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Introduction

Settlement, Space, and Northern Iroquoian Societies

Eric E. Jones and John L. Creese

As a volume on spatial archaeology, a topic becoming increasingly diverse and complex, it is important to situate our focus and define our goals at the outset. We use the term *spatial archaeology* here to broadly encompass any archaeological research into the geographic patterning of past human behavior at any scale and explanations for those patterns. Given this definition, the roots of spatial archaeology are as deep as the field itself. Some of the earliest modern archaeological research in the Americas, conducted by such notables as Cyrus Thomas, A.V. Kidder, and Gordon Willey, investigated settlement patterns and placement of monuments and other non-domestic structures. Early studies often included discussions of geographic and environmental setting and environmental explanations for observed patterns. These considerations, in fact, remain an important part of contemporary spatial archaeology. More recently—in the last thirty to forty years—archaeologists have turned their attention to the cultural experiences and meanings associated with space and settings (i.e., landscape) and to how these meanings are related to ecological, economic, social, political, and ideological dimensions

of culture (Ashmore 2002; Smith 2003). This shift toward a more culturally aware study of space has been promoted by archaeologists working from both scientific/adaptationalist and interpretive/ideational paradigms, fitting well into Hegmon's (2003) "processual-plus" model of archaeological theory.

During the late 1970s, Hodder and Orton (1976) and Clarke (1977) produced seminal works on the methods for analyzing spatial data in archaeological research. These works set the standard for producing statistically supported findings on the geographic patterning of humans on past landscapes. Spatial archaeology was greatly expanded by the incorporation of geographic information systems (GIS) into the field (e.g., Aldenderfer 1981; Conolly and Lake 2006; Kvamme 1991; Wheatley and Gillings 2002), and along with this technological development came the addition of thinking about what spatial patterning meant within proper cultural contexts. Binford (1978, 1980, 1982) conducted some of the earliest work in this "new" spatial archaeology during his ethnoarchaeological research into Nunamiut settlement and conceptions of space and place. More interpretive approaches came shortly thereafter and were led by Tilley's (1994) landscape phenomenology.

As in the wider field of archaeology, some of these boundaries between scientific and interpretive studies have become blurred in spatial archaeology. Contemporary research involves a wide variety of topics, including ecological relationships (Allen 1996; Bevan and Conolly 2002; Fletcher 2008; Hasenstab 1996a, 1996b; Hunt 1992; Jones 2010c; Jones and Ellis 2015; Jones et al. 2012; Jones and Wood 2012; MacDonald 2002), social patterning (Llobera 1996), political organization (Carballo and Pluckhahn 2007; Field 2004; Sakaguchi, Morin, and Dickie 2010), landscape construction and perception (Llobera 2001; Smith 2003), and monumentality (Buikstra and Charles 1999; Swanson 2003; Tilley and Bennett 2001). The diversity of questions and approaches featured in this volume illustrates the continuing trend toward theoretical and methodological pluralism in spatial archaeology.

NORTHERN IROQUOIAN SOCIETIES

In this section we provide a brief primer on the features of Northern Iroquoian societies related to landscape and space for readers more familiar with spatial archaeology than with Northern Iroquoian culture. Each chapter will provide more details about specific periods, regions, sites, and

sociocultural groups. “Iroquoian” is a general term for the language family shared by Northeast and Mid-Atlantic indigenous populations in eastern North America. This language family is divided into two regional sub-groups: Northern Iroquoian (Haudenosaunee [Iroquois], Wendat-Tionnantaté [Huron-Petun], St. Lawrence Iroquois, Neutral, Erie, Susquahannock, and Tuscarora) and Southern Iroquoian (Cherokee) (Mithun 1984). Northern Iroquoian origins in the Northeast are debated (Crawford and Smith 1996; Hart and Brumbach 2009; Malhi, Schultz, and Smith 2001; Snow 1995b, 1996), but after approximately AD 800 material culture patterns appear that are similar to those of Northern Iroquoian cultures at contact. Each of the research ventures in this volume focus on the years AD 800–1600.

Northern Iroquoians practiced swidden agriculture, growing primarily maize, beans, and squash; and they hunted and gathered a variety of wild animal and plant species. Fishing is frequently mentioned in historical accounts but fish remains are less common at archaeological sites, likely as a result of preservation conditions (Engelbrecht 2003:15–16). Gathered plants were an important supplement to the diet, particularly fruits and berries (Monckton 1992). Deer were the primary hunted animal, but elk, bear, beaver, and several species of birds are commonly found in archaeological contexts (Engelbrecht 2003:10–15). The division of labor tended to have men hunting and clearing land and women gathering and tending and harvesting agricultural land.

After AD 800, Northern Iroquoian societies displayed certain distinguishable cultural characteristics compared with other, non-Iroquoian societies in the region. They were matrilineal and matrilocal with corresponding multi-family longhouses for dwellings. These houses were divided into compartments for individuals and nuclear families. Longhouses tended to house members of the same lineage, but there are exceptions (Richards 1967; Snow 2011). From AD 800 to 1700, average village size increased substantially from the low hundreds to around a thousand individuals. The largest Haudenosaunee and Wendat villages reached upward of 3,000 individuals (Jones 2010a, 2010b; Snow 1995b; Warrick 2008) during the seventeenth century. High variability in settlement size existed at this time, as some villages and hamlets continued to house only a few hundred individuals. Northern Iroquoian settlements tended to be compactly built and arranged with longhouses spaced close to one another. They often, but not always, were surrounded by a wooden palisade built for defense (Engelbrecht 2009).

Evidence of violence and conflict occurred from AD 800 on, increasing significantly after AD 1400 (Birch 2012; Williamson 2007). Skeletal trauma, destruction of villages, and substantially built palisades all indicate that warfare occurred regularly during this time. Early historical accounts confirm that low-level warfare was a regular occurrence among Northern Iroquoian societies after the arrival of Europeans as well (Engelbrecht 2003; Snow 1994; Trigger 1988). Causes of warfare have been debated. Fighting over hunting territories, revenge, the need to replenish spiritual losses from death, and population augmentation are cited as likely causes (Richter 1992; Trigger 1988). It is likely that all of these factors were in play, creating a complex sociopolitical landscape in which warfare was a common activity.

ARCHAEOLOGY OF NORTHERN IROQUOIA

European, Euro-American, and Euro-Canadian interest in Iroquoian cultures extends back to the first contact between the groups. In southern Ontario, southern Québec, and upstate New York, archaeological research essentially abuts against written documentation of Iroquoian peoples (Engelbrecht 2003; Snow 1994; Trigger 1986, 1988; Warrick 2008). In many cases, archaeological sites have been known since they were occupied in the 1700s, never having been lost to history. A comprehensive history of Northern Iroquoian archaeological investigation is beyond the scope of this chapter. However, for those interested, the aforementioned works by Engelbrecht, Snow, Trigger, and Warrick are the primary sources for learning about the archaeology and culture history of the Haudenosaunee and Wendat. We turn our focus specifically to the history of Northern Iroquoian spatial archaeology.

Spatial studies have long been a strength of archaeological research into Northern Iroquoian societies. The earliest written accounts discuss Iroquoian villages in detail, including their settings and the reasons behind their placement and arrangement (Thwaites 1896–1901; Wrong 1939). As a result, studies of regional Iroquoian settlement often address questions of settlement patterns and the reasons behind them (Allen 1996; Finlayson 1998; Hasenstab 1996a; Hunt 1992; Jones 2010c; Jones and Wood 2012; MacDonald 2002; Pearce 1984; Tuck 1971; Williamson 1985). This area of research has more generally been termed “settlement ecology” (Stone 1996). Foundational research in the mid-twentieth century (Heidenreich 1978; Ritchie 1965) explored Iroquoian

settlement patterns in New York State, including possible factors that influenced settlement location choices by individuals and communities.

The adoption of GIS into archaeological research in the 1980s increased our ability to move beyond proposed explanations by testing them statistically. Documenting the spatial relationship between settlement sites and various landscape features and conducting spatial analyses became more feasible; given prior interests, Iroquoianists quickly adopted this new technology. Several researchers were at the forefront of the integration of settlement theory and GIS-based spatial analyses to explore high-level theory about settlement. In particular, research undertaken by Allen (1996) and Hasenstab (1996a, 1996b; Hasenstab and Johnson 2001) set the standard for exploring past human settlement location choice using GIS. Their research projects independently explored the impact of various environmental and climatic patterns on the settlement patterns of late prehistoric Iroquoian societies, establishing a new direction for Iroquoian settlement ecology studies. More recently, Jones (2006, 2010c) and MacDonald (2002) have continued this research and expanded the theory and methods to include social, political, economic, and ideological factors in addition to standard subsistence factors.

Investigations of site-specific settlement patterns and local landscapes go back to Squier and Davis and their mapping of the Seneca Adams site in the mid-1800s. In 1907, Parker (1907) first reported Iroquoian postmolds but did not attempt to excavate any structures. In Canada, major excavations of Iroquoian villages in Ontario by Wintemberg (e.g., Wintemberg 1936) did not reveal clear house plans. These early observations of middens, earthworks, and palisades failed to translate into a cohesive approach to Iroquoian intra-site settlement archaeology until the late twentieth century.

Having established the antiquity of Iroquoian development in the Northeast using culture-historic methods, archaeologists of the 1950s and 1960s on both sides of the Canada-US border became interested in settlement layouts for the first time. Early strides in Ontario were made by the avocational archaeologist Wilfred Jury, whose extensive excavation of the late-sixteenth-century Wendat Forget site might have marked a watershed in Iroquoian settlement excavation and analysis had it been published. Jury excavated the longhouses at Forget in a series of narrow parallel trenches, allowing him to meticulously record each post and pit in both plan and profile (Finlayson 2001). At about the same time, in New York State Ritchie initiated a major study of

Woodland settlement patterns that included the excavation and publication of settlement plans from a number of ancestral Haudenosaunee sites such as Roundtop and Garoga (Ritchie and Funk 1973).

These early efforts have been criticized for their limited exposures and tendency to “chase” walls, leaving major areas of site plans unexposed or unreported (Trigger 1985). Moreover, settlement patterns were used primarily as evidence to augment culture-historic and taxonomic debates and as such figured little in Wright’s (1966) synthesis of Ontario Iroquoian prehistory. Likewise, Tuck’s (1971) significant delineation of the Onondaga village sequence incorporated a number of village and longhouse plans, but no attempt was made to analyze interior space or to investigate spatial distributions of material culture within and between structures. The first work of this kind came in the form of Wright’s (1974) landmark excavation and analysis of the Ontario Iroquoian Nodwell site. The complete excavation and mapping of this village provided a paradigmatic model for Iroquoian intra-site analysis and reporting for the next two decades. Wright analyzed inter-house differences in material culture patterning, identifying stylistically conservative and progressive groups, intensively and non-intensively occupied structures, and houses with high frequencies of ritual activity. For the first time, a clear sense of the social, occupational, and ritual complexity of a single settlement was available.

From the late 1970s to around 2000, the development of the cultural resource management industry, alongside the rapid growth of urban centers in southern Ontario, significantly increased the number of salvage excavations of Iroquoian villages in the province. Such excavations are by now far too numerous to list, but important examples include the Coulter (Damkjar 1990), Kirche (Ramsden 1989), Keffer (Finlayson et al. 1985; Finlayson, Smith, and Wheeler 1987), and Draper (Finlayson 1985) sites in the late 1970s and 1980s; the Wiacek (Robertson, Monckton, and Williamson 1995), Parsons (Robertson and Williamson 1998), Dunsmore (Robertson and Williamson 2003), and Alexandra (Robertson and Williamson 2008) sites in the 1990s and early 2000s; and more recently the large coalescent Mantle site (Birch and Williamson 2013). The result of these projects is an enormous database of site-level spatial information on Wendat village arrangement and longhouse structure (e.g., Dodd 1984). These data have helped to identify the locations of additional villages based on regional patterning, adding to an

already impressive database (MacDonald and Williamson 1995; Robertson, Monckton, and Williamson 1995; Robertson and Williamson 2003; Sutton 1990, 1999; Warrick 2008; Warrick and Molnar 1986). From these data, a number of influential studies were completed. Dodd (1984) and Warrick (1984) examined various social dimensions of Ontario longhouses and village layouts in large-scale comparative analyses. Fecteau and colleagues (1991) explored the placement, ecology, and catchments of Iroquoian settlements. Zubrow (1990) completed a similar study for settlements in New York.

At the same time, in New York the lack of urban expansion largely precluded cultural resource management (CRM) involvement in Haudenosaunee archaeology, leaving most of the work to academics and advocates. Further differences with Ontario occurred on the scale of research. Archaeologists in New York tended to subdivide further into expertise on one of the individual Haudenosaunee nations. As a result, nation-specific studies of settlement dynamics dominated New York archaeology throughout most of the last two decades of the twentieth century, highlighted by Snow's (1995a) Mohawk Valley Archaeology Project. This work not only surveyed all known Mohawk sites at the time but also conducted site-level excavations at several critical sites, such as Otsungo. This project brought to light a multitude of details about Mohawk culture, society, and community life. By using settlement remains to explore population characteristics, it was also a pioneering application of demographic archaeology theory.

Oneida settlement sites are known primarily through the work of advocational archaeologists Theodore Whitney and Monte Bennett (Bennett 1973, 1981, 1984, 1988, 1991, 1999; Bennett and Cole 1976; Whitney 1964, 1967, 1970, 1971). Whitney's meticulous work and his demand that work be published created a record rarely found among advocational groups. The result was perhaps the most complete body of knowledge of intra-site patterning for any of the Haudenosaunee nations. Tuck's (1971) and Bradley's (1987) works on the Onondaga were nearly as comprehensive as Snow's but were more descriptive and historical in nature. Niemczycki's (1984) study of the Cayuga and Seneca completed the nation-specific studies of regional settlement patterns. Her work was followed by more site-specific research by Wray and colleagues at the Rochester (NY) Museum and Science Center (Allen 2010; Jordan 2008; Sempowski and Saunders 2001; Wray et al. 1987; Wray, Sempowski, and Saunders 1991).

More recent work has focused on regional scales (Jones 2006, 2010c; Jones and Wood 2012), with only a few studies examining intra-site patterning (Funk and Kuhn 2003). The result has been a great understanding of the spatial patterning across New York State, but much more data on settlement layout and exploration of community organization are needed.

In spite of the enormous scale of extensive excavations at Iroquoian sites over the past four decades, intra-site analytical methods have rarely advanced beyond the efforts of Wright at Nodwell and Finlayson at Draper. Given the CRM context of most of these excavations, this underdevelopment is understandable but still unfortunate. Important exceptions include Kapches's (1990) work on longhouse spatial dynamics, Timmins's (1997) meticulous study of occupation history and economic variability at the Calvert site, and Creese's recent analyses of longhouse interior spatial organization (2012a, 2012b) and village layouts (2011). Likewise, Birch's (2012) research into the process of village coalescence along the north shore of Lake Ontario has uniquely linked internal social dynamics related to village layout with wider geopolitical changes in the region. Published site reports have also forced a rethinking of old ideas about the homogeneity of Iroquoian settlements. For instance, Williamson's (1998) study of the Myers Road site illustrated the complex occupation history at this early-fourteenth-century settlement. The uniqueness and variety of house layouts and the diverse occupation intensities and economic functions of specific houses within sites is a pattern observed again and again at Ontario Iroquoian villages, from the early Iroquoian Calvert site (Timmins 1997) to the Late Iroquoian Grandview (Williamson, Austin, and Thomas 2003), Ball (Knight 1987), and Dunsmore (Robertson and Williamson 2003) sites. Recognition of this complexity provides an important point of departure for many of the chapters in this volume. The research presented here draws on these insights and the rich data made available by the recent flush of excavations.

IMPORTANCE OF SPATIAL ARCHAEOLOGY IN NORTHERN IROQUOIAN STUDIES

Historic Northern Iroquoian cultures offer excellent case studies for archaeological questions related to landscape, space, and place. After AD 1300, most Northern Iroquoians lived in compact villages for five to twenty years, after which they moved, built a new village, and repeated the process, rarely reoccupying former locations. This creates what Schacht (1981, 1984) has called

“snapshot” settlements. Outside of catastrophic events, such as those as Pompeii, Ozette, and Cerén, it is difficult to pull apart several years of accumulated material culture to obtain a clear view of what was happening at a particular time at any site. Northern Iroquoian villages are less problematic with regard to this issue because the short occupation time means there are fewer overlapping postmolds and features to confuse attempts to reconstruct patterns at any one time or changes over time. We get a clearer picture of specific activities over the period of occupation. In addition, comparisons of these short-term settlements with similarly occupied settlements before and after allow us to examine these changes as both continuums and stages. Thus, we can confidently examine, on several temporal and spatial scales, many critical features of Northern Iroquoian village life, including how settlements were formed, what settlement processes took place, and how space was used and conceptualized by village occupants.

Further, southern Ontario, southern Québec, and upstate New York provide good preservation environments for most Northern Iroquoian archaeological sites. Villages tended to be built on hilltops, away from major rivers and waterways. In New York, most of the sites lie in rural areas where agricultural plowing and collecting/looting are the only major disturbances. In Ontario, suburban sprawl has been a threat to Wendat sites for decades. However, laws protecting archaeological remains have kept archaeological data safe either through protection of sites or mitigation.

The rich ethnohistoric and ethnographic record also makes Northern Iroquoian societies ideal archaeological case studies. From the mid-1500s, the French, Dutch, and English wrote extensive volumes about Northern Iroquoian societies, particularly the Haudenosaunee and the Wendat. Because of their goals of converting and establishing trade networks, they were very interested in Iroquoian culture and how to, unfortunately, bend it to their wishes and demands. The result is a detailed record of historical cultural information for the period AD 1530–1900 that can be used to augment archaeological findings. Most important, Northern Iroquoian people still live in the area today. All of the salvage work in Ontario is done with consultation with Wendat peoples, and the number of collaborative and cooperative projects done in New York is increasing (Kerber 2006).

In addition to providing ideal archaeological sites, Northern Iroquoian cultures represent an under-studied sector of the spectrum of human cultural

organization: segmentary societies (or tribes). Archaeological research into segmentary societies has always lagged behind that of both less and more sociopolitically complex societies. In fact, the greater amount of research conducted is quickly breaking down our definition and notions of what a “tribe” is. The incredible variability in tribal forms demands more anthropological research to fully understand the social, political, economic, and ideological forms that exist in this category (e.g., Parkinson 2002). Northern Iroquoian societies, with their beneficial archaeological sites and rich ethno-historic and ethnographic data, present an ideal case for achieving a better understanding of segmentary societies.

OVERVIEW OF THIS VOLUME

The volume is divided into three thematic sections. Chapters in the first section address relationships among intra-site patterns in architectural layout and artifact distributions and consider their implications for questions of community social organization and power relations. In chapter 1, Rodriguez and Allen analyze the distributional patterning of ceramic and lithic artifacts in a sixteenth-century Cayuga longhouse to study social relationships in a pre-contact Haudenosaunee community. By examining the spatial distributions of artifacts recovered from longhouse hearths, bench-lines, and vestibules, they reveal how specific domestic tasks were stratified between relatively autonomous family zones and more communal areas of the house. This allows them to infer important aspects of the power dynamics between households and between women and men in a single longhouse. This analysis represents a critical first step in a relatively nascent area of Iroquoian spatial archaeology: the fine-grained study of artifact distribution patterns within and across architectural features. Creese, in chapter 2, moves from this intra-house scale to an examination of complete village layouts through a diachronic analysis of Ontario Iroquoian settlement configurations. His study, which includes a sample of forty-three complete settlement plans dating from AD 900–1500, explores the relationship among settlement size, spatial organization, and social organization. Reporting distinct patterns in the long-term history of Ontario Iroquoian village sizes, built densities, and longhouse layouts, he proposes that Iroquoian communities maintained egalitarianism in the face of increasing population size and density by

developing as “sequential heterarchies.” These two studies represent innovative methods for using settlement patterns to gain a better understanding of several facets of social organization, including power, household membership, and tribal egalitarianism.

In the second section, three research projects explore both cultural and natural ecologies of Iroquoian settlement. In chapter 3, Allen and Katz use local and regional settlement data to reassess current ideas of pre-contact Cayuga settlement patterns. Their work demonstrates significant functional and economic diversity in two neighboring Cayuga settlements that, based on traditional definitions, would both be considered “villages.” This corroborates findings of significant occupational variability both within and between ancestral Wendat “villages” (Robertson and Williamson 2003) and reemphasizes Trigger’s (1985) suggestion that we need to think about Iroquoian settlement in more complex ways.

Birch and colleagues, in chapter 4, explore an important settlement question: how and why do settlements coalesce? Their work utilizes a plethora of artifactual data from a well-understood historical sequence of ancestral Wendat sites located on the north shore of Lake Ontario. By combining a firm understanding of a local trajectory of settlement movement and coalescence events with ceramic stylistic analyses, they are able to provide a new understanding of how village coalescence in the fifteenth century reconfigured prehistoric sociopolitical interactions across Iroquoia. Their work is a great example of using several lines of evidence at multiple scales to obtain a more complete picture of settlement history and its relationship to sociopolitics.

Jones’s chapter 5 explores the settlement ecology of Haudenosaunee communities during the sixteenth and seventeenth centuries with the goal of understanding the factors behind settlement location choices. This chapter builds on his earlier research with improved GIS-based landscape reconstruction and the analysis of a larger set of cultural and environment factors, bringing us closer to reconstructing the past settlement location choice process. In addition, he examines several sociopolitical and geographic scales, allowing for a more complete examination of general Haudenosaunee patterns as well as variability between nations. The smaller-scale results complement the regional data and help us understand how variability in subsistence and sociopolitics between the Haudenosaunee nations influenced settlement decisions and the ecology of the region.

The final section explores relationships among space, ethnicity, and identity. In chapter 6, Forrest examines interregional variability in Northern Iroquoian infant and childhood health through an examination of skeletal remains. Her work reveals interesting similarities in Wendat and Haudenosaunee health patterns, suggesting similar healthcare and childrearing practices across space and tribal boundaries. This challenges several current notions about the divisions between these cultures and opens possibilities for research into historical Iroquoian health. Hart and Engelbrecht, in chapter 7, introduce network analysis to the study of Iroquoian ethnogenesis. Their results challenge half-century-old notions about Iroquoian cultures, the timing of their development, and their sociopolitical and cultural interactions.

The volume is concluded by Williamson and Snow in chapter 8, who as highly respected researchers in the field, offer their wisdom on the current and future states of Iroquoian spatial archaeology, its place within Iroquoian studies, and its contribution to archaeology as a field.

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