	7478	97	16	16	142	6	45	164	53	VR
PECO-00046	12801 <i>a</i>	584	8184	102	23	24	190	2	55	176	91	CT
PECO-00046	12801 <i>b</i>	603	8062	119	20	22	198	1	58	173	88	CT
PECO-00046	12801 <i>c</i>	614	8329	120	23	26	188	0	64	178	87	CT
PECO-00046	12801 <i>d</i>	332	8093	81	18	11	154	4	42	172	55	VR
PECO-00046	12812	228	7445	99	14	15	146	6	41	158	44	VR
PECO-00046	12815 <i>a</i>	520	7407	73	23	16	148	4	43	171	51	VR
PECO-00046	12815 <i>b</i>	331	7695	97	21	13	144	7	37	151	49	VR
PECO-00046	12824	486	8680	122	21	22	198	1	66	178	93	CT
PECO-00046	12839	435	8216	88	23	16	151	6	45	175	58	VR
PECO-00046	12842	482	8235	96	23	17	187	1	60	169	89	CT
PECO-00046	12846	465	8424	97	17	16	147	8	40	172	50	VR

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	12857	348	5609	39	14	16	110	42	20	106	43	CC
PECO-00046	12858	408	4578	75	17	16	149	6	19	76	42	ER
PECO-00046	12860	440	7615	88	21	14	139	4	42	164	53	VR
PECO-00046	12864	745	8207	102	23	19	195	2	55	180	86	CT
PECO-00046	12877	419	8267	109	18	19	150	6	42	179	51	VR
PECO-00046	12878	515	8257	88	14	15	148	5	38	173	52	VR
PECO-00046	12880	504	8845	95	14	22	155	7	38	178	58	VR
PECO-00046	12881	559	9970	103	22	17	189	2	58	182	91	CT
PECO-00046	12897	389	7941	97	17	15	154	6	39	164	50	VR
PECO-00046	12898	384	8232	91	19	16	147	7	42	168	53	VR
PECO-00046	12899	461	8322	80	14	15	162	5	47	171	56	VR
PECO-00046	12903	569	9278	112	23	25	210	0	64	200	96	CT
PECO-00046	12907	335	8372	77	20	17	155	8	41	185	54	VR
PECO-00046	12909	359	8651	100	17	23	169	6	45	179	59	VR
PECO-00046	12912	644	8896	123	24	18	210	1	62	188	101	CT
PECO-00046	12918	470	8761	102	19	17	152	8	45	173	54	VR
PECO-00046	12927	852	11301	141	24	26	231	3	67	206	94	CT
PECO-00046	12941	681	8721	131	26	23	195	3	63	188	97	CT
PECO-00046	12942	406	8155	87	18	20	160	7	42	186	57	VR
PECO-00046	12944	758	9078	124	24	23	218	4	71	218	96	CT
PECO-00046	12945	289	9768	95	16	18	184	9	46	195	55	VR
PECO-00046	12946	465	8383	97	22	15	163	6	42	176	55	VR
PECO-00046	12947	680	9049	140	20	23	202	3	68	190	101	CT
PECO-00046	12948	480	8400	115	16	12	152	5	45	180	60	VR
PECO-00046	12950	715	8161	118	26	22	207	4	59	197	94	CT
PECO-00046	12953 <i>a</i>	456	7843	70	20	9	147	4	40	176	47	VR
PECO-00046	12953 <i>b</i>	404	8488	98	21	21	192	0	53	174	91	CT
PECO-00046	12958	327	8469	91	17	9	159	4	37	164	54	VR
PECO-00046	12963	561	7775	106	21	22	185	1	57	170	91	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	12965	460	8486	100	22	18	189	1	62	181	91	CT
PECO-00046	12967	501	8595	117	22	24	198	0	63	188	92	CT
PECO-00046	12968	532	8027	110	23	22	184	2	57	172	90	CT
PECO-00046	12969	560	8639	103	20	22	188	1	60	171	90	CT
PECO-00046	12970	428	7421	79	14	15	148	5	39	156	48	VR
PECO-00046	12971	514	7704	98	19	19	189	0	57	174	89	CT
PECO-00046	12993	606	7640	129	19	19	195	3	60	183	91	CT
PECO-00046	12998	469	8157	83	16	14	166	3	43	167	58	VR
PECO-00046	13001	358	4170	52	12	15	134	9	23	83	43	ER
PECO-00046	13002	643	7981	133	22	21	188	2	62	187	88	CT
PECO-00046	13004	358	8662	90	20	17	159	6	45	190	55	VR
PECO-00046	13009	546	8990	126	21	29	213	-0	62	197	98	CT
PECO-00046	13010	256	4858	60	16	14	150	6	22	79	44	ER
PECO-00046	13015	433	8768	74	18	14	158	6	40	186	54	VR
PECO-00046	13018	358	4447	47	8	16	129	3	20	70	44	ER
PECO-00046	13019	307	7963	104	23	14	138	5	44	161	53	VR
PECO-00046	13037	566	8364	117	22	22	186	0	62	178	86	CT
PECO-00046	13044	543	7698	82	20	13	152	6	41	170	53	VR
PECO-00046	13057	460	8747	79	20	16	149	8	39	169	50	VR
PECO-00046	13058	520	9172	119	18	17	197	2	61	181	95	CT
PECO-00046	13062	403	8337	132	20	22	188	2	56	172	89	CT
PECO-00046	13067	461	8300	98	21	16	182	3	61	187	92	CT
PECO-00046	13073	372	7799	89	20	14	137	5	38	150	52	VR
PECO-00046	13086	290	8439	88	13	14	154	7	48	179	59	VR
PECO-00046	13167 <i>a</i>	398	7811	77	15	16	143	6	38	156	52	VR
PECO-00046	13167 <i>b</i>	385	7421	94	22	18	153	4	42	161	53	VR
PECO-00046	13168	599	4043	68	15	17	139	6	19	77	43	ER
PECO-00046	13170	502	7978	93	16	13	147	5	41	173	55	VR
PECO-00046	13171	483	7938	109	20	19	179	3	54	169	84	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	13180	490	8255	83	16	18	142	6	39	154	54	VR
PECO-00046	13181	420	7738	99	21	16	139	5	41	165	50	VR
PECO-00046	13182	840	7469	183	28	34	444	4	71	141	185	HM
PECO-00046	13186	403	7630	62	17	16	149	7	42	189	56	VR
PECO-00046	13190	521	4005	62	17	16	141	8	24	77	44	ER
PECO-00046	13212	431	7855	108	22	15	189	0	62	180	84	CT
PECO-00046	13213	488	8246	102	14	18	197	2	61	177	92	CT
PECO-00046	13215	358	8102	91	15	12	147	5	39	168	49	VR
PECO-00046	13230	535	8345	117	21	24	199	2	65	180	92	CT
PECO-00046	13265	374	8012	80	16	16	149	5	45	172	54	VR
PECO-00046	13267	335	7845	73	12	16	143	6	46	174	53	VR
PECO-00046	13275	717	7518	107	18	21	179	-0	55	173	86	CT
PECO-00046	13289	335	4603	57	17	18	139	6	26	77	45	ER
PECO-00046	13292	463	4666	60	15	13	142	5	19	76	46	ER
PECO-00046	13294	596	8447	164	20	19	201	2	60	179	92	CT
PECO-00046	13304	422	4607	55	20	14	140	4	23	71	44	ER
PECO-00046	13306	396	8344	87	16	13	160	5	40	167	51	VR
PECO-00046	13313	417	8477	80	21	13	146	6	41	190	50	VR
PECO-00046	13314	427	4457	72	20	15	155	4	18	82	45	ER
PECO-00046	13321 <i>a</i>	581	8927	126	24	21	202	2	66	207	90	CT
PECO-00046	13321 <i>b</i>	785	7635	97	25	20	191	3	61	171	90	CT
PECO-00046	13355	457	3965	66	11	13	136	5	23	71	45	ER
PECO-00046	13361 <i>a</i>	563	8301	92	14	15	150	6	43	179	56	VR
PECO-00046	13361 <i>b</i>	492	8476	87	16	19	156	6	45	165	51	VR
PECO-00046	13370	601	7974	90	16	9	140	8	41	169	50	VR
PECO-00046	13378	285	8208	93	22	18	141	5	44	171	55	VR
PECO-00046	13379	626	7031	100	19	13	159	1	54	165	78	CT
PECO-00046	13402	465	8517	120	18	20	197	2	61	180	93	CT
PECO-00046	13409	578	7619	111	22	19	185	2	59	180	91	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	13426	395	7947	90	17	15	141	8	41	161	55	VR
PECO-00046	13432	281	7869	73	18	12	147	7	39	182	54	VR
PECO-00046	13433	433	8249	83	19	14	154	4	46	175	53	VR
PECO-00046	13437	291	8647	85	13	15	149	5	45	173	56	VR
PECO-00046	13442	502	8996	86	18	17	144	6	42	172	56	VR
PECO-00046	13443	488	8160	114	24	21	198	2	55	173	94	CT
PECO-00046	13448	299	7959	64	22	16	156	7	42	167	55	VR
PECO-00046	13449	257	8153	96	18	12	142	5	44	164	54	VR
PECO-00046	13528	493	8711	104	21	14	158	4	44	167	55	VR
PECO-00046	13529	423	7865	90	20	16	148	5	40	160	52	VR
PECO-00046	13534	505	8235	102	19	22	200	2	66	175	90	CT
PECO-00046	13542	654	8926	111	19	21	186	1	58	169	88	CT
PECO-00046	13545	660	7696	125	24	19	180	1	67	181	87	CT
PECO-00046	13546	459	8226	78	15	17	138	6	40	170	50	VR
PECO-00046	13547	569	7888	107	17	17	187	-0	61	176	90	CT
PECO-00046	13548 <i>a</i>	549	8125	121	24	19	176	1	62	178	91	CT
PECO-00046	13548 <i>b</i>	626	8395	79	20	13	158	6	43	189	54	VR
PECO-00046	13549 <i>a</i>	503	4985	57	13	19	103	35	24	100	43	CC
PECO-00046	13549 <i>b</i>	549	8447	109	23	20	201	2	62	189	94	CT
PECO-00046	13549 <i>c</i>	324	7971	130	27	22	186	3	64	174	85	CT
PECO-00046	13552 <i>a</i>	376	8205	77	20	13	154	6	45	178	57	VR
PECO-00046	13552 <i>b</i>	583	7849	102	23	24	181	2	67	164	88	CT
PECO-00046	13553	477	8025	93	21	20	152	5	41	164	54	VR
PECO-00046	13554	420	7609	90	17	15	150	6	39	184	53	VR
PECO-00046	13556	403	7623	80	17	14	142	6	41	165	51	VR
PECO-00046	13557	341	7616	74	15	18	133	5	39	150	49	VR
PECO-00046	13558	530	7797	117	23	23	187	0	60	196	85	CT
PECO-00046	13559	316	8802	73	19	15	155	6	42	181	53	VR
PECO-00046	13560	541	8318	116	21	18	202	1	63	174	89	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	13562	211	8458	77	20	16	149	5	40	168	51	VR
PECO-00046	13563	547	8180	114	19	23	188	2	59	180	85	CT
PECO-00046	13578	335	7934	71	17	14	151	5	40	169	55	VR
PECO-00046	13579	442	8254	112	26	19	182	1	60	167	89	CT
PECO-00046	13580	452	8503	115	17	21	196	2	54	167	90	CT
PECO-00046	13620	502	7841	113	21	25	188	0	54	170	83	CT
PECO-00046	13623	343	7101	61	19	15	135	3	41	165	51	VR
PECO-00046	13625	512	7270	93	17	22	171	1	57	173	81	CT
PECO-00046	13629	487	7447	68	21	14	142	5	39	164	52	VR
PECO-00046	13630	644	8036	102	24	19	189	2	60	174	88	CT
PECO-00046	13659	407	10153	136	25	26	207	3	60	173	90	CT
PECO-00046	13662	570	8788	129	23	22	180	4	56	175	92	CT
PECO-00046	13663	349	8310	84	22	17	151	6	39	173	55	VR
PECO-00046	13664	326	7897	102	24	23	181	2	58	165	81	CT
PECO-00046	13665	494	7776	118	18	15	137	4	44	171	51	VR
PECO-00046	13666	156	8227	77	18	13	146	6	43	164	54	VR
PECO-00046	13667 <i>a</i>	596	8190	109	24	18	190	1	61	190	84	CT
PECO-00046	13667 <i>b</i>	410	8520	73	17	17	153	5	43	169	53	VR
PECO-00046	13667 <i>c</i>	556	8096	118	22	21	177	1	61	178	90	CT
PECO-00046	13667 <i>d</i>	606	8016	98	18	17	188	2	65	183	93	CT
PECO-00046	13667 <i>e</i>	299	8197	72	22	11	147	6	34	168	56	VR
PECO-00046	13667 <i>f</i>	322	7884	88	18	13	139	6	42	160	54	VR
PECO-00046	13668	511	9505	157	23	29	206	8	58	172	85	CT
PECO-00046	13669	593	8040	112	18	23	183	1	63	173	89	CT
PECO-00046	13670	497	8581	111	23	22	196	1	61	183	89	CT
PECO-00046	13671	499	8021	106	16	21	190	3	59	165	93	CT
PECO-00046	13672	544	8010	96	19	18	197	1	59	176	90	CT
PECO-00046	13673	401	6166	86	13	20	105	44	19	99	49	CC
PECO-00046	13675	478	7959	115	24	20	184	3	62	174	90	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	13676	414	6472	62	16	20	108	42	23	111	51	CC
PECO-00046	13677	522	7674	103	18	19	177	0	61	176	87	CT
PECO-00046	13678	607	8008	93	19	13	147	6	45	177	51	VR
PECO-00046	13679	460	8023	92	18	10	146	6	43	169	56	VR
PECO-00046	13680 <i>a</i>	364	8217	79	16	17	150	7	39	166	48	VR
PECO-00046	13680 <i>b</i>	350	7390	80	20	15	141	4	43	155	49	VR
PECO-00046	13682	542	8822	116	21	23	192	1	64	185	92	CT
PECO-00046	13683	509	9166	102	18	16	170	5	40	183	56	VR
PECO-00046	13684	636	8892	105	23	21	212	1	62	185	94	CT
PECO-00046	13685 <i>a</i>	222	8010	65	15	17	139	6	46	162	51	VR
PECO-00046	13685 <i>b</i>	549	7965	91	16	14	152	3	47	169	52	VR
PECO-00046	13691	398	8111	67	19	13	151	5	43	161	56	VR
PECO-00046	13693 <i>a</i>	243	7679	89	17	9	142	6	41	156	51	VR
PECO-00046	13693 <i>b</i>	464	7791	122	23	21	170	2	51	163	84	CT
PECO-00046	13701	468	5195	67	19	18	116	52	18	112	52	CC
PECO-00046	13713	498	8866	84	19	16	161	4	39	185	54	VR
PECO-00046	13723	568	7917	98	23	23	186	2	59	180	89	CT
PECO-00046	13724	413	8101	83	18	16	160	5	47	168	59	VR
PECO-00046	13732	428	7652	86	16	12	150	7	44	170	48	VR
PECO-00046	13734	528	8097	108	23	20	187	1	59	179	95	CT
PECO-00046	13736	466	4570	59	17	15	145	6	23	77	45	ER
PECO-00046	13738	440	4394	64	14	12	152	8	21	77	43	ER
PECO-00046	13740	468	7865	105	14	15	138	7	41	180	53	VR
PECO-00046	13742	471	4840	55	18	16	149	8	22	76	48	ER
PECO-00046	13744	606	10316	142	25	22	219	1	64	195	92	CT
PECO-00046	13746	487	5140	50	13	14	140	5	21	78	45	ER
PECO-00046	13752	666	9896	114	22	26	207	1	58	183	91	CT
PECO-00046	13757	744	9189	129	20	26	215	1	64	177	90	CT
PECO-00046	13763	312	9446	104	20	20	172	5	39	159	55	VR

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	13770	329	8737	81	15	19	157	5	40	167	54	VR
PECO-00046	13772	385	8281	72	21	20	153	6	42	184	55	VR
PECO-00046	13777	534	8444	90	18	18	196	2	60	174	92	CT
PECO-00046	13781	496	8525	128	22	12	154	19	43	169	53	VR
PECO-00046	13782	443	8384	81	21	16	151	8	43	170	51	VR
PECO-00046	13785	414	9585	106	19	15	161	5	45	173	58	VR
PECO-00046	13793	585	8022	98	17	12	153	6	49	174	58	VR
PECO-00046	13794	274	7968	75	17	21	152	5	40	171	53	VR
PECO-00046	13798	742	13493	144	20	19	197	6	44	193	62	VR
PECO-00046	13820	384	7691	89	18	10	138	6	44	157	49	VR
PECO-00046	13859	736	8061	121	25	22	210	1	61	182	94	CT
PECO-00046	13882	424	4324	58	17	14	148	7	21	73	42	ER
PECO-00046	13934	387	8641	91	19	16	147	5	43	171	51	VR
PECO-00046	13940	527	8250	138	18	21	195	2	55	172	92	CT
PECO-00046	13962	480	7783	77	17	12	139	5	38	158	57	VR
PECO-00046	13967	307	7748	84	19	19	141	8	41	172	55	VR
PECO-00046	14000	457	7672	99	24	19	181	-0	60	166	88	CT
PECO-00046	14003	491	8141	82	18	13	151	5	39	176	55	VR
PECO-00046	14008	436	7781	82	20	13	148	4	41	162	53	VR
PECO-00046	14009	375	8407	62	15	21	152	6	39	175	53	VR
PECO-00046	14018	392	7812	70	20	13	145	7	38	165	52	VR
PECO-00046	14020	435	7395	78	17	12	138	5	48	161	50	VR
PECO-00046	14032	385	8040	79	16	15	148	2	40	159	53	VR
PECO-00046	14052	378	4794	54	18	16	144	7	21	77	45	ER
PECO-00046	14053	505	7945	79	15	13	147	8	42	163	56	VR
PECO-00046	14079	418	4338	41	18	12	143	7	20	74	40	ER
PECO-00046	14317	349	4588	48	14	16	136	6	21	74	44	ER
PECO-00046	14336	359	8071	91	16	14	143	5	42	165	52	VR
PECO-00046	14342	577	8083	127	20	23	187	2	59	177	93	CT

PNHP Accession No.	Cat. No.	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
PECO-00046	14343 <i>a</i>	557	7156	130	20	22	177	1	63	184	93	CT
PECO-00046	14343 <i>b</i>	643	7367	126	17	26	173	3	59	168	89	CT
PECO-00046	14343 <i>c</i>	188	8111	84	17	9	142	7	40	164	49	VR
PECO-00046	14344	289	7574	64	17	14	141	6	43	159	53	VR
PECO-00046	14345	361	7508	82	16	14	143	8	39	166	53	VR
PECO-00062	26870 <i>a</i>	266	7489	92	23	11	137	6	37	154	48	VR
PECO-00062	26870 <i>b</i>	585	7035	198	20	20	163	1	58	171	88	CT
PECO-00062	26870 <i>c</i>	471	7641	108	16	11	148	7	37	150	52	VR
PECO-00062	26870 <i>d</i>	405	7817	94	21	21	179	1	58	162	85	CT
PECO-00062	26870 <i>e</i>	525	8226	138	17	18	197	2	58	171	89	CT
PECO-00062	26870 <i>f</i>	388	8299	107	20	20	185	2	61	168	89	CT
PECO-00062	26870 <i>g</i>	277	7372	97	21	13	151	6	43	161	50	VR
PECO-00062	26870 <i>h</i>	232	7150	80	19	9	129	3	39	163	47	VR
PECO-00062	26872 <i>a</i>	374	7762	80	16	15	137	7	40	161	51	VR
PECO-00062	26872 <i>b</i>	356	7958	93	16	15	139	5	38	154	50	VR
PECO-00062	26872 <i>c</i>	289	7151	76	19	16	137	5	36	160	47	VR
PECO-00062	26880 <i>a</i>	411	7734	89	21	14	136	4	39	166	50	VR
PECO-00062	26880 <i>b</i>	369	7915	92	20	10	145	4	40	164	54	VR
PECO-00146	29299	509	8388	127	19	21	196	2	54	171	90	CT
PECO-00146	29302	418	8275	106	22	25	180	1	59	171	90	CT
PECO-00146	29306	335	4415	80	15	13	141	4	19	72	44	ER
PECO-00146	29313	373	8721	95	15	17	148	6	42	176	55	VR
PECO-00146	29317	359	8018	83	20	13	149	3	48	163	51	VR
PECO-00146	29320	496	9515	92	18	16	158	6	46	179	55	VR
PECO-00146	29324	598	9314	107	20	25	198	2	60	191	92	CT

TABLE A.2 Elemental concentrations and source assignments for obsidian artifacts from Awat'ovi. All measurements are in parts per million (ppm).

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
00-23-10/76259 <i>a</i>	316	7963	82	20	15	153	5	41	162	51	VR
00-23-10/76259 <i>b</i>	433	5342	62	15	14	134	7	20	68	40	-
00-23-10/76263 <i>a</i>	563	6583	68	12	6	86	86	17	75	44	GM
00-23-10/76263 <i>b</i>	591	6961	74	15	10	97	83	17	78	45	GM
00-23-10/76263 <i>c</i>	460	8023	86	25	14	138	10	38	165	49	VR
00-23-10/76263 <i>d</i>	604	7175	79	18	7	96	89	19	82	47	GM
00-23-10/76263 <i>e</i>	511	7008	77	18	4	104	86	16	84	47	GM
35-126-10/5807	477	7483	78	18	4	99	85	16	83	50	GM
35-126-10/5808	733	6762	83	19	7	103	87	19	88	52	GM
35-126-10/5809	346	8512	74	15	22	144	79	30	200	23	-
35-126-10/5812	347	7382	92	20	12	141	4	43	163	50	VR
35-126-10/5812A	629	6797	83	16	11	102	90	21	85	53	GM
35-126-10/5815	605	6269	85	15	7	107	83	17	80	48	GM
35-126-10/5816	363	5404	63	15	16	105	48	22	111	46	CC
35-126-10/5817	703	7097	70	13	4	98	86	21	85	50	GM
35-126-10/5818	504	6664	80	13	4	93	80	19	78	46	GM
35-126-10/5825	540	6409	53	19	7	90	78	14	73	46	GM
35-126-10/5828	711	6955	75	19	11	104	87	21	82	50	GM
36-131-10/8693.1	666	6440	91	21	9	106	74	19	87	49	GM
36-131-10/8715	542	6962	89	19	8	103	83	18	89	50	GM
36-131-10/8735	539	7216	94	20	9	107	92	19	86	50	GM
36-131-10/8764	585	7066	95	21	7	99	85	16	78	47	GM
36-131-10/8769	392	6766	85	17	7	105	82	17	87	54	GM
36-131-10/8780	436	7183	89	18	7	104	94	18	84	53	GM
36-131-10/8830	737	6972	94	18	13	106	88	19	81	52	GM
36-131-10/8831	607	6584	80	18	7	103	74	18	80	46	GM
36-131-10/8859	456	6739	76	19	6	103	87	20	88	51	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
36-131-10/8860	704	6402	77	17	8	98	83	15	77	44	GM
36-131-10/8861	642	7630	83	18	9	104	85	18	85	51	GM
36-131-10/8862	575	6609	89	14	7	94	80	20	76	47	GM
36-131-10/8863	504	8040	154	34	41	367	3	75	181	218	SM
36-131-10/8866	616	6630	84	19	8	107	88	18	86	47	GM
36-131-10/8868	727	7150	88	14	6	103	87	19	83	52	GM
36-131-10/8869	479	6488	91	19	6	111	85	17	88	48	GM
36-131-10/9294	673	6895	80	23	2	100	87	19	81	54	GM
36-131-10/9295	438	7194	84	17	3	109	86	15	88	48	GM
36-131-10/9296	441	7184	74	20	6	101	85	20	86	48	GM
37-111-10/11949	474	5082	53	15	19	108	39	19	110	48	CC
37-111-10/11957	760	7204	110	21	6	107	85	20	82	48	GM
37-111-10/11962	686	6890	79	19	7	114	82	24	83	51	GM
37-111-10/11964	648	6471	69	18	9	93	89	17	81	52	GM
37-111-10/11967	653	6351	70	18	5	98	81	19	89	51	GM
37-111-10/11973	651	7009	76	19	7	103	88	18	81	50	GM
37-111-10/11992	567	7017	81	18	8	104	91	19	85	54	GM
37-111-10/11994	458	6410	78	22	4	92	81	18	77	49	GM
37-111-10/11995	533	6439	76	16	8	99	79	18	80	44	GM
37-111-10/11996	546	6651	71	22	6	94	76	18	76	50	GM
37-111-10/11999	362	6990	76	19	6	104	81	19	78	48	GM
37-111-10/12006	412	7307	89	20	15	142	5	37	158	50	VR
37-111-10/12008	603	6755	61	13	5	105	79	20	82	47	GM
37-111-10/12012	469	6676	73	21	7	98	88	17	81	47	GM
37-111-10/12013	576	6760	76	17	7	103	79	21	80	47	GM
37-111-10/12017	564	7105	90	15	7	100	89	20	87	47	GM
37-111-10/12019	520	7009	87	14	8	103	87	17	79	47	GM
37-111-10/12020	601	6965	84	17	8	101	79	16	77	47	GM
37-111-10/12034	541	8426	84	17	11	109	91	17	88	52	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
37-111-10/12059	677	7678	87	17	12	104	96	17	83	52	GM
37-111-10/12075	674	7052	81	16	5	102	91	14	83	51	GM
37-111-10/12083	571	7271	81	16	5	102	85	19	80	50	GM
37-111-10/12089	328	7501	72	17	12	135	6	37	156	48	VR
37-111-10/12090	572	6767	65	18	9	101	79	23	83	50	GM
37-111-10/12096	622	6521	89	20	3	105	88	18	86	49	GM
37-111-10/12097	424	9152	104	22	12	168	6	42	179	55	VR
37-111-10/12098	513	7873	97	16	8	105	97	16	85	52	GM
37-111-10/12101	572	6996	75	17	6	102	86	19	86	52	GM
37-111-10/12103	447	6866	78	16	6	93	83	16	81	49	GM
37-111-10/12104	434	6498	77	17	6	98	75	17	84	47	GM
37-111-10/12110	287	8449	81	19	14	151	4	46	175	53	VR
38-120-10/16404	566	7360	100	20	9	107	88	18	85	47	GM
38-120-10/16412	593	7128	87	17	3	100	79	17	83	49	GM
38-120-10/16414	557	7913	85	22	5	105	87	18	86	50	GM
38-120-10/16423	510	12065	80	16	21	117	130	18	104	28	-
38-120-10/16435	676	7521	93	15	11	97	87	18	87	52	GM
38-120-10/16448	756	7656	96	20	10	107	82	18	87	56	GM
38-120-10/16449	539	8660	195	30	44	372	3	83	173	213	SM
38-120-10/16450	616	6818	74	16	10	102	88	17	83	49	GM
38-120-10/16454	508	7124	86	19	6	97	89	23	85	51	GM
38-120-10/16456	517	7399	70	16	17	152	8	35	164	57	VR
38-120-10/16457	607	7682	96	15	5	98	83	21	88	47	GM
38-120-10/16464	605	7261	82	14	8	105	79	18	84	51	GM
38-120-10/16468	626	7126	87	16	9	104	87	18	84	48	GM
38-120-10/16471	524	7233	77	16	10	100	90	18	83	52	GM
38-120-10/16478	667	6713	72	24	4	106	84	17	87	50	GM
38-120-10/16481	628	6718	79	18	10	99	87	18	84	49	GM
38-120-10/16486	492	6846	77	19	8	99	79	18	81	48	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/16493	434	6459	79	15	6	99	78	13	82	44	GM
38-120-10/16494	505	6789	84	13	6	103	81	16	84	51	GM
38-120-10/16496	587	6901	82	17	4	104	87	17	81	49	GM
38-120-10/16497	564	7387	71	22	8	105	85	17	88	49	GM
38-120-10/16498	570	6542	83	21	4	102	81	16	77	45	GM
38-120-10/16499	330	8181	96	10	22	146	6	39	157	54	VR
38-120-10/16505	706	7176	73	17	5	96	91	20	84	52	GM
38-120-10/16510	631	7265	77	18	9	106	87	17	88	51	GM
38-120-10/16513	411	6859	76	20	5	102	90	17	82	48	GM
38-120-10/16514	649	6993	78	14	2	105	80	19	85	48	GM
38-120-10/16524	631	7233	78	18	4	107	86	18	86	50	GM
38-120-10/16528	442	8039	101	17	19	150	6	38	174	57	VR
38-120-10/16529	641	8072	88	20	10	136	92	18	87	47	-
38-120-10/16530	575	7025	67	18	4	100	86	18	81	52	GM
38-120-10/16531	566	7142	95	20	8	99	85	18	80	53	GM
38-120-10/16534	479	6935	101	19	6	95	75	18	81	50	GM
38-120-10/16536	633	8440	156	30	42	336	2	73	170	206	SM
38-120-10/16537	598	6812	66	21	7	100	84	18	78	49	GM
38-120-10/16538	503	7830	58	15	9	98	82	19	85	46	GM
38-120-10/16541	720	7342	83	19	6	101	86	17	80	52	GM
38-120-10/16546	589	6839	59	16	6	96	75	16	84	51	GM
38-120-10/16566	581	6572	78	19	7	93	81	17	81	53	GM
38-120-10/16571	614	7170	88	18	5	98	85	18	87	52	GM
38-120-10/16572	717	7242	83	15	3	96	91	16	89	49	GM
38-120-10/16577	574	7022	85	20	11	103	88	23	82	50	GM
38-120-10/16580	387	8068	56	18	7	105	85	20	84	49	GM
38-120-10/16581	617	6627	91	17	11	103	88	18	84	48	GM
38-120-10/16582	553	7205	81	21	2	103	81	18	84	49	GM
38-120-10/16583	486	6732	92	18	7	101	87	16	83	52	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/16584	691	6515	70	18	7	96	85	15	80	48	GM
38-120-10/16590	541	6791	78	14	7	96	82	18	83	47	GM
38-120-10/16591	427	5205	55	15	19	106	38	21	103	51	CC
38-120-10/16594	518	7242	81	17	4	104	84	16	82	51	GM
38-120-10/16605	527	6114	90	16	10	104	83	21	83	48	GM
38-120-10/16611	525	7177	79	19	2	101	91	19	79	53	GM
38-120-10/16612	598	6758	92	18	6	99	80	17	84	49	GM
38-120-10/16617	588	7202	86	22	8	103	85	19	86	52	GM
38-120-10/16621	507	6940	88	20	10	98	83	20	86	52	GM
38-120-10/16628	597	6879	70	17	9	94	86	21	85	47	GM
38-120-10/16630	463	7230	84	17	9	102	85	17	87	51	GM
38-120-10/16637	617	7069	76	16	6	107	89	19	88	50	GM
38-120-10/16639	695	7247	70	21	5	104	82	19	86	48	GM
38-120-10/16640	604	7020	69	14	10	101	82	18	79	47	GM
38-120-10/16646	635	6946	63	16	12	103	85	13	85	53	GM
38-120-10/16647	508	6355	88	16	7	99	84	16	82	52	GM
38-120-10/16648	532	7010	88	15	7	104	79	19	84	53	GM
38-120-10/16649	612	6530	76	14	4	99	84	20	85	48	GM
38-120-10/16665	428	7275	65	15	0	100	86	18	85	50	GM
38-120-10/16666	566	7177	82	15	4	100	90	16	86	49	GM
38-120-10/16668	195	7828	69	18	13	146	5	40	159	50	VR
38-120-10/16670	694	7222	75	13	9	99	89	18	86	50	GM
38-120-10/16673	307	8139	87	18	16	144	6	39	170	53	VR
38-120-10/16674	505	6719	66	17	5	100	83	20	78	48	GM
38-120-10/16677	478	6894	67	14	7	104	81	16	85	51	GM
38-120-10/16680	411	7160	67	17	5	98	90	22	83	50	GM
38-120-10/16681	385	7733	89	16	15	139	8	42	159	50	VR
38-120-10/16683	424	6541	82	13	9	96	83	16	84	48	GM
38-120-10/16684	371	6986	89	19	9	99	80	17	81	46	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/16691	673	6851	55	15	8	97	80	20	85	52	GM
38-120-10/16693	572	6552	108	14	6	95	76	17	76	46	GM
38-120-10/16694	524	6474	81	16	6	101	79	16	77	49	GM
38-120-10/16698	567	6951	91	19	7	100	85	18	79	49	GM
38-120-10/16700	503	6714	78	19	5	92	86	16	79	44	GM
38-120-10/16703	540	6899	46	15	10	95	84	15	79	51	GM
38-120-10/16704	474	6681	70	13	6	89	81	16	80	46	GM
38-120-10/16705	399	6962	88	15	5	100	91	19	82	54	GM
38-120-10/16707	581	6845	82	18	7	107	78	16	81	46	GM
38-120-10/16708	581	7548	102	20	8	104	85	15	89	50	GM
38-120-10/16712	647	7014	76	16	7	103	74	20	83	48	GM
38-120-10/16716	437	6695	67	18	10	96	82	18	78	46	GM
38-120-10/16725	715	9637	101	15	15	116	97	18	89	52	GM
38-120-10/16727	515	7473	75	20	5	105	97	20	87	52	GM
38-120-10/16728	685	7223	77	13	10	100	81	21	86	53	GM
38-120-10/16729	452	7053	77	19	1	104	84	19	79	49	GM
38-120-10/16730	535	7498	82	18	8	106	85	19	84	51	GM
38-120-10/16732	548	7070	79	18	7	104	89	16	83	49	GM
38-120-10/16733	456	6960	64	20	6	98	86	20	86	48	GM
38-120-10/16737	619	6783	79	17	9	106	81	15	82	53	GM
38-120-10/16739	468	6431	75	19	25	221	3	38	87	52	MC
38-120-10/16751	410	8003	79	19	19	145	5	43	164	51	VR
38-120-10/16765	588	7386	79	19	9	109	89	19	87	51	GM
38-120-10/16770	658	6763	63	16	11	98	86	17	87	49	GM
38-120-10/16780	530	6738	66	13	10	99	83	17	85	49	GM
38-120-10/16781	701	6789	75	16	12	102	88	18	79	50	GM
38-120-10/16783	524	7126	82	18	7	100	83	17	80	47	GM
38-120-10/16784	505	7553	67	19	5	103	80	17	80	46	GM
38-120-10/16785	600	6556	59	17	4	97	79	18	85	49	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/16787	585	6970	86	21	8	98	83	22	85	53	GM
38-120-10/16788	476	6904	68	15	9	101	85	14	80	52	GM
38-120-10/16789	421	8194	144	28	46	363	-0	79	168	212	SM
38-120-10/16790	502	6789	88	24	5	98	84	17	78	50	GM
38-120-10/16791	624	6430	110	22	4	91	76	16	79	45	GM
38-120-10/16792	536	6828	89	22	5	103	89	19	86	50	GM
38-120-10/16793	587	6972	72	20	6	104	76	16	83	51	GM
38-120-10/16794	640	7383	74	14	11	104	80	17	82	49	GM
38-120-10/16796	643	8489	102	21	23	195	2	58	169	87	VR
38-120-10/16797	623	6692	70	19	8	97	85	21	82	52	GM
38-120-10/16798	589	6453	56	17	4	106	80	13	81	46	GM
38-120-10/16800	631	7545	68	18	9	104	91	20	85	48	GM
38-120-10/16801	549	6913	92	16	9	101	90	17	82	51	GM
38-120-10/16802	627	6844	83	20	8	102	83	16	84	50	GM
38-120-10/16803	629	6821	87	15	10	100	81	17	85	49	GM
38-120-10/16804	635	7589	92	16	10	104	88	19	85	57	GM
38-120-10/16805	631	6868	89	17	8	100	85	19	81	52	GM
38-120-10/16806	514	6640	80	21	9	103	83	21	87	49	GM
38-120-10/16807	730	7518	79	19	8	104	85	21	82	52	GM
38-120-10/16808	592	6636	81	17	5	97	87	15	78	49	GM
38-120-10/16809	467	7157	70	19	5	100	76	20	81	46	GM
38-120-10/16810	431	7070	82	16	7	94	80	20	85	51	GM
38-120-10/16811	520	5701	59	13	20	112	40	19	106	56	CC
38-120-10/16812	585	6873	79	15	8	103	91	16	84	55	GM
38-120-10/16814	763	7274	72	16	13	107	90	16	81	51	GM
38-120-10/16818	367	7172	58	12	28	209	15	41	117	25	MC
38-120-10/16824	286	7700	78	16	12	138	6	42	154	51	VR
38-120-10/16825	712	6982	89	17	9	102	81	18	85	50	GM
38-120-10/16827	440	7173	89	19	7	103	82	17	86	49	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/16828	633	6724	82	15	8	105	85	16	86	46	GM
38-120-10/16830	600	6601	74	18	3	104	81	21	84	48	GM
38-120-10/16832	377	7267	70	16	9	95	76	15	86	46	GM
38-120-10/16833	558	6946	97	17	8	96	88	16	83	49	GM
38-120-10/16837	526	7571	87	20	10	106	83	23	88	49	GM
38-120-10/16838	608	7274	72	20	5	108	87	19	82	53	GM
38-120-10/16841	430	6630	86	14	13	97	85	17	87	52	GM
38-120-10/16842	537	6801	93	19	10	100	78	18	83	50	GM
38-120-10/16843	549	6337	75	19	8	99	80	19	83	50	GM
38-120-10/16844	458	6583	82	17	6	94	85	14	79	47	GM
38-120-10/16846	538	6986	79	17	8	105	87	18	83	51	GM
38-120-10/16847	476	7001	80	20	6	96	89	18	85	53	GM
38-120-10/16849	603	6519	77	15	5	92	92	17	77	46	GM
38-120-10/16850	582	6813	75	13	5	105	86	18	85	50	GM
38-120-10/16858	563	6764	94	14	4	102	83	15	84	55	GM
38-120-10/16859	468	6436	69	17	5	98	77	14	81	46	GM
38-120-10/16860	607	6776	84	21	8	100	90	19	86	48	GM
38-120-10/16861	511	6457	68	16	10	89	75	16	80	46	GM
38-120-10/16862	593	7014	72	19	5	104	88	13	83	50	GM
38-120-10/16863	548	6713	84	21	11	93	87	19	82	49	GM
38-120-10/16864	478	6956	65	17	9	96	91	17	85	49	GM
38-120-10/16865	502	6829	83	18	4	101	82	14	81	49	GM
38-120-10/16866	555	7136	66	18	6	93	93	20	82	47	GM
38-120-10/16869	571	6437	68	15	10	93	83	17	84	44	GM
38-120-10/16876	525	6875	74	19	5	100	81	19	85	51	GM
38-120-10/16879	492	7064	86	20	6	107	88	18	84	49	GM
38-120-10/16895	598	7130	73	12	7	101	79	17	77	47	GM
38-120-10/16917	492	6500	82	18	10	94	79	18	82	47	GM
38-120-10/17096	513	7619	83	15	6	100	91	18	87	53	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
38-120-10/17614	479	7126	78	21	10	96	80	19	80	52	GM
38-120-10/18612	330	7362	78	19	12	99	91	17	80	47	GM
39-97-10/19483	623	7418	71	19	5	104	84	22	85	54	GM
39-97-10/19493	480	7678	228	25	11	121	124	20	79	51	-
39-97-10/19496	462	7351	87	16	6	103	94	18	88	48	GM
39-97-10/19498	555	7299	75	19	27	222	14	42	109	25	MC
39-97-10/19500	532	6869	87	19	9	104	88	19	85	53	GM
39-97-10/19501	502	5922	64	17	12	194	19	29	81	30	MC
39-97-10/19508	522	6332	77	17	7	91	79	22	82	48	GM
39-97-10/19512	815	8942	88	20	9	119	100	18	85	51	-
39-97-10/19516	392	9279	97	18	17	171	4	41	179	56	VR
39-97-10/19520	566	7055	63	15	10	108	83	18	83	49	GM
39-97-10/19522	394	7575	62	20	31	226	2	41	102	53	MC
39-97-10/19524	360	6893	88	17	7	100	77	17	82	49	GM
39-97-10/19529	428	7226	66	16	1	93	85	17	85	48	GM
39-97-10/19530	708	8796	110	22	25	181	2	63	181	90	VR
39-97-10/19533	526	7391	69	13	7	105	87	20	88	47	GM
39-97-10/19534	459	7077	69	18	7	107	84	18	78	49	GM
39-97-10/19536	465	7058	92	19	8	100	90	19	86	50	GM
39-97-10/19538	521	7063	71	12	4	104	95	19	81	50	GM
39-97-10/19541	776	6851	82	25	9	105	88	18	82	49	GM
39-97-10/19544	492	7000	93	16	5	100	90	20	124	49	-
39-97-10/19551	443	7221	79	15	8	100	85	19	83	48	GM
39-97-10/19557	519	6299	70	15	5	95	78	19	81	49	GM
39-97-10/19567	548	6847	83	20	11	110	86	18	80	49	GM
39-97-10/19568	560	6500	70	13	9	93	82	19	76	48	GM
39-97-10/19569	709	6436	85	16	7	91	79	19	78	43	GM
39-97-10/19570	815	7870	81	20	16	115	96	20	92	50	GM
39-97-10/19571	574	6621	75	17	11	97	82	17	86	51	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
39-97-10/19572	561	6553	81	21	9	94	85	12	82	50	GM
39-97-10/19573	612	7374	71	18	7	102	85	18	84	48	GM
39-97-10/19576	450	6815	80	17	7	101	80	20	84	53	GM
39-97-10/19581	542	6764	80	21	7	101	89	14	82	50	GM
39-97-10/19582	703	6962	74	21	7	102	87	19	86	49	GM
39-97-10/19583	621	6700	79	21	8	98	87	15	82	45	GM
39-97-10/19584	651	6836	59	14	6	104	85	18	79	50	GM
39-97-10/19585	592	7399	64	16	11	97	84	16	85	50	GM
39-97-10/19586	594	6985	71	14	7	129	74	21	78	52	GM
39-97-10/19587	636	6975	59	14	8	99	84	20	87	51	GM
39-97-10/19588	583	7147	78	15	13	106	89	19	79	48	GM
39-97-10/19592	672	6385	72	16	8	96	78	19	75	47	GM
39-97-10/19597	626	7254	89	19	8	101	91	20	86	55	GM
39-97-10/19599	644	6781	62	14	11	98	85	18	78	49	GM
39-97-10/19602	604	6902	94	18	8	100	83	18	85	51	GM
39-97-10/19606	464	6789	81	20	9	98	89	23	81	46	GM
39-97-10/19609	507	6557	81	17	7	96	86	17	77	51	GM
39-97-10/19610	650	6446	85	17	8	99	84	18	78	48	GM
39-97-10/19613	509	6618	82	17	10	98	84	15	81	46	GM
39-97-10/19614	431	6916	98	23	1	92	83	21	85	46	GM
39-97-10/19615	554	6885	91	22	8	107	82	20	81	49	GM
39-97-10/19616	504	7238	73	16	6	102	86	18	88	50	GM
39-97-10/19618	656	7358	86	19	10	101	86	19	79	47	GM
39-97-10/19619	480	6892	83	14	5	101	80	15	83	50	GM
39-97-10/19621	634	7288	91	15	9	104	82	17	84	50	GM
39-97-10/19622	724	6922	105	18	8	101	87	22	82	48	GM
39-97-10/19624	502	7295	99	20	6	104	82	15	82	51	GM
39-97-10/19625	380	7474	74	20	9	93	86	23	87	47	GM
39-97-10/19626	475	7217	85	20	4	102	87	18	85	51	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
39-97-10/19627	455	7529	76	17	11	105	90	21	82	48	GM
39-97-10/19628	577	7101	76	17	6	100	86	17	81	52	GM
39-97-10/19636	538	7076	68	19	8	101	84	18	80	47	GM
39-97-10/19640	407	8187	96	22	14	155	6	40	166	50	VR
39-97-10/19645	550	6797	86	21	10	98	88	15	78	50	GM
39-97-10/19648	470	7932	176	25	48	346	1	77	160	208	SM
39-97-10/19658	510	7036	76	18	2	97	82	21	83	46	GM
39-97-10/19659	510	6806	90	18	8	103	85	16	82	45	GM
39-97-10/19661	562	6619	74	16	4	93	78	17	81	43	GM
39-97-10/19662	663	6699	85	14	9	97	79	19	76	49	GM
39-97-10/19663	575	6468	79	20	8	90	84	17	79	50	GM
39-97-10/19665	610	7333	82	17	7	101	84	17	87	52	GM
39-97-10/19667	655	7780	84	19	8	115	91	15	86	53	GM
39-97-10/19668	425	7354	73	15	4	105	83	18	84	49	GM
39-97-10/19669	610	6917	71	14	3	97	80	19	81	47	GM
39-97-10/19670	465	7369	77	20	13	106	91	15	84	53	GM
39-97-10/19671	566	7179	69	15	5	109	76	19	87	53	GM
39-97-10/19672	524	7037	74	15	9	105	92	14	82	49	GM
39-97-10/19673	587	6877	101	23	9	103	80	20	81	50	GM
39-97-10/19674	336	8000	77	17	13	140	6	38	161	51	VR
39-97-10/19675	540	7189	68	21	6	108	85	17	85	52	GM
39-97-10/19676	528	6892	75	19	6	95	89	21	86	49	GM
39-97-10/19677	683	7668	97	14	7	103	85	15	84	47	GM
39-97-10/19678	643	7029	71	16	7	99	78	17	82	46	GM
39-97-10/19681	393	6609	61	16	6	99	84	17	86	49	GM
39-97-10/19683	468	6633	89	16	5	99	90	21	84	53	GM
39-97-10/19685	558	6867	71	21	8	101	81	16	85	46	GM
39-97-10/19686	578	6779	68	13	8	99	83	18	83	51	GM
39-97-10/19688	756	6789	85	19	5	89	80	19	81	49	GM

PMAE Object Number	Mn	Fe	Zn	Ga	Th	Rb	Sr	Y	Zr	Nb	Assigned Source
39-97-10/19689	508	6122	93	15	2	90	72	14	73	48	GM
39-97-10/19691	430	7142	60	14	7	102	87	19	81	46	GM

APPENDIX B **OBSIDIAN SOURCE DATA**

OVERVIEW The following tables convey the ranges and statistics for elemental concentrations of the obsidian sources that were used to assign samples in this study to geochemical groups. Sources are presented in alphabetical order. All measurements are in parts per million (ppm). N = number of samples reported.

TABLE B.1 *Bearhead Rhyolite (Paliza Canyon)*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Zn	51	41	145	62.2	3.3	23.8
Rb	51	87	111	100.5	0.7	5.1
Sr	51	76	99	86.9	0.7	4.8
Y	51	20	29	24.7	0.3	2.2
Zr	51	112	142	127.4	1.0	7.2
Nb	51	27	41	32.9	0.4	2.9
Ba	51	1445	1883	1654.8	10.3	73.2
Pb	51	15	25	19.6	0.3	2.3
Th	51	7	21	14.3	0.5	3.2

Source: Shackley et al. 2016. Statistics recalculated from raw data

TABLE B.2 *Canovas Canyon Rhyolite (Bear Springs Peak)*

Element	N	Min.	Max.	Mean	Std. Dev.
Ti	15	279	630	460	112
Mn	24	227	609	398	117
Fe	9	6245	7685	6593	431
Rb	24	106	128	116	5
Sr	24	36	54	43	4
Y	24	16	27	21	2
Zr	24	100	114	108	4

Element	N	Min.	Max.	Mean	Std. Dev.
Nb	24	40	61	53	5
Ba	16	293	717	352	99

Source: Shackley 2017 (<http://swxrflab.net/jemez.htm>). No std. error was provided for this dataset

TABLE B.3 *Cerro Toledo Rhyolite*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Ti	12	317	633	470	30	103
Mn	12	408	600	523	16	56
Fe	12	8242	10616	9735	192	666
Rb	20	179	222	207	2	11
Sr	20	0	7	5	1	3
Y	20	58	69	63	1	3
Zr	20	162	193	183	2	7
Nb	20	90	105	98	1	4
Ba	18	0	49	23	5	21

Source: Shackley 2017 (<http://swxrflab.net/jemez.htm>)

TABLE B.4 *El Rechuelos Rhyolite*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Ti	5	526	689	581	29	65
Mn	5	420	451	434	5	11
Fe	5	6362	7055	6676	133	296
Rb	15	146	165	152	1	6
Sr	15	2	11	9	1	3
Y	15	21	25	23	0	1
Zr	15	68	81	77	1	3
Nb	15	45	52	47	1	2
Ba	13	10	51	24	4	16

Source: Shackley 2017 (<http://swxrflab.net/jemez.htm>)

TABLE B.5 *Government Mountain*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Ti	15	592	792	639.2	13.5	52.2
Mn	25	452	603	521.0	7.9	39.6
Fe	25	7115	9536	8333.2	106.9	534.4
Zn	15	49	65	57.5	1.0	4.0
Rb	25	99	116	106.6	0.7	3.6
Sr	25	71	84	76.6	0.6	3.1
Y	25	17	23	19.6	0.3	1.7
Zr	25	73	91	82.5	0.7	3.6
Nb	25	47	55	51.1	0.5	2.4
Ba	25	322	397	364.7	3.6	18.2
Pb	15	27	34	31.2	0.5	2.0
Th	15	7	18	11.0	0.7	2.8

Source: Shackley 2017 (<http://swxrflab.net/sfvolfld.htm>). Statistics recalculated from raw data

TABLE B.6 *Grants Ridge*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Mn	15	768	1026	849.4	16.7	64.5
Fe	15	7655	9114	8303.0	99.3	384.7
Zn	15	130	180	154.1	3.0	11.8
Rb	15	514	626	570.1	7.5	29.2
Sr	15	1	7	4.0	0.3	1.3
Y	15	72	80	76.3	0.6	2.4
Zr	15	115	126	118.9	0.9	3.6
Nb	15	186	210	197.5	1.6	6.2
Ba	15	11	16	13.1	0.4	1.5
La	11	4	9	6.2	0.5	1.7
Ce	8	16	19	17.8	0.4	1.2
Th	8	26	41	34.3	1.7	4.7

Source: Shackley 1998. Statistics recalculated from raw data

TABLE B.7 *Horace Mesa*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Mn	11	580	692	654.4	9.9	32.7
Fe	11	9170	10248	9564.8	92.0	305.0
Zn	11	164	201	179.0	3.0	10.0
Rb	11	499	557	531.2	5.0	16.6
Sr	11	2	6	3.5	0.4	1.2
Y	11	82	92	87.6	1.0	3.3
Zr	11	136	151	143.2	1.5	4.9
Nb	11	227	247	236.9	2.0	6.7
Ba	11	15	20	17.5	0.5	1.6
La	11	6	13	9.1	0.6	2.1
Ce	11	20	28	23.7	0.7	2.3
Th	11	35	46	40.6	0.9	3.0

Source: Shackley 1998. Statistics recalculated from raw data

TABLE B.8 *La Jara Mesa*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Mn	9	487	595	525.1	11.2	33.5
Fe	9	8792	10233	9334.1	133.6	400.9
Zn	9	157	212	181.6	5.2	15.5
Rb	9	448	517	482.2	6.4	19.2
Sr	9	10	13	11.2	0.3	1.0
Y	9	81	91	86.8	1.1	3.4
Zr	9	124	138	131.0	1.4	4.2
Nb	9	218	232	225.0	1.6	4.9
Ba	9	0	22	4.6	2.6	7.8
Pb	9	50	62	53.9	1.1	3.4
Th	9	20	29	25.4	0.9	2.6

Source: Shackley 2017 (<http://swxrflab.net/grants.htm>). Statistics recalculated from raw data

TABLE B.9 *Sitgreaves Mountain / RS Hill*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Ti	30	210	916	470.8	39.5	216.4
Mn	30	354	476	418.6	5.1	27.7
Fe	30	8827	10995	9970.1	95.7	524.3
Zn	9	139	171	154.8	2.8	8.3
Rb	30	367	424	398.5	2.6	14.1
Sr	30	0	13	7.1	0.5	2.9
Y	30	82	100	88.7	0.7	4.1
Zr	30	155	183	171.4	1.4	7.4
Nb	30	246	272	260.4	1.1	6.2
Ba	30	0	48	31.7	3.5	19.4
Pb	9	70	87	80.7	1.7	5.0
Th	9	41	57	48.6	1.7	5.1

Source: Shackley 2017 (<http://swxrflab.net/sfvolfld.htm>). Statistics recalculated from raw data

TABLE B.10 *Valles Rhyolite (Cerro del Medio)*

Element	N	Min.	Max.	Mean	Std. Error	Std. Dev.
Ti	16	838	1066	933.2	14.7	58.9
Mn	27	393	606	497.1	14.9	77.4
Fe	27	8358	14160	10668.8	461.3	2396.8
Rb	42	140	178	157.2	1.3	8.2
Sr	42	5	15	10.0	0.3	1.9
Y	42	32	49	42.5	0.5	3.0
Zr	42	151	179	169.5	0.9	5.9
Nb	42	44	64	54.3	0.5	3.3
Ba	40	10	62	31.3	1.9	12.2

Source: Shackley 2017 (<http://swxrflab.net/jemez.htm>). Statistics recalculated from raw data

BIBLIOGRAPHY

Adams, E. Charles

- 1989 Passive Resistance: Hopi Responses to Spanish Contact and Conquest. In *Columbian Consequences, Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West*, edited by David Hurst Thomas, pp. 77–91. Smithsonian Institution Press, Washington, D.C.
- 1991 *The Origin and Development of the Pueblo Katsina Cult*. University of Arizona Press, Tucson.
- 1996 The Pueblo III-Pueblo IV Transition in the Hopi Area, Arizona. In *The Prehistoric Pueblo World, A.D. 1150-1350*, edited by Michael A. Adler, William D. Lipe, and Stephen H. Lekson, pp. 48–58. University of Arizona Press, Tucson.
- 2002 *Homol'ovi: An Ancient Hopi Settlement Cluster*. University of Arizona Press, Tucson.
- 2013 Prehispanic Jeddito Yellow Ware: An Overview. *Kiva* 79(2): 105–124.

Adams, E. Charles, and Andrew I. Duff (editors)

- 2004 *The Protohistoric Pueblo World, A.D. 1275-1600*. University of Arizona Press, Tucson.

Adams, E. Charles, Miriam T. Stark, and Deborah S. Dosh

- 1993 Ceramic Distribution and Exchange: Jeddito Yellow Ware and Implications for Social Complexity. *Journal of Field Archaeology* 20(1): 3–21.

Adams, E. Charles, Vincent M. LaMotta, and Kurt Dongoske

- 2004 Hopi Settlement Clusters Past and Present. In *The Protohistoric Pueblo World, A.D. 1275-1600*, edited by E. Charles Adams and Andrew I. Duff, pp. 128–136. University of Arizona Press, Tucson.

Adams, John

- 1957 Culture and Conflict in an Egyptian Village. *American Anthropologist* 59(2): 225–235.

Adams, Karen R.

- 2015 The Archaeology and Agronomy of Ancient Maize (*Zea Mays* L.). In *Traditional Arid Lands Agriculture Understanding the Past for the Future*, edited by Robert C. Hunt and Scott E. Ingram, pp. 15–53. The University of Arizona Press, Tucson.

Adler, Michael

- 2002 Negotiating the Village: Community Landscapes in the Late Pre-Historic American Southwest. In *Inscribed Landscapes: Marking and Making Place*, edited by Bruno David and Meredith Wilson, pp. 200–216. University of Hawai'i Press, Honolulu.

Adler, Michael, William D. Lipe, and Stephen H. Lekson (editors)

- 1996 *The Prehistoric Pueblo World, A.D. 1150-1350*. University of Arizona Press, Tucson.

Allen, Rebecca

- 1998 *Native Americans at Mission Santa Cruz, 1791-1834: Interpreting the Archaeological Record*. Perspectives in California Archaeology No. 5. Institute of Archaeology, University of California, Los Angeles.

Anderson, David G.

- 1994 Factional Competition and the Political Evolution of Mississippian Chiefdoms in the Southeastern United States. In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 61–75. Cambridge University Press, Cambridge.

Anschuetz, Kurt F.

- 2007 The Valles Caldera National Preserve as a Multi-Layered Ethnographic Landscape. In *More than a Scenic Mountain Landscape: Valles Caldera National Preserve Land Use History*, edited by Kurt F. Anschuetz and Thomas Merlan. General Technical Report RMRS-GTR-196. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Ft. Collins, CO.

- Anschuetz, Kurt F., and Thomas Merlan (editors)
 2007 *More than a Scenic Mountain Landscape: Valles Caldera National Preserve Land Use History*. General Technical Report RMRS-GTR-196. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Ft. Collins, CO.
- Anyon, Roger
 2001 Initial Hopi Ethnographic Study and Reconnaissance for the Enchanted Skies Park and Observatory, Cibola County, New Mexico. Heritage Resources Management Consultants, LLC, Tucson, AZ.
- Arakawa, Fumiyasu, Scott G. Ortman, M. Steven Shackley, and Andrew I. Duff
 2011 Obsidian Evidence of Interaction and Migration From the Mesa Verde Region, Southwest Colorado. *American Antiquity* 76(4): 773–795.
- Arbolino, Risa Diamond, and Kit Nelson
 2014 Patterns of Ceramic Exchange During the Classic and Historic Periods in the Jemez Area: Evidence From Early Excavations at Amoxiumqua and Giusewa. *Kiva* 79(4): 428–458.
- Arkush, Brooke S.
 1993 Yokuts Trade Networks and Native Culture Change in Central and Eastern California. *Ethnohistory* 40(4): 619.
 2011 Native Responses to European Intrusion: Cultural Persistence and Agency among Mission Neophytes in Spanish Colonial Northern California. *Historical Archaeology* 45(4): 62–90.
- Asad, Talal
 1993 *Genealogies of Religion: Discipline and Reasons of Power in Christianity and Islam*. Johns Hopkins University Press, Baltimore.
- Ashmore, Wendy
 2007 Building Social History at Pueblo Bonito: Footnotes to a Biography of Place. In *The Architecture of Chaco Canyon, New Mexico*, edited by Steven Lekson, pp. 179–198. University of Utah Press, Salt Lake City.
- Axtell, James
 1985 *The Invasion Within: The Contest of Cultures in Colonial North America*. Oxford University Press, New York.
 1988 *After Columbus: Essays in the Ethnohistory of Colonial North America*. Oxford University Press, New York.
- Baer, Marc David
 2014 History and Religious Conversion. In *The Oxford Handbook of Religious Conversion*, edited by Lewis R. Rambo and Charles E. Farhadian. Oxford University Press, Oxford.
- Bailey, R. A., R. L. Smith, and C. S. Ross
 1969 Stratigraphic Nomenclature of Volcanic Rocks in the Jemez Mountains, New Mexico. Washington, D.C.: USGPO.
- Ball, Jane Anne
 1990 *Contradiction and Compliance in a New Mexico Pueblo*. PhD dissertation, University of Minnesota, Minneapolis. ProQuest Dissertations Publishing.
- Bandelier, Adolph Francis
 1881 *Historical Introduction to Studies Among the Sedentary Indians of New Mexico; Report on the Ruins of the Pueblo of Pecos*. Papers of the Archaeological Institute of America, American Series No. 1. A. Williams, Boston.
- Barrett, Elinore M.
 2002 The Geography of the Rio Grande Pueblos in the Seventeenth Century. *Ethnohistory* 49(1): 123–169.

- 2012 *The Spanish Colonial Settlement Landscapes of New Mexico, 1598-1680*. University of New Mexico Press, Albuquerque.
- Baugh, Timothy G., and Fred W. Nelson
1987 New Mexico Obsidian Sources and Exchange on the Southern Plains. *Journal of Field Archaeology* 14(3): 313–329.
- Benavides, Alonso de
1996 [1630] *A Harvest of Reluctant Souls: The Memorial of Fray Alonso De Benavides, 1630*. Trans. Baker H. Morrow. University Press of Colorado, Niwot, CO
2012 [1630] *A Harvest of Reluctant Souls: Fray Alonso de Benavides's History of New Mexico, 1630*. Trans. Baker H. Morrow. University of New Mexico Press, Albuquerque.
- Berkhofer, Robert F.
1971 The Political Context of a New Indian History. *Pacific Historical Review* 40: 357–382.
- Bernardini, Wesley
2005a *Hopi Oral Tradition and the Archaeology of Identity*. University of Arizona Press, Tucson.
2005b Reconsidering Spatial and Temporal Aspects of Prehistoric Cultural Identity: A Case Study from the American Southwest. *American Antiquity* 70(1): 31–54.
2007 Jeddito Yellow Ware and Hopi Social Networks. *Kiva* 72(3): 295–328.
2011 North, South, and Center: An Outline of Hopi Ethnogenesis. In *Religious Transformation in the Late Pre-Hispanic Pueblo World*, edited by Donna M. Glowacki and Scott Van Keuren, pp. 196–220. *Amerind Studies in Archaeology* 8. University of Arizona Press, Tucson.
- Bhabha, Homi K.
1994 *The Location of Culture*. Routledge, London.
- Bishop, Ronald L., Veletta Canouts, Suzanne P. De Atley, Alfred Qöyawayma, and C. W. Aikins
1988 The Formation of Ceramic Analytical Groups: Hopi Pottery Production and Exchange, A. C. 1300–1600. *Journal of Field Archaeology* 15(3): 317–337.
- Blair, Elliot Hampton
2015 *Making Mission Communities: Population Aggregation, Social Networks, and Communities of Practice at 17th Century Mission Santa Catalina de Guale*. PhD dissertation, University of California, Berkeley. ProQuest Dissertations Publishing.
- Blakey, Ronald C., and Wayne Ranney
2008 *Ancient Landscapes of the Colorado Plateau*. Grand Canyon Association, Grand Canyon, AZ.
- Bletzer, Michael
2009 “Pueblos Without Names”: A Case Study of Piro Settlement in Early Colonial New Mexico. Ph.D. dissertation, Southern Methodist University, Dallas, TX. ProQuest Dissertations Publishing.
- Blitz, John H.
1999 Mississippian Chiefdoms and the Fission-Fusion Process. *American Antiquity* 64(4): 577–592.
2009 New Perspectives in Mississippian Archaeology. *Journal of Archaeological Research* 18(1): 1–39.
- Boissevain, Jeremy
1964 Factions, Parties, and Politics in a Maltese Village. *American Anthropologist* 66(6): 1275–1287.
- Bolton, Herbert E.
1917 The Mission as a Frontier Institution in the Spanish-American Colonies. *The American Historical Review* 23(1): 42–61.
1921 *The Spanish Borderlands: A Chronicle of Old Florida and the Southwest*. Yale University Press, New Haven.

Bradfield, Maitland

- 1971 *The Changing Pattern of Hopi Agriculture*. Royal Anthropological Institute of Great Britain and Ireland, Occasional Paper No. 30. Royal Anthropological Institute, London.

Brew, John Otis

- 1937 The First Two Seasons at Awatovi. *American Antiquity* 3(2): 122–137.
- 1939 Preliminary Report of the Peabody Museum Awatovi Expedition of 1937. *American Antiquity* 5(2): 103–114.
- 1940 Preliminary Report of the Peabody Museum Awatovi Expedition of 1939. *Plateau* 13(3): 37–48.
- 1949a II: The Excavations of Franciscan Awatovi. In *Franciscan Awatovi: The Excavation and Conjectural Reconstruction of a 17th-Century Spanish Mission Establishment at a Hopi Indian Town in Northeastern Arizona*, pp. 45–108. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University 36. The Museum, Cambridge, Mass.
- 1949b I: The History of Awatovi. In *Franciscan Awatovi: The Excavation and Conjectural Reconstruction of a 17th-Century Spanish Mission Establishment at a Hopi Indian Town in Northeastern Arizona*, pp. 1–43. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University 36. The Museum, Cambridge, Mass.
- 1979 Hopi Prehistory and History to 1850. In *Handbook of North American Indians*, Vol. 9: Southwest, edited by Alfonso Ortiz, pp. 514–523. Smithsonian Institution, Washington, D.C.

Brooks, James

- 2013 Women, Men, and Cycles of Evangelism in the Southwest Borderlands, A.D. 750 to 1750. *The American Historical Review* 118(3): 738–764.
- 2016 *Mesa of Sorrows: A History of the Awat'ovi Massacre*. W.W. Norton & Company, New York, NY.

Brown, Tracy L.

- 2000 *Ideologies of Indianness in New Mexico, 1692–1820: Personhood and Identity in the Colonial Encounter*. PhD dissertation, Duke University, Durham, NC. ProQuest Dissertations Publishing.

Brugge, David M.

- 1969 Pueblo Factionalism and External Relations. *Ethnohistory* 16(2): 191–200.

Brumfiel, Elizabeth M.

- 1992 Distinguished Lecture in Archeology: Breaking and Entering the Ecosystem—Gender, Class, and Faction Steal the Show. *American Anthropologist* 94(3): 551–567.
- 1994 Factional Competition and Political Development in the New World: An Introduction. In *Factional Competition and Political Development in the New World*, edited by Elizabeth M. Brumfiel and John W. Fox, pp. 3–13. New Directions in Archaeology. Cambridge University Press, Cambridge.

Brumfiel, Elizabeth M., and John W. Fox (editors)

- 1994 *Factional Competition and Political Development in the New World*. New Directions in Archaeology. Cambridge University Press, Cambridge.

Bruwelheide, Karin S., Douglas W. Owsley, and Richard L. Jantz

- 2010 Burials from the Fourth Mission Church at Pecos. In *Pecos Pueblo Revisited: The Biological and Social Context*, edited by Michèle E. Morgan, pp. 129–160. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 85. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.

Bujra, Janet M.

- 1973 The Dynamics of Political Action: A New Look at Factionalism. *American Anthropologist* 75(1): 132–152.

Burgh, Robert F.

- 1959 Ceramic Profiles in the Western Mound at Awatovi, Northeastern Arizona. *American Antiquity* 25(2): 184–202.

- Burkhart, Louise M.
1989 *The Slippery Earth: Nahua-Christian Moral Dialogue in Sixteenth-Century Mexico*. University of Arizona Press, Tucson.
- Burns, Penny Lee
1975 *A Folklore Analysis of Pre-Contact Factionalism at Isleta Pueblo, New Mexico*. Master's thesis, The American University, Washington, DC. ProQuest Dissertations Publishing.
- Byers, A. Martin
2006 *Cahokia: A World Renewal Cult Hierarchy*. University Press of Florida, Gainesville, FL.
- Cameron, Catherine M.
1992 An Analysis of Residential Patterns and the Oraibi Split. *Journal of Anthropological Archaeology* 11(2): 173–186.
1999a *Hopi Dwellings: Architectural Change at Orayvi*. University of Arizona Press, Tucson.
1999b Room Size, Organization of Construction, and Archaeological Interpretation in the Puebloan Southwest. *Journal of Anthropological Archaeology* 18(2): 201–239.
- Campisi, Jack
1980 Fur Trade and Factionalism of the Eighteenth Century Oneida Indians. In *Studies on Iroquoian Culture*, edited by Nancy Bonvillain, pp. 37–46. Occasional Publications in Northeastern Anthropology No. 6. Dept. of Anthropology, Franklin Pierce College, Rindge, NH.
- Capone, Patricia
1995 *Mission Pueblo Ceramic Analyses: Implications for Protohistoric Interaction Networks and Cultural Dynamics*. PhD dissertation, Harvard University, Cambridge, MA. ProQuest Dissertations Publishing.
- Castaño de Sosa, Gaspar
1965 *A Colony on the Move: Gaspar Castaño De Sosa's Journal, 1590-1591*. Edited by Albert H. Schroeder, translated by Daniel S. Matson. School of American Research, Santa Fe, NM.
- Chapin-Pyritz, Regina Louise
2000 *The Effects of Spanish Contact on Hopi Faunal Utilization in the American Southwest*. PhD dissertation, University of Arizona, Tucson. ProQuest Dissertations Publishing.
- Christensen, Mark
2016 Recent Approaches in Understanding Evangelization in New Spain. *History Compass* 14(2): 39–48.
- Cipolla, Craig N.
2013 *Becoming Brothertown: Native American Ethnogenesis and Endurance in the Modern World*. University of Arizona Press, Tucson.
- Cipolla, Craig N., and Katherine Howlett Hayes (editors)
2015 *Rethinking Colonialism: Comparative Archaeological Approaches*. University Press of Florida, Gainesville.
- Clemmer, Richard O.
1978 *Continuities of Hopi Culture Change*. Acoma Books, Ramona, CA.
- Cobb, Charles R. (editor)
2003 *Stone Tool Traditions in the Contact Era*. University of Alabama Press, Tuscaloosa.
- Collins, John J.
1967 Peyotism and Religious Membership at Taos Pueblo, New Mexico. *The Southwestern Social Science Quarterly* 48(2): 183–191.

- Colton, Harold Sellers
1956 *Pottery Types of the Southwest*. Ceramic Series No. 3c. Northern Arizona Society of Science and Art, Flagstaff, AZ.
- Colwell–Chanthaphonh, Chip, and T. J. Ferguson
2006 Memory Pieces and Footprints: Multivocality and the Meanings of Ancient Times and Ancestral Places among the Zuni and Hopi. *American Anthropologist* 108(1): 148–162.
- Comaroff, Jean, and John L. Comaroff
1986 Christianity and Colonialism in South Africa. *American Ethnologist* 13(1): 1–22.
1991 *Of Revelation and Revolution*. University of Chicago Press, Chicago.
- Copeland, Kathryn
2012 *Payupki Polychrome and Ethnogenesis in Post-Pueblo Revolt Hopi Society*. PhD dissertation, Northern Arizona University, Flagstaff. ProQuest Dissertations Publishing.
- Cordell, Linda S.
1998 *Before Pecos: Settlement Aggregation at Rowe, New Mexico*. Anthropological Papers No. 6. Maxwell Museum of Anthropology, University of New Mexico, Albuquerque.
- Cordell, Linda S., and Don D. Fowler (editors)
2005 *Southwest Archaeology in the Twentieth Century*. University of Utah Press, Salt Lake City.
- Cordell, Linda S., and Judith A. Habicht-Mauche (editors)
2012 *Potters and Communities of Practice: Glaze Paint and Polychrome Pottery in the American Southwest, A.D. 1250 to 1700*. Anthropological Papers of the University of Arizona No. 75. University of Arizona Press, Tucson.
- Courlander, Harold
1971 *The Fourth World of the Hopis*. Crown, New York.
- Creamer, Winifred
2008 Regional Interactions and Regional Systems in the Protohistoric Rio Grande. In *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange Across the American Southwest and Beyond*, edited by Michelle Hegmon, pp. 99–118. Proceedings of the 1996 Southwest Symposium. University Press of Colorado, Boulder.
- Crown, Patricia L.
1994 *Ceramics and Ideology: Salado Polychrome Pottery*. University of New Mexico Press, Albuquerque.
- Daughters, Anton
2009 A Seventeenth-Century Instance of Hopi Clowning? The Trial of Juan Suñi, 1659: Hayden Student Paper Award Winner. *Kiva* 74(4): 447–463.
- David, Bruno, and Meredith Wilson (editors)
2002 *Inscribed Landscapes: Marking and Making Place*. University of Hawai‘i Press, Honolulu.
- Davis, Hester A.
2008 *Remembering Awatovi: The Story of an Archaeological Expedition in Northern Arizona, 1935/1939*. Peabody Museum Monographs No. 10. Peabody Museum Press, Harvard University, Cambridge, MA.
- Deagan, Kathleen
1990 Accommodation and Resistance: The Process and Impact of Spanish Colonization in the Southeast. In *Columbian Consequences, Vol. 2: Archaeological and Historical Perspectives on the Spanish Borderlands East*, edited by David Hurst Thomas, pp. 297–314. Smithsonian Institution Press, Washington, D.C.
1993 St. Augustine and the Mission Frontier. In *The Spanish Missions of La Florida*, edited by Bonnie G. McEwan, pp. 87–110. University Press of Florida, Gainesville.

- Dein, Simon
 2010 Judeo-Christian Religious Experience and Psychopathology: The Legacy of William James. *Transcultural Psychiatry* 47(4): 523–547.
- Dongoske, Kurt E., and Cindy K. Dongoske
 2002 History in Stone: Evaluating Spanish Conversion Efforts through Hopi Rock Art. In *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*, edited by Robert W. Preucel, pp. 114–131. University of New Mexico Press, Albuquerque.
- Douglass, John, and William M. Graves (editors)
 2017 *New Mexico and the Pimería Alta: The Colonial Period in the American Southwest*. University Press of Colorado, Boulder.
- Dozier, Edward P.
 1958 Spanish-Catholic Influences on Rio Grande Pueblo Religion. *American Anthropologist* 60(3): 441–448.
 1966 Factionalism at Santa Clara Pueblo. *Ethnology* 5(2): 172–185.
 1970 *The Pueblo Indians of North America*. Holt, Rinehart and Winston, New York.
- Dubuisson, Daniel
 2003 *The Western Construction of Religion: Myths, Knowledge, and Ideology*. Johns Hopkins University Press, Baltimore, Md.
- Duff, Andrew I.
 2002 *Western Pueblo Identities: Regional Interaction, Migration, and Transformation*. University of Arizona Press, Tucson.
- Duff, Andrew I., Jeremy M. Moss, Thomas C. Windes, John Kantner, and M. Steven Shackley
 2012 Patterning in Procurement of Obsidian in Chaco Canyon and in Chaco-Era Communities in New Mexico as Revealed by X-Ray Fluorescence. *Journal of Archaeological Science* 39(9): 2995–3007.
- Dyer, Jennifer
 2010 *Colono Wares in the Western Spanish Borderlands: A Ceramic Technological Study*. PhD dissertation, University of New Mexico, Albuquerque. ProQuest Dissertations Publishing.
- Earle, Timothy
 1999 Production and Exchange in Prehistory. In *Companion Encyclopedia of Archaeology*, edited by Graeme Barker, pp. 608–635. Routledge, London.
- Eggan, Fred
 1950 *Social Organization of the Western Pueblos*. University of Chicago Press, Chicago.
- Eininger, Susan
 2002 Previous Archeological Work. In *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*, edited by Genevieve N. Head and Janet Dale Orcutt. Cultural Resources Management Professional Papers No. 66. Anthropology Projects, Cultural Resources Management, Intermountain Region, National Park Service, Dept. of the Interior, Santa Fe, NM.
- Ellis, Florence Hawley
 1959 An Outline of Laguna Pueblo History and Social Organization. *Southwestern Journal of Anthropology* 15(4): 325–347.
- Farwell, Robin E.
 1991 *An Architectural History of the Seventeenth-Century Mission Church of San José de Giusewa, Jemez State Monument, N.M.* PhD dissertation, University of New Mexico, Albuquerque. ProQuest Dissertations Publishing.

- Fenton, William N.
 1955 Factionalism in American Indian Society. In *Actes du IV^e congrès international des sciences anthropologiques et ethnologiques*, Vienne, Vol. 2, pp. 230–240. A. Holzhausens, Vienna.
 1957 *Factionalism at Taos Pueblo, New Mexico*. Bureau of American Ethnology Bulletin No. 164. Smithsonian Institution, Washington, D.C.
- Ferguson, T. J.
 2006 *History Is in the Land: Multivocal Tribal Traditions in Arizona's San Pedro Valley*. University of Arizona Press, Tucson.
- Ferguson, T.J., G. Lennis Berlin, and Leigh J. Kuwanwisiwma
 2009 Kukhepya: Searching for Hopi Trails. In *Landscapes of Movement*, edited by James Snead, Clark Erickson, and Andrew Darling, pp. 20–41. University of Pennsylvania Press, Philadelphia.
- Ferris, Neal
 2009 *The Archaeology of Native-Lived Colonialism: Challenging History in the Great Lakes*. University of Arizona Press, Tucson.
- Fewkes, Jesse Walter
 1891 A Few Summer Ceremonials at Zuñi Pueblo. In *A Journal of American Ethnology and Archaeology*, pp. 1–62. The Riverside Press, Cambridge, MA.
 1893 A-WA'-TO BI: An Archeological Verification of a Tusayan Legend. *American Anthropologist* 6(4): 363–376.
 1896 Preliminary Account of an Expedition to the Cliff Villages of the Red Rock Country, and the Tusayan Ruins of Sikyatki and Awatobi, Arizona, in 1895. In *Annual Report of the Board of Regents of the Smithsonian Institution*, pp. 557–588. Smithsonian Institution, Washington, DC.
 1898 Archeological Expedition to Arizona in 1895. In *Seventeenth Annual Report of the Bureau of American Ethnology*, pp. 519–744. Smithsonian Institution, Washington, DC.
 1899 The Winter Solstice Altars at Hano Pueblo. *American Anthropologist* 1(2): 251–276.
- Findlow, Frank J., Victoria C. Bennett, Jonathon E. Ericson, and Suzanne P. de Atley
 1975 A New Obsidian Hydration Rate for Certain Obsidians in the American Southwest. *American Antiquity* 40(3): 344–348.
- Flint, Richard, and Shirley Cushing Flint
 1992 The Coronado Expedition: Cicuye to the Rio de Cicuye Bridge. *New Mexico Historical Review* 67(2): 123–138.
 2005 (editors) *Documents of the Coronado Expedition, 1539-1542: "They Were Not Familiar With His Majesty, Nor Did They Wish to Be His Subjects."* Southern Methodist University Press, Dallas.
- Ford, Richard Irving
 1968 *An Ecological Analysis Involving the Population of San Juan Pueblo, New Mexico*. PhD dissertation, University of Michigan, Ann Arbor. ProQuest Dissertations Publishing.
- Fowles, Severin M.
 2004 *The Making of Made People: The Prehistoric Evolution of Hierocracy Among the Northern Tiwa of New Mexico*. PhD dissertation, University of Michigan, Ann Arbor. ProQuest Dissertations Publishing.
 2005 Historical Contingency and the Prehistoric Foundations of Moiety Organization among the Eastern Pueblos. *Journal of Anthropological Research* 61(1): 25–52.
 2012 *An Archaeology of Doings: Secularism and the Study of Pueblo Religion*. School for Advanced Research Press, Santa Fe.
- Fox, Anne A.
 1991 *Archaeology of the Spanish Missions of Texas*. Spanish Borderlands Sourcebooks No. 21. Garland, New York.

- Fox, J. R.
1961 Veterans and Factions in Pueblo Society. *Man* 61: 173–176.
- Francis, J. Michael, and Kathleen M. Kole
2011 *Murder and Martyrdom in Spanish Florida: Don Juan and the Guale Uprising of 1597*. Anthropological Papers of the American Museum of Natural History Vol. 95. AMNH, New York.
- French, David H.
1948 *Factionalism in Isleta Pueblo*. Monographs of the American Ethnological Society, No. 14. J.J. Augustin, New York.
- Funari, Pedro Paulo A. (editor)
2015 *Archaeology of Culture Contact and Colonialism in Spanish and Portuguese America*. Springer, Cham, Switzerland.
- Gabe, Caroline, and Anne Compton
2008 Stasis and Change in the Lithic Assemblage of San Marcos Pueblo. Paper presented at the Society for Historical Archaeology Conference, Albuquerque, New Mexico.
- Galgano, Robert C.
2005 *Feast of Souls: Indians and Spaniards in the Seventeenth-Century Missions of Florida and New Mexico*. University of New Mexico Press, Albuquerque.
- Gerbner, Katharine
2015 Theorizing Conversion: Christianity, Colonization, and Consciousness in the Early Modern Atlantic World. *History Compass* 13(3): 134–147.
- Gifford, James C., and Watson Smith
1978 *Gray Corrugated Pottery From Awatovi and Other Jeddito Sites in Northeastern Arizona*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 69. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Gilmore, Kathleen K.
1989 *Non-Aboriginal Artifacts From the South Pueblo and Vicinity, Pecos National Monument*. Unpublished Reports. Pecos National Historical Park, April.
- Glascok, Michael D., Raymond Kunselman, and Daniel Wolfman
1999 Intrasource Chemical Differentiation of Obsidian in the Jemez Mountains and Taos Plateau, New Mexico. *Journal of Archaeological Science* 26(8): 861–868.
- Glowacka, Maria
1998 Ritual Knowledge in Hopi Tradition. *American Indian Quarterly* 22(3): 386–392.
- Glowacka, Maria, Dorothy Washburn, and Justin Richland
2009 Nuvatukya’ovi, San Francisco Peaks: Balancing Western Economies with Native American Spiritualities. *Current Anthropology* 50(4): 547–561.
- Glowacki, Donna M., and Scott Van Keuren (editors)
2011 *Religious Transformation in the Late Pre-Hispanic Pueblo World*. University of Arizona Press, Tucson.
- Golitko, Mark, and Gary Feinman
2015 Procurement and Distribution of Pre-Hispanic Mesoamerican Obsidian 900 BC–AD 1520: a Social Network Analysis. *Journal of Archaeological Method and Theory* 22(1): 206–247.
- Gonzalez, Sara
2011 *Creating Trails from Traditions: The Kashaya Pomo Interpretive Trail at Fort Ross State Historic Park*. PhD dissertation, University of California, Berkeley. ProQuest Dissertations Publishing.

- Graham, Elizabeth
 1998 Mission Archaeology. *Annual Review of Anthropology* 27(1): 25–62.
 2011 *Maya Christians and Their Churches in Sixteenth-Century Belize*. University Press of Florida, Gainesville.
- Graham, Elizabeth, Scott E. Simmons, and Christine D. White
 2013 The Spanish Conquest and the Maya Collapse: How “Religious” Is Change? *World Archaeology* 45(1): 161–185.
- Graves, William M.
 2002 *Power, Autonomy, and Inequality in Rio Grande Puebloan Society, A.D. 1300–1672*. PhD dissertation, Arizona State University, Tempe. ProQuest Dissertations Publishing.
 2005 Obsidian Procurement Among the Jumanos Pueblos, New Mexico, A.D. 1300-1670s. *Kiva* 71(1): 7–35.
- Graves, William M., and Scott Van Keuren
 2011 Ancestral Pueblo Villages and the Panoptic Gaze of the Commune. *Cambridge Archaeological Journal* 21(2): 263–282.
- Greenleaf, Richard E.
 2000 France V. Scholes: Historian’s Historian, 1897-1979. *New Mexico Historical Review* 75(3): 320–338.
- Greer, Allan
 2003 Conversion and Identity: Iroquois Christianity in Seventeenth-Century New France. In *Conversion: Old Worlds and New*, edited by Kenneth Mills and Anthony Grafton, pp. 175–198. University of Rochester Press, Rochester, NY.
- Griffith, G.E., J.M. Omernik, C.B. Johnson, and D.S. Turner
 2014 *Ecoregions of Arizona (poster)*. U.S. Geological Survey, Reston, VA.
- Griffith, Glenn E., James M. Omernik, Maryann M. McGraw, Gerald Z. Jacobi, Christopher M. Canavan, T. Scott Schrader, David Mercer, Robert Hill, and Brian C. Moran
 2006 *Ecoregions of New Mexico (poster)*. USGS Open-File Report No. 2014-1141. U.S. Geological Survey, Reston, VA.
- Griffiths, Nicholas, and Fernando Cervantes (editors)
 1999 *Spiritual Encounters: Interactions Between Christianity and Native Religions in Colonial America*. University of Nebraska Press, Lincoln.
- Grimstead, Deanna N., and Barnet Pavao-Zuckerman
 2016 Historical Continuity in Sonoran Desert Free-Range Ranching Practices: Carbon, Oxygen, and Strontium Isotope Evidence From Two 18th-Century Missions. *Journal of Archaeological Science: Reports* 7: 37–47.
- Gueno, Michael P.
 2010 *Among the Pueblos: The Religious Lives of Franciscan Missionaries, Pueblo Revolutionaries, and the Colony of Nuevo Mexico, 1539–1722*. PhD dissertation, The Florida State University, Gainesville. ProQuest Dissertations Publishing.
- Gutiérrez, Ramón A.
 1991 *When Jesus Came, the Corn Mothers Went Away: Marriage, Sexuality, and Power in New Mexico, 1500-1846*. Stanford University Press, Stanford, CA.
- Habicht-Mauche, Judith A.
 1995 Changing Patterns of Pottery Manufacture and Trade in the Northern Rio Grande Region. In *Ceramic Production in the American Southwest*, edited by Barbara J. Mills and Patricia L. Crown, pp. 167–99. University of Arizona Press, Tucson.
 2008 Pottery, Food, Hides, and Women: Labor, Production, and Exchange Across the Protohistoric Plains-Pueblo Frontier. In *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange Across the American*

- Southwest and Beyond*, edited by Michelle Hegmon, pp. 209–231. Proceedings of the 1996 Southwest Symposium. University Press of Colorado, Boulder.
- 2012 Women on the Edge: Looking at Protohistoric Plains-Pueblo Interaction from a Feminist Perspective. In *The Oxford Handbook of North American Archaeology*, edited by Timothy R. Pauketat. Oxford University Press, Oxford.
- Habicht-Mauche, Judith A., Suzanne L. Eckert, and Deborah L. Huntley (editors)
- 2006 *The Social Life of Pots: Glaze Wares and Cultural Dynamics in the Southwest, AD 1250-1680*. University of Arizona Press, Tucson.
- Hackel, Steven W.
- 2005 *Children of Coyote, Missionaries of Saint Francis: Indian-Spanish Relations in Colonial California, 1769-1850*. Published for the Omohundro Institute of Early American History and Culture, Williamsburg, Virginia, by the University of North Carolina Press, Chapel Hill.
- Hack, John Tilton
- 1942a *Prehistoric Coal Mining in the Jeddito Valley, Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 35, No. 2. The Museum, Cambridge, MA.
- 1942b *The Changing Physical Environment of the Hopi Indians of Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 35, No. 1. Peabody Museum of American Archaeology and Ethnology, Cambridge, MA.
- Hall, G. Emlen
- 1984 *Four Leagues of Pecos: A Legal History of the Pecos Grant, 1800-1933*. University of New Mexico Press, Albuquerque.
- Hall, Joseph M.
- 2009 *Zamumo's Gifts: Indian-European Exchange in the Colonial Southeast*. University of Pennsylvania Press, Philadelphia.
- Hammond, George Peter
- 1927 *Don Juan De Oñate and the Founding of New Mexico: A New Investigation Into the Early History of New Mexico in the Light of a Mass of New Materials Recently Obtained From the Archivo General De Indias, Seville, Spain*. Historical Society of New Mexico, Publications in History Vol. 2. El Palacio Press, Santa Fe, NM.
- Hammond, George Peter, and Agapito Rey (editors)
- 1953 *Don Juan De Oñate, Colonizer of New Mexico, 1595-1628*. Coronado Cuarto Centennial Publications, 1540-1940 Vols. 5, 6. University of New Mexico Press, Albuquerque.
- 1966 *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castaño De Sosa, Morlete, and Leyva De Bonilla and Humaña*. University of New Mexico Press, Albuquerque.
- Hayes, Alden C.
- 1974 *The Four Churches of Pecos*. University of New Mexico Press, Albuquerque.
- Hayes, Alden C., Jon Nathan Young, and A. Helene Warren
- 1981 *Excavation of Mound 7, Gran Quivira National Monument, New Mexico*. Publications in Archeology No. 16. National Park Service, Washington, D.C.
- Hays-Gilpin, Kelley
- 2013 Sikyatki Polychrome: Style, Iconography, Cross-Media Comparisons, and Organization of Production. *Kiva* 79(2): 175–204.

Head, Genevieve N., and Janet Dale Orcutt (editors)

2002 *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*. Cultural Resources Management Professional Papers No. 66. Anthropology Projects, Cultural Resources Management, Intermountain Region, National Park Service, Dept. of the Interior, Santa Fe, NM.

Head, Genevieve N., Janet D. Orcutt, and Robert P. Powers

2002 Introduction. In *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*, edited by Genevieve N. Head and Janet Dale Orcutt. Cultural Resources Management Professional Papers No. 66. Anthropology Projects, Cultural Resources Management, Intermountain Region, National Park Service, Dept. of the Interior, Santa Fe, NM.

Hefner, Robert W.

1993 Introduction: World Building and the Rationality of Conversion. In *Conversion to Christianity: Historical and Anthropological Perspectives on a Great Transformation*, edited by Robert W. Hefner, pp. 3–44. University of California Press, Berkeley.

Hegmon, Michelle (editor)

2008 *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange Across the American Southwest and Beyond*. Proceedings of the 1996 Southwest Symposium. University Press of Colorado, Boulder.

Herr, Sarah, and Jeffery J. Clark

1997 Patterns in the Pathways: Early Historic Migrations in the Rio Grande Pueblos. *Kiva* 62(4): 365–389.

Hewett, Edgar L.

1904 Studies on the Extinct Pueblo of Pecos. *American Anthropologist* 6(4): 426–439.

Hodge, Frederick Webb

1937 *History of Hawikuh, New Mexico: One of the So-Called Cities of Cibola*. Frederick Webb Hodge Anniversary Publication Fund No. 1. Southwest Museum, Los Angeles.

Hodge, Frederick Webb, Watson Smith, Richard B. Woodbury, Nathalie F. S. Woodbury, Ross Gordon Montgomery, and Jesse L. Nusbaum

1966 *The Excavation of Hawikuh by Frederick Webb Hodge: Report of the Hendricks-Hodge Expedition, 1917-1923*. Contributions from the Museum of the American Indian, Heye Foundation Vol. 20. Museum of the American Indian, Heye Foundation, New York.

Hull, Sharon Kaye

2012 *Turquoise Exchange and Procurement in the Chacoan World*. PhD dissertation, University of Manitoba, Canada. ProQuest Dissertations Publishing.

Ishii, Lomayumtewa

2001 *Voices From Our Ancestors: Hopi Resistance to Scientific Historicide*. PhD dissertation, Northern Arizona University, Flagstaff. ProQuest Dissertations Publishing.

Ivey, James E.

1998 Convento Kivas in the Missions of New Mexico. *New Mexico Historical Review* 73(2): 121.

2005 *The Spanish Colonial Architecture of Pecos Pueblo, New Mexico: Archaeological Excavations and Architectural History of the Spanish Colonial Churches and Related Buildings at Pecos National Historical Park, 1617-1995*. Professional Papers. National Park Service, Division of Cultural Resources Management.

Ivey, James E., and David Hurst Thomas

2005 “The Feeling of Working Completely in the Dark”: The Uncertain Foundations of Southwestern Mission Archaeology. In *Southwest Archaeology in the Twentieth Century*, edited by Linda S. Cordell and Don D. Fowler, pp. 204–219. University of Utah Press, Salt Lake City.

Jackson, Robert H.

- 1995 Introduction. In *The New Latin American Mission History*, edited by Erick D. Langer and Robert H. Jackson, pp. vii–xviii. University of Nebraska Press, Lincoln.
- 2000 *From Savages to Subjects: Missions in the History of the American Southwest*. M.E. Sharpe, Armonk, NY.
- 2009 Missions on the Frontiers of Spanish America. *Journal of Religious History* 33(3): 328–347.
- 2013 *Conflict and Conversion in Sixteenth Century Central Mexico: The Augustinian War on and Beyond the Chichimeca Frontier*. Brill, Leiden.

James, William

- 1902 *The Varieties of Religious Experience: A Study in Human Nature*. Longmans, Green, and Co., London.

Keane, Webb

- 2007 *Christian Moderns: Freedom and Fetish in the Mission Encounter*. University of California Press, Berkeley.
- 2008 The Evidence of the Senses and the Materiality of Religion. *Journal of the Royal Anthropological Institute* 14: S110–S127.

Kessell, John L.

- 1987 *Kiva, Cross, and Crown: The Pecos Indians and New Mexico, 1540-1840*. University of New Mexico Press, Albuquerque.
- 1989 Spaniards and Pueblos: From Crusading Intolerance to Pragmatic Accommodation. In *Columbian Consequences, Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West*, edited by David Hurst Thomas, pp. 127–138. Smithsonian Institution Press, Washington, D.C.
- 2002 *Spain in the Southwest: A Narrative History of Colonial New Mexico, Arizona, Texas, and California*. University of Oklahoma Press, Norman.

Kessell, John L., and Rick Hendricks (editors)

- 1991 *The Spanish Missions of New Mexico*. Spanish Borderlands Sourcebooks, Vols. 17-18. Garland, New York.

Kidder, Alfred Vincent

- 1924 *An Introduction to the Study of Southwestern Archaeology With a Preliminary Account of the Excavations at Pecos*. Papers of the Southwestern Expedition No. 1. Department of Archaeology, Phillips Academy, Andover, MA/Yale University Press, New Haven.
- 1926 *The Excavations at Pecos in 1925*. Papers of the School of American Research (New Series) No. 14. School of American Research, Santa Fe, NM.
- 1932 *The Artifacts of Pecos*. Papers of the Southwestern Expedition No. 6. Published for Phillips Academy by the Yale University Press, New Haven.
- 1958 *Pecos, New Mexico: Archaeological Notes*. Papers of the Robert S. Peabody Foundation for Archaeology No. 5. Phillips Academy, The Foundation, Andover, MA.
- 2000 *An Introduction to the Study of Southwestern Archaeology*. Yale University Press, New Haven.

Kidder, Alfred V., and Anna O. Shepard

- 1936 The Glaze-Paint, Culinary, and Other Wares. In *The Pottery of Pecos*, Vol. II. Phillips Academy Papers of the Southwest Expedition No. 7. Yale University Press, New Haven.

Kilby, J. David, and Joseph Vásquez Cunningham

- 2002 Lithics. In *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*, edited by Genevieve N. Head and Janet Dale Orcutt. Cultural Resources Management Professional Papers No. 66. Anthropology Projects, Cultural Resources Management, Intermountain Region, National Park Service, Dept. of the Interior, Santa Fe, NM.

Krutz, Gordon V.

- 1973 The Native's Point of View as an Important Factor in Understanding the Dynamics of the Oraibi Split. *Ethnohistory* 20(1): 79–89.

- Kubler, George
1940 *The Religious Architecture of New Mexico in the Colonial Period and Since the American Occupation*. University of New Mexico Press, Albuquerque.
- Kulisheck, Jeremy
2003 Pueblo Population Movements, Abandonment and Settlement Change in Sixteenth and Seventeenth Century New Mexico. *Kiva* 69(1): 30–54.
2005 *The Archaeology of Pueblo Population Change on the Jemez Plateau, A.D. 1200 to 1700: The Effects of Spanish Contact and Conquest*. PhD dissertation, Southern Methodist University, Dallas, TX. ProQuest Dissertations Publishing.
2010 “Like Butterflies on a Mounting Board”: Pueblo Mobility and Demography Before 1825. In *Across a Great Divide: Continuity and Change in Native North American Societies, 1400-1900*, edited by Laura L. Scheiber and Mark D. Mitchell, pp. 174–191. University of Arizona Press, Tucson.
- Kulisheck, Jeremy, and Michael L. Elliott
2005 A Proposed Late Prehistoric and Early Historic Phase Sequence for the Jemez Plateau, North-central New Mexico, USA. Paper presented at the 70th Annual Meeting of the Society for American Archaeology, Salt Lake City, Utah.
- Landau, Paul
1999 “Religion” and Christian Conversion in African History: A New Model. *Journal of Religious History* 23(1): 8–30.
- Lange, Charles H.
1959 *Cochití: A New Mexico Pueblo, Past and Present*. University of Texas Press, Austin.
- Langer, Erick D., and Robert H. Jackson
1995 *The New Latin American Mission History*. University of Nebraska Press, Lincoln.
- Laugrand, Frédéric
2012 The Transition to Christianity and Modernity among Indigenous Peoples. *Reviews in Anthropology* 41(1): 1–22.
- Lawrence, Barbara
1951 *Mammals Found at the Awatovi Site. Post-Cranial Skeletal Characters of Deer, Pronghorn, and Sheep-Goat, With Notes on Bos and Bison*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 35. The Museum, Cambridge, MA.
- Leavelle, Tracy Neal
2012 *The Catholic Calumet: Colonial Conversions in French and Indian North America*. University of Pennsylvania Press, Philadelphia.
- LeBlanc, Steven A.
1999 *Prehistoric Warfare in the American Southwest*. University of Utah Press, Salt Lake City.
- Lechtman, Heather
1984 Andean Value Systems and the Development of Prehistoric Metallurgy. *Technology and Culture* 25(1): 1–36.
- Levine, Frances
1999 *Our Prayers Are in This Place: Pecos Pueblo Identity Over the Centuries*. University of New Mexico Press, Albuquerque.
- Levine, Frances, and Anna LaBauve
1997 Examining the Complexity of Historic Population Decline: A Case Study of Pecos Pueblo, New Mexico. *Ethnohistory* 44(1): 75–112.

- Levy, Jerrold E.
1992 *Orayvi Revisited: Social Stratification in an "Egalitarian" Society*. School of American Research Press, Santa Fe.
- Liebmann, Matthew
2006 "Burn the Churches, Break Up the Bells": The Archaeology of the Pueblo Revolt Revitalization Movement in New Mexico, A.D. 1680–1696. PhD dissertation, University of Pennsylvania, Philadelphia. ProQuest Dissertations Publishing.
2012a *Revolt: An Archaeological History of Pueblo Resistance and Revitalization in 17th Century New Mexico*. University of Arizona Press, Tucson.
2012b The Rest Is History: Devaluing the Recent Past in the Archaeology of the Pueblo Southwest. In *Decolonizing Indigenous Histories: Exploring Prehistoric/Colonial Transitions in Archaeology*, edited by Maxine Oland, Siobhan M. Hart, and Liam Frink, pp. 19–44. University of Arizona Press, Tucson.
2015 The Mickey Mouse Kachina and Other "Double Objects": Hybridity in the Material Culture of Colonial Encounters. *Journal of Social Archaeology* 15(3):319–341.
2017 From Landscapes of Meaning to Landscapes of Signification. Unpublished manuscript.
- Liebmann, Matthew, Joshua Farella, Christopher I. Roos, Adam Stack, Sarah Martini, and Thomas W. Swetnam
2016 Native American Depopulation, Reforestation, and Fire Regimes in the Southwest United States, 1492–1900 CE. *Proceedings of the National Academy of Sciences* 113(6): E696–E704.
- Liebmann, Matthew, and Melissa Scott Murphy (editors)
2011 *Enduring Conquests: Rethinking the Archaeology of Resistance to Spanish Colonialism in the Americas*. School for Advanced Research Press, Santa Fe, NM.
- Liebmann, Matthew, and Robert W. Preucel
2007 The Archaeology of the Pueblo Revolt and the Formation of the Modern Pueblo World. *Kiva* 73(2): 195–217.
- Liebmann, Matthew, Robert Preucel, and Joseph Aguilar
2017 The Pueblo World Transformed: Alliances, Factionalism, and Animosity in the Northern Rio Grande, 1680–1700. In *New Mexico and the Pimería Alta: The Colonial Period in the American Southwest*, edited by John Douglass and William M. Graves, pp. 143–156. University Press of Colorado, Boulder.
- Liebmann, Matthew, and Uzma Z. Rizvi (editors)
2008 *Archaeology and the Postcolonial Critique*. AltaMira Press, Lanham, MD.
- Lightfoot, Kent G.
2005 *Indians, Missionaries, and Merchants: The Legacy of Colonial Encounters on the California Frontiers*. University of California Press, Berkeley.
- Linton, Ralph
1936 *The Study of Man: An Introduction*. D. Appleton - Century, New York.
- Lockhart, James
1992 *The Nahuas After the Conquest: A Social and Cultural History of the Indians of Central Mexico, Sixteenth Through Eighteenth Centuries*. Stanford University Press, Stanford, Calif.
- Loendorf, Chris R., Craig M. Fertelmes, and Barnaby V. Lewis
2013 Hohokam to Akimel O'odham: Obsidian Acquisition at the Historic Period Sacate Site (GR-909), Gila River Indian Community, Arizona. *American Antiquity* 78(2): 266–284.
- Lomatuway'ma, Michael
1993 *Hopi Ruin Legends = Kiqötutuwu'tsi*. Published for Northern Arizona University by the University of Nebraska Press, Lincoln.
2002 *Hopi Tales of Destruction*. University of Nebraska Press, Lincoln.

Loren, Diana DiPaolo

2010 *The Archaeology of Clothing and Bodily Adornment in Colonial America*. University Press of Florida, Gainesville.

Lycett, Mark T.

1989 Spanish Contact and Pueblo Organization: Long-term Implications of European Colonial Expansion in the Rio Grande Valley, New Mexico. In *Columbian Consequences, Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West*, edited by David Hurst Thomas, pp. 115–125. Smithsonian Institution Press, Washington, D.C.

2002 Transformations of Place: Occupational History and Differential Persistence in Seventeenth-Century New Mexico. In *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*, edited by Robert W. Preucel, pp. 61–74. University of New Mexico Press, Albuquerque.

2005 On the Margins of Peripheries: The Consequences of Differential Incorporation in the Colonial Southwest. In *The Postclassic to Spanish-Era Transition in Mesoamerica: Archaeological Perspectives*, edited by Susan Kepecs and Rani T. Alexander, pp. 97–115. University of New Mexico Press, Albuquerque.

2014 Toward a Historical Ecology of the Mission in Seventeenth-Century New Mexico. In *Indigenous Landscapes and Spanish Missions: New Perspectives From Archaeology and Ethnohistory*, edited by Tsim D. Schneider and Lee M. Panich, pp. 172–187. University of Arizona Press, Tucson.

Maroukis, Thomas C.

2013 The Peyote Controversy and the Demise of the Society of American Indians. *American Indian Quarterly* 37(3): 161–180.

Mathers, Clay, Jeffrey M. Mitchem, and Charles M. Haecker (editors)

2013 *Native and Spanish New Worlds: Sixteenth-Century Entradas in the American Southwest and Southeast*. University of Arizona Press, Tucson.

McCafferty, Geoffrey G.

2000 The Cholula Massacre: Factional Histories and Archaeology of the Spanish Conquest. In *The Entangled Past: Integrating History and Archaeology. Proceedings of the 30th Annual Chacmool Archaeological Conference, Calgary, Alberta*, edited by M. Boyd, J. C. Erwin, and M. Hendrickson, pp. 347–359. The Archaeological Association of the University of Calgary, Alberta, Calgary.

McEwan, Bonnie G.

1993 (editor) *The Spanish Missions of La Florida*. University Press of Florida, Gainesville.

2001 The Spiritual Conquest of La Florida. *American Anthropologist* 103(3): 633–644.

Mera, H.P.

1933 *A Proposed Revision of the Rio Grande Glaze Paint Sequence*. Laboratory of Anthropology (Museum of New Mexico) Technical Series Bulletin No. 5. Archaeological Survey, Laboratory of Anthropology, Santa Fe, NM.

1934 *A Survey of the Biscuit Ware Area in Northern New Mexico*. Laboratory of Anthropology (Museum of New Mexico) Technical Series Bulletin No. 6. Laboratory of Anthropology, Santa Fe, NM.

1935 *Ceramic Clues to the Prehistory of North Central New Mexico*. Laboratory of Anthropology (Museum of New Mexico) Technical Series Bulletin No. 8. Y. Edwards Brothers, Ann Arbor, MI.

1940 *Population Changes in the Rio Grande Glaze-Paint Area*. Laboratory of Anthropology Technical Series Bulletin 9. University of New Mexico, Santa Fe.

Millhauser, John K., Enrique Rodríguez-Alegría, and Michael D. Glascock

2011 Testing the Accuracy of Portable X-Ray Fluorescence to Study Aztec and Colonial Obsidian Supply at Xaltocan, Mexico. *Journal of Archaeological Science* 38(11): 3141–3152.

Milliken, Randall

2008 *Native Americans at Mission San Jose*. Malki-Ballena Press, Malki Museum, Banning, CA.

- Mills, Barbara J.
2008 How the Pueblos Became Global: Colonial Appropriations, Resistance, and Diversity in the North American Southwest. *Archaeologies* 4(2): 218–232.
- Mills, Barbara J., Jeffery J. Clark, Matthew A. Peeples, W. R. Haas, John M. Roberts, J. Brett Hill, Deborah L. Huntley, Lewis Borck, Ronald L. Breiger, Aaron Clauset, and M. Steven Shackley
2013 Transformation of Social Networks in the Late Pre-Hispanic US Southwest. *Proceedings of the National Academy of Sciences of the United States of America* 110(15): 5785–90.
- Mills, Barbara J., and Patricia L. Crown (editors)
1995 *Ceramic Production in the American Southwest*. University of Arizona Press, Tucson.
- Mills, Barbara J., John M. Roberts Jr., Jeffery J. Clark, William R. Haas Jr., Deborah Huntley, Matthew A. Peeples, Lewis Borck, Susan C. Ryan, Meaghan Trowbridge, and Ronald L. Breiger
2013 The Dynamics of Social Networks in the Late Prehispanic US Southwest. In *Network Analysis in Archaeology: New Approaches to Regional Interaction*, edited by Carl Knappett, pp. 181–202. Oxford University Press, Oxford.
- Mills, Kenneth, and Anthony Grafton (editors)
2003 *Conversion: Old Worlds and New*. University of Rochester Press, Rochester, NY.
- Mindeleff, Victor
1891 *A Study of Pueblo Architecture: Tusayan and Cibola*. Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution. Bureau of Ethnology, Smithsonian Institution, Washington, D.C.
- Mobley-Tanaka, Jeannette L.
2002 Crossed Cultures, Crossed Meanings: The Manipulation of Ritual Imagery in Early Historic Pueblo Resistance. In *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*, edited by Robert W. Preucel, pp. 77–84. University of New Mexico Press, Albuquerque.
- Montgomery, Ross Gordon, Watson Smith, and John Otis Brew
1949 *Franciscan Awatovi: The Excavation and Conjectural Reconstruction of a 17th-Century Spanish Mission Establishment at a Hopi Indian Town in Northeastern Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 36. The Museum, Cambridge, MA.
- Morgan, Michèle E.
2010a (editor) *Pecos Pueblo Revisited: The Biological and Social Context*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 85. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
2010b A Reassessment of the Human Remains from the Upper Pecos Valley. In *Pecos Pueblo Revisited: The Biological and Social Context*, edited by Michèle E. Morgan, pp. 27–41. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 85. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
2010c Conclusion. In *Pecos Pueblo Revisited: The Biological and Social Context*, edited by Michèle E. Morgan, pp. 161–166. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 85. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Morrison, Kenneth M.
2002 *The Solidarity of Kin: Ethnohistory, Religious Studies, and the Algonkian-French Religious Encounter*. State University of New York Press, Albany.
- Muldoon, James
2015 *The Americas in the Spanish World Order: The Justification for Conquest in the Seventeenth Century*. University of Pennsylvania Press, Philadelphia.

- Mumford, Jeremy Ravi
2012 *Vertical Empire: The General Resettlement of Indians in the Colonial Andes*. Duke University Press, Durham, NC.
- Nagata, Shuichi
1978 Opposition and Freedom in Moenkopi Factionalism. In *A House Divided?: Anthropological Studies of Factionalism*, edited by Marilyn Silverman and Richard F. Salisbury, pp. 146–165. Social and Economic Papers 9. Institute of Social and Economic Research, Memorial University of Newfoundland, StJohn's, Nfld.
- Nelson, Nels C.
1914 *Pueblo Ruins of the Galisteo Basin, New Mexico*. Anthropological Papers of the American Museum of Natural History No. 15, Pt. 1. The Trustees of the American Museum of Natural History, New York.
- Nequatewa, Edmund
1990 *Truth of a Hopi: Stories Relating to the Origin, Myths and Clan Histories of the Hopi*. Museum of Northern Arizona Bulletin No. 8. Northland, Flagstaff, AZ.
- Nicholas, Ralph W.
1965 Factions: A Comparative Analysis. In *Political Systems and the Distribution of Power*, edited by Michael Banton, pp. 21–61. A.S.A. Monographs No. 2. F.A. Praeger, New York.
- Nichols, Deborah L., and Patricia L. Crown (editors)
2008 *Social Violence in the Prehispanic American Southwest*. University of Arizona Press, Tucson.
- Norcini, Marilyn
2005 The Political Process of Factionalism and Self-Governance at Santa Clara Pueblo, New Mexico. *Proceedings of the American Philosophical Society* 149(4): 544–590.
- O'Brien, Jean M.
2010 *Firsting and Lasting: Writing Indians Out of Existence in New England*. Indigenous Americas. University of Minnesota Press, Minneapolis.
- Olsen, Stanley
1976 The Dogs of Awatovi. *American Antiquity* 41(1): 102.
- Olsen, Stanley, and Richard Wheeler
1978 *Bones From Awatovi, Northeastern Arizona: The Faunal Analysis*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 70, No. 1-2. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Orser, Charles E.
1996 *A Historical Archaeology of the Modern World*. Plenum Press, New York.
- Orta, Andrew
2002 "Living the Past Another Way:" Reinstrumentalized Missionary Selves in Aymara Mission Fields. *Anthropological Quarterly* 75(4): 707–744.
2004 *Catechizing Culture: Missionaries, Aymara, and the "New Evangelization."* Columbia University Press, New York.
- Ortiz, Alfonso
1969 *The Tewa World: Space, Time, Being, and Becoming in a Pueblo Society*. University of Chicago Press, Chicago.
- Pandey, Triloki Nath
1967 *Factionalism in a Southwestern Pueblo*. PhD dissertation, The University of Chicago, Chicago. ProQuest Dissertations Publishing.

- Panich, Lee M.
 2013 Archaeologies of Persistence: Reconsidering the Legacies of Colonialism in Native North America. *American Antiquity* 78(1): 105–122.
 2016 Beyond the Colonial Curtain: Investigating Indigenous Use of Obsidian in Spanish California Through the pXRF Analysis of Artifacts From Mission Santa Clara. *Journal of Archaeological Science: Reports* 5: 521–530.
- Panich, Lee M., and Tsim D. Schneider
 2014 (editors) *Indigenous Landscapes and Spanish Missions: New Perspectives From Archaeology and Ethnohistory*. University of Arizona Press, Tucson.
 2015 Expanding Mission Archaeology: A Landscape Approach to Indigenous Autonomy in Colonial California. *Journal of Anthropological Archaeology* 40: 48–58.
- Parsons, Elsie Worthington Clews
 1920 *Notes on Ceremonialism at Laguna*. Anthropological Papers of the American Museum of Natural History Vol. 19, Pt. 4. The Trustees, New York.
 1925 *The Pueblo of Jemez*. Papers of the Southwestern Expedition Vol. 3. Published for the Department of Archeology, Phillips Academy, Andover, Massachusetts, by the Yale University Press, New Haven.
 1928 The Laguna Migration to Isleta. *American Anthropologist* 30(4): 602–613.
 1936 *Taos Pueblo*. General Series in Anthropology No. 2. George Banta Publishing Co., Menasha, WI.
 1939 *Pueblo Indian Religion*. The University of Chicago Press, Chicago.
- Pavao-Zuckerman, Barnet
 2011 Landscape Use at San Agustín. In *Contemporary Archaeologies of the Southwest*, edited by William H. Walker and Kathryn R. Venzor, pp. 227–244. Proceedings of the Southwest Symposium. University Press of Colorado, Boulder.
- Pavao-Zuckerman, Barnet, and Vincent M. Lamotta
 2007 Missionization and Economic Change in the Pimería Alta: The Zooarchaeology of San Agustín de Tucson. *International Journal of Historical Archaeology* 11(3): 241–268.
- Pavao-Zuckerman, Barnet, and Diana DiPaolo Loren
 2012 Presentation is Everything: Foodways, Tablewares, and Colonial Identity at Presidio Los Adaes. *International Journal of Historical Archaeology* 16(1): 199–226.
- Penman, Shawn
 2002 *Colonowares as Evidence of Acculturation at Pecos Pueblo, New Mexico*. PhD dissertation, University of New Mexico, Albuquerque. ProQuest Dissertations Publishing.
- Pérez de Luxán, Diego
 1929 *Expedition Into New Mexico Made by Antonio De Espejo, 1582-1583*. Translated by George Peter Hammond and Agapito Rey. The Quivira Society, Los Angeles.
- Peterson, Jane, Douglas R. Mitchell, and M. Steven Shackley
 1997 The Social and Economic Contexts of Lithic Procurement: Obsidian from Classic-Period Hohokam Sites. *American Antiquity* 62(2): 231–259.
- Pharo, Lars K.
 2007 The Concept of “Religion” in Mesoamerican Languages. *Numen* 54(1): 28–70.
- Phelan, John L.
 1970 *The Millennial Kingdom of the Franciscans in the New World*. University of California Press, Berkeley.
- Pierce, Donna
 2016 Popular and Prevalent: Asian Trade Goods in Northern New Spain, 1590–1850. *Colonial Latin American Review* 25(1): 77–97.

Potts, Philip J

2008 Introduction, Analytical Instrumentation and Application Overview. In *Portable X-ray Fluorescence Spectrometry*, edited by Philip J Potts and Margaret West, pp. 1–12. Royal Society of Chemistry, Cambridge, UK.

Powell, Melissa S., and Karl K. Benedict

2002 Ceramic Chronology. In *From Folsom to Fogelson: The Cultural Resources Inventory Survey of Pecos National Historical Park*, edited by Genevieve N. Head and Janet Dale Orcutt. Cultural Resources Management Professional Papers No. 66. Anthropology Projects, Cultural Resources Management, Intermountain Region, National Park Service, Dept. of the Interior, Santa Fe, NM.

Powell, Melissa Susan

2002 *The Organization of Ceramic Production in the Upper Pecos Valley, New Mexico, A.D. 1200–1400*. PhD dissertation, The University of New Mexico, Albuquerque. ProQuest Dissertations Publishing.

Preucel, Robert W.

1998 *The Kotyiti Archaeological Project: Report of the 1996 Field Season*. Pueblo de Cochiti and USDA Forest Service, Santa Fe.

2000 Living on the Mesa: Hanat Kotyiti, a Post-Revolt Cochiti Community in Northern New Mexico. *Expedition* 42(1): 8–17.

2002 (editor) *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*. University of New Mexico Press, Albuquerque.

Price Steinbrecher, Barry

2015 *The Geography of Heritage: Comparing Archaeological Culture Areas and Contemporary Cultural Landscapes*. Master's thesis, The University of Arizona, Tucson. ProQuest Dissertations Publishing.

Quilter, Jeffrey

2011 Cultural Encounters at Magdalena de Cao Viejo in the Early Colonial Period. In *Enduring Conquests: Rethinking the Archaeology of Resistance to Spanish Colonialism in the Americas*, edited by Matthew Liebmann and Melissa Scott Murphy, pp. 103–125. School for Advanced Research Press, Santa Fe, NM.

Radding, Cynthia

1997 *Wandering Peoples: Colonialism, Ethnic Spaces, and Ecological Frontiers in Northwestern Mexico, 1700-1850*. Duke University Press, Durham, NC.

Reddy, Seetha N.

2015 Feeding Family and Ancestors: Persistence of Traditional Native American Lifeways During the Mission Period in Coastal Southern California. *Journal of Anthropological Archaeology* 37: 48–66.

Reid, Gerald F.

2004 *Kahnawà:ke: Factionalism, Traditionalism, and Nationalism in a Mohawk Community*. University of Nebraska Press, Lincoln.

Renfrew, Colin

1977 Alternative Models for Exchange and Spatial Distribution. In *Exchange Systems in Prehistory*, edited by Timothy K. Earle and Jonathon E. Erickson, pp. 71–90. Academic Press, New York.

Ricard, Robert

1966 *The Spiritual Conquest of Mexico: An Essay on the Apostolate and the Evangelizing Methods of the Mendicant Orders in New Spain, 1523-1572*. Translated by Lesley Bird Simpson. University of California Press, Berkeley.

Richter, Daniel K.

1985 Iroquois versus Iroquois: Jesuit Missions and Christianity in Village Politics, 1642-1686. *Ethnohistory* 32(1): 1–16.

- 2003 *Facing East From Indian Country: A Native History of Early America*. Harvard University Press, Cambridge, MA.
- Robbins, Joel
2007 Continuity Thinking and the Problem of Christian Culture: Belief, Time, and the Anthropology of Christianity. *Current Anthropology* 48(1): 5–38.
- Rodríguez-Alegría, Enrique
2008 Narratives of Conquest, Colonialism, and Cutting-Edge Technology. *American Anthropologist* 110(1): 33–43.
- Rodríguez-Alegría, Enrique, John K. Millhauser, and Wesley D. Stoner
2013 Trade, Tribute, and Neutron Activation: The Colonial Political Economy of Xaltocan, Mexico. *Journal of Anthropological Archaeology* 32(4): 397–414.
- Rogers, J. Daniel
1990 *Objects of Change: The Archaeology and History of Arikara Contact With Europeans*. Smithsonian Institution Press, Washington, D.C.
- Rogers, J. Daniel, and Samuel M. Wilson (editors)
1993 *Ethnohistory and Archaeology: Approaches to Postcontact Change in the Americas*. Plenum Press, New York.
- Rothschild, Nan A.
2008 The Colonial Southwest: Pueblo Landscapes and Spanish Shared and Separate Landscapes. In *Landscapes Under Pressure*, edited by Ludomir R. Lozny, pp. 27–53. Springer, New York.
- Rourke, Randi
2007 The Factionalism Stereotype. *Indian Country Today* 10 January: Editorials. Oneida, N.Y.
- Rubertone, Patricia E.
2000 The Historical Archaeology of Native Americans. *Annual Review of Anthropology* 29(1): 425–446.
- Rubin, Julius H.
2013 *Tears of Repentance: Christian Indian Identity and Community in Colonial Southern New England*. University of Nebraska Press, Lincoln.
- Ruff, Christopher B.
1981 A Reassessment of Demographic Estimates for Pecos Pueblo. *American Journal of Physical Anthropology* 54(1): 147–151.
- Said, Edward W.
1978 *Orientalism*. Pantheon Books, New York.
- Saitta, Dean J.
2008 Theorizing the Political Economy of Southwestern Exchange. In *The Archaeology of Regional Interaction: Religion, Warfare, and Exchange Across the American Southwest and Beyond*, edited by Michelle Hegmon, pp. 151–166. Proceedings of the 1996 Southwest Symposium. University Press of Colorado, Boulder.
- Salisbury, Neal
2003 Embracing Ambiguity: Native Peoples and Christianity in Seventeenth-Century North America. *Ethnohistory* 50(2): 247–259.
- Salisbury, Richard F., and Marilyn Silverman
1977 An Introduction: Factions and the Dialectic. In *A House Divided?: Anthropological Studies of Factionalism*, edited by Richard F. Salisbury and Marilyn Silverman. Institute of Social and Economic Research, Social and Economic Papers No. 9. Memorial University of Newfoundland, St. John's.

Sánchez, Joseph P.

- 1997 A Historiography of the Route of the Expedition of Francisco Vázquez de Coronado: Cíbola to Río de Cicúye. In *The Coronado Expedition to Tierra Nueva: The 1540-1542 Route Across the Southwest*, edited by Richard Flint and Shirley Cushing Flint, pp. 215–224. Southern Methodist University Press, Dallas, TX.

Sando, Joe S.

- 1992 *Pueblo Nations: Eight Centuries of Pueblo Indian History*. Clear Light, Santa Fe, NM.
1998 *Pueblo Profiles: Cultural Identity Through Centuries of Change*. Clear Light, Santa Fe, NM.

Sandos, James A.

- 2004 *Converting California: Indians and Franciscans in the Missions*. Yale University Press, New Haven.

Scheiber, Laura L., and Judson Byrd Finley

- 2011 Obsidian Source Use in the Greater Yellowstone Area, Wyoming Basin, and Central Rocky Mountains. *American Antiquity* 76(2): 372–394.

Scheiber, Laura L., and Mark D. Mitchell (editors)

- 2010 *Across a Great Divide: Continuity and Change in Native North American Societies, 1400–1900*. University of Arizona Press, Tucson.

Schneider, Tsim D.

- 2015a Envisioning Colonial Landscapes Using Mission Registers, Radiocarbon, and Stable Isotopes: An Experimental Approach from San Francisco Bay. *American Antiquity* 80(3):511–529.
2015b Placing Refuge and the Archaeology of Indigenous Hinterlands in Colonial California. *American Antiquity* 80(4): 695.

Scholes, France V.

- 1929a Documents for the History of the New Mexican Missions in the Seventeenth Century. *New Mexico Historical Review* 4(1): 45–58.
1929b Documents for the History of the New Mexican Missions in the Seventeenth Century (cont'd.). *New Mexico Historical Review* 4(2): 195–201.
1930 The Supply Service of the New Mexico Missions in the Seventeenth Century. *New Mexico Historical Review* 5(1): 93–115.
1932 Problems in the Early Ecclesiastical History of New Mexico. *New Mexico Historical Review* 7(1): 32–74.
1936a Church and State in New Mexico, 1610-1650, Ch. I–II. *New Mexico Historical Review* 11(1): 9–76.
1936b Church and State in New Mexico, 1610-1650 (cont'd.), Ch. III. *New Mexico Historical Review* 11(2): 145–178.
1936c Church and State in New Mexico, 1610-1650 (cont'd.), Ch. IV. *New Mexico Historical Review* 11(3): 283–294.
1937 Church and State in New Mexico, 1610-1650 (concl'd.), Ch. VI–VII. *New Mexico Historical Review* 12(1): 78–106.
1942 *Troublous Times in New Mexico, 1659-1670*. Historical Society of New Mexico Publications in History Vol. XI. The University of New Mexico Press, Albuquerque.
1943 *Church and State in New Mexico in the Seventeenth Century*. The University of New Mexico Press, Albuquerque.

Scholes, France V., and Lansing B. Bloom

- 1944 Friar Personnel and Mission Chronology, 1598–1629. *New Mexico Historical Review* 19(4): 319–336.
1945 Friar Personnel and Mission Chronology, 1598–1629 (concl'd.). *New Mexico Historical Review* 20(1): 58–82.

Schroeder, Albert

- 1968 Shifting for Survival in the Spanish Southwest. *New Mexico Historical Review* 43(4): 291.

- Schwartz, Douglas W.
 2000 Kidder and the Synthesis of Southwestern Archaeology. In *An Introduction to the Study of Southwestern Archaeology*, by A.V. Kidder, pp. 1–55. Yale University Press, New Haven.
- Sekaquaptewa, Emory, and Dorothy Washburn
 2004 They Go Along Singing: Reconstructing the Hopi Past From Ritual Metaphors in Song and Image. *American Antiquity* 69(3): 457–486.
- Shackley, M. Steven
 1988 Sources of Archaeological Obsidian in the Southwest: An Archaeological, Petrological, and Geochemical Study. *American Antiquity* 53(4): 752–772.
 1995 Sources of Archaeological Obsidian in the Greater American Southwest: An Update and Quantitative Analysis. *American Antiquity* 60(3): 531–551.
 1998 Geochemical Differentiation and Prehistoric Procurement of Obsidian in the Mount Taylor Volcanic Field, Northwest New Mexico. *Journal of Archaeological Science* 25(11): 1073–1082.
 2005 *Obsidian: Geology and Archaeology in the North American Southwest*. University of Arizona Press, Tucson.
 2016 *Source Assignments for Bruker Acquired Elemental Concentrations for Artifacts from Pecos National Historical Park, New Mexico*. Geoarchaeological XRF Laboratory, Albuquerque, NM.
 2017 Sources of Archaeological Obsidian in the Greater American Southwest. Electronic document, <http://swxrflab.net/swobsrsrcs.htm>, accessed Feb. 10, 2017.
- Shackley, M. Steven, Fraser Goff, and Sean G. Dolan
 2016 Geologic Origin of the Source of Bearhead Rhyolite (Paliza Canyon) Obsidian, Jemez Mountains, Northern New Mexico. *New Mexico Geology* 38(3): 52–65.
- Shepard, Anna O.
 1942 *Rio Grande Glaze Paint Ware: A Study Illustrating the Place of Ceramic Technological Analysis in Archaeological Research*. Contributions to American Anthropology and History No. 39. Carnegie Institution of Washington, Washington, D.C.
- Sheridan, Thomas E.
 1992 The Limits of Power: The Political Ecology of the Spanish Empire in the Greater Southwest. *Antiquity* 66(250): 153–171.
 2006 *Landscapes of Fraud: Mission Tumacácori, the Baca Float, and the Betrayal of the O'odham*. University of Arizona Press, Tucson.
- Sheridan, Thomas E., Stewart B. Koyiyumptewa, Anton T. Daughters, T. J. Ferguson, Leigh Kuwanwisiwma, Dale S. Brenneman, and LeeWayne Lomayestewa
 2013 Moquis and Kastiilam: Coronado and the Hopis. *Journal of the Southwest* 55(4): 377–434.
- Sheridan, Thomas E., Stewart B. Koyiyumptewa, Anton T. Daughters, Dale S. Brenneman, T. J. Ferguson, Leigh J. Kuwanwisiwma, and LeeWayne Lomayestewa (editors)
 2015 *Moquis and Kastiilam: Hopis, Spaniards, and the Trauma of History*. The University of Arizona Press, Tucson.
- Siegel, Bernard J.
 1949 Some Observations on the Pueblo Pattern at Taos. *American Anthropologist* 51(4): 562–577.
- Siegel, Bernard J., and Alan R. Beals
 1960 Pervasive Factionalism. *American Anthropologist* 62(3): 394–417.
- Silliman, Stephen W.
 2003 Using a Rock in a Hard Place: Native-American Lithic Practices in Colonial California. In *Stone Tool Traditions in the Contact Era*, edited by Charles R. Cobb, pp. 127–150. University of Alabama Press, Tuscaloosa.

- 2005 Obsidian Studies and the Archaeology of 19th-Century California. *Journal of Field Archaeology* 30(1): 75–94.
- 2009 Change and Continuity, Practice and Memory: Native American Persistence in Colonial New England. *American Antiquity* 74(2): 211–230.
- 2012 Between the Longue Durée and the Short Purée: Postcolonial Archaeologies of Indigenous History in Colonial North America. In *Decolonizing Indigenous Histories: Exploring Prehistoric/Colonial Transitions in Archaeology*, edited by Maxine Oland, Siobhan M. Hart, and Liam Frink, pp. 113–131. University of Arizona Press, Tucson.
- Smilde, David
- 2005 A Qualitative Comparative Analysis of Conversion to Venezuelan Evangelicalism: How Networks Matter. *American Journal of Sociology* 111(3): 757–796.
- 2007 *Reason to Believe: Cultural Agency in Latin American Evangelicalism*. University of California Press, Berkeley.
- Smith, Jonathan Z.
- 1982 *Imagining Religion: From Babylon to Jonestown*. University of Chicago Press, Chicago.
- Smith, M. Estellie
- 1968 Governing Systems and Cultural Change Among the Southern Tiwa. Paper presented at the 67th Annual Meeting of the American Anthropological Association, Seattle, WA.
- Smith, Watson
- 1952 *Kiva Mural Decorations at Awatovi and Kawaika-a: With a Survey of Other Wall Paintings in the Pueblo Southwest*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 37. Peabody Museum of American Archaeology and Ethnology, Cambridge, MA.
- 1971 *Painted Ceramics of the Western Mound at Awatovi*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 38. Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge, MA.
- 1972 *Prehistoric Kivas of Antelope Mesa, Northeastern Arizona*. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 39, No. 1. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Smith, Watson, and Benjamin W. Smith
- 1992 One Man's Archaeology. *Kiva* 57(2): 105–191.
- Smith, Watson, and Bernard Fontana
- 1970 Religious Sacramentals from Awatovi. *Kiva* 36(2): 13–16.
- Smith, Watson, Richard B. Woodbury, and Nathalie F.S. Woodbury
- 1966 *The Excavation of Hawikuh by Frederick Webb Hodge: Report of the Hendricks-Hodge Expedition, 1917-1923*. Contributions from the Museum of the American Indian, Heye Foundation No. 20. Museum of the American Indian, Heye Foundation, New York.
- Snow, D.A., and R. Machalek
- 1984 The Sociology of Conversion. *Annual Review of Sociology* 10(1): 167–190.
- Snow, David H., Emily J. Brown, Carol J. Condie, Helen K. Crotty, and Archaeological Society of New Mexico
- 2016 *History and Archaeology: Connecting the Dots. Papers in Honor of David H. Snow*. Papers of the Archaeological Society of New Mexico No. 42. Archaeological Society of New Mexico, Albuquerque, NM.
- Spector, Janet
- 1993 *What This Awl Means: Feminist Archaeology at a Wahpeton Dakota Village*. Minnesota Historical Society Press, St. Paul.

- Spicer, Edward H.
1962 *Cycles of Conquest: The Impact of Spain, Mexico, and the United States on the Indians of the Southwest, 1533-1960*. University of Arizona Press, Tucson.
- Spielmann, Katherine
2010 The Sociopolitical Context of Pecos. In *Pecos Pueblo Revisited: The Biological and Social Context*, edited by Michèle E. Morgan, pp. 19–26. Papers of the Peabody Museum of Archaeology and Ethnology, Harvard University Vol. 85. Peabody Museum of Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Spielmann, Katherine A.
1983 Late Prehistoric Exchange Between the Southwest and Southern Plains. *Plains Anthropologist* 28(102): 257–272.
1989 Colonists, Hunters, and Farmers: Plains-Pueblo Interaction in the Seventeenth Century. In *Columbian Consequences, Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West*, edited by David Hurst Thomas, pp. 101–113. Smithsonian Institution Press, Washington, D.C.
1991a Coercion or Cooperation? Plains Pueblo Interaction in the Protohistoric Period. In *Farmers, Hunters, and Colonists: Interaction Between the Southwest and the Southern Plains*, edited by Katherine A. Spielmann, pp. 36–50. University of Arizona Press, Tucson.
1991b (editor) *Farmers, Hunters, and Colonists: Interaction Between the Southwest and the Southern Plains*. University of Arizona Press, Tucson.
- Spielmann, Katherine A., and E. Charles Adams (editors)
1998 *Migration and Reorganization: The Pueblo IV Period in the American Southwest*. Anthropological Research Paper No. 51. Arizona State University, Tempe.
- Spielmann, Katherine A., Tiffany Clark, Diane Hawkey, Katharine Rainey, and Suzanne K. Fish
2009 “...being weary, they had rebelled”: Pueblo Subsistence and Labor Under Spanish Colonialism. *Journal of Anthropological Archaeology* 28(1): 102–125.
- Spielmann, Katherine A., Jeannette L. Mobley-Tanaka, and James M. Potter
2006 Style and Resistance in the Seventeenth Century Salinas Province. *American Antiquity* 71(4): 621–647.
- Spielmann, Katherine A., Margaret J. Schoeninger, and Katherine Moore
1990 Plains-Pueblo Interdependence and Human Diet at Pecos Pueblo, New Mexico. *American Antiquity* 55(4): 745–765.
- Stanislawski, Michael B.
1973 Ethnoarchaeology and Settlement Archaeology. *Ethnohistory* 20(4): 375–392.
- Stemp, W. James, Elizabeth Graham, and Jessica Goulet
2011 Coastal Maya Obsidian Trade in the Late Postclassic to Early Colonial Period: The View From San Pedro, Ambergris Caye, Belize. *The Journal of Island and Coastal Archaeology* 6(1): 134–154.
- Steward, Julian H.
1942 The Direct Historical Approach to Archaeology. *American Antiquity* 7(4): 337–343.
- Stewart, Omer C.
1984 Taos Factionalism. *American Indian Culture and Research Journal* 8(1): 37–57.
- Stojanowski, Christopher M.
2005 *Biocultural Histories in La Florida: A Bioarchaeological Perspective*. University of Alabama Press, Tuscaloosa.
2013 *Mission Cemeteries, Mission Peoples: Historical and Evolutionary Dimensions of Intracemetery Bioarchaeology in Spanish Florida*. University Press of Florida, Gainesville.

- Stresser-Péan, Guy
 2009 *The Sun God and the Savior: The Christianization of the Nahua and Totonac in the Sierra Norte De Puebla, Mexico*. University Press of Colorado, Boulder.
- Stubbs, Stanley A., Bruce T. Ellis, and Alfred E. Dittert, Jr.
 1957 "Lost" Pecos Church. *El Palacio* 64(3-4): 67.
- Sullivan, and Kenneth C. Rozen
 1985 Debitage Analysis and Archaeological Interpretation. *American Antiquity* 50(4): 755–779.
- Talbot, Steve, Mary E. Fleming Mathur, and William L. Partridge
 1976 On American Indian "Factionalism." *Current Anthropology* 17(3): 526–529.
- Taliaferro, Matthew S., Bernard A. Schriever, and M. Steven Shackley
 2010 Obsidian Procurement, Least Cost Path Analysis, and Social Interaction in the Mimbres Area of Southwestern New Mexico. *Journal of Archaeological Science* 37(3): 536–548.
- Tavarez, David
 2011 *The Invisible War: Indigenous Devotions, Discipline, and Dissent in Colonial Mexico*. Stanford University Press, Stanford, Calif.
- Thomas, David Hurst
 1989 (editor) *Columbian Consequences, Vol. 1: Archaeological and Historical Perspectives on the Spanish Borderlands West*. Smithsonian Institution Press, Washington, D.C.
 1990 (editor) *Columbian Consequences, Vol. 2: Archaeological and Historical Perspectives on the Spanish Borderlands East*. Smithsonian Institution Press, Washington, D.C.
 1991 (editor) *The Spanish Borderlands in Pan-American Perspective*. *Columbian Consequences* Vol. 3. Smithsonian Institution Press, Washington, D.C.
 1993 The Archaeology of Mission Santa Catalina de Guale: Our First 15 Years. In *The Spanish Missions of La Florida*, edited by Bonnie G. McEwan, pp. 1–34. University Press of Florida, Gainesville.
 2012 Historical Archaeology and Native Agency across the Spanish Borderlands. In *The Oxford Handbook of North American Archaeology*, edited by Timothy R. Pauketat. Oxford University Press, Oxford.
- Thomas, Noah H.
 2008 *Seventeenth Century Metallurgy on the Spanish Colonial Frontier: Transformations of Technology, Value and Identity*. PhD dissertation, The University of Arizona, Tucson. ProQuest Dissertations Publishing.
- Titiev, Mischa
 1944 *Old Oraibi: A Study of the Hopi Indians of Third Mesa*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 22, No. 1. Peabody Museum, Cambridge, MA.
- Toulouse, Joseph H.
 1937 Excavations at San Diego Mission, New Mexico. *New Mexico Anthropologist* 2(1): 16–18.
 1949 *The Mission of San Gregorio De Abó: A Report on the Excavation and Repair of a Seventeenth-Century New Mexico Mission*. Monographs of the School of American Research No. 13. University of New Mexico Press, Albuquerque.
- Trigg, Heather B.
 1999 The Economy of Early Colonial New Mexico, AD 1598-1680: An Investigation of Social Structure and Human Agency Using Archaeological and Documentary Data. PhD dissertation, University of Michigan, Ann Arbor. ProQuest Dissertations Publishing.
 2003 The Ties That Bind: Economic and Social Interactions in Early-Colonial New Mexico, A.D. 1598-1680. *Historical Archaeology* 37(2): 65–84.
 2004 Food Choice and Social Identity in Early Colonial New Mexico. *Journal of the Southwest* 46(2): 223–52.
 2005 *From Household to Empire: Society and Economy in Early Colonial New Mexico*. University of Arizona Press, Tucson.

- Tyler, Hamilton A.
1964 *Pueblo Gods and Myths*. University of Oklahoma Press, Norman.
- Ullman, Chana
1989 *The Transformed Self: The Psychology of Religious Conversion*. Plenum Press, New York.
- Upham, Steadman
1982 *Politics and Power: An Economic and Political History of the Western Pueblo*. Academic Press, New York.
1987 The Tyranny of Ethnographic Analogy in Southwestern Archaeology. In *Coasts, Plains and Deserts: Essays in Honor of Reynold J. Ruppé*, edited by Sylvia W. Gaines, pp. 265–279. Anthropological Research Paper No. 38. Arizona State University, Tempe.
- Ur, Jason
2009 Emergent Landscapes of Movement in Early Bronze Age Northern Mesopotamia. In *Landscapes of Movement*, edited by James Snead, Clark Erickson, and Andrew Darling, pp. 180–203. University of Pennsylvania Press, Philadelphia.
- Urton, Gary
1981 *At the Crossroads of the Earth and the Sky: An Andean Cosmology*. University of Texas Press, Austin.
1990 *The History of a Myth: Pacariqtambo and the Origin of the Inkas*. University of Texas Press, Austin.
- Van Buren, Mary
2010 The Archaeological Study of Spanish Colonialism in the Americas. *Journal of Archaeological Research* 18(2): 151–201.
- Van Dyke, Ruth M.
2008 *The Chaco Experience: Landscape and Ideology at the Center Place*. School for Advanced Research Press, Santa Fe, N.M.
- Van Engen, John
2003 Conversion and Conformity in the Early Fifteenth Century. In *Conversion: Old Worlds and New*, edited by Kenneth Mills and Anthony Grafton, pp. 30–65. University of Rochester Press, Rochester, NY.
- VanPool, Christine S., Todd L. VanPool, and David A. Phillips
2006 *Religion in the Prehispanic Southwest*. Archaeology of Religion Vol. 5. AltaMira Press, Lanham, MD.
- VanValkenburgh, Nathaniel Parker
2012 *Building Subjects: Landscapes of Forced Resettlement in the Zaña and Chamán Valleys, Peru, 16th-17th Centuries C.E.* PhD dissertation, Harvard University, Cambridge, MA. ProQuest Dissertations Publishing.
- Varien, Mark, and James M. Potter (editors)
2008 *The Social Construction of Communities: Agency, Structure, and Identity in the Prehispanic Southwest*. Archaeology in Society. Rowman & Littlefield, Lanham, MD.
- Vierra, Bradley J.
2013 Archaic Foraging Technology and Land Use in the Northern Rio Grande, New Mexico. In *From Mountaintop to Valley Bottom: Understanding Past Land Use in the Northern Rio Grande Valley, New Mexico*, edited by Bradley J. Vierra, pp. 145–160. The University of Utah Press, Salt Lake City.
- Vivian, R. Gordon
1964 *Gran Quivira: Excavations in a 17th-Century Jumano Pueblo*. Publications in Archeology No. 8. National Park Service, U.S. Dept. of the Interior, Washington, D.C.
- Voss, Barbara L.
2008 *The Archaeology of Ethnogenesis*. University of California Press, Berkeley.
- Voth, H.R.
1905 *The Traditions of the Hopi*. Anthropological Series No. 8. Field Columbian Museum, Chicago.

- Wade, Edwin L., and Lea S. McChesney
 1981 *Historic Hopi Ceramics: The Thomas V. Keam Collection of the Peabody Museum of Archaeology and Ethnology, Harvard University*. Peabody Museum Press, Cambridge, MA.
- Wade, Maria de Fátima
 2008 *Missions, Missionaries, and Native Americans: Long-Term Processes and Daily Practices*. University Press of Florida, Gainesville.
- Walter, Tamra Lynn
 2007 *Espíritu Santo De Zúñiga: A Frontier Mission in South Texas*. University of Texas Press, Austin.
- Weber, David J.
 1992 *The Spanish Frontier in North America*. Yale University Press, New Haven.
- Weber, Max
 1964 *The Sociology of Religion*. Beacon Press, Boston.
- Weik, T. M.
 2014 The Archaeology of Ethnogenesis. *Annual Review of Anthropology* 43(1): 291–305.
- Weisman, Brent Richards
 1992 *Excavations on the Franciscan Frontier: Archaeology at the Fig Springs Mission*. University Press of Florida/Florida Museum of Natural History, Gainesville.
- Welker, Eden
 1997 *Attributes of Aggregation at Pueblo San Marcos and Pecos Pueblo in the Northern Rio Grande of New Mexico*. PhD dissertation, University of Colorado, Boulder. ProQuest Dissertations Publishing.
- Wenger, Tisa Joy
 2009 *We Have a Religion: The 1920s Pueblo Indian Dance Controversy and American Religious Freedom*. University of North Carolina Press, Chapel Hill.
- Wernke, Steven A.
 2012 Spatial Network Analysis of a Terminal Prehispanic and Early Colonial Settlement in Highland Peru. *Journal of Archaeological Science* 39(4): 1111–1122.
 2013 *Negotiated Settlements: Andean Communities and Landscapes Under Inka and Spanish Colonialism*. University Press of Florida, Gainesville.
- White, Courtney
 1996 Adobe Typology and Site Chronology: A Case Study from Pecos National Historical Park. *Kiva* 61(4): 347–363.
- White, Leslie A.
 1942 *The Pueblo of Santa Ana, New Mexico*. Memoirs of the American Anthropological Association No. 60. The American Anthropological Association, Menasha, WI.
 1962 *The Pueblo of Sia, New Mexico*. Smithsonian Institution, Bureau of American Ethnology Bulletin No. 184. U.S. Government Printing Office, Washington, D.C.
- Whitehead, Harriet
 1987 *Renunciation and Reformulation: A Study of Conversion in an American Sect*. Cornell University Press, Ithaca.
- Whiteley, Peter M.
 1988 *Deliberate Acts: Changing Hopi Culture Through the Oraibi Split*. University of Arizona Press, Tucson.
 2002 Re-imagining Awat'ovi. In *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*, edited by Robert W. Preucel, pp. 147–66. University of New Mexico Press, Albuquerque.

- 2008 *The Orayvi Split: A Hopi Transformation*. Anthropological Papers of the American Museum of Natural History No. 87. AMNH, New York.
- Whitman, William
 1940 The San Ildefonso of New Mexico. In *Acculturation in Seven American Indian Tribes*, edited by Ralph Linton, pp. 390–462. D. Appleton - Century, New York.
 1947 *The Pueblo Indians of San Ildefonso: A Changing Culture*. Columbia University Contributions to Anthropology Vol. 34. Columbia University Press, New York.
- Wiget, Andrew O.
 1982 Truth and the Hopi: An Historiographic Study of Documented Oral Tradition concerning the Coming of the Spanish. *Ethnohistory* 29(3): 181–199.
- Wilcox, Michael V.
 2009 *The Pueblo Revolt and the Mythology of Conquest: An Indigenous Archaeology of Contact*. University of California Press, Berkeley.
- Wills, W. H., and Robert D. Leonard (editors)
 1994 *The Ancient Southwestern Community: Models and Methods for the Study of Prehistoric Social Organization*. University of New Mexico Press, Albuquerque.
- Winship, George Parker
 1896 *The Coronado Expedition, 1540-1542*. Annual Report of the Bureau of Ethnology to the Secretary of the Smithsonian Institution No. 14. Smithsonian Institution, Washington, D.C.
- Wolf, Eric R.
 1957 Closed Corporate Peasant Communities in Mesoamerica and Central Java. *Southwestern Journal of Anthropology* 13(1): 1–18.
 1982 *Europe and the People Without History*. University of California Press, Berkeley.
 1986 The Vicissitudes of the Closed Corporate Peasant Community. *American Ethnologist* 13(2): 325–329.
- Woodbury, Richard B.
 1954 *Prehistoric Stone Implements of Northeastern Arizona*. Papers of the Peabody Museum of American Archaeology and Ethnology, Harvard University Vol. 34. Peabody Museum of American Archaeology and Ethnology, Harvard University, Cambridge, MA.
- Wulff, David M.
 1997 *Psychology of Religion: Classic and Contemporary*. John Wiley & Sons, New York.
- Wyckoff, Lydia L.
 1990 *Designs and Factions: Politics, Religion, and Ceramics on the Hopi Third Mesa*. University of New Mexico Press, Albuquerque.
- Wylie, Alison
 1985 The Reaction against Analogy. *Advances in Archaeological Method and Theory* 8: 63–111.
- Yava, Albert
 1981 *Big Falling Snow: A Tewa-Hopi Indian's Life and Times and the History and Traditions of His People*. Edited by Harold Courlander. University of New Mexico Press, Albuquerque.
- Zárate Salmerón, Gerónimo
 1629 Relaciones de todas las cosas que en el Nuevo Mexico se han visto y sabido, asi por Mar como por tierra, desde el año de 1538 hasta el de 1676 [i.e. 1626]. Ayer MS 1273. The Newberry Library, Chicago.