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Ancestral Pueblo Archaeology: The Value of Synthesis

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Abstract

Archaeologists working in the Ancestral Pueblo region of the American Southwest have documented variability in sociopolitical and economic complexity, landscape use, community organization, mobility, and violence at a wide range of temporal and spatial scales from AD 500-1700. Recent studies have a strong synthetic orientation, employ methods that track material culture, mobility, and social networks at macroregional scales, and benefit from a renewed engagement with indigenous peoples. Much of this research relies on integrating vast amounts of data from numerous academic and cultural resource management projects and demonstrates the promise of an archaeology that relies on the cumulative acquisition and sharing of data. Given the scale and depth of this research, Ancestral Pueblo archaeology is an exceptional comparative case for archaeologists considering similar processes, especially at fine temporal and wide geographical scales, in ancient farming societies across the globe.

Keywords: Ancestral Pueblo archaeology, North America, Neolithic/Formative societies, Macroregional approaches

Suggested running head: Ancestral Pueblo Archaeology

Introduction

As one of the first areas in the world to benefit from chronometric dating techniques (Nash 1999; Towner 2002) and long an important training ground for American archaeologists (Mills 2005), the Ancestral Pueblo region has played an outsized role in anthropological archaeology. This influence has waned in recent years as research in lesser-known parts of the American Southwest/Mexican Northwest and on Neolithic/Formative societies in other parts of the world is increasingly incorporated into disciplinary knowledge. Current Ancestral Pueblo archaeology has much to offer, however, as both a data-rich comparative case and exemplar of the benefits of large-scale, synthetic studies and efforts to promote preservation and access to accumulated archaeological knowledge. Research in the region provides insights into the origins and spread of agriculture (Price and Bar-Yosef 2011), the resulting Neolithic demographic transition and subsequent cycles of demographic change (Bocquet-Appel and Bar-Yosef 2008; Shennan 2013), the growth of regional and macroregional socioeconomic and political networks (Kantner 2008; Kowalewski 2008; Lesure et al. 2013; Robb and Pauketat 2013), and tensions between social differentiation and cooperation in middle-range societies (Carballo 2012; Price and Feinman 2010; Vaughn et al. 2010).

The strength of Ancestral Pueblo archaeology derives from a well-preserved archaeological record, precise chronologies, high-quality research on time-space systematics, and the presence of descendent populations who provide ethnographic analogues and both acknowledged and unacknowledged interpretations of material culture and ancient histories. The accumulated knowledge from nearly 130 years of archaeological research, coupled with new fieldwork and modern analytical and interpretative frameworks that emphasize synthesis and re-interrogation of existing data, provides insights into ancient dynamics at scales ranging from

individuals to households to regions that are unparalleled in their temporal and spatial detail (Kowalewski 2004, 2007). Southwest research has much to offer scholars seeking similar richness in archaeological explanations. Working with data sets of such depth and scope requires the development of analytical techniques, strategies for data preservation, and models for collaborative research. The legacy of the long history of all three approaches in Ancestral Pueblo research has become more evident over the last decade.

My review touches on shifts in our understanding and interpretation of the Ancestral Pueblo archaeological record over the past 15 years. Rather than provide a review structured by chronology or geography, I explore a few major themes that illustrate the value of the pan-regional, comparative perspective of recent works. These include (1) “big synthesis” as a research strategy, (2) settlement archaeology—including the study of landscapes and community organization, (3) mobility and linked demographic shifts, (4) the development of social and economic networks, and (5) the role of violence in ancient social dynamics. These strategies and subjects also are prominent among contemporary work on Neolithic/Formative societies throughout the globe. Interwoven through the text, I also examine the impact of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) and collaboration between archaeologists and native peoples of the Southwest on both the practice and content of scholarship. Recent archaeological study has been consciously and unconsciously shaped by the resurgence of interactions with modern Pueblo people and other native groups. I conclude with a brief look at potential future directions, including research topics and the structure of the Southwestern archaeological community, at a time when cultural resource management (CRM) projects are increasingly the primary source of new data and the main venue for archaeological fieldwork. I also offer a few suggestions for how Ancestral Pueblo archaeology may be useful

for researchers working in other parts of the world. My review is by no means comprehensive; it reflects my knowledge of particular regions and biases toward particular topics. For example, I discuss research on ancient religion (Fowles 2013; Glowacki and Van Keuren 2011; Lekson 2012; VanPool et al. 2006) and iconography (Hays-Gilpin and Hill 1999; Hays-Gilpin and Schaafsma 2010; LeBlanc and Henderson 2009; Munson 2011a, b; Plog 2003; Schaafsma 2000, 2007a, 2009; Washburn et al. 2010; Webster et al. 2006) only in relation to the topics introduced previously, yet either is deserving of in-depth treatment on its own. Vibrant research also is occurring in many regions of the Ancestral Pueblo Southwest and within many methodological specialties that I discuss briefly, if at all.

Definitions

In contrast to prior decades (Kohler 1993, pp. 268-270; McGuire and Saitta 1996, pp. 204-207), archaeologists working in the Ancestral Pueblo region have settled into a period of relative consensus on the theoretical underpinnings of our research. Although drawing upon diverse approaches, most current work conforms to the “processual plus” school (Hegmon 2003). We place strong emphasis on the design and implementation of fieldwork, the use of a comparative approach, and subjects of cross-cultural significance. We also have benefited from behavioral archaeology, resulting in a refinement of our understanding of the archaeological record and fruitful explorations of the role of material culture in human action and societies. Over the last decade, examinations of agency, practice, religion, memory, landscape, and heritage, as well as calls for more historically driven research have become more common. Explicitly evolutionary research is less common than in other parts of western North America

and often pursued in closer dialogue with other approaches. At present, it is hard to find specific projects that are not eclectic in their theoretical bases and inspiration.

There are still disagreements over the interpretation of the archaeological record and the privileging of particular processes in explaining the past, but there is little desire to establish a single, unifying theoretical framework. On the other hand, some earlier debates, particularly over the relevance of the ethnography of Southwestern societies to the interpretation of the ancient past, have not been resolved. The lack of resolution of the latter has become more important in the face of renewed engagement with ethnography, driven by both research questions and greater interaction with the indigenous peoples of the Southwest (Colwell-Chanthaphonh 2010; Colwell-Chanthaphonh and Ferguson 2006; Hays-Gilpin and Lomatewama 2013; Liebmann 2012a; Schaafsma 2013; Whiteley 2002; M. Wilcox 2009). Whether our relatively congenial eclecticism and lack of strong theoretical identity diminishes the importance of Southwest research among the wider archaeological community remains to be seen.

The Ancestral Pueblo area includes the southern Colorado Plateau, northern portions of the Rio Grande Valley, and the mountainous Mogollon Rim (Fig. 1). This area is subdivided into smaller regions or traditions originally defined in Kidder's (1924) seminal synthesis of Southwest archaeology. These regions are demarcated and bounded by various criteria, ranging from Pueblo traditional history to physical geography to similarities in artifact and architecture styles. I frequently refer to these divisions to provide geographic context. They remain important in structuring how Southwest archaeologists divide up the analytical universe, regardless of how they were initially defined (Cameron 2005; Cameron and Duff 2008; Duff 2000).

The Ancestral Pueblo area encompasses the entire culture area that was previously defined as Anasazi as well as the northern reaches of the Mogollon culture area. The boundary

between the two culture areas was never strong and became increasingly blurred over time. The terminological shift from “Anasazi” to “Ancestral Pueblo” reflects both a relabeling in response to native concerns (Colwell-Chanthaphonh 2009; Walters and Rodgers 2001) and a reevaluation of the culture area concept that encouraged incorrect, oversimplified assumptions about past behavior, social relationships, and identity (e.g., Speth 1988). In this sense, however, Ancestral Pueblo is equally problematic as a label.

Although “Ancestral Pueblo” makes the connection between modern and ancient groups explicit, a necessity in light of the pernicious “disappearing Anasazi” myth, it wrongly implies a strongly unified Pueblo identity exists or existed in the past, minimizing the diverse cultures, languages, polities, and histories of modern Pueblo groups (Ortiz 1994). The study of the emergence of modern Pueblo cultural and linguistic diversity out of what sometimes is portrayed as a homogenous ancient past has become increasingly significant in the age of NAGPRA (e.g., Bernardini 2005a, b; Gregory and Wilcox 2007; Kohler 2013; Ortman 2012; Whiteley 2004). The use of Ancestral Pueblo as a geographic label also wrongly demarcates the homeland of the ancestors of modern Pueblo people. Modern Pueblo groups have ancestral ties to many areas, including the Hohokam, Fremont, Mogollon, and Plains regions (Colwell-Chanthaphonh and Ferguson 2006; Dongoske et al. 1997; Ferguson et al. 2013; Shaul and Hill 1998; Spielmann 1991), and ancient migrations among these areas are increasingly well documented (Cameron 2013; Nelson and Strawhacker 2011). Some ancient residents of the Ancestral Pueblo region also are likely ancestors of non-Pueblo people. This possibility has received little attention but is especially significant along the lesser-known edges of the Ancestral Pueblo world (e.g., Allison 2010). The dynamics of these edges and the possibility that ancestors of non-Pueblo peoples were ancient residents of the Ancestral Pueblo region has taken on added significance with

NAGPRA and recent controversies over cultural affiliation (see Cordell and Kintigh 2010; Schillaci and Bustard 2010; Warburton and Begay 2005). Further exploration of these possibilities may reveal a more dynamic and intertwined history of the various linguistic and social groups of the Southwest than previously assumed (Colwell-Chanthaphonh 2010; Dongoske et al. 1997; Welch and Ferguson 2007) and encourage further attention to the role of distant connections and cultural diversity in the ancient history of the Southwest (Lekson 2009; McGuire 2011).

In this review, I focus on the period from roughly AD 500-1700, with the bulk of attention placed on the period from AD 800-1450. The longer interval encompasses the latter portions of the Pecos classification (Basketmaker III and Pueblo I-V) (Kidder 1927) and begins with the accelerated population growth characteristic of the Neolithic demographic transition (Kohler and Glaude 2008; Kohler et al. 2008a; Wilshusen and Perry 2008). Major transformations include the initial formation of aggregated villages (Wilshusen et al. 2012a; Young and Herr 2012), the pithouse-to-pueblo transition in residential architecture that accompanied changes in household and corporate group organization (Feinman et al. 2000; Schachner 2010; Wills 2001a), the rise and fall of Chaco Canyon as the preeminent sociopolitical center in the region (Lekson 2006a; Mills 2002), massive changes in the aggregation and distribution of populations from AD 1275 to 1450 (Adams and Duff 2004; Adler 1996; Spielmann 1998a), and the invasion of Spanish colonists in the 16th and 17th centuries (Barrett 2002; Flint 2008; Kessell 2010; Liebmann 2012a; Mathers et al. 2013; Mills 2008; Preucel 2002; M. Wilcox 2009; see Liebmann 2012b for discussion of the problematic use of this temporal division on perceptions of Pueblo history) (Fig. 2). McBrinn (2010) and Vierra (2005) provide excellent summaries of the substantial advances made in the archaeology of earlier

periods. Major topics include the adoption of maize-dominated diets and agricultural technologies such as irrigation (Coltrain et al. 2007; Damp et al. 2001; Wills 2005), the role of migration in the spread of cultigens into the Southwest (Hill 2001; LeBlanc 2008; Mabry et al. 2008; Matson 2002; Merrill et al. 2009), and the potential origins and identification of distinct ethnolinguistic groups (Hill 2002; Matson 2007).

Figure 2 illustrates the most widely used chronological schemes for the Ancestral Pueblo region and adjacent culture areas. Ancestral Pueblo archaeologists often use the original Pecos classification with some modification based on more recent research, while in the Rio Grande Valley an alternative temporal scheme is more common (Wendorf and Reed 1955). Researchers have largely discarded the unilineal evolutionary implications of the original sequences and also recognize that the timing of important phenomenon, such as the adoption of pueblo architecture or aggregated settlement forms, varies from region to region and even within regions. The explanation of temporal and spatial variation has become central to Ancestral Pueblo archaeology over the last few decades, particularly as we more accurately infer the historical trajectories of specific locales and understand how local histories shape and reflect social developments at larger scales.

Ancestral Pueblo chronologies are heavily reliant on dendrochronology and the identification of cross-dated pottery types. In most cases these two methods enable exceptionally precise site-level and regional chronologies (e.g., Reed and Hensler 2001; Varien 1999). Many chronological tools could be updated, however, through more effective analytical and field methods (e.g., Ortman et al. 2007; Peeples and Schachner 2012; Ramenofsky and Feathers 2002; Ramenofsky et al. 2009; Seymour 2010), collaborative reevaluation of the date ranges of pottery types, and greater use of alternative techniques precise enough to examine site use life or post-

occupational activities, for which tree-ring dating is difficult or impractical (e.g., Ahlstrom 2008; Cordell et al. 2008; Plog and Heitman 2010). The precision of Ancestral Pueblo chronologies enables research focused on changes at generational or even finer temporal scales, a goal of current research in many parts of the world (Beck et al. 2007; Bolender 2010; Shennan 2013; Sherratt 2004; Whittle et al. 2011). More dialogue between archaeologists attempting to work with refined chronologies is needed, as decades of work in the Ancestral Pueblo area suggests that precise dating raises additional interpretative challenges that are often overlooked when dating methods are less exact.

Nearly all research in the Ancestral Pueblo area is reliant on the vast amount of high-quality CRM work that has occurred in recent decades. I provide few direct citations to this work despite its centrality as a data source. The majority of CRM projects are relatively small and usually incorporated into wider disciplinary knowledge as part of larger synthetic studies. Larger projects, such as the recently completed Animas-La Plata Project in the eastern Mesa Verde region or the Peña Blanca project in the northern Rio Grande Valley, often have a more direct impact on the field due to both their scale and presentation of results in a wider range of venues (e.g., Lakatos and Post 2012; Post 2013; Potter and Chuipka 2010; Potter and Perry 2011). Although there is relatively frequent collaboration and interaction among CRM and academic archaeologists, further cultivation of these relationships is necessary. New venues for timely reporting of the existence and results of smaller projects, such as the “Recent Fieldwork” section of the Arizona Archaeological Council newsletter, would be useful. Southwest research also may benefit from new forms of collaboration between academic and CRM archaeology that leverage the divergent cost-benefit equations and reward structures of the two career tracks to mutual advantage.

Big synthesis

Since the first Pecos Conference (Kidder 1927), a defining strategy of Ancestral Pueblo archaeology has been large-scale synthesis. Recent efforts involve collaborative teams from diverse career paths engaged in: (1) short-term alliances of regional specialists to create pan-regional synthetic volumes that outline variation in cultural practices, change, and interregional connections during single time periods (e.g., Adams and Duff 2004; Adler 1996; Reed 2000; Wilshusen et al. 2012a; Young and Herr 2012), (2) short-term collaborations of scholars with varying methodological strengths who examine major questions in specific regions, such as the history of linguistic groups or the rise and fall of Chaco Canyon (Gregory and Wilcox 2007; Lekson 2006a; Reed 2008a), and (3) long-term projects associated with a small number of institutions that explore either regionally specific (Kohler and Varien 2012a) or pan-regional cultural phenomena (Hegmon et al. 2008; Mills et al. 2013a, b; Nelson et al. 2011, 2012) to examine questions of wider anthropological interest, such as the evolution of socionatural systems or the formation of large-scale social networks.

Interwoven with these efforts is the creation of massive databases, including the Chaco Research Archive (www.chacoarchive.org), the related Coalescent Communities (Hill et al. 2004; Wilcox 2005; Wilcox et al. 2007) and Southwest Social Networks databases (Mills et al. 2013a, b), and the Village Ecodynamics Project database (Ortman et al. 2007). Large, cumulatively generated databases have a long history in Ancestral Pueblo archaeology; recent examples incorporate earlier databases and benefit from the digitization of state archaeological record files. While the latter are primarily tools for CRM, they also have provided data for the synthesis projects (e.g., Wilcox et al. 2007, pp. 165-167) and regional investigations (e.g., Wills

et al. 2012, pp. 343-346) and are important conduits for bringing small-scale CRM work to wider attention. The long use and expectation of submission of information to state archaeological record files has ensured at least a minimal level of standard recording practices that is improving our ability to work with and share data generated in a variety of contexts. The more specialized databases created over the last few years, which have undergone substantial reanalysis to address data quality and comparability, are usually accessible to other researchers either through project websites or the Digital Archaeological Record (tDAR).

Chaco

An important example of this strategy is the Chaco Synthesis Project, which provided a capstone for the National Park Service-University of New Mexico Chaco Project (1969-1986) (Mathien 2005) and incorporated new perspectives on the Chaco system derived from subsequent research. Final products include edited volumes and journal issues covering the organization of production (Cameron and Toll 2001), society and polity (Cordell et al. 2001), the regional system (Kantner 2003), economy and ecology (Vivian et al. 2006), architecture (Lekson 2007), and an overall summary (Lekson 2006a). These efforts brought Chacoan archaeology broader attention, especially through the involvement of outside scholars in the synthesis volumes (Ashmore 2007; Earle 2001; Peregrine 2001; Renfrew 2001; Yoffee 2001) and beyond (DeBoer 2001; Pauketat 2007; Yoffee 2005; also see Drennan et al. 2010). The Chaco Research Archive also has revived the use of data from older projects (e.g., Heitman 2007, 2011; Plog and Heitman 2010; Watson 2012), and the Salmon Research Initiative led to new explorations of how the archaeology of the middle San Juan (or Totah) region, the potential location of a successor to Chaco, fits into our understandings of the Chacoan regional system and later social

developments (Reed 2008a, 2011a). These efforts produced many important advances that post-date Mills (2002) review of Chaco archaeology in this journal and warrant extensive discussion.

Most view Chaco Canyon as a sociopolitical center where some individuals and groups held a great deal of power, but there is little agreement on the cultural and historical processes that enabled their rise and the extent and form of their influence. Multiple aspects of the Chacoan archaeological record, including architecture requiring significant labor effort and coordination (Metcalf 2003; Wills 2000), rich and unusual burials (Akins 2001, 2003; Plog and Heitman 2010), large-scale flows of wood (English et al. 2001; Reynolds et al. 2005; Windes and McKenna 2001), pottery (Toll 2001, 2006), and turquoise (Hull et al. 2014; Kantner 2010b; Mathien 2001) into the canyon, and regional variation in the sizes and distribution of great houses and roads (Lekson 2009; Van Dyke 2007; Wilcox 2004), make a strong argument for sociopolitical inequality and the ability of Chaco Canyon's residents to draw surplus labor and its products from surrounding areas. Drennan et al. (2010) note that the labor expenditures and burial investment at Pueblo Bonito in Chaco Canyon are comparable to and often exceed efforts in other contexts where the presence of hierarchical political organization and social inequality are largely unquestioned (e.g., La Venta, Moundville, Formative Oaxaca, etc.). They chide Southwest archaeologists for obfuscating what they see as fairly clear evidence of inequality and our relegation of ancient Pueblo societies to a "separate, but equal" status in comparisons with other societies (Drennan et al. 2010, pp. 45-46, 48; also see Lekson 2006b, 2009; Neitzel 2003).

Comparisons of Chacoan archaeology to other areas around the world (e.g., DeBoer 2001; Drennan et al. 2010; Neitzel 1999; Pauketat 2007; Yoffee 2005) have generally been useful, particularly as critiques of both minimalist, egalitarian models—some of the most influential suggested by non-Southwesternists (Johnson 1989; Renfrew 2001; also see Vivian

1990)—and maximalist models that propose state or state-like organization (Lekson 1999, 2006b, c, 2009; Wilcox 1999, 2004). Comparison has been less effective for differentiating among the models that privilege various combinations of ritual, economy, and competition in giving rise to leaders, inequality, and the formation of a regional system (Judge and Cordell 2006; Kantner 2010a; Mills 2002; Phillips and Sebastian 2004; Plog and Heitman 2010; Reed 2011a; Toll 2006; Sebastian 2006; Van Dyke 2007; Ware 2014; Wills 2000, 2001b, 2012a; although see Kantner and Vaughn 2012; Saitta 2005). Here we will need new data and analyses, some of which has been forthcoming in recent years. In addition, a number of important critiques of how arguments about Chaco are tied to empirical evidence have proposed ways to sharpen and verify developing ideas, especially those related to control of ritual and pilgrimage in the rise of the canyon as a sociopolitical center (e.g., Lekson 2009, pp. 122-132; Plog 2010; Plog and Watson 2012; Wills 2001b, 2009, 2012a).

The pair of burial crypts in Pueblo Bonito excavated during the 1890s and 1920s have received renewed attention (Akins 2003; Ashmore 2007; Heitman and Plog 2005; Plog and Heitman 2010; Windes 2003). Each set of rooms in the crypts contained the remains of dozens of adults and children interred over a few generations, including secondary or partial burials and some disturbed by later activities (Harrod 2013; Marden 2011; also see Pérez 2012). The original excavators attributed the disturbance to natural and human post-occupational causes, minimizing the distinctiveness of these crypts in comparison to other burial practices. This form of burial, however, may have been unique within the Pueblo Southwest, although similarly sequential, multiple interments in single burial facilities associated with large artifact assemblages existed in the northern margins of the Hohokam region after AD 1300 (Loendorf 1998). Given the massive

looting of Ancestral Pueblo graves over the last 150 years, it is difficult to confidently assess the rarity of this practice.

The Pueblo Bonito burial crypts contained thousands of artifacts, including most of the turquoise recovered from the site, conch shell trumpets closely associated with leadership in ancient and modern Southwest societies and Mesoamerica (Mills and Ferguson 2008), wooden staffs, prayer sticks, and flutes, baskets, and most of the ceramic cylinder jars found in the Southwest. Analyses of organic residues present in the latter suggest these tall, beaker-like jars were used for drinking cacao imported from southern Mesoamerica (Crown and Hurst 2009; Washburn et al. 2011; also see Crown and Wills 2003).

Recent AMS radiocarbon dates from skeletal remains in Room 33 in the northern crypt, and in particular from the two deepest burials—arguably the two richest interments in the entire Southwest—answer long-held questions about the temporal assignment of these burials and the use of mortuary practices to differentiate particular segments of Chacoan society (Coltrain et al. 2007, table 1; Plog and Heitman 2010, table 1). The two deepest burials yielded nearly identical 2- σ calibrated ages of AD 691-877 and AD 690-873, while dates from eight other burials indicate human remains were added to the crypt continuously between the mid-ninth and early 12th centuries AD. Plog and Heitman (2010, p. 19625) argue that the later burials are elites most likely descended from the original founders interred in the deepest burials (also see Akins 2003). Contrary to earlier interpretations that interments began during the height of architectural investment in Chaco Canyon during the AD 1000s (e.g., Akins 2003, p. 104; Kantner 2010a, pp. 277-278; Lekson 2006b, p. 30), these new data suggest that social inequality originated at least a century prior. The new dates also raise questions about the long-perceived hiatus in the importance of Chaco Canyon during the 10th century AD (see Kantner 2010a, pp. 274-275).

This century is among the least well known in Ancestral Pueblo history but now appears increasingly pivotal in the rise of Chaco.

The new dates for the Pueblo Bonito burials bolster explanations that locate the origins of Chaco Canyon as a sociopolitical center and the emergence of Ancestral Pueblo social inequality within the early Pueblo period (roughly AD 650-950). Incipient leaders in this era drew on shifting interregional connections and the formalization of architectural, economic, and social practices to create new forms of social organization and differentiation (Feinman et al. 2000; Heitman 2007; Heitman and Plog 2005; Kantner 2012; Kohler and Reed 2011; Kohler et al. 2012a; Lekson 2009; Peregrine 2001; Plog and Heitman 2010; Schachner 2010; Van Dyke 2007; Ware 2002, 2014; Wilshusen and Van Dyke 2006; Wilshusen et al. 2012b; Windes 2007; Windes and Van Dyke 2012). Leaders experimented with many of the strategies cross-culturally associated with incipient inequality, including expansions of agricultural and craft production, increases in household size, investment in trade networks, and control over ritual, during a period of population growth characteristic of the Neolithic demographic transition (Kohler et al. 2008a) and the pithouse-to-pueblo architectural transition.

Evidence for inequality is best documented in the Mesa Verde region where the pithouse-to-pueblo transition was accompanied by the appearance of large, sedentary villages with hundreds of residents (Wilshusen et al. 2012a, b, c). Aggregation of this scale did not appear in most other parts of the Ancestral Pueblo region until centuries later. The best evidence for incipient social inequality in the Mesa Verde area comes from “proto-great houses” (Van Dyke 2007; Wilshusen and Van Dyke 2006; Windes 2003, 2007), architecturally differentiated spaces whose residents controlled communal ritual and feasting (Potter 2012; Schachner 2001) and probably dominated village economies (Kohler and Reed 2011; Schachner 2010). Although early

great houses are present in both the Mesa Verde region and the San Juan Basin (Van Dyke 2007; Windes 2007; Windes and Van Dyke 2012), current evidence suggests they first appeared in the former. One problem with the interpretation of these buildings is that nearly all of studies of the activities that occurred within them rely on the Dolores Archaeological Program and McPhee Village in particular, yielding a potentially biased view of where, when, and how proto-great houses emerged and the activities contained within. Comparisons of artifact assemblages from multiple proto-great house sites, in addition to continued comparisons to more typical residential sites, are needed.

By the late AD 800s, most of the Mesa Verde region was depopulated (Wilshusen et al. 2012c), just as the population in Chaco Canyon and nearby areas began to grow (Wilshusen and Van Dyke 2006; Windes and Van Dyke 2012). This ninth-century depopulation of the Mesa Verde region is by far less well known than that of the AD 1200s (Kohler et al. 2010), but it may be just as important in Ancestral Pueblo history (Nelson and Schachner 2002). Wilshusen, Van Dyke, and Windes (Wilshusen and Van Dyke 2006; Windes and Van Dyke 2012) argue these migrations brought the strategies and people conducive to the development of inequality to Chaco Canyon in the late AD 800s, eventually leading to the explosion in great house construction and formalization of the regional system in the AD 1000s (Duff and Lekson 2006; Kantner and Kintigh 2006; Lipe 2006).

Explanations such as these that link the rise of Chaco Canyon as a regional center in the AD 1000s to earlier social changes occurring in other regions have become more common as Southwest archaeology follows an increasingly historical and spatially expansive path. A historical turn is characteristic of many recent explanatory efforts, where combinations of local and regional factors are invoked and situated in contextualized histories that depict social change

at generational time scales. Historically rich explanations of social process have been proposed covering many spatial scales, from that of local communities (Bernardini 2005a; Eckert 2008; Liebmann 2012a; Schachner 2012) to regions (Cameron and Duff 2008) to the Southwest as a whole (Lekson 2009; Ware 2014). Explanations that only examine local processes synchronically (i.e., the “little community” research paradigm that was common earlier) are unlikely to satisfy most of our colleagues.

Some of the problems with earlier explanations for Chaco’s preeminence now appear attributable to failures to examine the connections between Chaco Canyon and surrounding regions prior to the appearance of Chaco-style great houses outside the canyon in the AD 1000s. The possibility that the origins of leadership and the Chaco system lie in earlier times and distant places requires further investigation of when and how social networks may have structured movement from the Mesa Verde region into Chaco Canyon (Kantner 2012, pp. 231-232), how social groups from other regions were involved in the process (Schachner et al. 2012, pp. 125-126; Vivian 1990), and the strategies that early leaders at Chaco employed to develop and secure power in what may have been a new homeland, let alone how this power was then maintained for centuries afterward by their descendants. As discussed below, archaeologists have made significant advances explaining geographically extensive movement linked to major social changes in the Southwest during the AD 1200s and 1300s. One of the challenges of understanding Chaco is expending similar effort on the process and effects of movement at sufficient spatial scales.

Agreement on what strategies ancient leaders in Chaco Canyon employed to maintain power and draw followers remains elusive. Most recent models depict Chaco Canyon as a pilgrimage destination at the center of an area of shared religious ideals (Kantner and Vaughn

2012; Malville and Malville 2001; Toll 2006; Van Dyke 2007). This model accounts for the apparently low population of the canyon and great houses in particular (Bernardini 1999), as well as the enormous quantities of objects from the surrounding region (Toll 2006) and some Mesoamerican exotics (macaws, copper bells, cacao) (McGuire 2011; Nelson 2006) that were drawn to the canyon while few, if any, items left. Pilgrimages provided the ritual and practical knowledge for participants to build their own communities along Chacoan ideals, spurring the creation of Chaco-style great houses by local leaders well outside the canyon itself, albeit with some degree of local variation (Duff and Lekson 2006; Kantner and Kintigh 2006; Van Dyke 2003, 2007). Explanations for how the pilgrimage system evolved emphasize competition among ritual specialists within the canyon and among local elites in distant great house communities (Kantner 2010b; Kantner and Vaughn 2012) or historical factors, such as connections between Chaco Canyon and the Mesa Verde area (Van Dyke 2007; Wilshusen and Van Dyke 2006).

Some scholars have questioned the pilgrimage model on empirical and theoretical grounds. Lekson (2006b, c, 2009, 2012) argues there is overemphasis on ritual in recent Ancestral Pueblo archaeology, which he attributes to uncritical projections of idealized depictions of modern Pueblo societies into the ancient past. Drawing on architecture, settlement patterns, and roads, Lekson instead suggests that Chaco exhibited state-level regional integration and sociopolitical inequality (also see Wilcox 1999, 2004). He sees the emphasis on ritual and egalitarianism among modern Pueblos as the legacy of a conscious 13th and 14th century rejection of the excesses of Chaco society. Lekson proposes Chaco began in the AD 800s as a small, San Juan Basin-centric redistribution system that was transformed into a secondary state with palaces and economic and military control over distant lands to counter the expansion of Hohokam settlement on the southwestern margins of the Pueblo world in the AD 1000s (Lekson

2009, pp. 122-133). He is vague about why this expansion would have drawn the concern of Chacoan leaders, especially given that the two regional systems were separated by small populations that were not clearly part of either (Herr 2001). Empirical evidence for redistribution is lacking, although this is understandable given that foodstuffs would have been the primary product moved through the system (Lekson 2009, p. 140). Because of significant analytical and methodological challenges, efforts to track the movement of maize have yet to yield definitive results, especially for the earlier part of the Chaco sequence (Benson 2010, 2012; Benson et al. 2003, 2009; Cordell et al. 2008). Nearly all Southwest archaeologists would argue that many of the archaeological markers of state organization, such as clear, multitiered settlement hierarchies, institutionalized bureaucracies, and armies, are difficult to see in the Chaco region. On the other hand, many of these markers are signs of successful state creation. It may be useful to explore the possibility that failed experiments in these directions did occur (see Wright 2006).

Lekson (2009) also argues for further study of long-distance connections, both to adjacent regions and to more remote Mesoamerica. Connections to the latter are receiving renewed interest with the discovery of cacao consumption at Chaco (Crown and Hurst 2009) and potentially other areas of the Southwest (Washburn et al. 2011, 2013). Washburn (2011; Washburn et al. 2010) also has argued that differences between the symmetries of designs on ritually important vessels from Pueblo Bonito, including the cylinder jars, and other prior and contemporary design symmetries are markers of the migration of Mesoamericans who assumed elite positions in Chacoan society. Her model echoes earlier arguments positing Mesoamerican peoples as the instigators of Chaco's rise that have generally been met with skepticism. As with other models that focus on the AD 1000s as the period of institutionalization of inequality and differentiation of Chaco from regional peers, Washburn's account needs to confront the now

well-documented earlier history of proto-great houses and incipient elites. Whether the material evidence for Mesoamerican ties has been accurately identified or is indicative of changes in Ancestral Pueblo society during the Chaco era rather than simply the product of the long intertwined history of Mesoamerica and the Southwest remains to be seen.

Wills (2001b, 2012a) and Plog and Watson (2012) also critique the pilgrimage-based model of Chaco's organization and rise. The primary data for pilgrimage derives from Pueblo Alto (Toll 2001, 2006). Alto is prominently sited at the junction of roads leading both into and out of the canyon, making it a key interface with regional populations. The excavators suggest that its population was smaller than its architectural mass indicates and that the trash mound contains evidence of episodic deposition of ceramic vessels and faunal debris indicative of periodic gatherings. Wills (2001b), focusing on the stratigraphy of the mound and calculations of vessel deposition, and Plog and Watson (2012), reexamining vessel deposition and the faunal assemblage, conclude that pilgrimage was not especially important in the development of Chaco Canyon as a regional center. Instead they suggest that the Alto mound (and the Pueblo Bonito mounds [Wills 2001b]) contains relatively typical Ancestral Pueblo trash deposits, except for an overabundance of construction debris and a notable absence of human burials. The latter is a significant departure from patterns in nearly all other time periods and regions within the Ancestral Pueblo area, including the small houses of Chaco Canyon itself (Plog and Heitman 2010, p. 19620). It is difficult to explain the lack of burials and overabundance of construction debris in great house trash mounds due to uncertainty about the representativeness of the excavated record from the canyon.

Wills (2012a) also challenges the evidentiary bases of pilgrimage/ritual models by critiquing interpretations of a relatively minor facet of that record, the remains of a large

ponderosa pine excavated in the 1920s in the plaza of Pueblo Bonito that some have suggested conferred the location with cosmological significance (e.g. Ashmore 2007; Stein et al. 2007). Wills (2012a, pp. 480-485) presents evidence suggesting that a portion of a dead tree was brought to the site well after its sociopolitical peak. He suggests the thin empirical basis for assigning cosmological significance to this minor aspect of the Chacoan archaeological record is representative of a wider failure to fully explore the empirical basis of ritually oriented models and a tendency to privilege explanations that already fit the dominant narrative in Chacoan archaeology. He singles out research on astronomical alignments in great house architecture (e.g., Sofaer 2007) and the cosmological significance of roads (e.g., Van Dyke 2007) as ripe for reanalysis, suggesting that these explanations require further empirical testing and consideration of alternative possibilities (e.g., Janes 2005 on roads). Wills (2012a, pp. 486-489) also explores the growing reticence to see Chacoan great houses as analogous to modern and historic pueblos, citing studies that suggest low population estimates as the primary empirical drivers of this perspective. This challenge to current consensus is less persuasive, probably because the empirical basis for these arguments derives from a wider range of contexts and lines of evidence. Although Wills' critique is focused narrowly on Chaco, it parallels similar skeptical appraisals of research on ritual, cosmology, and landscape in many Neolithic/Formative contexts.

Wills, Plog, Watson, and Lekson challenge us to build on the numerous advances in our understanding of the Chacoan archaeological record over the last few decades and to investigate Chaco with modern methods used in other areas and time periods. Recent research by Wills, Crown, and their students that reexamines the stratigraphy of the Pueblo Bonito mounds (Wills 2012b), evidence for population discontinuities during the 12th century McElmo phase (Wills 2009), potential variation in agricultural production in the canyon and its role in fostering social

differentiation (Dorshow 2012; Wills and Dorshow 2012; Worman and Mattson 2010), and early population aggregates in Chaco Canyon and their role as precursors to great house communities (Wills et al. 2012) is providing new data and perspectives on Chacoan archaeology that should enable us to better ground our explanations. Although an enormous amount of accessible data exists from Chaco Canyon, targeted modern fieldwork and analyses are crucial to move Chacoan archaeology forward.

One area that deserves particular attention is how we identify pilgrimages in the archaeological record and whether evidence for episodic mass consumption and deposition are good indicators. Given the distance over which people traveled to Chaco Canyon, their stays may have been relatively long, resulting in the deposition of normal day-to-day assemblages. Seasonal and short-term occupation of alternate residences is well attested in the Pueblo ethnographic record (Anschuetz 2007; Preucel 1990; Snead 2004). What of the possibility that Chaco Canyon was an alternative residence location for large numbers of people who resided elsewhere much of the time (also see Toll 2008, p. 327)? Windes et al. (2000) have presented evidence that some small houses of the canyon were uninhabitable in the winter because they were shielded by cliffs from the warming sun (also see Wills and Dorshow 2012, p. 152). The creation of a system that facilitated the mobility of people has yet to be thoroughly explored and may explain many of the presumably enigmatic features of Chaco Canyon, including low numbers of habitation rooms and burials at great houses (Bernardini 1999; Plog and Heitman 2010), strong material ties to particular areas, such as the Chuska slope (Cameron 2001; Toll 2001, 2006, 2008), and the relative peacefulness of the Chaco era (LeBlanc 1999; Lekson 2002). The possibility that mobility drove many of the archaeological patterns of the Chaco system remains on the table even if strong evidence for mass feasting events is lacking. Except for the

special role attributed to pilgrimage, discussions of Chaco have diverged from that of other regions and time periods in the Southwest where mobility is a dominant theme. Mobility has crept into a few areas in Chaco research, especially in relation to early migrations from the Mesa Verde area, but also in the potential movement of the center of the Chacoan system to the north in the late 1000s and early 1100s.

Many Chaco scholars now see the construction of Salmon Ruin and the larger complex of ruins at Aztec in the Totah region along the San Juan River and its tributaries during the late 11th and early 12th centuries as an effort to create either a rival or successor to Chaco Canyon (Brown et al. 2008; Lekson 1999, 2009; Reed 2008a, 2011a; Van Dyke 2009). Although not directly part of the Chaco Synthesis Project, recent efforts in the middle San Juan region (Reed 2006a, 2008a, 2011a) have complemented the former, providing further insights into regional economic and political processes. A range of evidence, including pottery (Washburn and Reed 2011), dental traits (Durand et al. 2010), perishables (Webster 2011), architecture (Brown et al. 2008; Brown and Paddock 2011), and settlement patterns (Brown et al. 2013; Reed 2011b; Wheelbarger 2008), suggests the Chaco-era settlement of the middle San Juan region was complicated. Migrants from the Chaco region, including elites with intimate knowledge of Chacoan ritual and architectural canons (Clark and Reed 2011; Reed 2008b; Webster 2011), mixed with local residents who variably incorporated Chacoan elements depending on the social and historical circumstances of specific portions of the region (Reed 2011b). No other part of the Chaco region has received comparable investigation of linkages to the Chaco center, but many questions remain.

First, the middle San Juan is an exceptional case of limited value for modeling socioeconomic processes and demographic ties in other parts of the Chaco world. The great

house at Salmon and great houses at Aztec are the only ones outside Chaco Canyon and its immediate environs that are of the same scale as those found in the canyon. Great houses in other areas are orders of magnitude smaller and exhibit less adherence to Chacoan architectural canons (Van Dyke 2003). For no other part of the Chacoan world would archaeologists entertain the possibility that a direct successor or rival to Chaco Canyon existed in the AD 1000s. Although the founding of Totah great house communities simultaneously involved all the processes that have been explored for other regions, including colonization by people from Chaco Canyon, the formation of hybrid communities of local and migrant residents, and emulation of Chacoan architecture and ritual by local groups (see Kantner 2003; Kantner and Mahoney 2000; Van Dyke 2003, 2007), other areas do not contain contemporaneous evidence for all these possibilities, especially settlement by Chacoan elites. Second, middle San Juan archaeology is dominated by studies of great houses, with comparatively little information from contemporary and earlier small sites, which limits our insights into how local people were affected by Chaco's rise and the arrival of colonists from that area (Reed 2008b, pp. 379-380; Vivian 2008, pp. 373-374). Reed (2011b) and others (Brown et al. 2013; Wheelbarger 2008) have begun to rectify the issue, but clearly more attention to small sites in the Chaco sphere in nearly all areas is necessary. Further studies of how the vast majority of people were affected by and influenced regional sociopolitical dynamics and economy remain critical for understanding the Chaco era.

I have barely touched the investigation of outlier communities spread over thousands of square kilometers around Chaco Canyon. The latter are crucial for understanding the Chacoan system (Kantner 2003) yet have received comparatively little study. We are often dependent on decades-old investigations for primary data. A few projects have occurred in recent years in the Mesa Verde and Cibola regions (e.g., Cameron 2009; Duff 2005; Duff and Nauman 2010; Duff

et al. 2012; Kantner et al. 2000), but these newly investigated communities are located on the farthest fringes of the Chaco world. A fundamental shortcoming in our understanding of the Chaco world is the limited archaeological knowledge of the Chuska slope on the western edge of the San Juan Basin, from where significant amounts of the pottery, lithics, and wood found in Chaco Canyon derive. Similarly distant outliers located in the southern San Juan Basin also are poorly understood.

The Chaco Synthesis Project and recent work inspired by it have transformed our understanding of Chaco Canyon. Here I suggest a few avenues for further investigation. Renewed study of social differentiation rooted in local economies is warranted by both the early appearance of Chacoan elites and problems with the pilgrimage/ritual model. Investigations of agricultural and craft production and their control by elites would be timely. Modern techniques for investigating these possibilities are beginning to be employed in the Chaco area (e.g., Dorshow 2012; Wills and Dorshow 2012), but lag behind other areas (e.g., Mesa Verde for agricultural potential and the Rio Grande for craft production). Chaco archaeologists should investigate models of chiefly societies proposed by Earle (2001) and others that have largely been ignored by Southwest archaeologists. Although we may be skeptical of the label “redistribution,” the “special pleading” made for Ancestral Pueblo societies noted by Drennan et al. (2010) has been counterproductive. Of course ritual is important and some aspects of overly standardized models may not fit, but I believe we have taken too many of the pathways to power seen around the world off the table to investigate Chaco properly or make it amenable to comparison to other cases.

One way to further investigate Chaco is to compare it to local societies that were not part of the system. Vast parts of the Ancestral Pueblo Southwest, especially the Rio Grande Valley to

the east and the Kayenta and Tusayan areas to the west, were outside the Chaco system. Why (see Fowles 2013)? What is different about social trajectories in these places? It is not simply distance, as parts of these regions are as close to Chaco Canyon as well-documented great houses in southeast Utah and west-central New Mexico. How do contemporary Rio Grande, Kayenta, Sinagua, and western Little Colorado communities compare to those of the Chaco world? Our knowledge of early Rio Grande communities has improved in recent years after long periods of relative inattention (Fowles 2013; Kohler 2004; Lakatos 2007; Lakatos and Post 2012; Post 2013; Scheick 2007), and studies of Arizona communities outside the Chaco sphere have long occurred (Dean 2002; Herr 2001; Powell 2002), but rarely have our understandings of these local communities been put in productive dialogue to elucidate what made the Chaco experience distinct or why people in many parts of the Pueblo world did not participate at all.

Interdisciplinary synthesis

Another major synthetic trend in Ancestral Pueblo archaeology is interdisciplinary exploration of socionatural systems. The two most prominent are the Village Ecodynamics Project (VEP) based at Washington State University and Crow Canyon Archaeological Center (Johnson et al. 2005; Kohler et al. 2007; Kohler and Varien 2010, 2012a; Ortman et al. 2007; Varien et al. 2007) and the Long Term Vulnerability and Transformation Project based at Arizona State University (Hegmon et al. 2008; Nelson et al. 2010, 2011, 2012; Schoon et al. 2011; Spielmann et al. 2011a, b). A third major project, the multi-institution Jemez Fire & Humans in Resilient Ecosystems Project has also recently begun (Roos and Swetnam 2012). This work builds on decades of interdisciplinary and environmental studies that have demonstrated the promise, and some might say pitfalls, of the availability of high-quality and often high-

resolution data measuring climatic and environmental variability. A fourth interdisciplinary project, the University of Arizona- Archaeology Southwest-sponsored Southwest Social Networks project (Mills et al. 2013a, b; Peeples and Haas 2013) follows a different strategy in that it links with other social sciences rather than environmental fields.

The VEP has yielded unparalleled insights into settlement dynamics and cultural process in the Mesa Verde region from AD 600 to 1300, encompassing the first substantial settlement of the area and two cycles of population growth (approximately AD 600-900 and AD 1000-1275) that are each followed by regional depopulation. Each cycle culminated in the formation of aggregated villages, and the second cycle ended with total depopulation of the area at the end of the 13th century AD. Phase I of the VEP focused on the area of densest prehispanic occupation in the region; Phase II is expanding the study area in the Mesa Verde region and includes a portion of the northern Rio Grande Valley centered on the Pajarito Plateau west of Santa Fe. The latter is a likely destination for migrants from the Mesa Verde region (Arakawa et al. 2011; Kohler et al. 2008b; Lipe 2010; Ortman 2010, 2012; although see Boyer et al. 2010). The inclusion of this new area enables key changes to the VEP simulation model, including modeling exchange and population movement (Kohler et al. 2012b); more importantly it provides a comparative case that can then be used to further evaluate the VEP model itself.

VEP research combines synthesis and generation of new data from nearly 9000 recorded archaeological sites with analysis of paleoenvironmental data and the creation of the “Village” agent-based simulation model. VEP researchers have not attempted to produce a perfect model of Ancestral Pueblo society but use modeling to define processes and variables within sionatural systems for investigation based on expectations rooted in concepts of optimality and adaptation. Model results are then tested against the archaeological record to highlight and

examine actual change in the ancient socionatural system (Kohler and Varien 2012b, pp. 6-9). VEP research addresses the rise of inequality (Kohler and Reed 2011; Kohler et al. 2012a), settlement and population dynamics in Neolithic/Formative societies (Kohler and Varien 2010), the contributions of mobility and evolutionary convergence to the generation of common cultural practices across space and time (Kohler 2013), and links between population size and the frequency of warfare (Kohler et al. 2009; Kohler and Varien 2010). These efforts are good examples of how researchers can leverage the strengths of Ancestral Pueblo archaeology to address issues of interest in other regions and fields of study.

Comparisons of the VEP model and the archaeological record provide a range of insights. First, inhabitants of the Mesa Verde region initially avoided and then twice embraced aggregation at levels much higher than estimated by the model, leading researchers to address the potential role of sunk costs linked to social and physical infrastructure of various sorts concentrated in larger settlements (Glowacki and Ortman 2012; Janssen et al. 2003) and violence (Cole 2012) in encouraging aggregation (Kohler 2012a, pp. 252-261; Kohler et al. 2012b). Second, ancient population levels reached much higher highs and lower lows than in the modeled world, a fact that Kohler (2012a, pp. 249-250) attributes to an underestimation of the effects of low-frequency temperature variation and lack of modeling of migration and cooperation in the original simulation. Third, the modeling highlights the challenges of securing sufficient protein from the local environment due to the rapid depression of animal populations, especially deer, through overhunting (Bocinsky et al. 2012; Cowan et al. 2012). This shortfall was addressed through the domestication of turkey (Badenhorst and Driver 2009; Muir and Driver 2002), which may have created its own set of resource problems as these newly

domesticated animals were competitors for maize (Rawlings and Driver 2010). VEP Phase II further explores these mismatches (Kohler et al. 2012b).

A strength of the VEP is that modeling is seen as a partial solution to improving studies of ancient societies and not a complete explanation (Kohler 2012a). Although strongly shaped by evolutionary models, VEP research also includes the eclectic theoretical grounding characteristic of recent Southwest research (e.g., Arakawa 2012b; Glowacki and Ortman 2012). By being explicit about assumptions behind the model and providing access to both their archaeological and simulated data, VEP researchers have opened their research to scrutiny. Critical examinations of the VEP model and associated archaeological research, such as that provided by Janssen (2009) for the Artificial Anasazi model (Axtell et al. 2002; Gumerman et al. 2003), will sharpen VEP modeling efforts and insights into ancient socioecological change.

A striking conclusion of VEP research is the sheer size of populations in the VEP I area (Ortman et al. 2007, 2012). These estimates are substantially higher than prior estimates for the entirety of the Mesa Verde region, of which the VEP area is only a portion (compare to Duff and Wilshusen 2000; Wilshusen 2002). Further examination of these disparities and the sensitivity of population estimates to variation in base-level assumptions would provide an excellent illustration of how our methods of population estimation structure archaeological research, not just in terms of absolute numbers estimated but also in smoothing or accentuating demographic and sociocultural change. The VEP is one of many Southwestern examples that provide a myriad of lessons on archaeological population estimation (e.g., Kintigh et al. 2004; Wilcox et al. 2007).

It is unclear, however, how representative the VEP study is of Ancestral Pueblo settlement dynamics in general. The study region is on the northern edge of the culture area, has relatively high precipitation levels and high-quality soils, and the early emergence of social

inequality set the area on a different trajectory than others (Cameron and Duff 2008).

Comparison of multiple regions using the same methods may broaden the utility of the VEP research, highlight new areas for investigation, and generate robust inferences about common patterns of evolutionary change in Neolithic societies. Similarly detailed modeling of agricultural productivity across multiple regions with comparable population densities would help refine our understanding of the relationships between these variables, as well as the potential link between agriculture and the origins of social differentiation in local communities.

The ASU project illustrates the benefits of a comparative approach by juxtaposing insights from multiple study areas, ranging from northern Mexico to the Mesa Verde region, to explore how societies address trade-offs among robustness, vulnerability, and productivity to ensure resilience over the long term. ASU researchers created general measures of rigidity and flexibility in social and physical infrastructure to characterize how variation in these factors affected the ability of populations to address both short-term and long-term socioecological vulnerabilities (Hegmon et al. 2008). Modeling is an important component of this research, although the types of models and modeling goals contrast with that of the agent-based VEP model (Anderies and Hegmon 2011; Janssen 2010).

The ASU project examines three areas of the Ancestral Pueblo world—Zuni, Mesa Verde, and Salinas—that contrast well with one another because they exhibit a range of population trends, respectively, steady growth, boom and bust, and stability (Spielmann et al. 2011a). Key findings include the deleterious effects of rigid subsistence strategies, such as investment in large-scale irrigation networks, or inflexible social practices, such as homogeneity and conformity in iconography and architecture. Although often beneficial for short-term productivity gains or during favorable climatic and environmental regimes, rigidity resulted in

radical reorganization or collapse in the face of socioecological changes (Hegmon et al. 2008; Nelson et al. 2010, 2011, 2012; also see J. Dean 2010). For example, emphasis on social conformity and long-term investment in specific locations made the Mesa Verde social system particularly vulnerable to the climatic shifts of the 13th century (Hegmon et al. 2008). In contrast, the long history of residential mobility, limited investment in physical infrastructure, and social diversity in the Zuni area enabled continuity in the social system and population of the area in the face of similar environmental challenges (Nelson et al. 2011).

In many ways the VEP and ASU projects reach complementary conclusions. The former provides rich detail on specific processes in a socioecological system; the latter highlights differences among regional social practices and ecological systems that enable us to understand how different historical outcomes arise even in the face of similar challenges. Future comparison of multiple cases with the detail of the current VEP study appears especially promising. By documenting the range of variability and underlying causal factors in multiple regions within what at one level is a fairly unitary archaeological culture area, Ancestral Pueblo archaeology may inspire the creation of models that are useful for researchers trying to examine similar variation in other Neolithic/Formative societies (cf. Kowalewski 2004, 2007; Lesure et al. 2013).

Settlement archaeology

CRM surveys and improved mapping and analytical technologies have exponentially increased the spatial coverage of survey in the Ancestral Pueblo area. Coupled with the relative accuracy of Southwest ceramic chronologies, regional surveys enable high-resolution diachronic views of settlement strategies at macroregional (Hill et al. 2010; Wilcox et al. 2007), regional (Barrett 2002; Duff 2002; Kulisheck 2003, 2010; Post 2013; Ramenofsky et al. 2011; Varien

1999), and local scales (Kintigh et al. 2004; Schachner 2012; Snead 2004, 2008; Varien and Potter 2008a). Recent settlement pattern studies often focus on either the built and natural landscape to explore the cosmology of ancient settlement and land use practices (Anschuetz 2005; Anschuetz et al. 2001; Bernardini et al. 2013; Fowles 2009, 2010, 2013; Greene and Leckman 2011; Ortman 2008, 2012; Schachner 2011; Snead 2004, 2008, 2009; Snead and Preucel 1999; Van Dyke 2004, 2007, 2011) or the social organization of communities (Coffey 2010; Fowles 2005; Gilpin 2003; Kintigh et al. 2004; Preucel 2000; Schachner 2012; Varien 1999). These strategies parallel wider trends in settlement archaeology, which has increasingly focused on social and ideological drivers of ancient settlement strategies, in addition to the traditional emphasis on economic and environmental considerations. The latter two facets have been less prominent in recent Southwest settlement pattern research but are not absent (e.g., Anschuetz 2007; Duwe and Anschuetz 2013; Snead 2008, pp. 49-80). Subsistence and environment may be due for renewed consideration in Ancestral Pueblo settlement archaeology as we develop more integrative models of ancient settlement dynamics.

A distinguishing feature of landscape studies in the Ancestral Pueblo area is that they have been driven by a reengagement with ethnography and renewed interaction with the indigenous people of the region rather than primarily drawing on British landscape perspectives for inspiration (Fowles 2010, pp. 457-458; Snead 2008, pp. 17-19, 28-32). Thus the “Southwest school” may offer an alternative to or an important comparative case for the “British school” as they build on contrasting sources (Fowles 2010). These new studies revive an older strategy of Ancestral Pueblo archaeology that worked from a strong ethnographic base; what makes the new studies distinct is their integrative perspective. Different types of places, including pueblos, shrines, and natural features, are analyzed simultaneously rather than as distinct products created

independently. Early researchers also rarely studied the wider landscape to understand ancient ritual practices, with the real action thought to be in kivas, plazas, and material culture rather than the land itself (although see Stein and Lekson 1992).

The prior sentence would probably be seen by many of our Pueblo colleagues as telling. Archaeologists often ignore important factors and places in Pueblo life due to our focus on what we believe are the correct features and processes for understanding small-scale agricultural societies (Anschuetz 2005, p. 58). Modern landscape research in the region is wide ranging and employs spatial analyses of residences, limited activity areas, such as shrines, rock art locales, and fields, as well as prominent natural features that were likely important based on modern Pueblo cosmologies. Scholars have demonstrated continuity in Pueblo landscape use and demarcation practices well back into the Rio Grande Classic period (to AD 1300 if not earlier), often drawing inspiration from Ortiz (1969) as well as contemporary Pueblo scholars (e.g., Naranjo 1995, 2008). Ortman (2008, 2011, 2012) argues that these same practices can be traced further back in time and space to the Mesa Verde region, where similar patterns of shrine construction, location, and landscape feature visibility are apparent. He suggests these parallels are evidence for cultural continuity between Mesa Verde and Tewa-speaking Rio Grande populations. Bernardini et al. (2013), Van Dyke (2007, 2011), and myself (Schachner 2011) have argued that many natural features that are prominent in modern Pueblo cosmology, particularly those demarcated by the geographic scope of their visibility or their unusual geological origins, also were key pieces of ancient landscapes that facilitated the creation of social networks and identities across time and space.

Recent landscape studies in the Ancestral Pueblo area may suffer from the risk of uncritically projecting a modern ethnographic understanding into the past (see Lekson 2009,

2012), but Southwest archaeologists have attempted to ameliorate this hazard by using ethnography to develop material expectations that can be evaluated against the archaeological record. Duwe (2011), Ortman (2008), Snead and Preucel (1999), and Fowles (2009) look to the ethnographic record of the Rio Grande Pueblos as sources of information about probable configurations of features like shrines and alignments to mountains and hills and then contrast those expectations against diverse archaeological examples. This form of falsification has been more difficult to apply in considerations of the importance of natural features (see Duff 2011, p. 473) but is theoretically possible.

Small steps have been made in extending this method deeper into the past and into landscapes that are more distant from the modern pueblos in time and space (Bernardini et al. 2013; Potter 2004; Schachner 2011; Van Dyke 2007, 2011; Wilshusen et al. 2012b). Continued extension of these efforts, which have focused on either relatively recent or comparatively monumental (e.g., Chaco) archaeology, further back in time will require reevaluation of inferential methods and greater emphasis on analyses simultaneously addressing imagery across a range of media, architecture, and landscapes (e.g., Munson 2011a). Rock art may be a key aspect of landscape research that attempts to move beyond the ethnographic record, although it is unlikely to completely escape it. It is surprising how rarely research on landscape and rock art overlaps, although there are important exceptions in the Rio Grande area (Fowles 2013; Munson 2011a; Munson and Head 2011; Schaafsma 2009; Snead 2008; also see Potter 2004). Integration of these perspectives may provide an avenue for productive dialogue between the Southwest school and our British and European counterparts, where rock art is often of greater interest to archaeologists employing landscape perspectives. The lack of attention to rock art in many

landscape studies is surprising given the interest of modern Pueblo peoples in rock art as markers of landscape use, migrations, and cosmology (Schaafsma and Young 2007).

One area where recent landscape archaeology can improve is through a more deliberate melding of considerations of economic and cosmological factors. Recent work underemphasizes farming, hunting, and gathering in the formation of Ancestral Pueblo landscapes (although see Duwe and Anschuetz 2013; Potter 2004). These three activities are notoriously difficult to trace through archaeological survey, but further consideration of the role of subsistence in landscape use is warranted; it often drove the physical presence of people on the landscape and is an essential component of the cosmology of Pueblo land use (Anschuetz 2007; Wall and Masayesva 2004). Recent advances in identifying potential locations of ancient fields, both directly (Dominguez 2002; Gauthier et al. 2007; Kruse-Peebles et al. 2010) and indirectly (Dorshow 2012), new perspectives on traditional farming techniques, language, and ideology (Dominguez and Kolm 2005; Homburg and Sandor 2011; Homburg et al. 2005; Muenchrath et al. 2002; Sandor, et al. 2007), and recent explorations of the role of mobility in agriculture (Anschuetz 2007; Duwe and Anschuetz 2013; Kulisheck 2010; Schachner 2012) all provide directions that an integrative archaeology of Ancestral Pueblo landscapes might take. Faunal assemblages provide a window not only into diet but variation in presence at and connections to distant places for the acquisition of animals (Ferguson and Hart 1985, pp. 42-43; Potter 2002). Botanical assemblages could be similarly “spatialized” and interrogated. Although our interests often oscillate toward two seemingly diametric poles (e.g., economy vs. cosmology in this case), as our collaborations with Pueblo people make clear, these analytical divisions can also inhibit our understanding.

Southwest archaeologists have also made important contributions to debates about the utility and theorizing of the long-used concept of community (e.g., Kolb and Snead 1997; Preucel 2000; Varien and Potter 2008a). We discuss “Chacoan communities” or “Cibola communities” with the implicit understanding that we are referring to a cluster of tens of settlements within tens of square kilometers that were occupied by dozens to hundreds of individuals. Some have considered whether this usage blinds us to variation in social organization and the processes that gave rise to clustering in the archaeological record (Adler 2002; Hegmon 2002, 2008; Preucel 2000; Schachner 2012; Varien 2000; Varien and Potter 2008b). Research on this topic in the Ancestral Pueblo region provides excellent illustrations of challenges in archaeological interpretation, including the use of ethnographic analogies, the inference of social organization from archaeological remains, and tensions among theories of culture change.

The community concept became more important during investigations of the Chacoan system and the spatial distribution of outlying great houses and residential pueblos scattered around them (Gilpin 2003; Kantner 2003; Kantner and Mahoney 2000; Kintigh 2003). Archaeologists studying Chaco-era communities investigated social organization at scales well beyond that of individual sites, long the traditional focus of social archaeology in the Southwest (e.g., Hill 1970). Some argued that the demography and land use strategies of scattered Chaco period settlements were similar to historic Pueblo villages (i.e., hundreds of people farming up to 10 km from their residences), and that what archaeologists recorded as settlement clusters surrounding great houses were bounded sociopolitical units archetypical of Pueblo society and anthropological visions of the little community, albeit linked into a larger system that did not jibe as well with Pueblo ethnography (Stein and Fowler 1996).

Attempts to define the social processes behind the formation of these settlement clusters reveals the essentialist/processualist tension of many recent debates in archaeology. Chacoan communities can be defined as near universal social/settlement units standing at mid-ground in Chacoan social organization between a regional system centered on the canyon and the thousands of small pueblos scattered across the region. Thus great house locations are often used as proxies for surrounding settlement clusters and the overall geography of the Chacoan system. Variability in the spatial distribution of residential pueblos is largely ignored. The study of these small pueblos is crucial if we are to understand what great houses were, how the use of Chacoan architecture and ideology varied, and the impact of Chaco on day-to-day life. Understanding the settlement strategies that governed the distribution and occupation of these pueblos will require fine-grained examinations of their relationship to farming lands and investigation of many small pueblos within one or more adjacent settlement clusters.

Although many recognize the pitfalls of rigidly defining communities, studies that enable us to examine variation through time and space are few due to the difficulty of generating data sets spatially expansive and detailed enough to investigate processes at proper scales. Studies by Duff (2005; Duff and Nauman 2010), Kantner et al. (2000), and Cameron (2009) have examined multiple settlement clusters in close proximity to one another, enabling analyses of variability in social organization and interaction linked to the maintenance of community-scale social boundaries. Synthetic studies of Chaco-era settlement practices and organization may shed new light on a variety of processes, from the construction and use of outlying great houses to how different parts of the Chaco region interacted and influenced one another, potentially without that interaction being channeled through Chaco itself. One area that needs greater study is how community-scale, intermediate-level social units during the Chaco era related to those of earlier

eras, which are more diverse than prior models based on the San Juan Basin and Mesa Verde region have suggested (Kantner 2012; Schachner et al. 2012).

Comparison of communities in the Mesa Verde and Cibola regions illustrates the range of variation in local-level social interaction and organization in two of the most densely settled portions of the Ancestral Pueblo Southwest. Mesa Verde researchers have examined the organization of single communities, as well as regional patterns of change in community organization and scale (Adler 2002; Coffey 2010; Glowacki and Ortman 2012; Varien 1999, 2000; Varien and Wilshusen 2002). Varien (1999) demonstrates that settlement clusters were persistent and well demarcated on the Mesa Verde landscape during the 10th through 13th centuries AD, especially in the most populous, agriculturally productive areas. Clusters usually contained sequentially occupied community centers with public architecture, including Chaco-style great houses. Centers were resided in for multiple generations and surrounded by smaller pueblos that were occupied for shorter periods of time. Varien argues that the centers were residences of socially important people who ensured temporal and spatial continuity in land tenure systems and community identity. Over time, the proportion of people residing in community centers increased as people aggregated at points on the landscape that ensured access to high-quality farmland and the protective cover of groups large enough to secure both lives and resources on an increasingly populated and conflict-ridden landscape (also see Kohler et al. 2012b). Communities shifted from widely scattered configurations similar to those of the Chaco era to more centralized forms, yielding a relatively smooth evolutionary shift from dispersion to aggregation.

Recent work in the Cibola region presents a contrasting picture (Huntley 2008; Kintigh et al. 2004; Peeples 2011; Peeples et al. 2012; Schachner 2008, 2012). At roughly AD 1300,

coincident with the depopulation of the Mesa Verde area and other northern regions, Cibola area populations began to occupy nucleated pueblos, each containing hundreds to thousands of rooms, and small pueblos became exceedingly rare (Huntley and Kintigh 2004; Kintigh 2007). The new nucleated pueblos were similar in scale of aggregation and population to historically documented pueblos, and it is reasonable to consider each a relatively bounded sociopolitical unit (i.e., the idealized Pueblo community). The now nearly 700-year-long existence of residential units of this scale in the Cibola/Zuni area would seem to indicate the timelessness of this social form, but a longer-term view suggests otherwise.

Although large villages were occasionally present in the Cibola area between AD 500 and 1300, most people resided in settlements containing one to a few households, and strong clustering is difficult to define (Peeples et al. 2012; Schachner 2012). Many pueblos and clusters in the Cibola area that were occupied prior to the AD 1400s were depopulated within a generation or less (Kintigh 2007; Schachner 2012; Thompson 2012). In addition, people residing in close proximity to one another often had remarkably different regional ties, contradicting the expectations of the bounded community model (Huntley 2008; Peeples 2011; Schachner 2012; Schachner et al. 2011). Well-bounded sociopolitical units equivalent in demographic and spatial scale to Mesa Verde communities rarely existed in the Cibola region prior to AD 1300.

Thus the appearance of large, nucleated pueblos in the Cibola area at AD 1300 was not a spatial reorganization of an extant social unit but rather a fundamental reordering of the relationships among households and similarly sized groups that enabled greater communal control over the day-to-day decision making and mobility of others (Schachner 2012). The initial adoption of nucleated settlement forms was spotty. In the 1200s, people experimented with different settlement forms for a few generations before nucleated pueblos came to dominate

settlement choices. Increasing conflict was an important factor in the emergence of nucleated pueblos (LeBlanc 1999, 2001), but violence was more common in the Cibola region *after* nucleated pueblos had already appeared. Violence may have been the primary factor encouraging the near universal adoption of nucleated pueblos, but not necessarily for their original innovation. This historically contingent perspective on the origins of communities in the Cibola area avoids the essentialist trap of projecting community-scale social groups into the deep past and highlights the role of variability in enabling social innovation (cf. Hegmon et al. 2008).

Nucleated pueblos have usually been depicted as the culmination of a long process of aggregation (e.g., Fish et al. 1994). Given the predilection to see community-scale social units as universal features of Ancestral Pueblo history, the fundamental reordering of *social and ideological* relationships implied by the shift to nucleated pueblos circa AD 1300 has arguably been underexamined. At no point in Ancestral Pueblo history was community identity and polity so clearly physically marked. Even after nucleation, however, mobility challenged the formation of strong, persistent social boundaries, as people shifted residences among pueblos and across regional and linguistic boundaries (Adams 2002; Anschuetz 2007; Bernardini 2005a, b; Eckert 2008; Huntley 2008; Kulisheck 2003, 2010; Liebmann 2012a; Lyons 2003). Thus even in situations where the archaeological record is composed of starkly bounded residential units, the permeability and importance of those boundaries in day-to-day life and social networks remains unclear.

Given the contrast between Mesa Verde and Cibola communities, we should refrain from seeking a single model of the Ancestral Pueblo community and instead investigate variability and shifts in settlement strategies in response to changing social and environmental parameters. The assumption that bounded community-scale social units had important structuring effects on

settlement choices and/or persisted on the landscape at all times and in all places is unwarranted. For most of the Ancestral Pueblo world and especially along its margins, residences were small and short-lived, the products of a mobile agricultural/subsistence system that entailed continuous reformatting of spatial and social relationships (e.g., Bayman and Sullivan 2008; Herr 2001; Rocek and Rautman 2007; Sullivan 2008). These types of land use systems undermine the long-term stability and utility of community-scale social organization (Schachner 2012).

Demonstration of the existence of bounded social communities requires more than documenting settlement clustering, which is confounded by a need for temporal precision that challenges the strongest chronologies. The study of communities also necessitates examining interaction within spatially contiguous *groups* of potential communities to assess boundary making at the appropriate scale. Improved understanding of local social organization also requires further investigation of the effects of farming and other nonresidential activities on the use of the landscape and social interaction. The potential of these types of nonsettlement focused analyses is illustrated by Snead's (2004, 2008, pp. 49-80) and Duwe's and Anschuetz's (Anschuetz 2007; Duwe 2011; Duwe and Anschuetz 2013) work in the Rio Grande, which examines many factors affecting community organization and landscape usage, with farming among the most important in moving bodies and marking places.

Despite my skepticism about the time depth and universality of community organization, these types of social units were at times important, as illustrated by the Mesa Verde case and the numerous nucleated villages that dominated the landscape throughout the Ancestral Pueblo area after AD 1300. These forms of organization were strategies enacted by social groups in response to both local and regional phenomena—historical products of their eras and locations. Where Ancestral Pueblo archaeologists can contribute to the study of community formation more

broadly is to identify the social, environmental, and historical factors that led people to make choices leading to the adoption of community-scale settlement forms and boundary maintenance and how variability enabled or inhibited those choices. Integration of data from survey and analyses of socioeconomic interaction at appropriate scales across many parts of the Ancestral Pueblo area has the potential to yield an extraordinary view of variability in the formation of community-scale social units during the rise of agricultural economies and represents a sharp contrast from earlier research that either sought single models applicable to the entire region or projected community forms of the ethnographic present back into deep time.

Mobility

Mobility is a central theme of Ancestral Pueblo archaeology (Cameron 2013; Fowles 2011; Gilman and Whalen 2011; Mills 2011). Ancient movements in the region took many forms, from once in a century long-distance migrations to near daily trips to fields and water sources. While earlier archaeologists initially focused on the movement of “cultures” and the depopulation of the northern Southwest, during the processual era the emphasis shifted to the transition to sedentism and local movements linked to subsistence practices (see Gilman and Whalen 2011). Migration remained an important topic among scholars working along the Mogollon Rim (Ezzo and Price 2002; Lowell 2007, 2010; Reid and Whittlesey 2007; Riggs 2001, 2005, 2007), but its recent resurgence elsewhere was driven primarily by disciplinary trends and greater interaction with our Pueblo colleagues. Migrations are central themes in Pueblo oral histories and cosmologies (Anschuetz 2005; Colwell-Chanthaphonh 2010; Ferguson 2007; Naranjo 1995, 2008), which have inspired recent studies of movement and its effects in both origin and destination locales (Bernardini 2005a, b, 2008; Lyons 2003; Ortman 2012). Research

foci include long-distance migration and its role in the pivotal 13th and 14th century AD transformation of settlement systems and population distribution across the Ancestral Pueblo world (Adams 2002; Bernardini 2005a, b; Clark 2001; Cordell et al. 2007; Duff 2002; Eckert 2008; Fowles 2005, 2011; Lyons 2003; Neuzil 2008; Ortman 2012; Spielmann 1998a; Stone 2003; Zedeño 2002) and the role of mobility in shifting demography and social responses to Spanish military and missionary activities during the colonial period (Barrett 2002; Kulisheck 2003, 2010; Liebmann 2012a, b; Ramenofsky et al. 2011; M. Wilcox 2009). Current research is less concerned with identifying whether particular groups were mobile and instead examines how mobility was shaped by and generated other phenomena ranging from environmental variation, to violence, to the emergence of new forms of social organization and interaction.

No migration has received as much attention as the depopulation of the northern Ancestral Pueblo area in the late AD 1200s during an interval that has been referred to as the “Great Drought”. This event continues to be one of the central themes of the public imagination and scholarship of the Southwest (Diamond 2005; M. Wilcox 2010). During the last half of the AD 1200s, the northern reaches of the Ancestral Pueblo world, including the Mesa Verde, Kayenta, and Chaco regions, were depopulated as migrants moved to long-occupied regions to the south, including the Rio Grande Valley and Mogollon Rim. Destination regions experienced coeval population growth and the rapid and nearly complete adoption of nucleated settlement forms (Adams and Duff 2004; Spielmann 1998a; Wilcox et al. 2007).

The superficial explanation that drought alone caused the depopulation of the Mesa Verde region has proven unsatisfactory. Improved estimates of how environmental variation would have affected crop yields suggest that at no point in the region’s occupation would rainfall amounts have precluded agricultural production (Benson et al. 2013; Cordell et al. 2007; Kohler

2012b; Kohler et al. 2008b; Van West 1994). The Mesa Verde area was and is the most productive dry-farming region in the Southwest (J. Dean 2010; Kohler 2012b). Had Mesa Verde residents been able to fully exploit higher-quality locations on the landscape during the late AD 1200s, a possibility inhibited by an increasingly aggregated and densely packed settlement system, significant portions of the population could have rode out the Great Drought, as they had even worse droughts in earlier eras.

Based on new population estimates, depopulation of the region started roughly a generation *before* drought conditions began in the mid-1270s; this finding undermines explanations focused exclusively on environmental variation (Duff and Wilshusen 2000; Ortman et al. 2007, 2012; Wilshusen 2002). Improved knowledge of Mesa Verde population dynamics also indicates that the AD 1200s depopulation was the *second* cycle of emigration from the region, following nearly 300 years after an earlier population decline (Arakawa 2012a; Nelson and Schachner 2002; Ortman et al. 2007; Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006). The existence of this earlier, but not total, depopulation driven by similar environmental and social challenges suggests that the AD 1200s depopulation was not as extraordinary as first assumed. Researchers now explore the role of many factors in the depopulation, including long-term historical ties to a then-fallen Chaco center and its potential successor at Aztec (Cameron and Duff 2008; Glowacki 2011; Lekson 2009), religious transformations (Glowacki 2011; Lipe 2010; Ortman 2012), regional population circulation that preceded and exacerbated the effects of environmental variation (Duff and Wilshusen 2000; Glowacki 2010; Ortman et al. 2012; Varien et al. 2007), and the role of violence (Cole 2012; Kohler and Kramer Turner 2006; Kohler et al. 2008b; Kuckelman 2010a, b, 2012; Kuckelman et al. 2002; LeBlanc 1999; Lekson 2002). These factors led to total depopulation and near total rejection of any vestiges of social practices

associated with the region in destination areas after AD 1300 (Arakawa 2012a; Lekson 2009; Lipe 2010; Ortman 2010, 2012).

The destination of migrants from the Mesa Verde region and adjacent areas remains a point of contention; most researchers suggest that between 10,000-20,000 people departed for the Rio Grande Valley during the late 1200s (Arakawa et al. 2011; Cordell et al. 2007; Ortman 2010, 2012). Some traveled even farther to central and southern New Mexico (Clark and Laumbach 2011; Lekson et al. 2002; Varien 2010). Research on Mesa Verde-Rio Grande connections has explored how migrants were channeled by extant social and economic networks (Arakawa et al. 2011; Cordell et al. 2007) and combined analyses of demography, genetics, and linguistics to identify likely destinations and descendent populations (Ortman 2010, 2012). Boyer et al. (2010) present a contrary view, arguing that material and demographic ties between the two areas were tenuous at best, that classic site-unit intrusions are lacking and should be expected for a migration event of such scale, and that social and population changes in the Rio Grande can be explained by different mechanisms, including local growth and migration from more proximate areas. This question requires continued examination. Comparable population increases are not apparent in areas outside the Rio Grande that remained occupied across the transition (Hill et al. 2010), and unless one posits significant in situ population decline in the Mesa Verde area (Cameron 2010), it is hard to make the demography of the migration work without substantial movement to the Rio Grande.

The Kayenta area offers instructive contrasts for understanding why the northern regions were depopulated (J. Dean 2010) and the effects in destination regions (Clark and Laumbach 2011; Lyons 2003; Lyons et al. 2008; Stone and Lipe 2011). Kayenta residents were less directly affected by drought because they relied primarily on alluvial groundwater rather than rainfall as

in the Mesa Verde area (J. Dean 2010). Kayenta settlement and social practices were more diverse, suggesting little of the deleterious emphasis on social conformity and rigidity seen in the Mesa Verde case (Hegmon et al. 2008). Kayenta area residents also did not participate in the earlier Chacoan sphere, which insulated them from some of the social changes that accompanied the Mesa Verde region's demise (J. Dean 2010, p. 337).

The diversity of practices and differing historical ties did not ultimately preclude depopulation of the Kayenta region, however, but enabled substantial numbers to move a short distance to the nearby Hopi mesas. Some Kayenta people migrated great distances into the southern Southwest in what some have labeled diaspora (Lyons and Clark 2012; Lyons et al. 2011; Mills 2011), where they maintained distinct cultural traditions (Lyons 2003; Lyons et al. 2008; Woodson 1999). Kayenta migrants have been implicated in significant social changes in Classic period Hohokam society and the Mogollon area, including the production of cosmologically charged Roosevelt Red Ware (Crown 1994; Lyons 2003), the rise of a related feasting tradition (Lyons et al. 2011), and changes in socioeconomic networks and ritual practices (Clark and Laumbach 2011; Lyons and Clark 2012; Lyons et al. 2011; Neuzil 2008; Stone 2002, 2003). Further explorations of other instances of depopulation during this era, in the northern (Allison 2010; J. Dean 2010) and southern (Clark et al. 2006; Duff and Schachner 2007; Rocek and Rautman 2007; Peeples 2011) peripheries of the Pueblo world and the formerly central Chuska and Chaco regions (Stein and Fowler 1996), are likely to contribute to our growing understanding of the nuances of the transformation of Ancestral Pueblo life in the AD 1200s and early 1300s. While local factors played a role in specific depopulation events, given the distances migrants traveled satisfactory explorations will need to be macroregional in scope.

Study of this topic demonstrates the necessity of tacking among scales to craft satisfactory explanations of the ancient past.

Our understanding of mobility also would benefit from studying a wider range of movements (Cameron 2013; Gilman and Whalen 2011; Schachner 2012), variability among the types of groups and individuals that move (Bernardini 2005a, b; Cameron 2013; Gilman and Whalen 2011; Kohler and Kramer Turner 2006; Lowell 2007, 2010), and migrations and other movements in time periods both before (Clark and Laumbach 2011; Herr 2001; Kantner 2012; Wilshusen and Ortman 1999; Wilshusen and Van Dyke 2006) and after (Kulisheck 2003, 2010; Liebmann 2012a, b; Mills 2008; Peebles 2014; Ramenofsky et al. 2011; M. Wilcox 2009) the AD 1200s and 1300s. Studies of long-distance migration resulting from regional depopulations remain ascendant at the moment, but research on more frequent movements, including intraregional population circulation (Cameron 2013; Duwe and Anschuetz 2013; Schachner 2012), pilgrimage (Kantner and Vaughn 2012; Malville and Malville 2001; Plog and Watson 2012; Schachner 2011; Van Dyke 2007), hunting (Potter 2004), and resource procurement (Arakawa 2012b; Ward 2011), is becoming more common. Renewed research on agricultural mobility is likely to be an important piece of these endeavors. Different types and scales of movement form an interconnected whole, thus the study of disparate varieties adds to our knowledge of the temporal and spatial dimensions of larger, interconnected networks and how more regular movements are implicated in channeling the less frequent migrations that have been the subject of intense scrutiny in recent years.

Addressing variability in mobility practices of small groups or even individuals that are hard to track in the archaeological record has been difficult, but a few examples suggest the promise of these efforts. Studies of the demographic effects of violence and the identification of

potential refugees, especially women and children (Cameron 2013; Kohler and Kramer Turner 2006; Lowell 2007, 2010) suggest that substantial numbers of women in Chaco Canyon, the Totah region, and the Mogollon Rim area were captives forcibly relocated or refugees fleeing conflict in adjacent areas. Nearly 20 years into the reinvigorated study of Ancestral Pueblo mobility, great advances have been made, and it is likely that these studies will continue to reveal a more connected, diverse, and spatially expansive world than previously thought. Greater attention to the scale and frequency of mobility in the ancient past in general, but particularly in smaller-scale societies, is a key facet of countering wrongheaded assumptions about modernity (Cobb 2005; Fowles 2013) and developing more nuanced explanations of past cultural change (Kowalewski 2006; Pauketat 2003).

Economy and social networks

Recent studies of Ancestral Pueblo economies and social networks parallel the regional, expansive focus of other research in the Southwest. Earlier studies often assumed that the production, distribution, and consumption of a range of goods occurred in localized, relatively simple systems; during the last few decades researchers have employed methods from materials science, geology, and studies of technology to document the movement of many classes of material culture across huge expanses of the Southwest. Recent models propose that specialized production systems and extensive regional exchange arose along with expansive religious ideologies and increased consumption of ceremonially important objects (Crown 1994; Mills 2004, 2007a, b; Spielmann 1998b, 2002). The appearance of these new ritual practices has been linked to the necessity of integrating diverse populations during the era of long-distance migration and aggregation in the 13th and 14th centuries. The structure of earlier Ancestral

Pueblo economies has received less attention, but studies of Chaco period exchange (Toll 2001, 2006) and that of even earlier eras (Allison 2008; Webster 2012) document similarly expansive networks and specialized production of a range of objects. Specialized production and extensive exchange likely has deep roots in the Ancestral Pueblo area, extending back at least to the early Pueblo era and the formalization of larger corporate groups and increased competition over social status (Feinman et al. 2000; Schachner 2010). Forms of exchange and production driven by other factors, such as market transactions (Kohler et al. 2000, 2004), are deserving of further attention given the apparent prevalence of both local and regional economic specialization, the volume of goods moving within socioeconomic systems, growing evidence for market-based systems in adjacent parts of the Southwest (Abbott et al. 2007), and recent rethinking of the archaeological study of market exchange in general (Garraty and Stark 2010). While ritually linked production, distribution, and consumption was important in the Ancestral Pueblo area, entertaining a wider range of models to understand how economic strategies shifted over time and space and the potential integration of craft and agricultural economies is needed.

Research on craft economies in the region is often integrated with studies of related dimensions of cultural process, including mobility (Arakawa et al. 2011; Bernardini 2005a, b; Duff 2002; Fowles et al. 2007; Glowacki 2006; Lyons 2003; Peeples 2011; Schachner 2012; Triadan 2013; Triadan et al. 2002; Zedeño 2002; Zedeño and Triadan 2000), social power (Duff et al. 2012; Neitzel et al. 2002; Thibodeau 2012), learning networks and communities of practice (Cordell and Habicht-Mauche 2012; Duwe and Neff 2007; Eckert 2008; Habicht-Mauche et al. 2006), religion (Glowacki 2006; Mills 2007a; Van Keuren 2011), and identity (Eckert 2008; Lyons 2003; Peeples 2011). Most of these studies rely on compositional methods for tracing the movement of objects across the landscape or to understand variability and change in the

distribution of technical knowledge required for the production of complex crafts, such as glaze-paint recipes. This research focuses on a range of artifact types, including ceramics (Carter et al. 2011; Cordell and Habicht-Mauche 2012; Eiselt and Ford 2007; Fowles et al. 2007; Glowacki and Neff 2002; Harry et al. 2013; Schachner et al. 2011; Speakman and Neff 2002), obsidian (Arakawa et al. 2011; Duff et al. 2012; Graves 2005; Mills et al. 2013a, b; Shackley 2005), and turquoise (Hull et al. 2008, 2014; Thibodeau 2012). Objects that present significant analytical and methodological challenges, such as architectural mortars and adobe (Balsam et al. 2007; Rumsey and Drohan, 2011), wood (English et al. 2001; Reynolds et al. 2005), animal products (Grimstead 2011), shell (Grimstead et al. 2013), and maize (Benson 2010, 2012; Benson et al. 2009; Cordell et al. 2008), are less frequently examined. A relatively untapped research strategy is the comparison of movement of multiple crafts, raw materials, and agricultural products within integrative systems. While we have made advances by juxtaposing the movement of objects with those of people and ideas, we have been less successful in bringing insights from multiple artifact classes back together to view the economy as a whole.

The greatest amount of research has been on ceramics. Ancestral Pueblo pottery production was the province of household specialists, with community specialization occurring throughout the Pueblo sequence and in nearly every region. Studies of paints, particularly glaze paints that began to be applied in the Cibola and Rio Grande areas in the late AD 1200s, have demonstrated that some technologies were difficult to copy or innovate independently. Instead the spread of this technology was linked to the development of communities of practice shaped by flows of people and knowledge across broad swaths of the Southwest during the era of regional reorganization in the 13th and 14th centuries (Cordell and Habicht-Mauche 2012; Duwe and Neff 2007; Goff 2009; Habicht-Mauche et al. 2002, 2006; Huntley 2008; Huntley et al.

2007; Thibodeau et al. 2013; Van Keuren et al. 2013). In addition to finished products, raw materials necessary for producing glaze paints, such as galena and other lead bearing ores, also moved through socioeconomic networks, at times over hundreds of kilometers.

Why glaze ware pottery became important at this critical juncture in Ancestral Pueblo history is more difficult to explain. Most researchers argue that the innovation was related to the use of glaze ware serving vessels during communal rituals conducted in newly built nucleated pueblos (Chamberlin 2002; Cordell 2006; Mills 2007a, b; Spielmann 1998b, 2002; Van Keuren 2006, 2011; although see Kohler et al. 2000). This turn toward more public display and participation is argued to have forged links among the diverse factions within pueblos formed during the era of depopulation and migration in the AD 1200s and 1300s. The movement of glaze-painted pots and technological styles among regions, particularly from the Cibola area, where glaze technology appears to have arisen earlier, to the Rio Grande Valley (Thibodeau et al. 2013), complicates this interpretation. The chronology of the appearance of glaze paints and more public ritual deserves greater attention to better understand how paints, knowledge, and people may have flowed from west to east, as well as the association between glaze ware technology and the rise of new forms of ceremonial practice. This process was likely more complicated than it currently appears.

Greater integration of the results of social network and different methods of compositional analysis would be beneficial. Bernardini (2005a, 2007) used formal social network analytical methods to study Jeddito Yellow Ware compositional data and evaluate the expectations of different models of social structure for the Hopi region from AD 1300-1700. He suggests the region was only weakly integrated prior to the AD 1400s when ties across the region moderately increased in frequency with the emergence of an incipient Hopi identity among the

diverse migrant populations that arrived in earlier centuries. The central nodes of a hierarchical system did not exist until after Spanish missions were established in the 1600s but soon disappeared following the destruction of the village of Awat'ovi.

The Southwest Social Networks Project has analyzed the distribution of obsidian in the western Southwest, including much of the Ancestral Pueblo area, during AD 1200-1450 (Mills et al. 2013a). Their analyses suggest that macroregional social networks, while at times conforming to expectations of gravity models based on spatial proximity, became increasingly complex during the period of long-distance migration that occurred during the latter half of their study interval, when many villages had longer-distance ties that potentially linked them to others with similar migration histories. These results corroborate analyses based on the distribution of ceramic wares that also document important shifts in the geography and structure of long-distance social networks during this era (Mills et al. 2013a; Peeples and Haas 2013). Formal models of exchange and analytical techniques deserve wider use in Ancestral Pueblo archaeology and may be especially helpful in synthesizing the large body of compositional data created over the last few decades that has usually been analyzed within rather than across regions. Due to the sparseness of data points, most macroregional analyses of the movement of objects and people in Neolithic/Formative societies provide only skeletal outlines of what appear to be complex, varied systems when viewed through the lens of richer data sets. To address these shortcomings, synthesizing the regional analyses of artifact circulation accumulated in the Ancestral Pueblo area in recent decades should be prioritized.

Research at the household scale has become rare in the Ancestral Pueblo area in comparison to earlier decades. This lack of focus on household archaeology contrasts with the nearby Hohokam area, where the larger scale of recent CRM projects allows comparison of

economic activities among households within and between villages (e.g., Bayman 2002; Ciolek-Torrello 2012; Craig 2007; Ensor 2013). A few similar studies have been pursued in the Ancestral Pueblo region (Douglass and Heckman 2012; Duff and Nauman 2010; Mills 2007b; Mobley-Tanaka 2010; Schachner 2010), often resulting in the identification of axes of difference in economic activities that were exploited by some households to improve or at least mark their social status. Attempts at melding this strategy with wider regional examinations are promising. What is required is the synthesis of data from multiple sites and projects (e.g., Douglass and Heckman 2012; Mobley-Tanaka 2010), a process that may be simpler for studies of eras prior to the nucleation of population into large pueblos when individual households and their associated trash deposits are easier to identify.

Further explorations of the existence of multicrafting are warranted in light of recent arguments about links between craft production and migrants (Lyons and Clark 2012; Mills 2007b) and ritual practices (Mills 2004, 2007a; Spielmann 2002), as well as the importance of multicrafting in other parts of the Americas (Hirth 2009). Attempts to integrate studies of craft production with those of agricultural systems also may yield more complete understandings of Ancestral Pueblo economies (e.g., Harry 2005). Foodstuffs and other agricultural products, such as cotton (Adams 2002), have long been important items of exchange in Pueblo societies, but, these exchanges are particularly difficult to track. This is an area where further development of simulation modeling may be insightful (Cockburn et al. 2013). In sum, recent explorations of Ancestral Pueblo economies and social networks suggest that economic production, consumption, and distribution were often far more complicated than the overly simplified domestic mode of production usually associated with Neolithic/Formative economies. Studies of Ancestral Pueblo

economies attest to the macroregional, interconnected character of early farming societies, paralleling the conclusions of recent research on mobility and settlement systems.

Violence

Following calls for a reinvestigation of ancient conflict in the Southwest in the 1990s (Haas and Creamer 1993; LeBlanc 1998, 1999; Wilcox and Haas 1994), the study of violence was sidetracked by the sensationalized public and professional debate over the existence, prevalence, and explanation of anthropophagy (Billman et al. 2000; Darling 1999; Dongoske et al. 2000; Kantner 1999; Kuckelman et al. 2002; Nichols and Crown 2008; Turner and Turner 1999; Walker 1999). This debate may still be the most widely known aspect of recent Southwest archaeology among the public, American Indian peoples, and archaeologists working elsewhere in the world, and has created a number of challenges during the post-NAGPRA reengagement with Pueblo people (Chavarria and Mendoza 2012; Whiteley 2008). The anthropophagy controversy has overshadowed other research that examines conflict through a wider range of data (Adams and LaMotta 2006; Cole 2012; Kohler and Kramer Turner 2006; Kuckelman 2010a, b, 2012; LeBlanc 2001; Lekson 2002; Liebmann 2012a; Lowell 2007, 2010; Potter and Chuipka 2010; Schaafsma 2000, 2007b; Snead and Allen 2011; Solometo 2006; Walker 2002, 2009; Wilcox et al. 2006; M. Wilcox 2009). These studies have demonstrated that, as in most human societies, various forms and intensities of violence were present throughout the Ancestral Pueblo sequence and that the types of events associated with anthropophagy are only a piece of the overall history of violence. Bioarchaeological research has played a crucial role as part of analyses of human remains recently uncovered (Kuckelman et al. 2002; Martin et al. 2014; Martin et al. 2008; Potter and Chuipka 2010; Osterholtz 2014) and through the reanalysis of

older collections (Baustian et al. 2012; Harrod 2013; Osterholtz 2014; Palkovich 2012; Pérez 2012). These studies have complicated earlier, oversimplified depictions of violence, pointing a way to more, nuanced comprehensive studies of violence and its effects in ancient societies. Researchers also have begun to examine general models of conflict in human societies, contributing to the wider anthropological literature on this subject (Cole 2012; Kohler et al. 2009; LeBlanc 2003; Lekson 2002; Solometo 2006).

Early overviews of violence in the Southwest highlighted the association of conflict with mass population movements and in some cases, such as that of the late 1200s and early 1300s, with aggregation. The nucleated pueblos of the AD 1200s and 1300s have high outer walls and limited entries and have long been interpreted as more defensible than earlier architectural forms (LeBlanc 1999; Lekson 2002; Wilcox and Haas 1994). The burning of pueblos, sites located on defensible topographic features, line of sight communication, and unoccupied lands between site clusters (LeBlanc 1999, 2001; Solometo 2006; Snead and Allen 2011) also suggest violence was a significant factor in the depopulation of many areas during this time period. Burning of architecture and the prevalence of defensive site locations have been challenged by other archaeologists as evidence for violence, particularly when used as proxies for general patterns of violence. More detailed examinations of archaeological evidence for these phenomena within local contexts often are able to differentiate various forms of violent events, including the rapid destruction of entire communities (Snead and Allen 2011), pervasive, endemic violence across regions (Solometo 2006), or internal conflict and ritually sanctioned use of force (Adams and LaMotta 2006; Walker et al. 2000).

Direct, osteological evidence for violence has been most commonly documented in the Mesa Verde area (Cole 2012; Kuckelman 2010a, b, 2012; Kuckelman et al. 2002), a source

rather than destination for the migrations of the AD 1200s and early 1300s. Mesa Verde researchers see violence as a decisive factor in the complete depopulation of the area in the 1200s and as a point of contrast with the earlier partial depopulation of the late 800s (Cameron 2010; Glowacki 2006; Kohler et al. 2008b; Kuckelman 2010b; Lipe 2010; Nelson and Schachner 2002; Varien 2010). We still lack satisfactory explanations for why evidence for massacres like those documented in the Mesa Verde area is less common in other regions. Evidence for violence, including from human remains (e.g., Baustian et al. 2012; Lowell 2007), is present in other areas, but in most cases conflict did not reach the intensity of the Mesa Verde region (although see Smith and Robertson 2009). An expansion of Cole's (2012) research on the spatial and temporal distribution of evidence for violence among assemblages of human remains from the Mesa Verde region to a wider area would provide more insight into these differences. A current challenge to understanding variability in violence across the Ancestral Pueblo world is that local studies examine divergent, often noncomparable criteria, whereas earlier syntheses lack the requisite detail to distinguish different types of violence.

Critical evaluations of human remains have identified the mid-AD 1100s as a peak in the frequency and intensity of anthropophagy, as well as the spatial concentration of these events in the Mesa Verde area (Billman 2008; Bustard 2008; Cole 2012; Kohler et al. 2009; McGuire and Van Dyke 2008; Walker 2008). This era follows the cessation of construction in Chaco Canyon, coincides with one of the longest droughts in the Ancestral Pueblo sequence (Benson et al. 2007), and is a poorly known era in Ancestral Pueblo history. According to Kohler et al. (2009; Cole 2012) this spike in violence was linked to exogenous factors, such as the fall of Chaco and yet unknown changes in interregional interaction and migration, in contrast to other changes in the frequency of violence in the region that were largely attributable to population pressures. Sites

that date to the mid-1100s have been difficult to find or simply ignored by archaeologists in nearly all regions (Benson and Berry 2009, 2010), making it a challenge to more fully explore these possibilities. Why violent treatment of human remains was more common during this era than in both earlier (Potter and Chuipka 2010) and later time periods (Whiteley 2008) also requires further exploration. Solometo (2006) notes that the mutilation of bodies during conflict occurs most often in instances where there is significant social distance between the victims and perpetrators (also see Potter and Chuipka 2010). Recent discussions of violence in this era have often looked to the role of environmental challenges, rather than social distance, in the creation of contexts where this intensity of violence was possible. Reexamination of the role of population movements, possibly involving people from distant portions of or even outside the Ancestral Pueblo world, seems warranted to contextualize these troubling events.

Some bioarchaeological insights into the social and physical circumstances of violence have yet to be integrated with other archaeological studies. Martin and others have demonstrated that there is much more variability in the extreme processing of human remains than previously recognized. Their research also documents the variable experience of violence among genders (Martin et al. 2008) and the prevalence of both lethal and nonlethal violence (Baustian et al. 2012). Many early discussions of violence in the Southwest underutilized bioarchaeological evidence, perhaps in the largely incorrect supposition that the study of human remains would cease post-NAGPRA (Lambert 2000). Thoughtful and forthright consultation with affiliated groups still allows excellent bioarchaeological research to occur (Perry and Potter 2006; Perry et al. 2010).

Martin et al. (2008, 2014) have demonstrated that assemblages of damaged human remains that look similar based on trait-based analytical approaches are strikingly different under

closer examination and through comparison among assemblages; factors include post-depositional processes and more complex mortuary behaviors than archaeologists generally assume were practiced in the the Ancestral Pueblo area. Pérez's (2012) comparison of commingled human remains from Peñasco Blanco in Chaco Canyon to an assemblage from La Quemada in northern Mesoamerica suggests that the Peñasco Blanco assemblage was produced through a secondary burial process aimed at removal of parts of the skeleton rather than attempts to remove flesh or muscle at or immediately following death. The ancient handling of human remains has not been examined systematically but is not unknown (e.g., Kidder and Guernsey 1919, pp. 190-192). Given the complexity of mortuary behavior and the use of human remains among other North American and Mesoamerican societies, the previously assumed homogeneity of Ancestral Pueblo mortuary activity is likely incorrect. This possibility has been raised repeatedly in recent studies of burials in Chaco Canyon, which suggest that secondary burial and handling of human remains was not uncommon (Harrod 2013; Marden 2011; Pérez 2012; Plog and Heitman 2010). Recent bioarchaeological research well illustrates the importance of detailed recording and analysis of human remains that addresses variability in ancient practices and critically approaches received models. This research also recognizes that the study of human remains and violence has implications that reach well beyond an academic context (Martin et al. 2013).

Although violence has not assumed the explanatory importance argued for in the 1990s, this earlier critique did succeed in encouraging Southwest archaeologists to consider how violence, or at least the threat of violence, was a factor in many processes, including migration, aggregation, regional depopulation, changes in ritual practices, and how people interacted with their environments. The best research marshals a wide array of evidence to craft stronger

explanations of long-term shifts and specific instances of violence in the Ancestral Pueblo world. Recent research on violence in the region also illustrates the challenges of what can be a troubling topic, particularly for descendent populations that have long experienced discrimination and dehumanization at the hands of colonial powers and among settler societies.

Conclusion

The major contributions of recent Ancestral Pueblo archaeology are made possible by syntheses of the vast amount of data generated by CRM and academic fieldwork and examinations of settlement, social interaction, socionatural systems, and mobility at multiple scales. Unlike prior studies of Ancestral Pueblo archaeology that were based on detailed analyses of particular sites, most recent work integrates data from a variety of projects to explore social processes at expansive spatial scales and with a level of detail that is rarely possible for other Neolithic/Formative societies. Results of this work are relevant to scholars working on similar topics that require analytical frameworks that cross traditionally defined archaeological boundaries and traditions (Kowalewski 2004, 2007; Lesure et al. 2013).

The ability of scholars to pursue synthetic research depends on the commitment of the Southwest archaeological community to make project data available in state archaeological record files, museums, and burgeoning digital repositories, which are part of a legacy of careful planning and institution building in the CRM, academic, museum, and nonprofit sectors (Cordell and Fowler 2005). This research culture did not arise by chance and has been maintained and renewed over many years. As a result, it is now possible to address the macroregional scale questions and analyses envisioned in the 1960s and 1970s (e.g., Euler and Gumerman 1978). Maintaining a cohesive archaeological community must be a priority over the coming decades

(Altschul and Patterson 2010) as the retirement of large numbers of baby-boom archaeologists will entail significant losses of institutional knowledge in many of the organizations that sustain our ability to pursue synthetic, macroregional research.

We also have forged stronger relationships with descendent peoples, creating an archaeology that asks a wider range of questions and is more sensitive to the significance of artifacts, archaeological sites, and human remains beyond our discipline. As native peoples increasingly assert their interests as sovereign groups, they have directly influenced the practice of archaeology and cultural heritage. Many of the areas that remain relatively unknown within the Ancestral Pueblo region, such as the Chuskas, Tusayan, and Acoma areas, lie largely on or near modern reservations, making future research in these areas dependent on stronger collaboration. Although neither archaeologists nor native peoples will probably ever have fully congruent interests and goals related to archaeology, collaboration and engagement over the last two decades provides models for the structure of research and heritage management going forward. A challenge of continuing collaborative work is the development and funding of the long-term relationships required to build trust among participants and produce results that are useful to all.

Future contributions to archaeological knowledge within the region and beyond will likely entail further commitment to the synthetic strategies developed in recent decades, albeit with a critical eye to potential shortcomings of these approaches. Greater effort to compare areas within the Ancestral Pueblo region using similar methodologies and analytical detail, a multiregional Village Ecodynamics Project for example, is likely to improve our understanding of the variability that exists in social formations and historical trajectories across the Southwest. Characterizing variability is crucial if we are to understand how Ancestral Pueblo people made

decisions that shaped historical trajectories both within their home regions and beyond. The value of comparison within the culture area, such as community formation in the Cibola and Mesa Verde areas or craft production in the Little Colorado and Rio Grande Valleys, is well illustrated by recent research. Synthesizing the vast amount of compositional data generated in recent years and comparing results across various artifact classes is critical in furthering our understanding of the complexity of Ancestral Pueblo economic systems and regional interaction. Renewed household-scale investigations are warranted to balance out the focus on panregional works and provide it with richer detail, as well as place Ancestral Pueblo research more in line with wider disciplinary interests and the archaeology of adjacent areas (i.e., Hohokam, Mesoamerica). Although these types of analyses are limited by the rarity of intensive excavations, substantial household-scale data are generated through CRM and exist in repositories. Synthesizing these data in a manner analogous to recent efforts focused on survey data would enable more detailed investigations of Ancestral Pueblo economic and domestic practices.

In many recent cross-cultural syntheses, insights from Ancestral Pueblo archaeology are used to elucidate social practices in the middle range, such as the rise of inequality and eventual origination of complex societies (Carballo 2012; Smith 2011; Vaughn et al. 2010), or to understand how our ancestors faced the challenges of a changing planet (Cooper and Sheets 2012; R. Dean 2010). These subjects have long been of interest within Ancestral Pueblo archaeology but have received variable attention. Other influences on the content and practice of contemporary Ancestral Pueblo archaeology come from comparisons with other Neolithic/Formative societies (e.g., Bandy and Fox 2010; Bouquet-Appel and Bar-Yosef 2008) or contexts of colonial encounters (Liebmann and Murphy 2011; Mathers et al. 2013; Oland et al. 2012). These perspectives have opened up new avenues for research, such as the Neolithic

demographic transition, the farming-language dispersal hypothesis, and the histories and legacies of colonialism. The Ancestral Pueblo case provides insightful contradictions (Kohler et al. 2008a; Liebmann 2011) and counterarguments (Merrill et al. 2009; M. Wilcox 2009).

Ancestral Pueblo archaeology provides a data-rich, multiscalar comparative case for researchers working on settlement, demography, regional interaction, mobility, and violence in farming societies ranging from mobile, dispersed agriculturalists to relatively sedentary village dwellers (e.g., Lillios 2011; Neitzel 1999) that remains largely untapped. The region's history encompasses the diffusion of agriculture, concomitant shifts in settlement, and the cataclysms of colonialism in the Americas. Recent Ancestral Pueblo archaeology also can aid methodological considerations of other scholars grappling with similar issues, including large data sets and precise chronologies. Comparison has been a less common strategy for scholars working on Neolithic/Formative societies than for our colleagues working on larger-scale societies or more recent eras. The great expansion in the richness of our knowledge of earlier and smaller-scale groups in recent decades throughout the world provides a solid basis for reconsidering common trajectories and processes after the rise of farming. Recent work in the Ancestral Pueblo region is well situated to contribute to these efforts and provides a model for the development of an archaeology able to look well beyond the confines of single sites, projects, and regions.

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Figure Captions

Fig 1. Ancestral Pueblo region and major subregions. Note the western edge of the culture area is off the map in the vicinity of Las Vegas, Nevada.

Fig. 2. Chronologies for the Ancestral Pueblo region and other parts of the Southwest.



