

THE YEAR IN REVIEW

Archaeology

Place, Landscape, and Environment: Anthropological Archaeology in 2009

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ABSTRACT Topics of current interest to anthropological archaeologists include the relationships between people and place, interactions between people and past environments, and responses by past societies to changes in the natural environment. In this article, I focus on recent considerations of past landscapes and the built environment. This research concentrates on such topics as architecture, the utilization of different environmental zones, and transitions from foraging to farming, one of the long-standing topics of interest to anthropological archaeology. Recent archaeological research also emphasizes climate change and warfare, topics that have relevance to current events and conditions in the modern world.

Keywords: archaeology, landscape, environment, place, architecture

All archaeological evidence has landscape dimensions. Sites and artifacts are located in particular places, and archaeological finds are mapped within sites, within regions, and within stratigraphic sequences. Current interests in anthropological archaeology on past places and landscapes focus on the interrelationships among cultural practices, conditions, and trends in the natural environment as well as on characteristics of the built environment. Archaeologists currently tend to think of environmental conditions and environmental changes (incl. climatic events and trends) as forces that shape, or that accelerate, cultural changes, rather than as forces that generate those changes by themselves. Anthropological archaeologists in this first decade of the new century have also explored the ways in which the built environment, including visible remnants of past settlements and monuments, has shaped patterns of cultural change. These interests have led archaeologists to reconsider the salience of distinctions we sometimes draw between the “natural” environment and the “cultural” landscape, for example, and they have led archaeologists to explore the relationships between space and place as well as those among history, cultural memory, and cultural practices of “placemaking.” All human activity has spatial and temporal dimensions, of course. It is cultural activity—and cultural knowledge—that gives meaning to particular spaces in the landscape and that makes them “places.”

The first article in this new “Year in Review” series in *American Anthropologist*, by Sunday Eiselt (2009), covered, among other things, archaeological debate and dialogue in 2008 about catastrophes, including natural disasters and short-term events as well as longer-term environmental changes that have negatively affected past societies. Perhaps because of broader interests in the world community in climate change, archaeologists are currently very interested in cultural responses to cycles of wet and dry intervals, cycles of warm and cold periods, and extreme weather events such as hurricanes and tsunamis. Archaeologists should continue to pursue these lines of research, and archaeological knowledge should also be given consideration in contemporary debates about current trends in climate change and its implications for the global community.

My review here of anthropological archaeology in 2009 focuses on the study of place, landscape, and environment, and it concentrates primarily on articles published in major journals. My thematic focus excludes discussion of some interesting and important research on early writing systems, pottery production and use, stone-tool production and use, foodways, and other topics, although each of those aspects of past lifeways, of course, has spatial dimensions. Some of the articles considered here make interesting advances in methodology, others encourage new modes of interpretation of architecture or regional datasets, and all give us

new perspectives on the relationships among people, place, and landscape. Several articles explore cultural responses to environmental changes. Others emphasize the social and ideational aspects of past landscapes and the built environment.

METHODOLOGY

Geographic information systems (GIS) software has become commonplace in many disciplines, and GIS applications enable anthropological archaeologists to focus on entire landscapes—at varying spatial scales—as units of analysis. Of course, archaeologists still find sites, features, and artifacts, but they very often analyze the data generated through GIS and other software. GIS applications also enable us to examine spatial distributions at many different scales and in different types of environmental and archaeological datasets. Several researchers have performed correspondence analysis—a relatively simple yet powerful multivariate statistical technique amenable to many kinds of archaeological data—toward identifying and understanding spatial patterning at local and regional scales (Kuijt and Goodale 2009; Smith and Munro 2009). Others have explored the potential for somewhat more complicated techniques of access analysis—a variant of space-syntax analysis that involves graphical display of the paths of movement and visibility that are possible within architectural layouts (for example, Fisher 2009)—and network analysis (Mizoguchi 2009; Munson and Macri 2009).

With an interest in contrasting the organization and use of space by preagricultural (Natufian) and agricultural (Neolithic) groups in the Near East, Ian Kuijt and Nathan Goodale (2009) examine horizontal and vertical (stratigraphic) distributions of tools at 'Iraq ed-Dubb, a site in Jordan with deposits dating to the Late Natufian (12,800–11,700 years ago) and Pre-Pottery Neolithic A (11,700–10,500 years ago) periods. Through correspondence analysis and discriminant analysis of data from 'Iraq ed-Dubb, the authors demonstrate very different patterns in the spatial distributions of Natufian and Neolithic tools at the site. There is very little evidence for differentiation and segmentation in the use of space in Natufian deposits at the site, but by contrast, there are clearly delineated areas where Neolithic residents of 'Iraq ed-Dubb performed specific tasks. Before the complete and widespread transition from Natufian hunting and gathering to life in sedentary farming villages in the Neolithic Near East (by Pre-Pottery Neolithic B times), then, people significantly changed the organization of space within settlements.

Focusing on the later Bronze and Iron ages in the Near East, Alexia Smith and Natalie Munro (2009) analyze zooarchaeological and archaeobotanical data from sites to identify regional variation in the nature of agricultural economies. This timeframe falls several millennia after the early domestication of plants and animals in the Near East and after the emergence and collapse of city-states. The results of correspondence analysis indicate to Smith and Munro that

there was considerable variation in the utilization of wild and domesticated resources across the Near East and that the primary determinant of subsistence practices was moisture (or lack thereof). Aside from their demonstration of the utility of correspondence analysis, this study by Smith and Munro (among others in recent years) is also notable in that it attempts to bring together both zooarchaeological and archaeobotanical data, an approach that should yield new insights into the relationships between people and the plants and animals on which they rely for food. It should also provide a deeper understanding of the relationships between people and landscapes during transitions from hunting and gathering to more sedentary ways of life based on some form (or forms) of farming.

Using different analytical techniques, Kizo Mizoguchi (2009) demonstrates that the placement of sites within regional social networks dating to the late Yayoi period (prior to C.E. 150) in Japan was critical to the emergence of some of those sites as geopolitical centers of hierarchical and centralized polities during the Kofun period (prior to C.E. 300). Network analysis enables Mizoguchi to determine the relative degrees of “connectedness” of different sites. Those sites most prominent in these networks seem to have become major geopolitical centers.

Jessica Munson and Martha Macri (2009) apply social-network analyses, as well, on epigraphic data from 150 Maya sites dating to the Classic period, from roughly C.E. 250 to C.E. 1000. Their results are consistent with ideas developed by others about cycles in the expansion and contraction of Maya polities during this period. Munson and Macri are strong advocates of network analyses of the Maya geopolitical landscape, especially because of the considerable evidence for the periodic collapse and abandonment of some Maya centers (or “node failure,” in the terminology of social-network analysis), but they also demonstrate the utility of this approach toward the study of any area in which archaeologists are interested in trends in the development of hierarchical and centralized political systems.

Focusing on architectural layouts from the Late Bronze Age site of Enkomi, in Cyprus, Kevin Fisher (2009) highlights the importance of large public rooms in monumental architecture to elite status and identity during a period of social transformation from relatively small-scale and minimally hierarchical villages to a stratified urban-centered civilization. He examines patterns both in the connectedness of rooms as well as lines of sight and “viewsheds” within monumental structures. He concludes that large rooms for public gatherings—probably including feasts hosted by elites and aspiring elites—were critical to elite identity, whereas in earlier times, social differentiation was manifested primarily in the domain of mortuary ritual and burial. The kind of viewshed analysis Fisher has done is often applied at very different spatial scales: that of lines of sight between sites (Arkush 2009; Mantha 2009), for example, often covering considerable distances and large areas. Fisher makes good use

of these techniques at the much different scale of individual structures.

Focusing on the scales of individual sites and viewsheds around them, Martindale and Supernant (2009) apply quantitative analytical techniques developed by architectural theorists to study the defensiveness of Native American villages in the Northwest Coast of North America. Archaeologists in northwestern North America have commonly referred to the placement of villages and refuge settlements in what seem to have been easily defensible locations within the landscape (e.g., on the edges of bluffs or on hilltops) and to cultural features at sites that reflect the threat of warfare and the need for defense (such as trench embankments and stockades, often augmented by natural features of surrounding landscapes). Andrew Martindale and Kisha Supernant advocate a more explicit and quantitative approach toward comparing the varying emphases on defensibility and fortification of sites in the Pacific Northwest so as to better understand the significance of warfare as a force of cultural change in the ancient and more recent past. They develop a formulaic approach to calculating an “index of defense” (by quantifying visibility, elevation, accessibility, and area of sites) that could be replicated and adapted for comparable analyses in the Northwest and in other world areas.

The foregoing comments focus on some examples of spatial analyses after the stage of archaeological fieldwork and data collection. Jason Ur and Emily Hammer (2009) offer an innovative approach to regional archaeological survey and the search for visible signs of archaeological sites on the ground surface. They describe intensive regional survey in the Upper Tigris River Valley, in Turkey, in areas near Hirbermerdon Tepe, a large mound site dating from the Chalcolithic period through the Bronze and Iron ages. They have walked transects across relatively large upland areas, and they have recorded abundant evidence for significant investment by pastoral groups in structures and landscape modifications such as check dams, cisterns, cairns, and animal enclosures. Artifact-find spots have been recorded with global-positioning-system (GPS) devices, which are now widely used in regional archaeological surveys. Locations of artifact finds can be recorded with GPS devices, and researchers can later look for patterning in the spatial distribution of archaeological finds, in GIS and other software applications. Meanwhile, the surveys reported by Ur and Hammer (2009), conducted at levels of intensity typical of some areas of Mesoamerica but relatively rare in Mesopotamia, demonstrate that relatively mobile groups, such as nomadic pastoralists from the ancient and more recent past, may indeed leave material traces visible to archaeologists. Looking for traces of land use in areas between major sites, as well as seeking artifacts and sites in marginal environments like uplands, can give us clues about land use and landscape modification.

The values of regional survey are likewise demonstrated by James Savelle and Arthur Dyke (2009) in the central Canadian Arctic, one of the most marginal environments

settled by Native Americans in the ancient past. They have analyzed intersite and intrasite spatial patterns in one area of the central Canadian Arctic that was first settled by people roughly 4,500 years ago. Settlement activity seems to have peaked between 4,200 and 3,600 years ago, after which point the area was largely, if not entirely, abandoned. People resettled the area at about 3,200 years ago, abandoned it at roughly 2,500 years ago, resettled it at 1,600 years ago, and reabandoned it at 1,200 years ago. These periods of abandonment and resettlement do not seem to correspond to major climatic changes, indicating that people may have periodically exhausted resources in the region, returning when they were replenished.

ENVIRONMENTAL CHANGE

The Canadian Arctic case study aside, climate change has been implicated in many major cultural developments studied by archaeologists around the world. Climate change may not have led directly to the early domestication of plants in the Near East, but it did set the stage for the emergence of fully developed agricultural economies roughly 9,000 years ago, during a period of relatively stable climatic conditions after cycles of alternately warm-wet and cold-dry conditions in the region (Belfer-Cohen and Goring-Morris 2009; Zeder and Smith 2009). Large areas of Argentina may have been largely abandoned because of extreme aridity during the period from 8,000 to 4,000 years ago (Neme and Gil 2009). Mesoamerican archaeologists have long been interested in the widespread collapse of Maya polities during the late first millennium C.E., and the effects of severe droughts have long been suspected as a major culprit in this period of Maya collapse. Archaeologists relate these developments to changing patterns of Maya warfare and to changes in the built environment and public architecture of major Maya centers (Andres 2009; Garrison and Dunning 2009; Inomata and Triadan 2009; Scherer and Golden 2009). Several researchers have related the effects of drought to conflict, regional fragmentation, and an emphasis on building and maintaining fortifications in the Andes during the Late Intermediate Period (early second millennium C.E.), just before the expansion of the Inka empire (Brown Vega 2009; Lane 2009; Mantha 2009). Periods of wet and dry conditions may have significantly affected the emergence and collapse of Cahokia, located in the Central Mississippi Valley—the center of the most highly centralized polity in Native North America north of the Rio Grande, during the 10th and 11th centuries C.E. (Benson et al. 2009).

In southern Africa, periodic droughts may have been correlated with the emergence of Mapungubwe and then Great Zimbabwe as the major seats of geopolitical power in the South African Iron Age during the early first millennium C.E. (Huffman 2009). Relating major cultural developments to apparent patterns of climate change is not new in archaeology, but currently archaeologists are especially interested in the relationships between climate change and other aspects of past ways of life in different natural and cultural

landscapes and the ways in which climatic changes not only pose problems for past societies but also create the conditions for new forms of social activity and community formation.

For example, the major seat of political power in southern Africa shifted from Mapungubwe to Great Zimbabwe not only because of drought conditions but also because Great Zimbabwe displaced Mapungubwe in the gold trade, connecting inland areas with ports along the African coast (Huffman 2009). Some pottery and stone masonry at Great Zimbabwe includes crocodile designs, which are thought to have been symbols of sacred leadership at Mapungubwe. Stone bird sculptures at Great Zimbabwe are thought to have represented ancestors connecting the leadership at Great Zimbabwe to preceding rulers of Mapungubwe. Connections to ancestral places, then, as manifested in material culture and the built environment, were significant to claims to power in the South African Iron Age. The built environment of Great Zimbabwe, meanwhile, created distance between elites and commoners, with elite domestic compounds enclosed by massive walls.

At roughly the same time as these developments in South Africa, major changes were taking place in the Central Mississippi Valley (Benson et al. 2009). North American archaeologists have devoted considerable effort to studying the emergence of the massive mound center at Cahokia, in the American Bottom region of Illinois, as the center of a large regional polity. New research suggests that the peak of Cahokia corresponds to an episode of relatively wet conditions and that persistent drought may have contributed to its decline and abandonment during the 13th and 14th centuries C.E. This wet episode did not cause the ascendance of Cahokia in and of itself, and the American Bottom was already the setting for dense settlement by thriving agricultural villages, but the possibility that the consolidation and collapse of Cahokia is related to cultural responses to climate change is worth further consideration.

In another area of the southeastern United States, Victor Thompson and John Turck (2009) have found that the relatively rich estuarine environments of coastal Georgia were settings for mound building by hunter-gatherer groups from 4,200 through 1,000 years ago, except for the period from 3,100 and 2,400 years ago, when the region was largely, if not entirely, abandoned because of climatic changes and dramatic decreases in sea level. Villages and large shell rings from the period before 3,100 years ago were still visible when people returned to the region when sea levels rose after 2,400 years ago. Traces of “old” settlements guided the placement of “new” settlements, and Thompson and Turck (2009) identify burial mounds postdating 2,400 years ago as territorial markers associated with this colonization of an abandoned landscape.

Another recent archaeological case study of cultural responses to major climatic changes is that of hunter-gatherers in the Sierra Nevada of California during the Little Ice Age, a period of relatively cold and dry conditions in the Great

Basin region of western North America between roughly 650 and 150 years ago (Morgan 2009). The preceding Medieval Climatic Anomaly, from 1,300 to 650 years ago, was relatively warm and wet and, thus, relatively favorable for seasonably mobile hunter-gatherers for whom acorns and other mast resources were major food sources. By analyzing the spatial distribution of sites, Morgan demonstrates that hunter-gatherers in the Sierra Nevada developed different patterns of seasonal mobility in upland and lowland settings, in the face of climatic variability and unpredictability, as part of strategies that minimized risk and that emphasized security rather than maximum gain.

CULTURAL LANDSCAPES

Landscapes are not just natural environments, of course, and much recent research focuses on cultural and symbolic aspects of landscapes, architecture, and monuments (Arnold 2009; Skoglund 2008; Thompson 2009) and the placement of burials (Keegan 2009). Many archaeological studies of mobile hunter-gatherer societies emphasize themes of risk management and resource procurement (Grove 2009; Morgan 2009), and many studies of sedentary societies emphasize the social dimensions of architecture and monuments (Coupland et al. 2009; Lepofsky et al. 2009). There are exceptions to these points, of course, including a recent study of inclusionary and exclusionary leadership strategies in hunter-gatherer societies of the Ohio River Valley during the period from roughly 200 B.C.E. to C.E. 500 (Coon 2009), during which period important social and political events took place at Hopewell ceremonial centers with earthen enclosures and earthen mounds. Meanwhile, prehistoric native groups of the Pacific Northwest in North America are known to have lived in sedentary settlements, with substantial architecture and pronounced social and political differentiation for a considerable period of time before and after European contact (Martindale 2009), but, strictly speaking, traditional societies of the Pacific Northwest were hunter-gatherers. Several recent publications consider social and symbolic aspects of the architecture and built environment of native villages in the Pacific Northwest.

Gary Coupland and colleagues (2009) consider architectural evidence for the balance between hierarchy and communalism in native houses and households of the northern, central, and southern portions of the Northwest Coast region. Archaeological and ethnohistoric evidence indicates that social ranking and status distinctions were more pronounced in the northern Northwest Coast (Alaska) than in the central (British Columbia) and southern (Washington, Oregon, and northern California) Northwest Coast. Several families (including elites and commoners) would have lived in single plank houses, and in the northern Northwest Coast, there is clear architectural evidence within structures for status distinctions between elite and nonelite members of households. In household settings with such pronounced status distinctions, the reinforcement of solidarity and communalism may have been important, and the shared

use of hearths and other spaces within plank houses in the northern Northwest Coast may have achieved this balance between hierarchy and communalism. By contrast, along the southern Northwest Coast, where status distinctions seem to have been less pronounced, architectural evidence indicates both less pronounced hierarchy within plank houses and less sharing of domestic space.

Dana Lepofsky and colleagues (2009) demonstrate combinations of plank houses, typical of coastal villages in the Pacific Northwest of North America, and semisubterranean pithouses, typical of the Columbia Plateau in interior British Columbia and Washington, at several village sites in the Fraser River Valley. In coastal villages, plank houses are typically arranged in rows, with houses facing the water. At pithouse villages of the interior, houses are often spaced close together but not in discernible rows or circles. Combinations of these different architectural characteristics at sites along the Fraser River indicate social linkages between coastal and interior groups. Like other researchers, Lepofsky and colleagues interpret the initial emergence of large, permanent houses and villages along the Fraser River as evidence for claims by hunter-gatherer groups to particular places and resource locales, and many such places were settings for either long-term or cyclical settlement spanning great lengths of time. If permanent villages and large houses were built in part to make claims to zones of resource availability, those houses and those places themselves became significant and enduring components of the cultural landscape. In addition to indications of continuity and stability of settlement, Lepofsky and colleagues also document general trends in increases in house size in the Fraser Valley through time, trends that are probably related to the benefits of increased domestic productivity associated with increases in the sizes of houses and households.

Large houses are not the only way that hunter-gatherers have created permanence and attachments to places in landscapes of settlement mobility. Recent reanalyses of artifacts, excavation records, and photographs of the Bull Brook site in Massachusetts indicate that the site was the setting for a relatively large-scale gathering of highly mobile hunter-gatherer groups during the Paleoindian period, circa 10,000 years ago, not long after the end of the Last Ice Age (Robinson et al. 2009). The Bull Brook site itself may represent a single social gathering of dispersed hunter-gatherer groups (which is remarkable, in that most sites are long-term palimpsests, rather than snapshots of short-term episodes), but the size and the formally patterned layout of Bull Brook suggest that such groups probably gathered periodically for such events at other places (Robinson et al. 2009). Douglas Bamforth (2009) argues that, in addition to utilization of both local and nonlocal sources of stone for tools, early hunter-gatherers in the Great Plains of western North America practiced caching (or storage of tools) as part of mobile settlement patterns from 10,900 B.C.E. to 7,800 B.C.E., suggesting the possibility that territoriality developed very early in the history of human settlement in North America. Takashi

Sakaguchi (2009) demonstrates significant diversity in the storage economies of hunter-gatherers focused on mast resources in Japan during the period from 13,750 B.C.E. to 500 B.C.E. and shows that this diversity in storage practices was related to environmental conditions and seasonality in different areas but also to social differences within the Jomon archaeological culture. Nomadic pastoralists (whose economy did involve some amount of crop production) of the northeast Asian steppes of Mongolia, meanwhile, have lived in areas in which there were (and are) substantial monuments dating from the much earlier Middle Bronze Age and even the Mesolithic period (Wright et al. 2009). Pastoral societies known as the Xiongnu, whose settlements date from roughly 3,000 to 2,000 years ago, built long-term and relatively large-scale settlements near these ruins, as well as cairns that may have marked burials in some cases (Wright et al. 2009).

Shifting our focus from landscapes of hunter-gatherers and pastoralists, let us consider the archaeology of more sedentary and centralized societies, including state-level societies and middle-range societies. Focusing on pottery, regional settlement patterns, and monuments, Claudia Glatz (2009) argues that there was considerable cultural diversity in the many provinces incorporated within the Late Bronze Age Hittite empire in Anatolia and Syria between roughly 1,650 B.C.E. and 1,200 B.C.E., rather than any cultural uniformity imposed by rulers. Acknowledging the spatial extent of Shang material culture and the monumental scale of the ancient Chinese state capital of Anyang from 1,250 B.C.E. to 1,050 B.C.E., Roderick Campbell (2009) argues that the geopolitical networks associated with Anyang were segmented and that the Shang geopolitical landscape created the potential both for consolidation of power by the rulers of Anyang and for resistance to it.

Archaeologists have long been interested in the geopolitical landscape of ancient Mesoamerican cities and states as well as cycles in the emergence and collapse of regional polities in highland Mexico and in the Maya lowlands. Kam Manahan and Marcello Canuto (2009) present evidence for major discontinuities in settlement patterns and cultural identity of groups living in the Copan Valley in Honduras before (early first millennium C.E.) and after (late first millennium C.E.) the emergence and collapse of the major Classic Maya polity centered at Copan itself. Summarizing results of long-term surveys and excavations in the province associated with the geopolitical centers of San Bartolo and Xultun in the Peten, Guatemala, Thomas Garrison and Nicholas Dunning (2009) note that the regional center of San Bartolo was abandoned after the onset of drought conditions during the second or third century C.E. The center of power then shifted to Xultun, which seems to have had close ties with the more powerful Maya polities of Tikal and Caracol. Finally, Garrison and Dunning conclude, the entire province surrounding Xultun was largely abandoned after droughts during the ninth century C.E.

One major point of emphasis in Maya archaeology is the effects of environmental change, including the period of severe droughts and increased warfare that seems to have dramatically reshaped the Maya landscape during the late first millennium and the early second millennium C.E. One set of responses to these conditions seems to have focused on new practices of warfare and new types of fortifications (Inomata and Triadan 2009; Scherer and Golden 2009). Another strategy may have been the revival or adaptation of traditional forms of architecture (Milbrath and Peraza Lope 2009); still another may have been the development of new forms of Postclassic-period architecture that emphasized inclusivity and access rather than the exclusivity of many Classic-period centers (Andres 2009). The collapse of Maya polities did not affect all Maya communities similarly, and Kevin Schwarz (2009) emphasizes localized responses to these developments in his study of the settlement history of the village of Excicil, in the Peten. Vernon Scarborough and Fred Valdez (2009) suggest that many, if not most, Maya groups living in the hinterlands between major centers were involved in economic practices and networks separate from tributary relations with major Maya polities and that these “dual economies” enabled them to withstand the cyclical rise and fall of individual Maya cities and polities—regardless of whether those cycles were driven by environmental changes, cultural changes, or a combination thereof.

Another major theme in recent archaeological research on the Maya is networks of interaction, the positioning of cities and polities within them, and the effects of these networks on the fortunes of those polities. Interaction networks included short-distance relationships between local communities, on the one hand, and long-distance ties between Maya centers and Teotihuacan, in highland Mexico, as evident in murals and material culture from Holmul and surrounding sites in the Peten region of Guatemala (Estrada-Belli et al. 2009), on the other hand. Ancient Maya economies were based on some forms of specialized production and exchange, and Scott Speal (2009) notes from his study of stone-tool assemblages from Belize that, whereas prestige goods were produced in workshops attached to elite households, utilitarian goods were largely produced in the hinterlands.

In other areas of Mesoamerica, including highland Mexico, recent research has focused on the geopolitical landscape of the Aztec empire, during the early second millennium C.E. Minc (2009) draws on stylistic and compositional analyses of Aztec ceramics to identify two distinct market spheres in the Basin of Mexico during the period when Tenochtitlan was the capital of the Aztec empire, suggesting that borders between provinces incorporated into the Aztec empire corresponded to economic borders maintained for political reasons. Deborah Nichols and colleagues (2009) conclude, from their study of Aztec pottery, that local elites within the Aztec empire focused on access to nonlocal goods as sources of status. Concentrating on the much earlier Formative period, prior to the emergence of centralized state-level societies in Mexico, David Carballo (2009)

notes architectural differences between elite and commoner households at the site of La Laguna, providing evidence that elite households were more connected to long-distance trade networks.

Climate change, conflict, and architectural innovation are all significant developments of interest to Mesoamerican specialists and to archaeologists in the North American Southwest. During the late first millennium C.E., Chaco Canyon, in northwestern New Mexico, was one of the major centers of settlement and ritual activity in the Southwest. Many variations of Chacoan architecture were built throughout the northern Southwest during the early second millennium C.E.: some contemporaneous with sites in Chaco Canyon itself, others built after the apparent abandonment of Chaco and many other localities in the northern Southwest. Climate change and conflict are widely implicated in widespread abandonments, movements, and other changes in the cultural landscape of northern New Mexico and southwestern Colorado during the period after the abandonment of Chaco Canyon. Ruth Van Dyke and others have written a great deal about Chacoan architecture and the Chacoan landscape, and Van Dyke (2009) has recently identified different ways by which Ancestral Pueblo groups connected themselves to Chacoan architectural and ritual practices: by replicating established architectural styles based on detailed knowledge of them (called “citation”) or creating variations on general architectural themes (called “translation”). Long after the abandonment of Chaco Canyon in the twelfth century C.E., long after the abandonment of Mesa Verde (Colorado) and other areas of the northern Southwest, puebloan architecture and landscape continued to reference Chacoan themes.

In another highly interesting case study from the Southwest, Severin Fowles (2009) situates Pot Creek Pueblo, located in the Rio Grande Valley of northern New Mexico and dating to the late 1200s and early 1300s C.E., within a landscape of trails, ruins of past settlements, and several different types of earthen and stone shrines (see also Snead 2008). These shrines themselves are, in many cases, relatively modest landscape features. Ethnographic and ethnohistoric evidence demonstrates the richness of landscape symbolism among puebloan groups in the Rio Grande Valley, including symbolism associated with the cardinal directions and the placement of shrines around villages. Aside from his focus on the Rio Grande Valley itself, Fowles (2009) makes the valuable point that our knowledge of places, and relationships between people and places, is enhanced when we consider not just excavation data, and not just regional survey data, but both in tandem. The interpretive frameworks of Fowles (2009), Van Dyke (2009), and others (e.g., Schaafsma 2009) are guided significantly by the oral tradition, ethnography, and ethnohistory of Native American groups in the Southwest, and this general approach toward the study of landscape and architecture has been explored by other archaeologists in the Northwest (Martindale 2009), the Southeast (Rodning 2009), the Southern Plains (Perttula

2009), and the Great Lakes (Howey and O'Shea 2006, 2009; see also Mason 2009; Whitley 2009).

From these perspectives, architecture not only reflects adaptations to local environments and basic needs for shelter but also manifests social and symbolic meaning, even if we cannot decipher those meanings archaeologically. Similarly, monuments and rock art are symbolically meaningful—and, in some cases, long lasting—elements of past landscapes. Julian Thomas and colleagues (2009) have recently redated the Stonehenge Cursus, the three-kilometer-long linear earthen embankment near Stonehenge, to the fourth millennium B.C.E., placing it earlier than Stonehenge itself and suggesting that the cursus guided the placement of Neolithic and Bronze Age monuments in the surrounding landscape for more than a millennium. Mike Parker Pearson and colleagues (2009) now date the beginning of Stonehenge to the early third millennium B.C.E., at which point it was a cremation cemetery, prior to the later construction of its earthen embankments, timber circles, and stone circles. Joakim Goldhahn (2009) argues that one of the more well-known monumental stone cairns of Bronze Age Scandinavia was open for burials for more than 600 years. Peter Skoglund (2009) relates rock art and boat-shaped monuments made of stone slabs in southern Scandinavia to social and political dynamics within Bronze Age chiefdoms. Boats and other symbols are widely shared in the rock art and monuments in several areas of southern Scandinavia, but they demonstrate varying degrees of accessibility. In some areas, only elite burials are associated with stone settings, and rock art depicting boats and sun symbols is relatively inaccessible. In other areas, there were no apparent distinctions between elite and nonelite burials in stone settings, and rock art panels were placed in more widely visible places. Whatever cosmological or ritual knowledge was associated with rock art and monuments in these cases, it was widely shared in some areas and carefully guarded, presumably by chiefs, in others.

Here I have drawn distinctions between the archaeological study of landscapes of mobile and sedentary societies. There is one topic of considerable long-standing interest to anthropological archaeologists in which the study of both mobile and sedentary societies is critical—that is, the transitions from foraging to farming in several world areas and corresponding changes from relatively small-scale, egalitarian societies to complex societies and, eventually, highly centralized and stratified polities. Several articles in a recent special section of *Current Anthropology* consider this topic (Aldenderfer 2009; Cohen 2009), and other recent and forthcoming publications add a great deal to long-running debates in archaeology about fundamental changes in landscape utilization and fundamental changes in social, economic, and political organization associated with transitions from foraging to farming in human history. Such transitions clearly took place at different times, and probably for different reasons, and more or less gradually in different world areas

(Arnold 2009; Bellwood 2009; Liu et al. 2009; Zeder and Smith 2009; Zvelebil 2009).

Some authors emphasize the need for archaeologists to focus on clues about risk management and decisions about the delay in seeing returns from foraging versus farming activities in understanding these transitions. From this perspective, both storage and mobility are alternative risk-minimizing strategies (Winterhalder and Kennett 2009). Some authors specifically consider the evidence (or lack thereof) for storage at sites dating to periods when people were making the transition from mobile hunter-gatherer ways of life to sedentism and agriculture (Hayden 2009; Kuijt 2009). Evidence for storage—whether storage of foods from undomesticated or domesticated sources—can be seen as evidence for close attachments and significant investments by a group or groups of people in particular points within a landscape. In the case of the Levant and surrounding areas of the Near East—one of the major focal points for the development of sedentism and early farming—there is some evidence for storage by Epipaleolithic-period Natufian groups, but it is only much later, in the Early Neolithic, when there is unequivocal evidence for reliance on domesticated plants and animals and permanent architecture, that people clearly begin relying on storage rather than other practices (incl. settlement mobility) to procure necessary resources.

Other indicators of sedentism in the Neolithic Near East include substantial residential architecture, sequences of structure rebuilding in place, and burials placed inside houses and in areas near houses (Guerrero et al. 2009; Roberts and Rosen 2009). The Neolithic site of Çatalhöyük, in Turkey, dating from 7,400 B.C.E. to 6,200 B.C.E., has long been thought to have been one of the earliest permanent villages in the world, and a great deal of archaeological fieldwork at the site and analyses of recent finds is underway. Recent research indicates that much of the area surrounding Çatalhöyük would have been flooded seasonally, indicating that cereal crops must have been grown in fields located at some distance from Çatalhöyük itself. Although there was a significant agricultural emphasis in the economy of Çatalhöyük, crops could have been supplemented by wild resources in nearby wetlands. Clay sources were available nearby, but sources of obsidian—the primary raw material for stone tools at Çatalhöyük—were located far away. These clues suggest significant mobility among the people of Çatalhöyük, despite the sense of permanence manifested in the built environment of the village itself. More generally, these findings (and findings elsewhere in the Near East, and in other world areas) indicate that the transition from foraging to farming, and from mobile to sedentary forms of settlement, did not take place as rapidly as once thought. In some areas, of course (such as the Pacific Northwest), people did not become farmers and did not need farming to support sedentary settlement or to generate surplus resources.

Of course, the archaeological study of early farming focuses largely on the identification of domesticated plants

and animals at archaeological sites—and for good reason. Only those species available locally, or imported from other areas, could have been domesticated. However, processes of domestication and the emergence of sedentary and permanent settlements in different world areas are embedded within relationships between people and the landscapes in which they lived. The permanence of architecture, settlements, monuments, and human imprints on past landscapes are highly significant to our understanding of domestication and sedentism. Transitions from foraging to farming are fundamental transitions in the relationships between people and resources, but they are also fundamental changes in relationships between people and place and between people and the landscapes in which they have lived.

CONCLUSIONS

All archaeological evidence has spatial and temporal dimensions, and all archaeological evidence can be applied in some way toward the study of places and landscapes. Places are not just backdrops to cultural activity. Places are outcomes of that activity, and they shape practices of domestic and ritual life. It takes time to build places, to live in them, and to abandon them, just as it takes time to modify landscapes. Given the inherent interest of archaeologists in temporal trends, archaeological perspectives make valuable contributions to broader anthropological knowledge about places and landscapes and changes in them.

The archaeological study of places and landscapes has much to contribute to knowledge about many important aspects of human history and prehistory, including the emergence and collapse of trade networks and political systems, conditions of conflict and warfare, colonization and colonialism, and human impacts on past environments. Archaeologists have learned that architecture can be a force of cultural stability (as in the case of plank houses in the Pacific Northwest that changed little for long periods and that were built and rebuilt in place for many generations) and that architecture can be a force of cultural change (as in the case of changing forms of Maya architecture in Mesoamerica). Archaeologists widely apply different scales of analysis to archaeological data, from regional and even global scales down to the level of individual sites and structures. Shifting analytical scales helps greatly, for example, in identifying patterns such as the placement of shrines, rock art sites, and trails in areas around pueblos in the Rio Grande Valley and patterns in the arrangement of space within puebloan sites themselves.

Many of the topics covered in this article are certainly not new to archaeology. Anthropological archaeologists have long been interested in the effects of environmental change and warfare on past societies, for example. Given contemporary circumstances and conditions in our modern world, it makes sense that archaeologists would be interested in conflict and climate change in the past. Speaking as one archaeologist, and as one citizen of our global village, I advocate further study of these and related topics. Given the

current challenges we face in our modern world, I would also encourage archaeologists to speak and to write even more loudly and more publicly about what we know of the effects of conflict and climate change on past societies and to remind the public that past human societies have experienced problems and prospects that are relevant to our own.

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NOTE

Acknowledgments. Thanks to Tom Boellstorff and Carla Sinopoli for the invitation to write this article. Thanks also for contributions from William Baleé, Rob Beck, Tony Boudreaux, David Chatelain, Patrick Livingood, Jon Marcoux, David Moore, Kit Nelson, Mayumi Shimose, Hope Spencer, and Bram Tucker. Let me also acknowledge the resources and staff of Howard-Tilton Memorial Library at Tulane University. Any problems with this article, of course, are my responsibility.

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