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HOUSEHOLD ARCHAEOLOGY
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USING WORKED BONES TO STUDY IROQUOIAN HOUSEHOLDS:
The Case of the St. Lawrence Iroquoians from Saint-Anicet, Quebec

Christian GATES ST-PIERRE, Marie-Ève BOISVERT
Maude CHAPDELAINE

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USING WORKED BONES TO STUDY IROQUOIAN HOUSEHOLDS: The Case of the St. Lawrence Iroquoians from Saint-Anicet, Quebec

Christian GATES ST-PIERRE, Marie-Ève BOISVERT, Maude CHAPDELAINE

Abstract
Bone tools are abundant on Iroquoian sites and are generally analyzed using a typo-functional perspective. This article will serve as a demonstration of the utility of bone tools to study the household and social organization of St. Lawrence Iroquoians through intra- and inter-household spatial analyses.

Mots clés
Archaeology, Iroquoians, Quebec, household, bone tool, bone technology, spatial analysis.

Introduction
It is surprising that Iroquoian sites are rarely analyzed from the perspective of an archeology of the household, despite the fact that they are especially fit for such an approach. After all, Iroquoian villages are defined above all by the remains of large multifamily dwellings called longhouses. In addition, these sites are almost never contaminated by earlier or subsequent occupations. Moreover, ethnohistoric and ethnographic sources describing the social and spatial organization of Iroquoian households are relatively numerous. Therefore, it is not due to a lack of suitable remains and data that an archeology of the Iroquoian household has not become more common. It is simply a reflection of an old tradition in analyzing Iroquoian living spaces at the scale of the entire village, a tradition partly inscribed in the persistent wake of settlement pattern studies.

A second general observation is necessary prior to the presentation of our data, and it concerns the scarcity or near absence of technological analyses of Iroquoian bone industries (Gates St-Pierre, 2001, 2010). Indeed, Iroquoian bone tool assemblages are generally described or analyzed from a typo-functional or sometimes chronological or comparative perspective (see Beauchamp, 1902; Wray, 1963; McCullough, 1987; Jamieson, 1993; Thomas, 1998; Berg, Bursey, 2000; Cowin, 2000; Weissshuhn, 2004; Williamson, Veilleux, 2005; Walker, 2007). Manufacturing debris are almost always ignored and microwear analyses are just as rare (Gates St-Pierre, 2007; Gates St-Pierre, Boisvert 2015). No wonder then that analyses of Iroquoian households integrating data from worked bone has never been produced before. Everything remains to be done in this regard, but the present study of some collections from the Saint-Anicet area is a first step in that direction.
1 - St. Lawrence Iroquoians from the Saint-Anicet Area

St. Lawrence Iroquoians were one of the many Iroquoian nations of Northeastern North America. Their subsistence was based on the cultivation of corn, squash and beans, supplemented by the products of fishing and hunting and, incidentally, by gathering plants, nuts and berries. These horticulturalist people lived in semi-permanent villages, relocated after two or three decades, and containing a variable number of longhouses. These were large, multifamily dwellings inhabited by families related by the lineage of the mothers, as they were matrilineal and matrilocal societies.

Before the enigmatic disappearance of the St. Lawrence Iroquoians, at the end of the 16th century, their territory covered the entire St. Lawrence River Valley, between Lake Ontario and the estuary of the river, with an extension to northern Lake Champlain (figure 1). This vast territory can be divided into a number of provinces (C. Chapdelaine, 1989, 1990, 1995, 2015a; Tremblay, 2006). One of them, the province of Hochelaga, was centered on the Island of Montreal. It is in this great province that lies the Saint-Anicet region, where a concentration of Iroquoian villages was discovered consisting of the Berry, Droulers, McDonald and Mailhot-Curran sites (see Clermont, Gagné, 2004). This paper will be limited to the last two sites, since data from the Berry site, briefly investigated decades ago (Pendergast 1996), are inadequate, while those from the Droulers site, still being excavated, will be presented on another occasion.

![Figure 1 - Location of the sites mentioned in the text.](image)

2 - The Iroquoian Household

The household is to some extent an alternative to the concepts of family and kinship (Wilk, Rathje, 1982: 618). The household refers to the minimal unit of socialization, production and socio-economic reproduction, consisting of members of a family living under the same roof (co-residence). This definition implies that a household is also a place for communal activities and decisions. For the archaeologist, it is through the house structure that this ethnographic concept materializes and becomes operational. The house structure and its inhabitants combine and become entangled in a “mutually constitutive” relationship (Birdwell-Pheasant, Lawrence-Zúñiga, 1999: 4); understanding the Iroquoian household thus requires us to document and analyse the house structure.
Ethnohistoric and ethnographic data can be used to reconstruct the typical Iroquoian household at the time of contact with the first Europeans during the 16th and 17th centuries. This household assembled families related through the lineage of the mother, and the lineages that share a common ancestor constitute a clan. Thus, a longhouse always shelters families belonging to the same lineage and the same clan, but these may be distributed among several longhouses. The Iroquoian longhouse is divided into compartments which can be separated by partition walls, each compartment containing its own central hearth used by two nuclear families distributed on both sides (figure 2). Every longhouse is led by a matron occupying the central compartment, usually the eldest of the household. Consequently, there is a narrow definition of the household, that of the minimal cooperation unit, and a broader definition designating the related families living in a same longhouse.

Figure 2 - Schematic division of a typical Iroquoian longhouse (modified after Chapdelaine, 2015d).

Here the entanglement of the ethnographic unit (the household) with its materiality (the longhouse) is again visible, even allowing American archaeologist Dean Snow (2012: 118) to use the neologism “longhousehold”. However, we must avoid the danger of establishing a complete synonymy between the two concepts. Moreover, the few existing comparative analyses of Iroquoian households have often highlighted the variability that existed between longhouses as well as within longhouses themselves (Clermont et al., 1983; Allen, 1992; Michaud-Stutzman, 2009; Timmins, 2009; Williams-Shuker, 2009; Snow, 2012; C. Chapdelaine, 2015d; Rieth, this volume). This is clearly a valid argument for the pursuit of an archeology of the Iroquoian household.

It is by observing the spatial distribution of bone tools and manufacturing waste between, as well as within households that we will try to understand the Iroquoian households of the village sites from the Saint-Anicet area. In so doing we implicitly assume that the social organization observed during the Contact period already existed at least a few centuries earlier, following the principle of the Direct Historical Approach (Stewart, 1942).

3 - The McDonald site

Dated to the middle of the 14th century AD, the McDonald site is an Iroquoian village comprising a minimum of three longhouses (Gagné, 1993, 2010). Each of these habitats is associated with a midden or small area of domestic waste, in addition to a larger midden used by the whole community. A total of 383 bone objects have been found on the site, usually fragmented, including awls, needles, beaver incisors used as chisels, antler punches, projectile points, harpoons heads, beads and pendants, and elements of the cup and pin game, among other categories (figure 3). The assemblage from the McDonald site also contains 642 production waste products of many sorts: blanks, preforms, scraps, percussion flakes, etc. (figure 4).
Figure 3 - Examples of bone artifacts from the McDonald and Mailhot-Curran collections: awls (1-10); pointed objects that could have been used as projectile points, daggers or corn husking pins – (11-15); harpoon heads (16-17); antler punches (18); element of the cup-and-pin game from a modified deer phalanx (19-20); beads (21-22); beaver incisors used as chisels and side scrapers (23-26); projectile points (27-28); needles (29-31).

Figure 4 - Examples of bone tool production waste from the McDonald and Mailhot-Curran collections. A: linear cut-outs; B: preforms; C: percussion flakes; D: various manufacturing debris with grooves, scraping, or cutting traces.
A detailed analysis of the pottery from the McDonald site revealed the great homogeneity that exists in the ceramic production from one household to another, despite minor variations (Lévesque, 2015). But what about the bone industry? The analysis of the spatial distribution of the worked bones indicates that bone tools and manufacturing waste are much more abundant within the longhouses than outside, including the middens (table 1). The production and use of bone objects were therefore indoor activities for the most part, although a better coverage of the external areas would have been necessary to assert this with more certainty. It should also be noted that there is always more production waste than finished objects almost anywhere on the site. Hence, the ratio of bone tools per manufacturing debris varies between 0.3 and 0.8 between longhouses, with an average ratio of 0.6. This is an expected result, since prehistoric bone industries always generate more waste than finished products; however, the regularity of the phenomenon between households is intriguing and noteworthy.

<table>
<thead>
<tr>
<th>Longhouse 1</th>
<th>Longhouse 2</th>
<th>Longhouse 3</th>
<th>Central midden</th>
<th>Surface</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior</td>
<td>Exterior</td>
<td>Interior</td>
<td>Exterior</td>
<td>Interior</td>
<td>Exterior</td>
</tr>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Tools</td>
<td>148</td>
<td>87.6</td>
<td>30</td>
<td>76.9</td>
<td>9</td>
</tr>
<tr>
<td>Waste</td>
<td>221</td>
<td>89.8</td>
<td>34</td>
<td>69.4</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>369</td>
<td>46</td>
<td>64</td>
<td>24</td>
<td>377</td>
</tr>
</tbody>
</table>

Table 1 - Distribution of the bone tools and waste products among the longhouses of the McDonald site.

Beyond these general results which give an impression of widespread homogeneity are some interesting variations. For example, it seems clear that the inhabitants of longhouse 2 produced far fewer remains from bone transformation than those of the two other longhouses. This house is smaller than the others and it certainly sheltered a smaller number of families; however, it is only one third smaller than the other longhouses, yet it contains nearly 80% less modified bone remains. The discrepancy is not proportional to the size of the households and such a difference is best explained by a greater intensity in the production and use of bone objects in the two largest longhouses.

Observed at an even smaller scale, the spatial distribution of the bone objects and manufacturing waste indicates that they are present in all of the compartments of each longhouse (figures 5-6). Hence, there were apparently no families or households that did not produce or use such objects. Likewise, nothing indicates the existence of specialized activity areas, or concentrations of bone objects or debris, that may indicate the presence of a workshop. These artifacts are certainly more numerous around some hearths, which are areas of intense domestic activities, but this does not allow us to interpret these as specialized areas or workshops. Rather, it is as if every household included at least one member having the knowledge and experience necessary to produce the bone objects needed by his or her family. It is thus a technological knowledge that was socially shared, like all other material productions of the St. Lawrence Iroquoians.

The artifacts analyzed seem to be more numerous in the compartments located on the south side of the central alignment of hearths in longhouse 1, and on the west side of the alignment in longhouse 3. These could represent privileged spaces for the production and use of bone objects,
Figure 5 - Spatial distribution of bone tool manufacturing debris on the McDonald site.

Figure 6 - Spatial distribution of bone tools on the McDonald site.
and perhaps also places of male activities since it is historically the men who produced most of the weapons and tools used among the Iroquoian nations (see Tooker, 1987; Tremblay, 2006). However, women also used some bone objects in fulfilling their domestic tasks; needles and punches for the production of clothing and fishing nets, spatulas and gravers for the manufacture of ceramic vessels, corn husking pins and other cooking utensils, not to mention necklaces, pendants and other items of body or clothing ornament. Moreover, it must be remembered that the most important concentrations of bone objects are located around the hearths, which corresponds to the main areas of production and use of these artifacts. The spatial distribution of food remains (M. Chapdelaine, 2015) and pottery sherds (Lévesque, 2015) on the same site confirms the tendency for an accumulation of debris of all kinds around the hearths.

There are no indications of larger accumulations of bone artifacts around the hearths located in the central compartments, normally occupied by the eldest woman of the household or, in some cases, by clan or village leaders (although the latter usually lived in a separate house). As a matter of fact, the other hearths of the longhouses are just as rich in bone remains, or even richer still. This is an indication that the authority and influence of the elders and leaders was not accompanied by the use or accumulation of larger quantities of material goods. To the contrary, the households of the McDonald site appear to have maintained the communitarian and egalitarian basis that characterizes their social organization.

Finally, longhouse 2 stands out once again as bone objects and manufacturing debris are here more randomly distributed, more diffuse, without any recognizable concentration. The originality of this household was also noted regarding their pottery production, suggesting that the village was occupied by two different clans, one represented by the families living in longhouses 1 and 3, the other being limited to the families sheltered in longhouse 2 (Lévesque, 2015). The latter could represent families from a more distant and culturally differentiated community who joined the core of the village at a later time. Likewise, M. Chapdelaine (2015) noted a greater quantity of food remains around the central hearth of longhouse 2, a phenomenon that is not visible in the other longhouses where hearths contain comparable amounts of ecofacts.

In summary, the data analyzed reflects the relative heterogeneity of the material production and behavior of the members of the three households at the McDonald site. However, this heterogeneity is not to be equated with a differentiation in the accumulation of material goods, nor with the early emergence of specialized artisans.

### 4 - The Mailhot-Curran Site

The Mailhot-Curran site is another Iroquoian village, inhabited during the years 1520-1530 AD and comprising a minimum of six longhouses (C. Chapdelaine, 2015b, 2015c). At least three middens were identified, but contrary to the McDonald site it is not easy to associate them to any specific longhouse. The analysis of the ceramics from the Mailhot-Curran site concluded that the production of the potters of longhouses 3 and 4, located in the northernmost portion of the site, on the lower terrace, differ somewhat from the ceramics produced in the other households (C. Chapdelaine, 2015d, this volume). An analysis of the spatial distribution of the faunal remains also underlined a slight differentiation in the food habits of the inhabitants of these same two longhouses (St-Germain, Courtemanche, 2015, this volume). As with the McDonald site, it was concluded that these two houses were inhabited by families at a later date that were probably affiliated with another clan, distinct from those represented in the other four longhouses forming the original core of the village.
The worked bone assemblage contains 340 objects, complete or fragmented, as well as 433 pieces of production debris. Spatial analysis of these artefacts suggests that the bone objects, as well as the debris resulting from their manufacture, were found in each and every longhouse (figures 7-8). However, these artifacts are somewhat more numerous in longhouses 3 and 4. Longhouses 5 and 6 do not allow for detailed comparisons because they have not been excavated as extensively as the other four longhouses of the site, thus providing much smaller assemblages (table 2). In addition, the most important concentrations are actually in the middens, not in the longhouses, unlike the situation previously observed on the McDonald site. The inhabitants of the Mailhot-Curran site have either cleaned their daily living spaces more regularly than at the McDonald site, or they more frequently installed themselves outside their homes, near the middens, to manufacture and use their bone objects, which would suggest a more intense summer life at the Mailhot-Curran site. We previously raised the possibility that the middens of the Mailhot-Curran site first emerged as areas of specialized activities, where the gradual accumulation of production debris would have ultimately led to the development of middens attracting even more waste products, such as pottery sherds and food remains (Gates St-Pierre, Boisvert, 2015: 279-281). This is the logic behind the “dumping ground effect” – or “Arlo Guthrie trash-magnet effect” – whereby waste inevitably attracts more waste (Wilk, Schiffer, 1979).

<table>
<thead>
<tr>
<th>Longhouse 1</th>
<th>Longhouse 2</th>
<th>Longhouse 3</th>
<th>Longhouse 4</th>
<th>Longhouse 5</th>
<th>Longhouse 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Tools</td>
<td>44</td>
<td>63.8</td>
<td>74</td>
<td>69.2</td>
<td>44</td>
</tr>
<tr>
<td>Waste</td>
<td>25</td>
<td>36.2</td>
<td>33</td>
<td>30.8</td>
<td>75</td>
</tr>
<tr>
<td>Total</td>
<td>69</td>
<td>107</td>
<td>119</td>
<td>59</td>
<td>24</td>
</tr>
</tbody>
</table>

| Ratio T:W | 1.8:1 | 2.2:1 | 0.6:1 | 0.4:1 | 0.7:1 | 0.3:1 |

| Density / m² | 1.2 | 1.2 | 2.3 | 2.3 | 1.0 | 0.7 |

Table 2 - Distribution of the bone tools and waste products among the longhouses of the Mailhot-Curran site.

Also noteworthy is the ratio of complete objects versus production debris which varies considerably from one household to another; longhouses 1 and 2 show a greater proportion of bone objects compared to the four other longhouses. Regarding the density of bone artifacts per square meter (combining finished objects and manufacturing debris), it appears that longhouses 3 and 4 stand out again with densities two to three times higher than in the other households. These are also the households that contain the highest quantities of production blanks. The bone processing activities thus appear to have been led more intensively or more frequently in these two households.

Figures 7 and 8 illustrate the spatial distribution of the remains of the bone industry within households, and show that the remains are concentrated around the hearths and do not seem most abundant on either side of the central alignment. Moreover, these artifacts are present in nearly every compartment, with only a few exceptions. These rare empty spaces could correspond to compartments that were not inhabited or inhabited for short periods of time since they are also nearly devoid of pottery sherds (C. Chapdelaine, 2015d: 396). There is a comparable variability.
Figure 7 - Spatial distribution of bone tool manufacturing debris on the Mailhot-Curran site.

Figure 8 - Spatial distribution of bone tools on the Mailhot-Curran site.
in the distribution of modified bone remains between the compartments (figure 9). Hence, the compartment located north of the most central hearth in longhouse 1, or compartment 2 North, is the richest of the household, while in longhouse 2 it is the compartments located at both ends of the longhouse that are the richest. Within longhouses 3, 4 and 5, the compartments around the hearths of the eastern half of the habitat have the highest frequencies of such artifacts. Finally, longhouse 6 does not show any particular pattern, probably due to the very small number of modified bone remains that were found in this house. Hence, there is no general trend towards a greater accumulation of such remains in the central living areas, which were most probably occupied by the elders or clan leaders.

In summary, the households of the Mailhot-Curran site certainly reveal a minimum of variability between them, but no major discrepancies. Moreover, it is longhouses 3 and 4 that stand out from others, which could support the hypothesis of an occupation of these houses by families from more distant lineages, perhaps a different clan, having developed somewhat different habits regarding their way of producing and using bone objects, yet clearly belonging to the same extensive St. Lawrence Iroquoian community of the Saint-Anicet area.

Conclusion

An analysis of the spatial distribution of the bone objects and bone manufacturing debris on the McDonald and Mailhot-Curran sites demonstrates the presence of a moderate level of variability sufficient enough to reject an hypothesis of homogeneity. The variation is visible in the rejection and abandonment patterns of these bone remains between households as well as between villages. This variability could even be used to identify households composed of Iroquoian families having a slightly different cultural background.
Beyond this variability lie a few common patterns that are significant as well. For example, we can establish that the art of making bone objects of all kinds was not the prerogative of a few specialists, but rather seems to have been a widespread practice within each household, perhaps within each nuclear family. In addition, this socially shared technological knowledge was also carried out without the need for specially designated areas, since we have not been able to identify any sort of workshop via our spatial analyses. In sum, there are no traces of specialization comparable to those that were identified in the ceramic or lithic productions among other Iroquoian nations (Noble, 1978; Trigger, 1981; Martelle, 1999, 2002). Moreover, we did not identify higher concentrations of modified bones around the central hearths in any of the households studied. This in turn does not support the hypothesis of a significant accumulation of goods in those specific spaces occupied by female elders, or by civilian or military leaders who were appointed by women and did not possess hereditary and coercive powers. The longhouse occupancy patterns, as well as the lack of specialized crafts or inequalities in material possessions, together offer the image of a social organization that was firmly communitarian and egalitarian in nature.

The results presented here suggest that the St. Lawrence Iroquoians, at least those of the Saint-Anicet cluster, were not yet about to become what archaeologists call a complex society, despite the favorable conditions such as the adoption of agriculture and a sedentary lifestyle, the accumulation of horticultural surplus, a growing population, and the increasing occurrence of armed conflict. In fact, the social complexification the Saint-Anicet community would have possibly begun a few decades later, was it not for the arrival of the first Europeans which was quickly followed by episodes of wars and epidemics that put a brutal halt to this evolutionary trajectory of the St. Lawrence Iroquoians.

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