

Pre-Contact Pottery and the Woodland Occupations of Vermont and the Northeast: a Closer Look at the Significance of the McNeil Site (VT-CH-93).

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The Burlington Intervale is home to several pre-Contact archaeological sites, including Site VT-CH-93, first identified near the Winooski River in 1978 by Peter Thomas and the University of Vermont in advance of the construction of the McNeil Generating Power Plant. During the summer of 2010, a University of Vermont field school conducted a block excavation on a portion Site VT-CH-93. This program gave undergraduate students an invaluable opportunity to take part in an archaeological excavation and analyze their findings, and increase their knowledge of the region's indigenous inhabitants. Among the artifacts recovered were fragments of pre-Contact grit-tempered ceramics dating to the Middle and Late Woodland periods (2150 BP to 400 BP). During these periods, the design motifs people used to decorate the ceramic vessels varied according to temporal phase and the local traditions within a regional social system. By studying these variations within and between sites, it is possible to determine band and regional identities among people living in the Northeast prior to European contact and then use this information to trace population movements and trade relationships between different groups.

Introduction

This paper investigates ceramic decoration exhibited within a sample of pre-Contact ceramics excavated from Site VT-CH-93 in the Burlington, Vermont Intervale. The materials studied were excavated during a University of Vermont (UVM) archaeological field school in 2010. In addition to dating Middle and Late Woodland period occupations at the site, this work also demonstrates that the inhabitants of northeastern North America designed and produced ceramic vessels that functioned not only as cooking and storage vessels, but also as a means of communication used to establish group identity and maintain trade relations with neighboring bands. By impressing and dragging special tools over the surface of an unfired ceramic vessel, native people produced design patterns that may have been unique to the various communities of family bands living in the different regions of the Northeast. Based on the distribution of these design motifs, it is possible to distinguish the extent of pre-Contact trade networks in portions of northeastern North America as well as achieve a better understanding of northeastern Native American identities.

The people living throughout the Early to Late Woodland periods (3050 BP to 400 BP) in the Northeast were primarily family bands of egalitarian hunter-gatherers, seasonally occupying sites near bodies of water within the region (Fitting 1965; Ritchie 1969; Thomas and Bourassa 1978; Petersen and Power 1983; Heckenberger and

Petersen 1988; Heckenberger et al. 1990; Crock and Robinson 2011). With the advent of pottery around 3000 BP and the use of distinctive decoration after 2100 BP, it is possible that these family bands may have used design motifs on ceramic vessel surfaces to distinguish themselves from other groups dispersed throughout New England and the Maritime Provinces. By contemplating whether the designs on ceramic vessels contain a deeper social and individual meaning (i.e. a preferred design by a social group or a single potter), archaeologists can trace the routes people took. Throughout their travels they were not only exchanging the ceramics they produced, but also exchanging methods and techniques for ceramic design. Once a band adopted certain design motifs, these motifs could have been utilized to exemplify a group identity and perhaps, unite the band with others using the same decorative techniques.

Ceramic Periods

The ceramic sequence compiled by Petersen and Sanger (1991) is used here to categorize and designate the ceramics recovered during the 2010 UVM field school at the Intervale portion of Site VT-CH-93. Petersen and Sanger (1991) established "Ceramic Periods" (CP) numbered one through seven to classify the period a ceramic vessel was made, based on their research of pre-Contact pottery throughout much of New England and the Maritime Provinces (Tables 1 and 2).

Table 1: Chronology of Woodland Era Ceramic Periods 1 through 7 (from Petersen and Sanger 1991; Haviland and Power 1994).

Era	Ceramic Period	Date (BP)	Phase	Sub-phase
Early Woodland	1	3050-2150	--	--
Middle Woodland	2	2150-1650	early Middle Woodland	Early Winooski (1850-1650 BP)
	3	1650-1350	middle Middle Woodland	--
	4	1350-950	late Middle Woodland	Late Winooski (1350-1150 BP) Colchester (1150-950 BP)
Late Woodland	5	950-650	early Late Woodland	--
	6	650-400	late Late Woodland	--
Contact Period	7	400-200	---	--

Table 2: Characteristic Designs of Woodland-Era Ceramic Periods 1 Through 7

Ceramic Period	Temper	Decoration	Tool	Technique	Shape/Size	Rims/Lips	Body
1	Grit	Undecorated		Fabric Paddle interior and exterior	Conoidal/4L or less	Simple and rounded	
2	Grit	Elaborate	Stamping -Dentate -Pseudo-scallop shell -Un-notched linear forms	Drag (push-pull)	Conoidal	Presence of castellations on lip surface	
3	Grit	-Increase in tooth size of dentate stamping -Smoothed interior surfaces	Disappearance of pseudo-scallop shell	Rocker stamping/ Dentate stamping	Increase in vessel size/less standardized form	Increase in rim area	Increase in wall thickness
4	Shell or "organic" temper (Northeast Maine)	Cord-Wrapped Stick dominant	-Cord-Wrapped Stick -Fabric Paddled -Alternative forms of punctation (linear and concentric fingernail designs, "wavy-line" or pseudo-scallop shell-like tool incision and trailing	Disappearance of rocker and drag stamping and dentate	Elongate conoidal/ 4L - 8L		Upper majority of exterior surfaces with design motifs, but large majority of exterior body surface undecorated
5	Shell or "organic" temper (Northeast Maine)	-Cord-Wrapped Stick -Circular punctate -Incision and linear punctation	-Cord-Wrapped Stick -Average diameter of punctate tools and cordage decreased	Exterior surfaces smoothed-over by fabric paddling	More globular by end of period	No collars or modifications	Coiling manufacture
6		-Combination of chevron and other geometric motifs -Punctation particularly on lower margins -Vessel necks decorated with incision punctation	-Cord-Wrapped Stick -Incision and simple dentate	Exterior surfaces left smoothed and fabric-paddled	Globular	Extrusive collars on upper rim portions (Owasco-Iroquois Tradition)	-Vessels become thinner (60% - 80% reduction in thickness) -Body left undecorated
7	Predominant Grit temper	Incision decorated		Fabric Paddled		Collared	Very thin walled (~5 mm thick)

Of particular interest to this study is the pottery dating to CPs 4, 5, and the beginning of CP 6 (Petersen 1980; Petersen and Power 1983; Haviland and Power 1994) that Petersen (1980) defines as belonging to a complex unique to the Champlain Valley: the Winooski Ceramic Complex (Petersen and Power 1983; Haviland and Power 1994). The Winooski series itself is split into the Early Winooski (1850-1650 BP) and Late Winooski periods (1350-1150BP), followed by the Colchester Phase (1150-950 BP). An intermediate stage spans the time between the Early and Late Winooski periods, though very little is known about this stage in Vermont (Petersen 1980; Haviland and Power 1994). Early Winooski pottery is similar to the assemblages of other early Middle Woodland ceramics seen throughout the Northeast, including sites on Martha's Vineyard (Petersen 1980; Ritchie 1969). These vessels usually consist of:

Pseudo scallop shell decoration applied with combinations of simple vertical, drag and rocker stamping techniques; smooth exterior and channeled interior surfaces; everted square or pointed lip forms; small vessel size and generally thin walled rims and the possible association of dentate stamped decoration (Petersen 1980: 37).

Late Winooski ceramics, on the other hand, signify a change in uniform ceramic design. Ceramic assemblages from this period exhibit greater variation (Petersen 1980: 41), possibly indicating the existence of more distinct, regional identities within the Champlain Basin.

A combination of cord, dentate, trailed or incised decoration in conjunction with a unifying trait of circular punctate decoration. Smooth interior surfaces, smooth or smooth cord padded exteriors, and square or rounded lip forms on straight walled vessels (1980: 41).

Archaeologists have found Late Winooski ceramics in association with artifacts diagnostic of the late Middle Woodland Period throughout the Champlain Basin and beyond, including the northern areas of the greater St. Lawrence River drainage (Haviland and Power 1994, Petersen 1980, 1996; Petersen and Sanger 1991; Thomas and Bourassa 1978). However, regional variation within this series is also present. For instance, dentate stamping had essentially disappeared elsewhere during the late Middle Woodland, yet it persisted

within the St. Lawrence River drainage and the Champlain Valley (Petersen and Sanger 1991), including the occupation sites along the Winooski River (Thomas and Bourassa 1978; Petersen 1980; Petersen and Power 1983; Crock and Robinson 2011).

Variation in ceramic decoration and vessel size (Haviland and Power 1994) continued into the Colchester Phase (1150-950 BP) of the Middle Woodland Period. The use of a cord-wrapped stick became the dominant decorative motif, though the twist of the cordage (S-twist or Z-twist) is believed to relate to the region in which the pottery was being manufactured (Petersen 1980; Petersen and Sanger 1991; Haviland and Power 1994; Petersen 1996). Because of the introduction of these distinctions in vessel designs, some have hypothesized that "interaction between groups in the Northeast was coming to an end" (Haviland and Power 1994: 121). Evidence of continued interaction seems to exist, however, at sites in the Northeast, including within the ceramic assemblage from the 2010 block excavation at the Intervale that has yielded, for example, ceramic artifacts bearing designs similar to those used in Owasco-Iroquoian pottery (Ritchie 1973; Petersen 1980; Petersen and Power 1983; Denny 2001). If interaction between groups occupying the Maritime Provinces and New England was waning, then it appears that interaction between inland Vermont groups and their Iroquoian neighbors was increasing.

The Western Abenaki

One way to better understand the lifestyles of the hunter-gatherers inhabiting the pre-Contact Northeast and their relationships with one another is to look at the ethnohistorical records of the natives encountered by Europeans exploring and settling the New World. The Abenaki, or *Wobanakii* meaning "Ordinary People" (Day 1978; Haviland and Power 1994), are part of a larger Algonquian language group spread throughout most of northeastern North America south of the St. Lawrence River and east of Lake Champlain to the Atlantic coast. By 1600, it is believed that the Western Abenaki inhabited an area of New England ranging from the Champlain Valley to the Green Mountains and the Connecticut River Valley on to the White Mountains and as far south as the present

day towns of Deerfield and Northfield, Massachusetts (Day 1978; Haviland and Power 1994; Petersen 1980; Petersen and Power 1983; Calloway 1990).

Using ethnohistorical data dating to the Contact Period, it is possible to construct a model for the social system of the people living during the Woodland periods (Haviland and Power 1994). Europeans settling in the Northeast during the 17th century described the Western Abenaki as practicing an ambilocal residence pattern, meaning the cohabitation of several generations, including spouses, within one residence or a dwelling group. Assuming, therefore, that the ancestors of the Western Abenaki also were ambilocal we might be able to, through ceramic analysis, reconstruct a family or larger kin group with which a newlywed couple most closely identified. As groups dispersed throughout the region, so too did the design motifs they used to decorate ceramic vessels, providing archaeologists with an opportunity to better understand the pre-Contact people of the Northeast.

2010 Block Excavation at the McNeil Site in the Burlington Intervale (VT-CH-93)

Past and Present Environment and Topography

The Intervale is located 1.5 kilometers south of where the Winooski River flows into Lake Champlain in the northeast corner of Burlington (Figure 1). The Winooski River flows along the site's east border, Route 127 on its west, and the Central Vermont Railroad tracks to the south. Peter Thomas and Marie Bourassa (1978: 9) noted during the excavations in advance of the construction of the McNeil Generating Plant that the "present vegetation in the project area was dominated by open pasture species – grasses, thistles, nettles, etc." The present study area, a part of the greater VT-CH-93 site that included the McNeil Generating Plant excavations, lies across the Intervale road from the McNeil Plant in an area presently covered by a grassy lawn and gardens maintained by the Gardner's Supply Company (GSC) and the Intervale Center (IC), as well as a man-made pond roughly three meters to the north of the excavation site (Figure 2). About the same distance to the east is the beginning of the pre-Contact riverbank that now abuts a younger terrace adjacent to the present day Winooski River. Note that Site VT-CH-93 is

located approximately 3.6 kilometers west of the Winooski Site (VT-CH-46) on the opposite bank of the Winooski River (Petersen and Power 1983) (Figure 3).

The site itself, which covers a broad area, lies on a floodplain and an older terraced landform that is dominated by loamy and well drained Winooski and Hadley soils (Thomas and Bourassa: 1978; Crock and Robinson 2011). These soils tend to remain dryer after flooding than the Limerick soils that occur further west towards the McNeil Generating Plant (Thomas and Bourassa 1978). On the southernmost portion of the site is the beginning of a terrace that primarily consists of gravelly Colton soil, though it too is well drained and contains loamy sands (Thomas and Bourassa 1978; Crock and Robinson 2011).

Petersen and Power (1983: 27) note that the environmental conditions of the Winooski River valley in Vermont a millennium ago were probably similar to what they are today. If this were the case, then the occupants along the Winooski River would have experienced winters and lake effect snow conditions akin to those seen in present day Vermont (Laird and Desrochers 2008). Excavations like those at the Cunningham Site in Martha's Vineyard (Ritchie 1969) and the Skitchewaug Site situated near Springfield, Vermont (Heckenberger and Petersen 1988) provide evidence that seasonal movement occurred in different areas of New England. Similarly, the groups living within the Champlain Valley could have also retreated from their lowland, warm-weather habitation sites to upland sites further into the interior of the state to avoid the less hospitable conditions of the Lake Champlain basin in the winter.

The flora found at the Intervale, including "white pine, red maple, sugar maple, American beech, red and white oak, birch, eastern hemlock, northern white cedar, and eastern red cedar" (Crock and Robinson 2011: 23), are typical of most floodplain forests in the Northeast (Hughes and Cass 1997). Paleobotanical remains recovered at the VT-CH-96 and the McNeil portions of Site VT-CH-93 suggest the presence of a plethora of floral resources used for foods, medicine, and fabric dyes by the native occupants of the sites (Petersen and Power 1983; Hughes and Cass 1997; Haviland and



Figure 1: Aerial view of the Intervale where the 2010 field school took place. To the left is a map indicating the project area in reference to its location between Burlington and the Winooski River (source: Crock and Robinson 2011: 13)



Figure 2: View from the south looking northward of the excavation site at VT-CH-93. To the east is new growth forest on the banks of the Winooski River. The rest of the site consisted of lawn and the man-made pond directly to the north.



Figure 3: Map of the Winooski River and location of the Winooski site (VT-CH-46) (source: Petersen 1980: 6).

Power 1994). Food remains recovered from these Woodland Period sites also correspond with the animal species that are still present in the Champlain Lowlands today. Besides available waterfowl and aquatic species from the Winooski River (the "Salmon Hole" is located a little over a kilometer upstream from the site, near the Winooski Falls [Petersen and Power 1983]) and Lake Champlain, moose, white-tailed deer, black bear and smaller mammal species would have been hunted by those inhabiting the Intervale.

Methods

Students from the 2010 UVM field school excavated a total of seven square meters in the eastern portion of Site VT-CH-93. The students excavated each one-by-one meter excavation unit at the Intervale in ten-centimeter levels within natural or cultural strata. Once removed, they sifted all matrix through quarter-inch screens, storing artifacts in labeled plastic artifact bags to be brought back to the UVM Consulting Archaeology Program laboratory for future cleaning and processing. Where features were identified, they collected soil samples for finer-grained water screening and flotation in the laboratory. The laboratory processing took place between September 2010 and April 2011.

Feature 1

The majority of the floral and faunal remains unearthed from the field school excavations were located in a discontinuous stratum designated as Feature 1 (Figures 4, 5, and 6). Feature 1 was likely a living surface and included a hearth area, based on the presence of significant quantities of fire-cracked (FCR) and fire-affected rocks in some sections, as well as an area of charcoal enriched soil that consisted of a black, silty loam. Found about 61cm (Level 43) to 90cm (Level 45) below the ground surface, the UVM students exposed a two-meter square portion of Feature 1 within the excavation unit. They excavated Feature 1 in arbitrary levels and 100 percent of Feature 1 soil was collected by unit, level, and stratum for subsequent laboratory analysis.

Students processed each bag of feature fill separately and its provenience within the feature as well as the volume of soil it contained before any

analysis began. After measuring the volume of each sample, two liters of the feature fill were separated for fine-grained flotation. Flotation of feature subsamples enabled the collection of seeds and vegetation that would have otherwise been lost in the other stages of processing. Once students completed the float of light and heavy samples, the larger portion of each soil sample was poured onto a series of nested eighth-inch and single-millimeter mesh screens. This process enabled the analyst to gently spray the screens of fill with a hose until all artifacts from the feature were clean and no soil remained. Next, the contents of each screen were set on individual trays and put aside to dry. Once dry, the artifacts were sorted according to their type and recorded and stored for any further analysis.

The paleobotanical remains recovered from Feature 1 supports the interpretation that Feature 1 was indeed a living surface (Table 3). The sample taken from the excavation block consisted of 28.31 grams of floral material from Level 44 and 3.89 grams from Level 45. The carbonized remains of tree species recovered from the sample consist of beech, ash, pitch pine, red oak, and white oak (Sidell 2011). Out of the 1,782 carbonized plant remains analyzed, 100 fragments of wood were identified, of which 71% (n=71) were pitch pine. While there is some evidence of charred hardwoods (beech, ash and oak) in the sample, perhaps indicating the use of such woods in hearth fires, pitch pine is the dominant tree species identified.

The floral sample also contained food remains. An analyst identified a total of 229 nutshell remains in the paleobotanical sample, approximately 65% (n=148) of which was from shagbark hickory. Butternut and acorn were also present (Sidell 2011). The presence of these materials suggests that people used the area during the summer and autumn months, though it is possible that such food sources were stored throughout the winter and into the spring.

Besides the abundance of charcoal and carbonized floral remains, Feature 1 also yielded large concentrations of FCR (Figure 7). A lithic biface was recovered from another unit to the southwest of the site along with a large sample of pottery sherds. The close association of these artifacts with the FCR concentration suggests that



Figure 4: View of the western walls of units N1054/E838 and N1055/E838. Note the darkened soil of Feature 1 and how it continues beyond the wall.



Figure 5: View of the north wall of unit N1056/E839. Note the darkened soil of Feature 1 and the large amounts of fire-cracked rocks.



Figure 6: Overview of 2010 VT-CH-93 excavation with all units. The base of Feature 1 is indicated in unit N1055/E838, though it slopes into a lower level in the adjacent unit N1054/E838.

Table 3: VT-CH-93 Site: Carbonized Plant Remains (Sidell 2011)

April 11, 2011

VT-CH-93 Site: Carbonized Plant Remains					
Feature	1	1	1	1	1
Unit	N1055,E839	N1054,E838	N1055,E838	N1056,E839	N1056,E839
Level	44	44	44	44	45
Quad	NW	NE	NW	NW	NW
Sample no.	528	834	934	1037	1038
Sample type	1/8"	1/8"	1/8"	1/8"	1/8"
SAMPLE WEIGHT (g)					
>4 mm	6.63	1.61	1.93	2.60	1.84
2-4 mm	8.28	2.55	1.72	2.53	1.99
1-2 mm	0.19	0.05	0.03	0.13	0.05
0.5-1 mm	0.01	0.01	0.004	0.02	0.01
Total	15.11	4.23	3.69	5.28	3.89
SAMPLE COMPOSITION (>2 mm ct.)					
Nutshell					
<i>Carya ovata</i> , shagbark hickory	101	24	21	2	-
<i>Juglans cinerea</i> , butternut	22	10	1	37	10
<i>Quercus</i> spp., acorn	1	-	-	-	-
Wood					
Bark	6	15	4	4	2
Pitch	141	13	15	35	14
Cone scale?	-	-	1	-	-
Tuber?	1	1	1	1	-
Rhizome	7	-	1	-	-
Gall	1	1	-	-	-
Unknown	-	-	1	-	1
Total >2 mm	823	226	189	280	262
WOOD IDENTIFICATIONS					
<i>Fagus grandifolia</i> , beech	-	7	-	-	-
<i>Fraxinus</i> spp., ash	-	-	-	-	1
<i>Pinus rigida</i> , pitch pine	19	8	19	17	8
<i>Quercus</i> spp., oak	-	-	-	-	2
Red oak group	1	1	1	-	-
White oak group	-	4	-	3	9
Total	20	20	20	20	20

Note: Some of the beech fragments were questionable.



Figure 7: Excavation of VT-CH-93 during the 2010 field school. Note the large assemblage of fire-cracked rocks in the middle of the excavation that may indicate the presence of a fire hearth.

people at the site engaged in stone tool production and cooking around the same hearth.

In addition to the numerous flakes of lithic debitage excavated throughout the feature, the stone tools and ceramics are indicative of an area of high human activity. The presence of FCR, pottery, animal bones and the charcoal infused soil also indicates that the portion of Feature 1 that was studied was most likely an area for cooking. Whether or not the actual processing of foodstuffs also occurred in this area is unclear. No grinding tools were recovered, but several stone scrapers were found in the feature soil taken for analysis, suggesting the possibility that the people occupying the study area were processing animal hides and/or using the tools to process certain types of vegetation.

Feature 1 produced a large quantity of data about the indigenous population that lived in this section of the Intervale, leaving several issues to be addressed. First, parts of the feature are incomplete, evidenced by abrupt interruptions in the presence of the charcoal layer at the top of the feature in Level 43. These interruptions may be due to disturbances from historic plowing as well as the construction of the man-made pond to the north of the site. Because the fill from its construction was apparently dumped within the vicinity of the 2010 excavation, overburden in the locus of the field school excavation contains artifactual material that originated in the adjacent pond area. One means of determining the extent of this impact is to investigate the mixture of historic and pre-Contact artifacts within the upper levels of the excavation units. Excavations uncovered some historic objects at the top of Level 43, only several centimeters above the onset of Feature 1. Although pre-Contact artifacts found in Feature 1 appeared to be in situ whereas artifacts recovered from levels on top of Feature 1 were likely impacted by the modern activities previously noted, these inconsistencies should be noted and kept in mind.

Results of the Ceramic Analysis

This study covers the ceramic assemblages from the 2010 UVM field school excavation at VT-CH-93. In all, the 2010 excavation produced 2,068 ceramic fragments or sherds, 126 of which were larger than two centimeters and therefore judged fit

to analyze for the purposes of this study. The analysis consisted of a study of the presence or absence of certain design motifs on each sherd. This information was then used to characterize the ceramic sherds and to place each within a ceramic period and, if possible, a vessel designation. Based on this analysis, the ceramic assemblage represents a maximum of 50 ceramic vessels, their use spanning from CP2 (the early Middle Woodland Period) until CP 6, around the time of European contact.

Ceramic Periods 2/3. Out of the sherds studied, 32% (n=16) were designated as CP 2, while 30% (n=15) were placed into the category of CP 3. Following Petersen and Sanger (1991), it was decided to group these two ceramic periods together because of the similarities in decorative motifs between the two making it somewhat difficult to distinguish between the two periods. Petersen and Sanger (1991) indicate that besides a decrease in the use of pseudo scallop shell and an increase in vessel thickness, there is no great change in the design motifs used between the periods (1991: 137). In the 2010 VT-CH-93 block excavation sample analyzed, 45% (n=14) of the CP 2/3 sherds exhibits a channeled interior that is said to be common in CP 2 and continue during CP 3. A temporal overlap of decorative motifs is clearly evident when looking at the presence of the wavy line and linear rocker designs on 39% (n=12) of the sample designated as CP 2/3. Interestingly, during CP 2 this particular design technique was most popular in Maine and the Maritime Provinces, while drag stamping was more commonly utilized in the St. Lawrence River Valley and Vermont (Petersen and Sanger 1991).

Within the sample studied, three sherds possess a mixture of pseudo scallop shell and dentate dragging, most likely placing them within the early Middle Woodland and the vicinity of CP 2, c.a. 2150 BP to 1650 BP. What is surprising is that this pattern is not seen in pieces recovered from the field school excavation that date to later periods. Instead, rocker stamping seems to become the more popular choice of design. The Champlain Basin is located in an ideal spot within the Northeast and the Intervale itself is part of a number of important interconnected watersheds (Crock and Robinson 2010). Speculatively, trade was taking place among the indigenous populations of the region. If so, the

occurrence of ceramics containing design motifs popular in other regions of the Northeast is further indication of these trade networks.

Pottery recovered from the Winooski Site (Petersen 1980) located across the river also exhibits similar design motifs, though the presence of rocker stamping is less common than at the study area. Whether the difference in the presence of rocker stamping is because of different samples is an open question. However, the similarities between the two ceramic assemblages are numerous. For example, both sites contained pre-Contact pottery bearing characteristics of the Early Winooski Phase (c.a. 1850 BP to 1650 BP), including channeled interiors, pseudo scallop shell designs, and rocker stamping (Petersen 1980; Petersen and Sanger 1991). Vessel rims of this era are primarily square or pointed, though the field school assemblage seems to have some variation. For instance, one rim sherd is rounded, but also contains pseudo scallop shell designs and a channeled interior. Petersen (1980: 37) mentions that research on such ceramic attributes in the Lake Champlain drainage has been limited and may account for the discontinuity of the current sample. Nevertheless, the similarities between the Middle Woodland ceramics discovered in Vermont and the rest of the Northeast (Fitting 1965; Ritchie 1969; Deal et al. 1991; Petersen and Sanger 1991) are sufficient to support a hypothesis of the existence of long distance trade among the region's inhabitants. Furthermore, it is possible that the small differences between design motifs present on CP 2/3 ceramics are representative of family band identities. When the cultural groups of one region traded their pottery with another, the distinct characteristics of the vessels were introduced into a different design tradition. Naturally, a larger research sample is needed to further such a study.

Ceramic Periods 4/5. Like the previous two ceramic periods, CP 4 and CP 5 also have very similar attributes, making it, at times, difficult to distinguish between the two. Twenty percent of the sample (n=10) taken from the field school ceramic assemblage consists of vessels assignable to CP 4, while it is possible to assign only 12% (n=6) of the assemblage to CP 5. The design motifs popular in these two ceramic periods such as cord-wrapped stick, punctations, and incision (Petersen and Sanger 1991) are all found on the pre-Contact

pottery of the Intervale sample studied. In particular, cord-wrapped stick is a predominant design used during this period, with 22% (n=11) of the ceramic assemblage exhibiting some form of cord stamping.

One distinction between CP 4 and CP 5 is their placement within the Winooski ceramic series. As mentioned previously, an intermediate phase between the Early Winooski and Late Winooski has not been well documented in Vermont. However, there is speculation that ceramics recovered from the Skitchewaug Site (Heckenberger and Petersen 1988) may fit intermediate characteristics such as "dentate, rocker dentate, simple cord, rocker cord, net, incised, circular punctate, and plain decoration" (Petersen 1980: 40). Although the Intervale ceramics do not contain all such characteristics, it could be suggested that some of the 2010 field school assemblage pieces attributed to CP 5 may in fact represent a transition between the intermediate phase and the Late Winooski ceramic series. For instance, only four out of the 126 sherds (3%) studied show any sign of circular punctation, three of which are categorized as CP 5. Similarly, all of the CP 5 pieces studied exhibit some form of incision, while the CP 4 pottery studied lacks this type of decoration.

Conversely, CP 5 ceramics are also representative of the Late Winooski series, c.a. 1350 BP to 1150 BP. Petersen (1980: 41) notes that pieces from this phase saw an increase in "variability within assemblages in both decoration and form." Looking at the CP 5 vessel sherds in the Intervale sample studied, there is a sudden decline in the use of dentate stamping and an increase of cord-wrapped stick decoration. However, ceramics from the Winooski Site and the McNeil Generating Plant portion of VT-CH-93 continue to display some combination of dentate with other designs (Petersen 1980; Petersen and Power 1983; Thomas and Bourassa: 1978). The differences and similarities between pre-Contact pottery dating to CPs 4 and 5 may illustrate the individuality of different groups of people living in various regions throughout the Northeast and perhaps even within the same site.

Ceramic Period 6. Unlike the previous ceramic periods, it is not hard to identify CP sherds from the

2010 field school sample. Cord wrapped stick remained a popular decorative technique during the CP 6 phase, but potters also began to place chevron patterns along a more collared rim (Petersen and Sanger 1991). The ceramic assemblage from the 2010 field block excavation at VT-CH-93 consists of, at the most, three different vessels possessing these patterns attributable to CP 6. Each of the pieces related to these three vessels is a rim sherd with a smooth exterior and interior and incisions creating chevron patterns. Two of the sherds are well-fired and seem to have belonged to a smaller vessel, while a third piece has a grittier temper and is more fragile. These differences may exist because the third rim sherd is associated with a later portion of CP 6 or even during CP 7, around the time of European contact, when pottery manufacture went into decline and vessel construction became less thorough (Petersen and Sanger 1991). Although the identification of additional sherds similar to the more fragile sherd with the grittier temper might be used to provide additional support for the dating of these sherds to CP 7, the more delicate sherd was recovered from a level above two other CP 6 pieces, suggesting its younger age.

When comparing the CP 6 vessels from the Intervale, as well as other ceramics from sites further to the east (Fitting 1965; Petersen and Power 1983; Heckenberger and Petersen 1988; Deal et al. 1991) to those recovered from upstate New York Iroquoian sites, the similarities are indisputable. It is not surprising that trade would have occurred between the populations on either side of Lake Champlain, which is known at Bitanbogoko, or "Between Lakes" in Abenaki (Haviland and Power 1994). In addition to similarities found between ceramics recovered at sites around Lake Champlain, similarities between ceramics also suggest trade connections between people living at sites like VT-CH-93 and a small St. Lawrence Iroquoian population along the Richelieu River in southernmost Quebec that ran into northeastern Vermont (Petersen et al. 2004). Ceramic assemblages recovered at the Lake Woodland sites of Getman and Garoga (Ritchie and Funk 1973) north of the Mohawk River in New York State possess almost identical rim sherds to those analyzed in the 2010 field school sample, even though the two regions are about 260 kilometers apart from one another. Again, it is important to

note that the Northeast is interconnected by a series of lakes and rivers and that the Champlain Basin is a major feature in this system. These waterways provided people with the ability to migrate as well as trade and communicate with other groups hundreds of miles away, a possible means of uniting people living in Vermont and New York during CP 6.

Significance of the Intervale

The portion of the site students excavated during the 2010 field school at the Burlington Intervale may be small in size, but it has yielded a great depth of information. Not only is it of significance for the region's pre-Contact archaeological record, but the site provided, and continues to provide, training for students while making the Intervale a meaningful place within the UVM community. After an analysis of the artifact assemblage it appears that the excavated portion of VT-CH-93 closest to the Winooski River was an area of high activity for pre-Contact peoples of the Lake Champlain Lowlands. Feature 1 provides evidence that the site may have served many different functions including tool manufacture, as indicated by the sizable quantity of lithic flakes found within the feature and around the rest of the site, as well as food processing. Concentrations of fire-cracked rock and carbonized food remains on the inside of several ceramic vessels within Feature 1 are suggestive of cooking and perhaps food storage.

The variation in pottery over what could be a period of 1,750 years (the start of CP 2 until the end of CP 6) is suggestive of recurring occupations. The pre-Contact populations living in this region remained hunter-gatherers for much of the Woodland (Snow 1980; Petersen and Power 1983; Heckenberger and Petersen 1988; Haviland and Power 1994). Based on evidence derived from other sites throughout the Northeast (Fitting 1965; Ritchie 1969; Petersen 1980; Petersen and Power 1983; Heckenberger and Petersen 1988; Deal et al. 1991; Thomas 1997) and the paleobotanical analysis of carbonized floral remains recovered from Feature 1 (Sidell 2011), people likely occupied the studied portion of VT-CH-93 in seasonal semi-permanent settlements. Pottery analysis suggests that the largest episode of occupation occurred throughout

the Middle Woodland over a period of approximately 1,200 years. People also inhabited the Winooski Site (VT-CH-46) over the same period of time. It could be that so much pottery is present in the material record of this era because people at both sites were manufacturing and trading ceramics amongst one another. Once the Winooski Site occupation ends, there is a direct correlation with the decrease in the quantity of pottery recovered from the Intervale on the other side of the river.

The excavation of the Burlington Intervale provides a valuable insight into what the everyday life of native Vermonters was like and the role pottery played in it. With ceramic vessels, these people not only had a new way of cooking and storing their food, as opposed to the bark vessels and stone bowls of the Archaic, they also had a new resource with which to build trade relations with other groups throughout the region. It is no coincidence that the pre-Contact pottery of the Intervale can be easily compared to that of Woodland Period sites around the Northeast (Thomas and Bourassa 1978; Fitting 1965; Ritchie 1969; Petersen and Power 1983; Heckenberger and Petersen 1988; Heckenberger et al. 1990).

Discussion and Conclusions

Based on the information thus far presented, it is arguable that the Woodland Period ceramic vessels produced and designed by the pre-Contact inhabitants of northeastern North America, including Vermont, were not only cooking tools, but also an active means of maintaining trade relations with neighboring bands and establishing an individual group identity. As the Woodland Period progressed so too did the intricacies of pottery manufacture and design. By using Petersen and Sanger's (1991) ceramic sequence, it is possible to chronologically categorize the types of vessels being produced during the Woodland as well as note the frequencies of particular design motifs used within different regions of the Northeast.

Similarities between the decorations impressed on ceramic vessels recovered from sites distant to VT-CH-93 like Cunningham (Ritchie 1969) in Martha's Vineyard along with a sample of Vermont sites (Thomas and Bourassa 1978; Petersen and Power 1983; Heckenberger and

Petersen 1988; Heckenberger et al. 1990; Crock and Robinson 2011), are convincing evidence that the beliefs and traditions of Woodland-era peoples were fairly integrated throughout the geography of the majority of the Northeast. That said, a comparison of ceramics also reveals a great amount of variation between different groups (Ritchie 1969; Thomas and Bourassa 1978; Petersen and Power 1983; Heckenberger and Petersen 1988; Heckenberger et al. 1990; Haviland and Power 1994). It is true that people across the Northeast tended to utilize similar design motifs for their ceramic vessels, but, within a signal band, certain motifs could have become more popular than others providing pre-Contact potters with a means of demonstrating their group or regional identities.

Associating the use of distinct design motifs with a particular group is similar to James Sackett's (1990) concept of isochrestism. The different ceramic decoration techniques, such as the designs found on Woodland-era ceramics in the Northeast, can be "expressed at several different levels of ethnic resolution ranging" from an individual, to a kin group, to an entire society (Sackett 1990: 33). Such a pattern is visible among the Middle Woodland Period ceramics recovered from the site of the 2010 block excavation at the Intervale. For instance, it can be hypothesized that those producing ceramics at the Intervale had a greater affinity to rocker-stamping motifs on their ceramics than did the group or groups occupying the Winooski Site. Furthermore, both sites, as well as others within the Lake Champlain Lowlands (Thomas and Bourassa 1978; Petersen and Power 1983; Heckenberger and Petersen 1988; Heckenberger et al. 1990) and the greater St. Lawrence River Basin produced a higher percentage of pottery with dentate decoration than those outside of the region during CP 4 (Petersen and Sanger 1991).

Hence each social group or unit of ethnicity tends to possess its own distinctive style, and the overall degree of stylistic similarity represented by two groups' material cultures taken as wholes can be regarded as a direct expression of their ethnic relatedness (Sackett 1990: 33).

It might be possible to take such information and follow the movement of a population. If a design style is known to have been

popular within one specific region and the material record shows that its frequency then grew outside of that region, then one can speculate that an individual or group may have migrated and introduced the design element. The presence of a variety of design motifs all unique to separate Northeastern locales may then be representative of the fusion of different populations, or small groups, with one another.

As groups became established, they created their identity. Among the Western Abenaki of the Contact Period, family bands identified themselves with animal emblems (Deal 1978; Calloway 1990; Haviland and Power 1994). Centuries earlier, the Woodland-era occupants of the Northeast could have symbolized these affiliations with designs on pottery. Polly Wiessner (1983) notes that material objects that represent group or individual identities tend to have either an emblematic or assertive style about them. In this case, "style" refers to the design motifs found on Woodland-era ceramic vessels. While emblematic style pertains to a "variation in material culture" that consciously signifies an identity to a specific population (Wiessner 1983: 257), assertive style is something that is more personal, "supporting individual identity, by separating persons from similar others" either consciously or unconsciously (Wiessner 1983: 258).

Northeastern Woodland-era ceramics appear to represent the use of an assertive style. Although people may have consciously applied design motifs to ceramic vessels in order to convey a group identity, according to the data collected in this study, it does not seem that the people producing the pottery had set boundaries to their places of occupation. People living in northern New England prior to Contact were hunter-gatherers and therefore not sedentary. Evidence from sites throughout the Northeast (Ritchie 1969; Thomas and Bourassa 1978; Petersen and Power 1983; Petersen and Heckenberger 1988; Heckenberger et al. 1990; Crock and Robinson 2011) suggests that these people were seasonally transplanting themselves and the presence of strict boundaries would have made it more difficult to move between seasonal occupation sites. Furthermore, the use of an assertive style in the productions of ceramics in the Northeast is proposed because people use an assertive style to distinguish between members of a

similar cultural affiliation (Wiessner 1983). Following this definition the family bands that were members of an overarching Woodland-era culture could have produced specific design styles in order to support their individual group identities within the larger group.

Sackett's (1986: 269-270) notions of "active" and "passive" styles further support this view. An "active" style suggests that style is an ethnic signal used by the maker of a utilitarian object to show individual or group cultural identity, while the latter poses that style may serve as an ethnic marker, but more or less a maker chooses certain designs because it is what is expected of his or her culture (Sackett 1986). In relation to Middle Woodland ceramics, people may have stamped or dragged certain design motifs onto a vessel as a direct means of displaying a group identity. The motifs could also have been placed on utilitarian objects because that was what was traditionally done in that specific culture. Either way, whether active or passive, the placement of different design motifs throughout the ceramic periods of the Woodland Era may be of use in determining different levels of identification amongst people.

Perhaps the close proximity of the recent excavation at the Intervale, and the whole of VT-CH-93, to the Winooski Site is not a coincidence. The pottery found at these sites, especially Winooski and the 2010 field school block excavation segment of VT-CH-93 are very similar, a majority of pieces recovered dating to the Middle Woodland (Petersen 1980; Petersen and Power 1983; Thomas and Bourassa 1978). Furthermore, it is known that Woodland era hunter-gatherers settled in different spots within the same area during seasonal occupations (Ritchie 1969; Snow 1980; Petersen and Power 1983; Heckenberger and Petersen 1988; Haviland and Power 1994). Is it possible that the people who were living at Winooski and throughout the different excavation sites of VT-CH-93 were in fact the same group? It is possible that with more archaeological data such as larger floral and faunal samples as well as more lithic and ceramic evidence that questions could be tested about relationships between the sites. Nonetheless, similarities between artifacts suggest that these sites were at least inhabited during the same period.

One possible hypothesis is that the inhabitants of the Winooski Site (Petersen and Power 1983) including those across the river at the McNeil (Thomas and Bourassa 1978) and Intervale portions of VT-CH-93 started out as two separate groups on either side of the Winooski River. However, as the two occupations progressed throughout the Woodland periods, relationships between the seasonal camps became stronger. The presence of similar pottery sherds from both sites can attest to possible analogous group identity. Eventually, around the beginning of CP 6 (650 BP to 400 BP), the family bands living at Winooski left the low-lying floodplain for the higher elevation and more stable landmass of the Intervale across the river.

Throughout the Intervale and the whole of the Northeast the grit and shell-tempered ceramic traditions of the Woodland periods became an important part of pre-Contact life. Not only used as utilitarian cooking and storage vessels, the pots also represented a means of aesthetically expressing a group identity. As a result, pre-Contact pottery allows archaeologists to better understand the lives and social relationships of people living in northeastern North America before Contact. Based on this research a conclusion can be made that ceramic design motifs may have functioned as an expression of individual group identity and a means of solidifying relationships between trade partners.

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