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From Prehistoric Villages to Cities

Settlement Aggregation and Community
Transformation

Edited by
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8 Organizational Complexity in Ancestral Wendat Communities

Jennifer Birch and Ronald F. Williamson

Understanding how changes in practice at the community level relate to cultural change writ large requires reconciling long-term processes of historical development with the lived experience of everyday life. Doing so necessitates the integration of multiple archaeological data sets, including regional settlement patterns, large-scale excavations, and the patterning of material culture therein.

During the late fifteenth and early sixteenth centuries, the Northern Iroquoian societies of northeastern North America experienced a process of widespread settlement aggregation. In southern Ontario, Canada, dozens of small villages came together into fewer large, nucleated settlements with populations of up to 1,500 to 2,000 individuals. The formation of these coalescent communities resulted in the development of new forms of social, political, and economic organization. Traditional models of seventeenth-century Wendat society describe it as essentially egalitarian with consensual decision making and well-integrated mechanisms to ensure equality (e.g., Trigger 1976: 54–59). The period during which those mechanisms were developed has only recently been subject to rigorous archaeological investigation. Evidence for enhanced community integration and coordinated decision making suggest that the late fifteenth and early sixteenth centuries was a time when new organizational structures and mechanisms developed to coordinate social, political, and economic functions. The complexity of those practices has been somewhat masked by reliance on static historic period accounts of Wendat sociopolitical organization.

IROQUOIAN ARCHAEOLOGY AND ETHNOHISTORY

The temporal resolution of the archaeological record of Iroquoian peoples is ideally suited to exploring how communities were transformed during processes of settlement aggregation. Iroquoian village sites were occupied for approximately 15 to 30 years before being abandoned, usually due to depleting agricultural yields and exhaustion of resources such as firewood and wild plants in the immediate vicinity (Heidenreich 1971; Trigger 1990: 31). New

villages were usually constructed within 5 kilometers of the previous site, and in the same drainage (cf. Birch and Williamson 2013; Pearce 1996; Snow 1995; Tuck 1971), although longer migrations also took place. Numerous site relocation sequences have been constructed which represent hundreds of years of occupation by contiguous community groups.

In south-central Ontario, more than three decades of cultural resource management-driven archaeology has resulted in the excavation of dozens of complete ancestral Wendat village sites. Each site represents a snapshot of the activities of a single generation. By tracking changes in the materiality and spatiality of these communities over time, we can observe changes within populations before, during, and after coalescence and relate them to historical processes in the lower Great Lakes more broadly.

To some extent, neoevolutionary, materialist paradigms retain a foothold in Northern Iroquoian archaeology, with precontact sites being seen as stages in the development of the historic Wendat way of life. In the same way, rich ethnographic descriptions of Wendat culture by early European explorers and missionaries (Biggar 1922–1936; Thwaites 1896–1901; Wrong 1939) and syntheses of these accounts by ethnohistorians (Tooker 1964; Trigger 1976, 1990) have at times led archaeologists to seek out analogous or intermediate forms of those cultural traits in the archaeological record, hampering the application of new theoretical approaches and interpretations of precontact Iroquoian life (Birch 2008; Ramsden 1996). This problem is compounded when village sites are conceptualized as static units as opposed to dynamic and historically constituted communities. Recent perspectives on the ethnogenesis of ancestral Iroquoian populations have shown that the development of Iroquoian societies was not a one-branch evolutionary path (Engelbrecht 2003: 112–113; Hart and Engelbrecht 2012). In the same vein, our recent appraisal of numerous community relocation sequences in south-central Ontario demonstrated that ancestral Wendat communities did not all develop or operate in the same way (Birch and Williamson 2013). Instead, there were multiple occasions where social, cultural, political, technological, and linguistic developments converged and/or separated during the Late Woodland period.

ORGANIZATIONAL COMPLEXITY

When archaeologists talk about “complex societies” they usually mean societies possessing a list of traits including powerful leaders, social classes, differences in wealth, craft specialization, and other qualities traditionally associated with chiefdoms and states (cf. Earle 1991; Fried 1967; Service 1962). More recently, new definitions of complexity have emerged that eschew categorical models tied to evolution and directionality (cf. Chapman 2003; Crumley 1995; Nelson 1995; Yoffee 2005). In a recent volume on complexity in ancient North America, Susan Alt promotes an alternative

means of measuring complexity accomplished through multiscalar analyses of “fine-grained sequences, object biographies, and genealogies of practice enmeshed in relational webs” which privilege history and “the complexities of enactment and social experience” (2010: 4). In other words, complexity as practiced, not as achieved. In that community-level construction programs as well as strategies for feeding and clothing larger populations would have necessitated communitywide organization, we can conclude that there were mechanisms that cut across kinship groups to ensure that the necessities of life were met. We further suspect that these systems belie an organizational complexity hitherto hidden from view and that represent a glimpse into an evolving process between the organization necessary in a small four-longhouse village and that of the historic Wendat communities and political confederacy described by the early European observers—a process in which aggregated settlements played a pivotal role.

Bruce Trigger has been the central influence in our understanding of the organizational complexity of the Wendat (Trigger 1976: 54–59) and Ontario Iroquoian studies more generally (Pearce et al. 2006; Warrick 2012). His description of the historic period Wendat as an egalitarian, tribal society has influenced and perhaps unintentionally muted questions about changes in the social and political organization of precontact populations. In the preface to the second edition of *The Huron: Farmers of the North* (1990), he acknowledges that the first edition (1969) was written at a time when neoevolutionism was at the peak of its influence in anthropology, leading him to interpret any suggestion of nonegalitarian behavior as “evidence of an incipient development towards a ranked, or even a stratified, level of social organization” (1990: vii) and that additional research conducted over the next 20 years had convinced him that this approach misrepresented the nature of Huron (Wendat) society. More than 30 years of archaeological excavation and analyses combined with a rereading of the ethnographic record have convinced us that ancestral Wendat societies underwent complex changes in their social organization. As Susan Jamieson has suggested, “it is time that we opened our minds to a range of socio-political organizational possibilities beyond those assumed and consolidated in Trigger’s impressive *construct* of early seventeenth century Wendat society” (2011: 7, emphasis in original).

Here, we are discussing organizational complexity—how, with the formation of larger coresidential groups, the social, political, and economic organization of communities became considerably more complicated. Recent detailed analyses of the aggregated community that occupied the Draper and Mantle sites, discussed at length below, have allowed us to look beyond overly generalized explanations of the development of complexity to understand how these processes played out, particularly with respect to economic concerns. Importantly, modeling of the agricultural field systems and hunting territories required to sustain larger communities have permitted a better understanding of the organization of production and consumption.

This, together with insights about the changing internal social and political dynamics of communities undergoing processes of coalescence, help us to understand how processes of cultural change at the local level relate to large-scale, long-term geopolitical change, such as the formation of “tribal” nations and confederacies.

In this chapter we provide a brief review of the history of settlement aggregation in precontact Iroquoia, focusing on the coalescent communities of the late fifteenth and early sixteenth centuries. We then explore how this process of coalescence unfolded for the community that occupied the Draper and Mantle sites, including changes in community integration, decision making, production and consumption, and interactions between local and distant populations. Our conclusions suggest that settlement aggregation created social settings that led to a dramatic increase in organizational complexity.

SETTLEMENT AGGREGATION IN THE IROQUOIAN WORLD

Aggregation was a deeply rooted cultural phenomenon in northeastern North America. Large occupation sites with dense artifact distributions situated by lakes or major rivers appear in the later Early and Middle Woodland periods. Most scholars believe that they were used by seasonal aggregations of bands (Spence, Pihl, and Molto 1984) and facilitated heightened social relations, including the exchange of marriage partners, information, and materials, and allowed for communal ceremonialism. These interactions may have led people to value a greater degree of sedentism, later made possible by the growing of food surpluses.

The earliest Iroquoian communities, occupied around AD 1000 to 1300, were base camps for groups practicing a limited amount of horticulture and following a semisedentary settlement-subsistence pattern (Williamson 1990). Early Iroquoian settlements were small, covering approximately half a hectare, and were occupied intermittently for as long as 50 to 100 years, resulting in settlement patterns composed of multiple, overlapping structures commonly surrounded by a single-row palisade (cf. Kenyon 1968; Timmins 1997). Population estimates for these communities are in the range of 75 to 200 people, leading Trigger to suggest that they may have developed from similarly sized Middle and Transitional Woodland territorial band aggregations (1976: 134). Sites are found in regional clusters that appear to have been occupied by two or more contemporary communities that shared a common resource base. Ceramic design sequences and decorative motifs differed between clusters and were more similar within them (Williamson 1990). Over time, populations seem to have increased their investment in village sites and their surrounding areas and drainages, which may have led to a greater concern for the maintenance of social and territorial boundaries.

The transition to agriculture was gradual for Early Iroquoian populations, who continued to practice a semisedentary way of life until about

AD 1300, when we see the appearance of sedentary village life, full-time dependence on maize cultivation, integrative social practices, and distinctive material culture that is, for the first time, consistently “Iroquoian” in character. Villages and houses increase in size, and settlement plans exhibit less rebuilding and structural change (Dodd et al. 1990). The settlement patterns of a number of well-excavated fourteenth-century villages, including the Uren (Wright 1986), Myers Road (Williamson 1998), and Alexandra sites (ASI 2008; Birch and Williamson 2013: 30) indicate the amalgamation of two or more previously distinct communities. The reasons proposed for this initial aggregation have included localized warfare based on a substantial palisade at the Uren site (Wright 1986: 62), although evidence for widespread hostilities during this period is limited (Dodd et al. 1990: 357–358; Williamson 2007), and population increase and regionalization in the early fourteenth century resulting in rapid culture change (Pearce 1996; Warrick 2008: 181–185). That change involved, at least in some regions, agricultural intensification. Detailed isotopic analysis of human remains from the late-thirteenth-century ancestral Wendat Moatfield ossuary, for example, indicates that, for at least one generation, maize comprised 70 percent of the diet. The intensification of agricultural production and consumption may have been a necessary, albeit temporary, response to population concentration within a newly amalgamated settlement (van der Merwe et al. 2003).

There was a great deal of variability in the size and structure of villages occupied between AD 1300 and 1450. Some villages were comprised of single clusters of three or four aligned longhouses, other sites contain two or more clusters of houses, while others contained less structured house groups (Birch and Williamson 2013). For the most part, villages were not palisaded, although some contained internal fence lines or the strategic placement of longhouses, which effectively set apart or separated segments of the community.

Some fourteenth-century sites may have been inhabited by as many as 400 to 500 individuals, suggesting that there may have been the need to develop more formal mechanisms of social and political organization. The relatively large size of some fourteenth-century longhouses, together with their alignment into house clusters, has been interpreted as indicating the beginnings of formal matrilineages and clan organization (Engelbrecht 1985: 174; Trigger 1985: 92–94; Warrick 2000: 439–440). Village councils may have been necessary to coordinate decision-making functions in some settlements; however, the variable nature of site size and spatial organization suggests that while communities may have been linked within networks of interregional interaction, the development of community life was a multilinear, differentiated process.

Unlike the regional clustering of material culture traits in the Early Iroquoian period, there is a relatively homogeneous distribution of material culture on fourteenth-century sites in southern Ontario (Dodd et al. 1990; Warrick 2000: 441; Williamson and Robertson 1994). This may have been the result of the

emergence of segmented matrilineal clans practicing village exogamy and a heightened degree of interregional interaction. The development of new mechanisms for integrating and ordering social segments within communities and facilitating ties between regional populations include semi-subterranean sweat lodges (MacDonald and Williamson 2001), an elaborate smoking pipe complex (Smith 1992), and ossuary burial (Williamson and Steiss 2003).

During the late fourteenth to early fifteenth centuries, population growth and increasing social circumscription continued to transform the lower Great Lakes region. Gary Warrick's demographic history of the Wendat and their neighbors, the Tionontaté (Petun), demonstrates that between 1330 and 1420, the population of south-central Ontario increased from approximately 10,000 to 24,000 persons (Warrick 2008: 141–142, 182). This demographic surge resulted in larger villages, group fissioning, and the establishment of new villages, together with migration of groups from south-central Ontario north into Simcoe County—historic Huronia—and east into the Trent Valley. This “population explosion” (Warrick 2008: 181) appears to have ultimately played a role in the coalescence of ancestral Wendat populations on the north shore of Lake Ontario. In the early fifteenth century, village sites on the north shore of Lake Ontario more than doubled in number and began to cluster along the major drainages flowing south-east into Lake Ontario, foreshadowing the large community aggregates that formed during the next half-century.

FIFTEENTH-CENTURY COALESCENCE AND CONFLICT

From the mid-fifteenth through the early sixteenth centuries, Northern Iroquoian societies experienced a period of rapid and widespread settlement aggregation that corresponds to increasing evidence for violent conflict and regionalization representing the initial development of “tribal” groupings or nations. In many ways, these processes reflect Stephen Kowalewski's formulation of coalescent societies (2006), but at a scale which has led us to refer to them as coalescent communities.

While these phenomena appear to have occurred throughout the Iroquoian world, there is evidence that settlement aggregation began somewhat earlier in south-central Ontario than in New York State or the St. Lawrence Valley (Birch and Williamson 2013: 21, 159). On the north shore of Lake Ontario, where we have a relatively complete picture of the precontact settlement landscape, dozens of small early-fifteenth-century villages came together to form a smaller number of large, heavily palisaded settlements. They include the Parsons (Williamson and Robertson 1998) and Damiani sites (ASI 2012a; Birch and Williamson 2013: 39) on the middle and upper Humber River, the Keffer site on the Don River (Birch and Williamson 2013: 36; Finlayson et al. 1987), and the Draper site on West Duffins Creek (Finlayson 1985) (Figure 8.1). All of these sites have been fully or partially

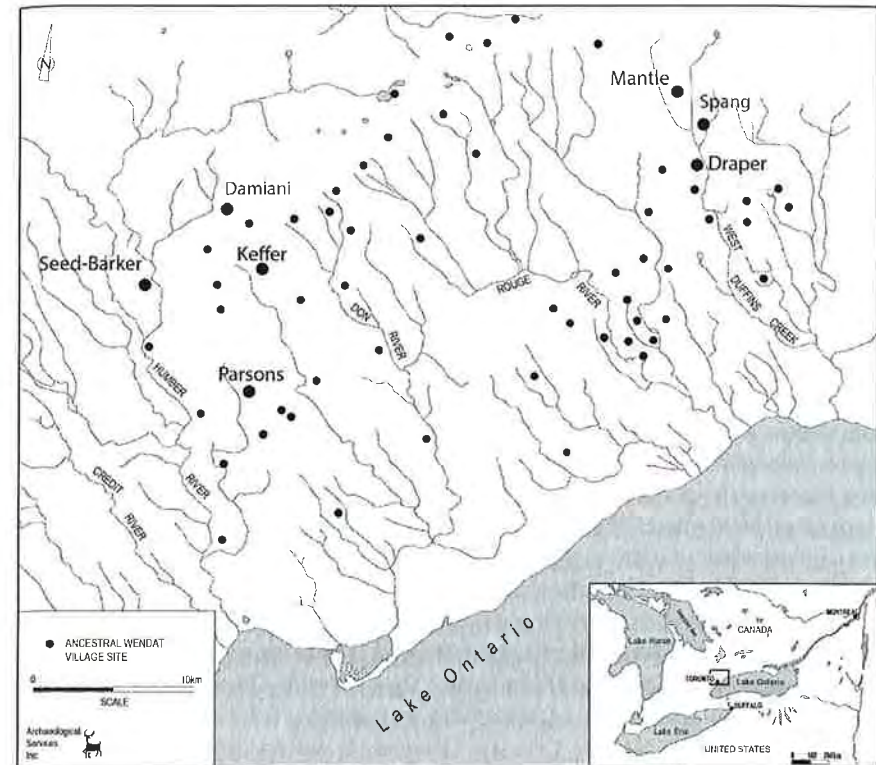


Figure 8.1 Map of the north-central shore of Lake Ontario indicating key sites mentioned in the text.

excavated and show evidence of village expansion whereby palisades were dismantled and extended to incorporate additional clusters of longhouses, thought to represent previously distinct villages. We consider them formative village aggregates because they represent initial sites of large-scale community coalescence.

Warfare between neighboring or distant populations appears to have played a central role in these developments. The north shore of Lake Ontario contains some of the earliest evidence for violent conflict in the fifteenth and sixteenth centuries. Parsons produced hundreds of pieces of burned human bone interpreted as evidence for prisoner sacrifice (cf. Williamson 2007), including two isolated crania that were morphologically similar to those buried in the Uxbridge ossuary located roughly 80 kilometers to the north-east (Dupras and Pratte 1998; Pfeiffer 1983). Parsons may have engaged in hostilities with that population, with other adjacent communities on the north shore of Lake Ontario, including Draper or Keffer, where significant quantities of human bone—including high percentages of skull fragments indicative of trophy-taking—were also recovered. It is also possible that

communities on the north shore were engaged in conflicts with both distant and adjacent populations (Williamson 2007). As such, it may be that the increasing militarization of a few communities led to a cycle of raiding and retaliation that spread throughout the lower Great Lakes (Birch and Williamson 2013: 159–160). By the late fifteenth century, evidence for violent conflict is apparent throughout Iroquoia (cf. Engelbrecht 2003), and artifacts made of human bone, including human skull rattles, peak in the archaeological record at this time (Jenkins 2011; Williamson 2007).

As we have discussed elsewhere (Birch and Williamson 2013: 160–161), once processes of settlement aggregation began in some areas, adjacent populations may have been compelled to follow suit or be displaced or absorbed by larger, more aggressive groups. By the early sixteenth century, for example, we see the displacement of at least two populations in southern Ontario. On the north shore of Lake Ontario, the occupants of the Don River Valley seem to have been displaced or absorbed by the larger communities forming to the west and east, in the Humber and Duffins Creek drainages. The lower St. Lawrence Valley was likewise abandoned, with distributions of St. Lawrence Iroquoian-style artifacts suggesting these populations were incorporated into the Trent Valley, the Toronto area, and the eastern Iroquois nations. It should be noted, however, that settlement aggregation was a strategy adopted by only some Iroquoian populations, particularly those ancestral Wendat groups on the north shore of Lake Ontario and the ancestral Onondaga and Oneida of eastern New York State (Tuck 1971). In some parts of western New York State and northern Simcoe County, Ontario, it would appear that the preference was to form clusters of villages located a few kilometers from one another, perhaps in an effort to avoid stressing local resources too quickly (Engelbrecht 2003: 113). Although without more extensive excavations of sites in both of these regions, these patterns are difficult to confirm.

By the early sixteenth century, quantities of modified human bone on sites in south-central Ontario drop off sharply, suggesting the cessation or decline of violent conflict, possibly as a result of alliance building between consolidated community aggregates. On the Humber River and West Duffins Creek, at least two of these formative village aggregates remained intact into the sixteenth century through subsequent village relocations. Seed-Barker (Burgar 1993) on the Upper Humber River and Mantle (Birch and Williamson 2013) on West Duffins Creek exhibit highly organized settlement plans and do not show evidence of expansion, leading us to consider them consolidated aggregates that had undergone significant social and political integration (Birch 2012).

While these trends characterize Iroquoian settlement trajectories during the late fifteenth and sixteenth centuries, it is clear that processes of settlement aggregation played out differently for each village based on their own unique historical contingencies, both in terms of the internal composition and the local and distant trade and social relationships of the communities that contributed to their formation.

COALESCENT COMMUNITIES: THE DRAPER AND MANTLE SITES

The formation of community aggregates created larger coresidential populations that necessitated new means of regulating sociopolitical organization and economic production. An in-depth analysis of the well-excavated and analyzed Draper and Mantle sites provides unique insights into the challenges and transformations that accompanied coalescence for one specific community group.

In the mid-fifteenth century AD, as many as eight small communities inhabiting the West Duffins Creek drainage came together at the Draper site (Finlayson 1985; Warrick 2008: 136–137). Ties engendered by the proximity of villages, their associated field systems, shared resource extraction areas and trail systems, kinship, intermarriage, and possibly trade and communal defense would have existed between early-fifteenth-century communities and likely influenced and helped to facilitate their amalgamation (see also Haggis; Rautman; Wallace and Lindeman, this volume). Intermarriage may have been a particularly important mechanism if these small villages were inhabited by single clan segments that practiced clan exogamy, as was the case for Wendat and Wyandot clans in the historic period (Tooker 1964: 126).

The Draper site was fully excavated in the late 1970s, revealing the total village plan (Figure 8.2). Finlayson (1985) produced a detailed report of these settlement patterns. Unfortunately, the material culture analyses were undertaken separately and never fully integrated with the settlement patterns. Future reappraisals and syntheses of these data will be essential for untangling the complex relationships that existed between village segments and constituent household groups at the site.

As described elsewhere (Birch 2012; Birch and Williamson 2013: 58–62; Finlayson 1985), following the construction of the original palisaded village core, the Draper site underwent a total of five expansions whereby new longhouses were constructed and the palisade extended around them. These multiple palisade expansions indicate that coalescence was not a one-time event. Instead, smaller communities joined the growing Draper village in a process of aggregation that unfolded over many years.

As each new house cluster was added, they were deliberately constructed in such a way as to keep each group spatially distinct, even when it would have been more practical, in terms of the additional palisade that needed to be constructed, to arrange them parallel within the palisaded enclosure. Each house cluster also contains one or more “long” longhouses. Exceedingly long houses appear in the fourteenth century AD and reach their greatest length during the mid-fifteenth century (Dodd 1984; Warrick 1996). The development of very large longhouses may reflect rivalry whereby large households were those of prominent lineages who played important roles in guiding community affairs, although there is no archaeological evidence that some households were wealthier than others (Trigger 1990: 126). While there is no evidence for economic inequality in the precontact period, that

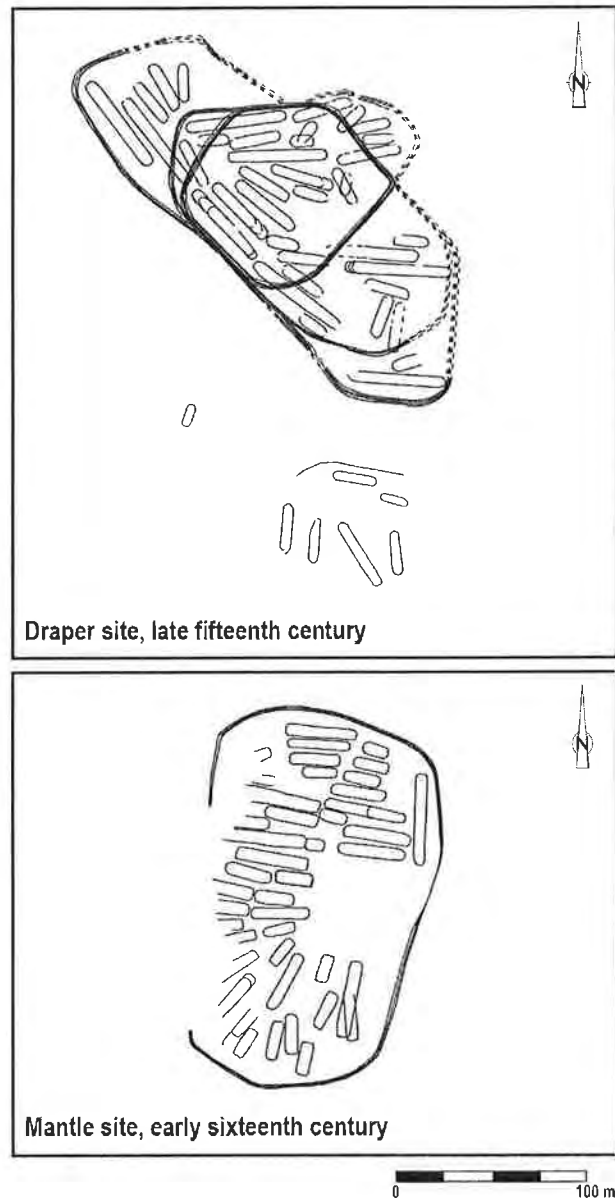


Figure 8.2 Draper and Mantle site plans. Draper site plan reproduced from Finlayson (1985); Mantle plan shows the early phase of occupation.

does not preclude the fact that there may have been asymmetrical power relations between some individuals, lineages, or clans. It is known from the historic record, for example, that some lineages and their heads “owned” various trade routes and that permission and the provision of gifts was required to use them (Thwaites 1896–1901, 10: 223–225).

As the Draper village grew, the number of face-to-face interactions between village inhabitants would have increased, stressing the existing mechanisms regulating communication and interaction within coresidential populations (Dunbar 2011; Fletcher 1995). They also would have had to develop mechanisms for group decision making within the growing community. Relationships between community members, households, and larger social units such as clans and their representatives would thus have developed over time with repeated negotiations, which may have become more complex as new social groups were added. This was likely facilitated by the village council, with all of its attendant rules, rankings, and protocols. The small precoalescent villages may have consisted of single clan segments that had perhaps first formed at the turn of the thirteenth century with the first phase of coalescence. New councils would likely have had to accommodate headmen from each of these clan segments (see also Trigger 1976: 54).

Warfare may have provided one means of ordering new village councils. It is known that warfare provided an avenue for young men to accrue prestige (Trigger 1976: 68–69; see also Birch 2010a; Snow 2007) and increase their influence in clan and village affairs. In historic Wendat society, a village council consisting of the civil headmen of clan segments appears to have met daily to discuss matters of public administration while other clan headmen were predominantly concerned with military affairs and relations between communities (Trigger 1976: 56–57). In that the raising of headmen was lineage- or clan-based, it is likely that women were influential in these decisions, although they did not attend the meetings (Trigger 1976: 55).

There are no clear central places or obvious public structures or spaces at the Draper site; many of the open spaces or plazas identified by Finlayson were actually filled with extensive refuse deposits. The emphasis on retaining the spatial separation of longhouse groups, and that each contained one or more long longhouses, which Finlayson suggested were chief’s houses (e.g., 1985: 175–176; see also Thwaites 1896–1901, 10: 181), suggests that the inhabitants of each longhouse group retained distinct identities and socio-political functions within the formative aggregate. As such, the Draper site can be interpreted not as a single village community but rather as a settlement composed of multiple small communities sharing a palisaded enclosure and learning to live together. In this way, the physical aggregation of this community preceded its social integration. It was not until the next known iteration of the village plan that a new, integrated community identity materialized (Birch 2012; Birch and Williamson 2013: 61, 82).

Based on their similar sizes, ceramic assemblages, calibrated radiocarbon dates, and agricultural field modeling, we believe that the Draper community relocated to the largely unexcavated Spang site around 1480 and then again to the Mantle site around the turn of the sixteenth century.

The Mantle site was excavated in its entirety by Archaeological Services Inc. between 2003 and 2005. Its settlement plan and the materials recovered have been the subject of detailed analyses (ASI 2012b; Birch 2010b, 2012;

Birch and Williamson 2013), making it one of the most-studied and well-known Iroquoian village sites excavated to date.

When the community that had previously inhabited the Draper site relocated to the Mantle site, there was a dramatic change in the structure of the built environment. The early phase of the village plan exhibits a pre-planned layout with no obvious divisions or house groups. Instead, houses were arranged in a radial alignment, with parallel and paired rows arrayed around a single open area (Figure 8.2). This plaza area is a unique example of a clear central and public space on an Iroquoian village site. Cross-cultural comparisons of large public facilities in middle-range societies indicate that plazas commonly served as a context for both sacred and secular activities and fulfilled integrative functions (Adler and Wilshusen 1990; Lipe and Hegmon 1989; Rautman, this volume), encouraging communication between households and facilitating activities and events that would have been important in constructing a collective identity. In the historic period, the Wendat are known to have held regularly scheduled councils and regional assemblies, either in the cabin of the village chief or in the “midst of the village” (Thwaites 1896–1901, 10: 251).

Houses 15 and 20 have been identified as the cabins of chiefly lineages. They are the longest on the site, and their high wall post densities indicate numerous rebuilding episodes, suggesting that they endured throughout the village’s occupation and may have been available for meetings and assemblies of the village council (Birch and Williamson 2013: 70, 83).

While the egalitarian nature of decision making that is reflected in the seventeenth-century ethnographic record might be assumed for this earlier period, the actual council structure and the issues they addressed can be inferred on the basis of both the ethnographic and archaeological records. This has not previously been possible since the postcoalescent period has only now been illuminated, at least for this community, through extensive excavation and analysis. We imagine those issues to include the construction and maintenance of public areas and shared features in the village, economic production, and foreign affairs—issues that no doubt became a great deal more complex in the context of coalescence.

MANAGING MANTLE: PLANNING AND PUBLIC ADMINISTRATION

Public Building Programs—Construction and Maintenance

In addition to the creation of a large public space or plaza during the first phase of the site’s construction, Mantle, like Draper and all other post-AD 1450 communities on the north shore of Lake Ontario, is surrounded by a formidable multirow palisade. The Mantle palisade was contracted twice. The contraction was evident since houses associated with the early village

were subsequently obscured or overlain by later phases of palisade construction and by a borrow trench that surrounded the third and final phase of palisade construction (Figure 8.3). In some sections there appear to be as many as seven rows of palisade posts, although this is the result of maintenance and successive phases of palisade construction as any more than three rows would have been unnecessary (Engelbrecht 2009: 180). Analysis of the settlement pattern indicates that the palisade complex consisted of more than 30,000 posts throughout the site’s occupation, a considerable effort with stone tool technology.

In the historic period, houses were constructed by groups of men, with each lineage or clan segment responsible for its own (Wrong 1939: 78), although those village inhabitants who found themselves without houses were the beneficiary of communitywide work parties authorized and organized by council (Wrong 1939: 81). Men were also responsible for the construction of the village defensive system, including palisades and earthworks. The minute amount of human bone recovered from nonburial contexts at the Mantle site, however, suggests that the effort expended on palisade construction was not in proportion to the actual levels of violent conflict.

The earliest phase of the village was surrounded by a palisade that was comprised of between one and four rows of posts and seemingly constructed prior to most of the houses. A section of the southeastern palisade was contracted soon after its initial construction to strengthen a particular weak area underlain by poor, gravelly soils. After the village had been occupied

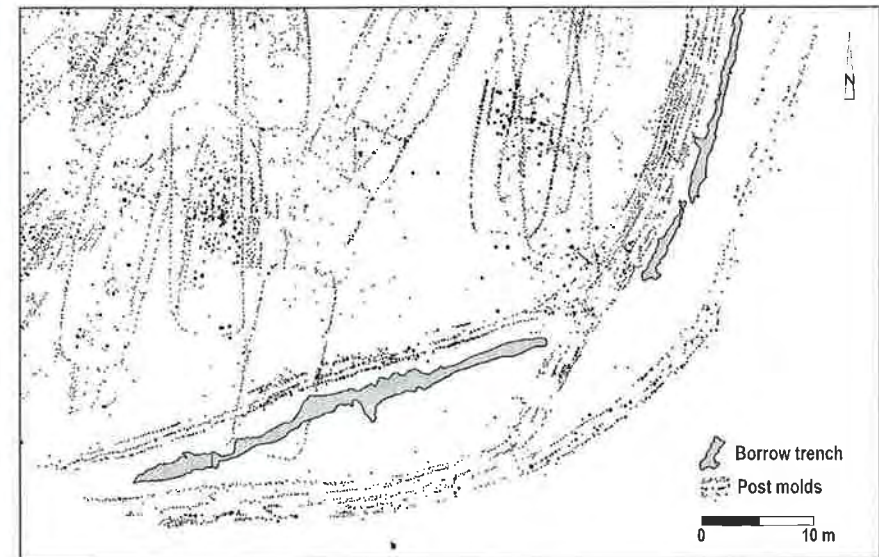


Figure 8.3 Section of Mantle site settlement plan indicating three phases of palisade construction and borrow trench.

for a decade or so, the palisade was entirely rebuilt. A trench was excavated around the palisade's perimeter, the fill presumably used to create a strengthening embankment at its base. While any evidence for earthworks at Mantle was obscured by nineteenth- and twentieth-century plowing, the earthworks of one of the villages that succeeded Mantle survived into the twentieth century, resulting in its historic description as a ringed fort (Emerson 1954: 165).

The construction of the site's new palisade and earthworks would have required a significant investment of time and effort, with implications for the organization of space, access to the village interior, and the allocation of communal labor. The rebuilding of the defensive system, for example, required the dismantling of a number of structures and appears to have put a new premium on space within the village precincts. Over time, the plaza area was filled with new structures, resulting in the abandonment of the original village plan. While the chiefly Houses 15 and 20 and some associated structures retained their position on the highest ground, other longhouses were dismantled and relocated or repositioned. Many of the houses along the western side of the site were rebuilt entirely, whereas others were completely dismantled and new houses with different orientations built in their place. It would appear that this work program, at least in part, was necessitated by the departure of a community segment occupying the houses in the northernmost portion of the village. It is not clear what led to the departure of a substantial segment of the community's population—on the order of the size of a precoalescent community—but it was coincident, whether as a cause or consequence, of the structural reorganization of the village. Whatever the reason, it points to the fragility of the community's integration and also to the fact that while regional hostilities had led to coalescence, the absence of violent conflict presumably allowed for a negotiated new home for that particular community segment. All of these changes would no doubt have required substantial discussion among all the clan segments in the community. In the absence of coercion, however, clan leaders and their constituents must have been free to leave or stay; it is also possible that they were asked to leave. However it occurred, the impact of the palisade contraction affected houses throughout the community, and the new design must have originated with a council decision.

The Necessities of Life—Food and Clothing

Once communities reached the size of Draper and Mantle, planning for village maintenance and relocation would have included ongoing assessments of present defensive fortifications, residences, agricultural field systems, and hunting and fishing strategies. While thousands of felled saplings and sheets of elm and cedar bark were constantly required for constructing and covering houses, their supply was likely coordinated with expanding agricultural fields due to ever-decreasing soil fertility. Hundreds of acres of new

agricultural fields would have been cleared, planted, tended, and harvested annually to provide the more than 1,500 pounds of maize required daily to feed the population.

While substantial quantities of nonagricultural food were obtained through hunting, fishing, and gathering activities, maize was the most important component in the Wendat diet. There would have been considerable concern over crop failure, leading to the regular production of surpluses, which were also used to trade with northern Algonquians or other Iroquoian groups. Bean, cucurbit (squash), sunflower, and tobacco were also cultivated by the Mantle community.

While the cultural geographer Conrad Heidenreich (1971) suggested maize contributed about 65 percent of the diet for the historic Wendat, initial isotope research suggested that the diet of most southern Ontario Iroquoians consisted of about 50 percent maize (Schwarcz et al. 1985). The degree to which maize contributed to diet would, of course, differ among various communities at different times depending on the pressures for intensification of production brought about by amalgamating populations (see Kowalewski, this volume). The isotope data recovered from testing a sample of loose teeth recovered from within the Mantle village and its associated cemetery were evaluated in the context of the established estimated food web fractionation of ^{13}C and ^{15}N (Pfeiffer et al. 2013; see also Birch and Williamson 2013: 95). It was estimated that maize comprised approximately 60 to 65 percent of the diet of the Mantle inhabitants, a value that, while consistent with other regional early-sixteenth-century Iroquoian sites, is higher than Middle Iroquoian or historic Wendat values.

Heidenreich (1971: 162–164) suggested the Wendat were consuming about 1.3 pounds of maize per day per person at 65 percent of the diet. This figure was used to model the field systems for the precoalescent, Draper, Spang, and Mantle villages in the Duffins Creek drainage (Birch and Williamson 2013: 95–103). Using population estimates for those sites, Heidenreich's basic model (1971: 189–195), and adjusting for soil regimes and steadily decreasing soil fertility in the immediate vicinity of the sites, climatic data, and modeling for surplus retention, we found that at its twentieth year of occupation, Mantle required 2,000 acres of maize, which entailed a walk of almost 2 kilometers to the edge of the field system. The precoalescent villages with populations of about 300 people required about 400 acres of fields with a distance to field edge of about 700 meters.

The extended family seems to have been the primary unit of production and consumption, although in times of scarcity the harvest was shared with others in the clan segment and even the village (Heidenreich 1971: 168–171; Trigger 1976: 36). The fields appear to have been available to any family if they were not being used, since land was apparently common property (Wrong 1939: 103). Wendat women planted, tended, and harvested the corn and other crops. Men removed trees and brush from the fields with stone tools and by girdling and burning large trees. But with thousands of acres of

forest to clear, it is clear that coordinated field clearance by work parties was necessary, a fact noted by Champlain (Biggar 1922–1936: 156).

If unused land was cleared by work parties, it seems reasonable that decisions regarding agricultural field systems were subject to council authority. This would be especially true since scarcity and trade required the growing of surpluses on behalf of the entire population. This was thought by Sagard to be as much as 2 to 3 years' supply (Wrong 1939: 103); the Jesuit Jean de Brébeuf claimed Huronia was the granary of their Algonquian neighbors (Thwaites 1896–1901, 8: 115). Clearly, in newly formed coalescent villages, where the distribution of foodstuffs was previously left to the individual family or small clan segments, these were substantial issues subject to considerable discussion and coordinated implementation. Moreover, with daily walks of 1 to 2 kilometers to fields, one wonders who had rights to the still-fertile fields closest to the village.

While the agricultural field systems would have required the expenditure of significant effort at clearing forested areas by men and planting, tending, and harvesting crops by women and children, in addition to gathering wild plant stuffs, the subsistence system of the site inhabitants also included the exploitation of animal resources for meat protein, hides for the manufacture of clothing, and bone for making tools. Our analyses indicate that coalescence also required changes in decision-making processes related to the coordination of these activities.

The faunal sample from the Mantle site was dominated by mammals (87 percent) with fish comprising 6 percent, birds 2 percent, and all other classes comprising 1 percent or less each (Needs-Howarth 2012; also Birch and Williamson 2013: 114–115). With regard to fishing practices, far higher percentages of fish bone have been documented in precoalescent villages on the north shore of Lake Ontario, ranging from 30 to 50 percent of excavated early-fifteenth-century assemblages (Birch and Williamson 2013: 106). Fish represented 8 percent of the animal bone from Draper and 6 percent at Mantle, indicating that fishing was not as important an activity for the aggregated community as it had been previously. *Salmonidae* (Atlantic salmon, lake trout, whitefish), identified mainly from their vertebrae, comprise about 50 percent of the identified fish remains and suggests that the fall lake fishery remained the focus of the community's limited fishing activities. In the historic period, the fall lake fishery went on for about 2 months and involved a cooperative effort at the village level (Thwaites 1896–1901: 13: 115; 15: 57–59; 8: 87–89). As the Mantle fishery was carried out a distance of 30 kilometers from the site, it no doubt would have been coordinated by the village's domestic council.

Yet, despite the emphasis on the fall fishery reflected in the fish portion of the faunal assemblage, the mean nitrogen isotopic value of 10.5 taken on a sample of fourteen teeth from Mantle indicates that the contribution of lake fish to the diet of the Mantle inhabitants was minimal by comparison with earlier precoalescent north shore sites or later contact period

Wendat populations, which have significantly higher values, reflecting their historically recorded reliance on lake fish for protein (Pfeiffer et al 2013; Birch and Williamson 2013: 110). For some reason, these recently coalesced populations decided to expend their coordinated efforts in ways other than fishing. We suspect the draw away from their previous reliance on fish was the requirement for animal hides to provide clothing for 1,500 individuals. Where traditionally village hunters were accustomed to providing hides for 200 to 400 individuals, in large, aggregated villages, the numbers of hides and the hunting territories required expanded dramatically.

While the mammal portion of the Mantle faunal assemblage contains twenty-three unique taxa, it is overwhelmingly dominated by deer (61 percent). Small mammals were present in insignificant numbers, and larger fur-bearing species were also targeted (Needs-Howarth 2012; Birch and Williamson 2013: 111–112), although none was well-represented in the assemblage. This pattern was also true for the preceding Draper site. The precoalescent sites, on the other hand, all have well less than 35 percent deer in the identified mammal component. The percentages of mammals, fish, and birds at Draper and Mantle are very similar but considerably different from earlier sites, where fish and small mammals dominate. From these data, it is evident that the focus in hunting strategies shifted considerably with the formation of aggregated villages.

The hunting of white-tailed deer (*Odocoileus virginianus*) and wapiti (*Cervus canadensis*) by the site inhabitants for hides, meat, and bone for making tools, therefore, must have been one of the most important economic considerations and planned seasonal activities.

In terms of the caloric contribution of deer meat to the diet, Heidenreich (1971: 163) estimated that deer represented about 6 percent of the caloric requirements of the historic Wendat, although the ethnographic record indicates that meat of any nature was rare in times other than during the fall seasonal hunt (e.g., Biggar 1922–1936: 126; Thwaites 1896–1901, 17: 142; Wrong 1939: 82, 106–107). This also may have been true for ancestral Wendat populations on the north shore given the probable scarcity of deer in the vicinity of villages and the competition for deer among neighboring communities.

While deer are solitary for most of the year, they are found in larger herds groups in mast-producing forest in the autumn and winter, when they may congregate or "yard" in stands of white cedar. Their hides and antler would have been in better condition at these times of the year, and their weight would have been optimal for meat (see also Stewart 1991: 25). The historic Wendat certainly participated in fall and early winter deer drives or group hunts at some distance from their villages, with 400 to 500 individuals in one case (Biggar 1922–1936: 60–61) and 25 in another, the latter involving a deer surround that resulted in the capture of 120 deer over a 38-day period (Biggar 1922–1936: 83–86). Archaeological evidence of such a drive and camp was found at the Early Iroquoian Little site in southwestern Ontario, where

a 17-meter-wide surround and blind was documented along with a feature containing 10,000 bones of at least eight deer (Williamson 1990: 314–316).

In our attempt to identify the requirements for deer hides and the hunting territory of Mantle, we considered the estimated annual requirement for hides per family, the regional habitat for deer at the time of the site's occupation, and estimates of their densities as well as the availability of other animal hides through hunting and/or trade to meet the requirements (see Birch and Williamson 2013: 113–120).

To estimate the number of deerskins necessary to clothe a Wendat person, we examined descriptions of Wendat clothing and hide working by Champlain and gleaned insights into the hide requirements for manufacturing breeches, shirts, capes, and moccasins as well the use-life of those items from Morgan Baillargeon, a curator of Plains ethnology at the Canadian Museum of Civilization, and David Christensen, a historical reenactor. Hides were also required for the manufacture of tobacco pouches and game bags and for wrapping bodies or offerings at death (Thwaites 1896–1901, 10: 265–279; Wrong 1939: 59, 102), the latter of which they considered of paramount importance even to the detriment of their own warmth in cold conditions. For a family of four, it would seem that twenty hides per year were required. Michael Gramly (1977) had previously calculated that an average historic Wendat person would require three and a half hides annually for moccasins and clothing. Taking other uses for hides into account leads to an annual requirement of four and a half to five hides per person, which, for a population of 1,500 people, would require approximately 6,750 to 7,500 deer.

Using an estimate of an annual requirement of 7,000 deer for the Mantle community and a relatively high density figure of 15 deer per square kilometer, after considering the environmental characteristics of the region in relation to past and present recorded and estimated deer densities and assuming a 35 percent predation rate to sustain populations (Bolstad and Gragson 2008), we concluded the Mantle occupants would have required 1,428 square kilometers of hunting territory. Visualized as an umland around the community, it would have a radius of 21 kilometers and would certainly have overlapped with the required deer territories of concurrently occupied villages on the north shore of Lake Ontario.

Modeling the hunting territories of these villages using the watersheds within which the communities were located resulted in the realization that the hunting territories of these or their predecessor communities would have overlapped to the extent that coterminous occupation of Parsons, Keffer, and Draper would have been impossible without negotiated boundaries, as was likely true for the successor villages of Seed Barker and Mantle, despite the absence of an intermediate community in the Don Valley by the time of their occupation (see Birch and Williamson 2013: 118–120).

Regardless of how the villages mediated these intercommunity tensions, the Mantle villagers would certainly have mounted several mass capture hunting expeditions each fall and early winter at some distance from their

village, likely involving hundreds of hunters. The absence of evidence of deer drives and their associated camps yielding large quantities of processed deer bone in the archaeological record of the north shore suggests they traveled some distance, perhaps northward to undertake these hunts to avoid encountering hunting parties from other villages. The Mantle occupants no doubt also traded shelled maize for hides with northern Algonquians, as the ethnography of the historic Wendat indicates.

DISCUSSION

With the constant infrastructure program, agricultural system, and large-scale hunting and fishing expeditions undertaken at some distance away from the Mantle community, the need for ongoing detailed administration and planning would have been considerable. Maize provided well over half of the calories to the community's diet, constituting the major ongoing economic activity at the site. While modest overlapping of the field systems between sequential communities would have resulted in the most productive fields being closest to the new village, thereby reducing the initial land clearance at the time of village relocation, the planning involved in village relocations would have been enormous and an ongoing concern in that community members would have been well aware of the need to relocate the village once every generation. In that the trees felled in clearing fields would have been used in the construction and maintenance of houses and palisade walls and their limbs and branches dried and used for firewood, the planning for activities obviously overlapped considerably. While planting, tending, and harvesting crops for ongoing consumption may have been lineage-based responsibilities as recorded in the ethnography, planning for the production of surpluses for trade and times of scarcity would have necessitated coordination among different lineages and clan segments, particularly with aggregation into larger coresidential settlements. Sharing was clearly an equalizer for families experiencing economic difficulties and contributed to the importance of an egalitarian ethos underlying social and political organization, but the creation of surpluses was likely organized by a planning authority or council that exercised considerable influence. Once chosen from among the leaders in each clan, the councilors made and implemented the necessary decisions to manage a sophisticated economy. It should also be noted that, whereas the Draper site was characterized by numerous midden deposits located throughout the village, refuse at the Mantle site was channeled into a single hillside midden, indicating the ability of this population to implement, or at least adhere to, communitywide management strategies (Birch and Williamson 2013: 85).

While competition for fields is unlikely to have been a contributor to intercommunity tension, overlapping hunting territories may have been. Once work parties cleared the necessary annual acreage to support the

agricultural system, they no doubt turned their attention to fishing and, more importantly, acquiring sufficient hides through hunting and trading. Given the numbers of hunters required for mass capture methods, however, its coordination would have been undertaken by the planning and scheduling authority as other activities had to be undertaken concomitantly. Indeed, there would have been careful consideration given to leaving sufficient men behind to guarantee the safety of the village and surrounding fields and to carry on with other domestic activities such as infrastructure maintenance. This represents a substantial shift that involved transitioning from individual family or even lineage-based organization at the precoalescent community level to those organized at the coalescent community level through the formation of focused work groups of individuals from multiple lineages and clan segments. Daily village councils would have been required with members capable of reaching decisions in the absence of large-scale public consultation.

Regardless of the success of the mass capture events, many hides would almost certainly have been acquired through trade either with other Iroquoian communities or with northern Algonquian bands in return for surplus maize. While this is a recorded feature of historic Wendat life, our modeling indicates that such trade must have been in place at least a century earlier. Those trading relationships and interaction networks would have contributed to a more diverse-looking material culture, possibly through the introduction of marriage partners or adoptees. Trigger (1990: 46–47) notes that visits from trading partners were occasions for several days of feasting, speech making, and the formal exchange of gifts.

These exchange systems also would have been crucial in defining the routes by which European trade items first made their appearance in the lower Great Lakes Region. The recovery of an iron tool featuring Basque forge marks as well as two beads of European copper at Mantle (Birch and Williamson 2013: 149–152; Carnevale et al. 2012) probably arrived through the same routes with northern Algonquians via other Iroquoian-speaking groups inhabiting the St. Lawrence valley.

CONCLUSIONS

Settlement aggregation in the late precontact Iroquoian world was prompted by a period of social upheaval caused by conflict and uncertainty. With the merging of several communities, it also would have been unsettling in the sense that coresidential communities would have necessitated the development of new social relationships and the creation, willingly or reluctantly, of a new community identity. One's homeland also may have been attenuated by having to leave behind ancestral landscapes and moving northward into unclaimed land. All of these tensions may have been mitigated by the increasing importance of clans, which eclipsed household-based lineages in

structuring village governance and may have included efforts to attract new members from neighboring and distant communities.

The structure of clan leadership allowed a means of moving forward where multiple communities with their own former leaders could participate in the selection of new clan leaders, who, in turn, would form and contribute to the village council. In this way, as organizational complexity increased at the village level, so too did the authoritative structure.

The egalitarian, group-centered ethos described by Trigger's model certainly characterized traditional values, which helped to maintain coalescent communities, but day-to-day planning authority also evolved with increasing economic complexity. Previous models of decision making, while based on the ethnographic accounts, have perhaps failed to recognize the importance of concepts such as work parties for clearing land or hunting parties of hundreds of individuals, all of which required detailed organization. In ignoring this complexity, we have been left with a sense of consensual management that perhaps masks the fact that leaders from all clan segments in the community met daily to manage these sites and that parallel structures were in place to address external tensions and trade. This, in our opinion, is a complex management structure and unlikely to have always been one of consensual decision making.

While differences in wealth are not visible in the ancestral Wendat archaeological record, the ability to manage, direct, and implement successful construction programs and resource procurement and management strategies would no doubt have elevated certain individuals to positions of higher status. As such, we believe that the needs of aggregated settlements gave rise to both consensual and hierarchical social relations (cf. McGuire and Saitta 1996; Plog 1995).

In this chapter we have focused on understanding how large, aggregated communities would have had to develop more complex organizational structures to obtain the necessities of life. Yet these same structures—clan segments and village councils—also would have needed to attend to the management of internal tensions, external relations, and even the relationships between humans and the supernatural realm to ensure the spiritual well-being of community members. Changes in the Mantle site settlement plan indicate that village life was dynamic. Organizational structures—social, political, and economic—were adopted, adapted, and, perhaps, abandoned not in a linear fashion but according to the changing needs and composition of the community.

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