Rethinking Levanna Ceramics: A Tenth Century Short Term Occupation Site in Central New York

Christina T. Rogers
University of Denver

Follow this and additional works at: https://digitalcommons.du.edu/etd

Recommended Citation
Rogers, Christina T., "Rethinking Levanna Ceramics: A Tenth Century Short Term Occupation Site in Central New York" (2014). Electronic Theses and Dissertations. 559.
https://digitalcommons.du.edu/etd/559
RETHINKING LEVANNA CERAMICS: A TENTH CENTURY SHORT TERM OCCUPATION SITE IN CENTRAL NEW YORK

A Thesis
Presented to
The Faculty of the Social Sciences
University of Denver

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Christina T. Rogers
August 2014
Advisor: Lawrence B. Conyers, PhD
ABSTRACT

The analysis of ceramics located inside of a proto-longhouse at Levanna, an early 10th century site overlooking Cayuga Lake in Central New York have found the established typologies of the area to be less rigid and contain much more variability than would be expected. Levanna appears to be a short-term occupation site (ca. 30 years) containing a variety of ceramics. In past studies Levanna had been deemed an “Owasco” era (900-1400 A.D.) site by early and some recent archaeologists, yet the analysis of features and ceramics found during the 2008 and 2009 excavations help deconstruct the idea or concept of Owasco in favor of Haudenosaunee (Iroquoian)(1400 A.D.-present). The analysis of 150 diagnostic ceramics found inside the proto-longhouse floor has led to unexpected conclusions; some decorated ceramics do not fit cleanly inside of the existing typology, decorated types from supposedly different temporal affiliations occur simultaneously inside of a short period occupation. This infers, individual types can temporally overlap or have a much longer use and life span than what was once previously believed. The pottery and the shape of the proto-longhouse at Levanna support a Haudenosaunee matrilineal and matrilocal culture living at the site; ceramic decorative styles and types are melded together and built upon each other as would be present in a matrilocal household. The ceramic analysis at the Levanna site corroborates the in-situ
development of the Haudenosaunee back to the 10th century, supporting review of the previous typology, the phases and the prehistory of Central New York.
ACKNOWLEDGEMENTS

Many people contributed to the completion of this study, providing assistance and support in innumerable ways. A particular debt is owed to Dr. Jack Rossen, who has encouraged and supported my interest in archaeology over the past 15 years. He has followed and directed my research throughout this undertaking. Dr. Michael “Bodhi” Rogers was also very supportive during the 2009 field season at Levanna. I am also grateful to Dr. Lawrence B. Conyers, who supported me as my academic advisor during my graduate studies. Additionally, I would like to acknowledge my thanks to Dan Hill and Donna Silversmith from the Cayuga Nation and Carmen Lucas from the Kwaaymii Laguna Band of Mission Indians. Finally, I want to thank my family for their support.
**TABLE OF CONTENTS**

Chapter One: Introduction ........................................................................................................ 1  
Nature of the Project ............................................................................................................. 1

Chapter Two: Background ....................................................................................................... 10  
   Iroquoian Cultural Origins and Archaeological History .................................................. 12  
   Ceramic Typology of the Area .......................................................................................... 19  
   Pottery Analysis and Culture ............................................................................................ 22  
   The Levanna Site History .................................................................................................. 24

Chapter Three: Pottery Making at Levanna ........................................................................... 27  
   Paddle and Anvil .............................................................................................................. 29  
   Firing ............................................................................................................................... 31  
   Fire Clouding .................................................................................................................. 33  
   Vessel Body Shape ......................................................................................................... 35  
   Vessel Necks ................................................................................................................... 36  
   Vessel Collars .................................................................................................................. 37  
   Vessel Rims ...................................................................................................................... 39

Decorating the Vessel ........................................................................................................... 44  
   Decoration versus Finishing Techniques/Functional Finishes ....................................... 44  
   Cordmarking and Cord Wrapped Paddle ......................................................................... 45  
   Smoothing ....................................................................................................................... 47  
   Cord Wrapped Stick (CWS) ............................................................................................ 48  
   Stamping .......................................................................................................................... 49  
   Dentate ............................................................................................................................ 50  
   Incising .............................................................................................................................. 51  
   Punctate ............................................................................................................................ 52  
   Combination of Decoration ............................................................................................ 53

Chapter Four: Discussion........................................................................................................ 55  
   Statistical Methodology .................................................................................................. 55  
   Theory ............................................................................................................................... 58  
      Cultural Ecology ........................................................................................................... 59  
   Synchronicity and Scale .................................................................................................. 62  
   Ceramic Analysis ............................................................................................................. 64  
   Matrilocality and the Haudenosaunee .............................................................................. 68

Chapter Five: Analysis .......................................................................................................... 73  
   The Diagnostic Levanna Sherds ....................................................................................... 73  
      Owasco Herringbone .................................................................................................... 73  
      Vinette Dentate ............................................................................................................ 76  
      Levanna Cord on Cord ................................................................................................. 78  
      Jack’s Reef Corded Collar ............................................................................................ 79  
      Castle Creek Beaded .................................................................................................... 80
Point Peninsula Rocker or St. Lawrence Psuedo Scallop Shell........... 83
Unknown or Sherds with New Attributes........................................ 84
Sherds Crossing Established Types .................................................. 87
Owasco Herringbone/Carpenter Brook Cord on Cord....................... 88
Levanna Corded Collar or Jack’s Reef Corded Collar....................... 90
Unknown......................................................................................... 91

Chapter Six: Results......................................................................... 96

Chapter Seven: Conclusion................................................................ 102

Addendum: Rethinking Levanna Ceramics ....................................... 105

References....................................................................................... 111

Appendix A........................................................................................ 122

Appendix B......................................................................................... 123

Appendix C........................................................................................ 126
LIST OF FIGURES

1. Location of Fingerlakes Region in Central New York.................................3
2. Location of Levanna in Fingerlakes Region...........................................3
3. Levanna site map....................................................................................4
4. New York cultural chronology..................................................................7
5. Cayuga Nation tradition land.................................................................11
6. Radiocarbon dates..................................................................................13
7. William A. Ritchie and “effigy”..............................................................25
8. Color bar chart.......................................................................................27
9. Quartz temper inclusions........................................................................28
10. Fire cloud mark....................................................................................34
11. Sherd outside unburned.........................................................................34
12. Sherd inside burned..............................................................................35
13. Fire clouded or burned bar chart.........................................................35
14. Collar types on diagnostic sherds bar chart.........................................38
15. Collars on all sherds............................................................................39
16. Rim and body counts............................................................................40
17. Sherd 45, cordmarked with large rim diameter....................................41
18. Rim diameters bar chart.......................................................................41
19. Body and rim thickness scatter plot....................................................42
20. Sherd 28 square castellation...............................................................43
21. Sherd 39 scalloped/round castellation.................................................43
22. Sherd 73 punctate or punctate dentate .........................................................48
23. Sherd 110 Owasco Herringbone/Carpenter Brook Cord on Cord; made with cord wrapped stick .................................................................49
24. Sherd 115 rocker stamped .................................................................50
25. Smoothed Cordmarked Owasco Herringbone Rims ...............................51
26. Sherd 145 incised rim sherd outside .........................................................52
27. Sherds 8, 9 and 13 combination of decoration .........................................53
28. Sherd 116 combination of decoration .........................................................54
29. Sherd 58 Owasco Herringbone .................................................................73
30. Sherd 125 smoothed rocker stamped Owasco Herringbone ...........................................75
31. Sherd 145 incised oblique lines inside .........................................................75
32. Sherds 5, 28, 35, 39, 49, 61, 76 and 138 Vinette Dentate .........................77
33. Sherd 78 Vinette Dentate .................................................................78
34. Sherd 59 Levanna Cord on Cord .................................................................79
35. Sherd 98 Jack’s Reef Corded Collar .........................................................80
36. Sherd 98 side profile of rim .................................................................80
37. Sherd 104 Castle Creek Beaded rim .........................................................82
38. Sherd 104 Castle Creek Beaded rim top view .........................................82
39. Sherd 107 Castle Creek Beaded rim .........................................................82
40. Sherd 130 Castle Creek Beaded rim .........................................................83
41. Sherd 115 shell stamped .................................................................84
42. Sherd 111 possible traded vessel .................................................................85
43. Sherd 111 possible traded vessel .................................................................85
44. Sherd 117 unusual plaid body decoration…………………………………………………..86
45. Sherd 19 “barbell” design………………………………………………………………………..87
46. Sherd 146 “barbell” design………………………………………………………………………..87
47. Sherd 3 Owasco Herringbone with Castle Creek Beaded like rim………………88
48. Sherd128 Owasco Herringbone/Carpenter Brook Cord on Cord………………..89
49. Sherd128 Owasco Herringbone/Carpenter Brook Cord on Cord………………..89
50. Sherd 2 Levanna Corded Collar………………………………………………………………………..91
51. Sherd 18 decorated rim…………………………………………………………………………………..93
52. Sherd 18 decorated rim…………………………………………………………………………………..93
53. Sherd 109 decorated rim…………………………………………………………………………………..93
54. Sherd 109 decorated rim…………………………………………………………………………………..93
55. Sherd 89 notch rim with incised lines…………………………………………………………..95
56. Type dispersal bar chart…………………………………………………………………………………..98
57. Levanna excavation map…………………………………………………………………………………..122
58. Levanna spatial and count map…………………………………………………………………………………..126
59. Levanna throw areas……………………………………………………………………………………………..127
CHAPTER ONE: INTRODUCTION

Nature of the Project

“Whoever understands the pottery, understands the site.”
Sir Mortimer Wheeler (1890-1976)

Decorated pottery sherds are some of the most artistic and exceptional artifacts found in the archaeological record (Gibson and Woods 1990). Before absolute dating methods, many culture histories were based on ceramic typologies. Today, ceramics are still used for chronological purposes and to identify and differentiate culture groups (Arnold 1989:1). I attempted to place ceramic sherds from the archaeological site of Levanna inside of existing ceramic typology of the area (Ritchie and MacNeish 1949). The ceramic sherd sample was analyzed differently than most other ceramic samples as it was a detailed, in depth attribute analysis. This detailed study allowed it to be seen that some types lasted much longer than the 1949 typology (Ritchie and MacNeish) would suggest while other sherds share attributes with multiple types. These conclusions were unexpected, and support the linear development of ceramic technology along with the cultural continuity of the Haudenosaunee people. The type deviation from the 1949 typology (Ritchie and MacNeish) could be explained by the existence of a matrilocal and matrilineal culture at the Levanna site.

This linear progression along with the melding of attributes, decoration styles and technology could be explained by technology being passed through familial lines from a
great grandmother directly or indirectly to a great granddaughter. This could account for
the melding of past and future styles, and the lengthier existence of types inside of the
Levanna site which is a short term occupation. This supports the in situ development of
the Haudenosaunee which in turn supports the modern Haudenosaunee Tribal Council’s
quest to get human remains and associated items from archaeological sites dated previous
to 1550 repatriated to them for proper interment.

The Levanna Site is located just over a mile west of Lake Cayuga in Central New
York (see Figure 1-2). The site was found in 1922 or 1923 during road construction
between the towns of Levanna and Scipio, New York. A road commissioner reported
finding human burials while gathering gravel, to Edward H. Gohl, a local amateur
archaeologist/collector. Mr. Gohl notified Arthur C. Parker who was, at the time, the New
York State archaeologist, of the findings (Ritchie 1928: 6). The site was first excavated in
1923 by Arthur C. Parker. Five burials were said to have been exhumed at this time from
the gravel pit area by Parker in his excavation. The site continued to be excavated in 1927
by Parker and his junior assistant, William A. Ritchie (Schulenberg 2007: 56).

In 1928, Ritchie wrote the first published work on Levanna as an Assistant
Archaeologist, Division of Archaeology under the direction of Arthur C Parker at the
Rochester Municipal Museum (Ritchie 1928). William A. Ritchie later went on to replace
Parker as the New York State Archaeologist and to name a popular type of projectile
point “Levanna” after points found at the site. Levanna was again excavated in 1934 by
Ritchie, Harrison Follett, and Carter Woods, among others, and then became a tourist
attraction from 1934 until 1940 (Rossen personal communication 2009). In the 1930’s
Ritchie left the project after disagreements with Follett, and Follett seemed to lead the archaeology of the site through the 1930’s and 1940’s (Follett 1957).

The site was not excavated again until 2008 when Dr. Jack Rossen performed site testing and determined by test excavations that there were undisturbed areas of the site. Rossen conducted a field school for Ithaca College and Tompkins County Community College during the summers of 2008 and 2009 at the Levanna site. I was a past student of J. Rossen’s and was invited by him to conduct my MA thesis fieldwork during the summer of 2009. I participated in excavations and led a geophysical investigation of the cleared areas at Levanna. After analyzing features, artifacts, past publications and receiving radiocarbon sample dates from the 2008 and 2009 excavations, J. Rossen concluded the site was occupied only for a short time period, approximately thirty years or less (Rossen personal communication 2010).

![Figure 1](image1.png) and Figure 2. Figure 1: Location of Fingerlakes Region in Central in New York State (modified from Fingerlakes 2012). Figure 2: Magnification of Figure 1 inset with Levanna site location (modified from Schulenburg 2007:54)
Excavations at Levanna yielded an extraordinary amount of ceramic sherds (Ritchie 1928, Rossen personal communication 2009). A sample of pottery sherds was designated from the Levanna site to analyze the attributes and decorations. The sample was taken from inside of a proto-longhouse at the site. It was hoped that the study of the decoration styles could help decipher if the people who had lived inside the proto-longhouse were matrilocal or patrilocal. The ceramic sample was composed of a total of 150 (= n) diagnostic ceramic sherds excavated from two dense, five centimeter levels inside of ten, 1x2 meter units (Figure 4). I performed a detailed attribute analysis of the sample and attempted to place the sherds inside of the constructs of the pre-Iroquois typology (Table 1) (Ritchie and MacNeish 1949). Though the sample consisted solely of decorated ceramics, it was quickly seen to be characterized by considerable diversity. This was unexpected considering the short time span the proto-longhouse and the site of Levanna was occupied. This diversity of not only types, but also styles, decoration and technology was important because it gave way to larger conclusions about the 1949
typology (Ritchie and MacNeish), the sherds themselves and possible insights about the actual people who were living at the Levanna site.

The Levanna site was only occupied for a very short amount of time, which is a very important aspect to this ceramic study. The site is considered a “tight” short term occupation site, not only because of the small condensed cultural layer inside of the stratigraphy and the number of artifacts found at the site, but also the small amount of associated burials. Archaeological sites often have long occupations consisting of many generations of people living at them, but this site was likely occupied for less than thirty years (Rossen personal communication 2010). It was expected that the ceramic sample found at an archaeological site with such a short occupation time would be characterized by a considerable lack of diversity, yet it had a considerable amount of diversity in the types of ceramics and the variety of combined decorations and styles.

Table 1. Ritchie and MacNeish’s Pre-Iroquois Typology (Adapted from Ritchie and MacNeish 1949)

<table>
<thead>
<tr>
<th>Point Peninsula Series</th>
<th>600-900/1000 A.D.</th>
<th>Owasco Series</th>
<th>900/1000-1400 A.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Vinette I</strong></td>
<td>Early to Middle Point Peninsula</td>
<td>Wickham Corded Punctate</td>
<td>Early Owasco</td>
</tr>
<tr>
<td><strong>Vinette Dentate</strong></td>
<td>Early to Middle Point Peninsula</td>
<td>Carpenter Brook Cord on Cord</td>
<td>Early Owasco</td>
</tr>
<tr>
<td><strong>Vinette Complex Dentate</strong></td>
<td>Middle to Late Point Peninsula</td>
<td>Levanna Corded Collar</td>
<td>Early Owasco</td>
</tr>
<tr>
<td><strong>Point Peninsula Corded</strong></td>
<td>Early to Late Point Peninsula</td>
<td>Canandaigua Plain</td>
<td>Middle Owasco</td>
</tr>
<tr>
<td><strong>Point Peninsula Rocker Stamped</strong></td>
<td>Early to Late Point Peninsula</td>
<td>Levanna Cord on Cord</td>
<td>Early to Late Owasco</td>
</tr>
<tr>
<td><strong>Point Peninsula Plain</strong></td>
<td>Middle Point Peninsula</td>
<td>Castle Creek Punctate</td>
<td>Middle to Late Owasco</td>
</tr>
<tr>
<td><strong>St. Lawrence Pseudo Scallop Shell</strong></td>
<td>Middle Point Peninsula</td>
<td>Owasco Herringbone</td>
<td>Late Point Peninsula to Late Owasco</td>
</tr>
<tr>
<td><strong>Wickham Incised</strong></td>
<td>Middle Point Peninsula</td>
<td>Owasco Platted</td>
<td>Early to Late Owasco</td>
</tr>
<tr>
<td><strong>Wickham Corded</strong></td>
<td>Middle Point Peninsula</td>
<td>Owasco Corded Horizontal</td>
<td>Early to Late Owasco</td>
</tr>
</tbody>
</table>
Originally my University of Denver’s Master’s thesis was to investigate the social structure of the people who were living at the Levanna site located in the Finger Lakes region of central New York State by identifying the shape of a living structure using geophysical methods (ground penetrating radar [GPR] resistivity & magnetometry), and by analyzing the stylistic variability and similarities of the ceramics found inside of the living structure. These methods would be used to try and decipher whether or not the people who resided at Levanna were patrilocal or matrilocal. The distinction would be important because it could help to shed light on whether the people living at the Levanna site were related to the Algonkian culture or Haudenosaunee. The Algonkians are a patrilocal culture and lived in small round houses while the Haudenosaunee are matrilocal and resided in longhouses.

While further cataloging and analyzing the Levanna ceramic sample, I found many sherds did not fit inside the established ceramic typologies (Table 1). For instance, many sherds were missing important attributes that distinguished them as a certain type such as a decoration style, a rim shape, a collar type, a color, or a stylistic variation while
other sherds had combinations of attributes from multiple types. This made it hard to place the sherds inside a specific type from the 1949 typology. Some were missing crucial attributes of a type, while others had more attributes than a specific type called for and many had mixtures of attributes of multiple types. Some sherds identified in the sample (n=150) were from outside of the Late Woodland time period; where the Levanna site fits chronologically (Figure 4). This suggests that the established typology of the area, (which connects certain ceramic types to different horizons, time periods and culture change) may not function as such a clean typology as was once believed. The constraints the 1949 typology (Table 1) imposes upon types are therefore likely too “tight” and the divisions between some types may not be as distinct as the typology suggests. This could be because there was a slow linear progression from the earlier types to the most modern types. It is possible that the women who were making these ceramics were passing knowledge from generation to generation and types last longer due to the pottery being made and designed by a matrilocal culture.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Culture</th>
<th>Phase</th>
<th>Beginning Date (A.D.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Late Woodland</td>
<td>Iroquois</td>
<td>Five Nations</td>
<td>1500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garoga</td>
<td>1400</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chance</td>
<td>1300</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oak Hill</td>
<td>1200</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Castle Creek</td>
<td>1100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Canandaigua</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Carpenter Brook</td>
<td>900</td>
</tr>
<tr>
<td>Middle Woodland</td>
<td>Point Peninsula</td>
<td>Hunter’s Home</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kipp Island</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. William A. Ritchie’s 1969 cultural chronology (Ritchie 1969) (modified from Hart and Brumbach 2007).

The sherds from Levanna show that temporally, certain ceramic types last much longer than was once believed, and decorative and technical attributes seen on sherds
seem to build upon, or have developed directly from, earlier type decorations and attributes. This suggests that the Levanna sherds are basically a snapshot in time, exemplifying linear development of the ceramics of the area. The linear progress of the ceramic sherd decoration, technology and style could be explained by the in situ development of the Haudenosaunee people in Central New York. Whether or not the Haudenosaunee/Iroquois people developed in situ, or whether they migrated into Central New York and displaced or integrated the Algonkian culture has been debated by archaeologists and anthropologists for over a century (Morgan 1904, Ritchie and MacNeish 1949, Snow 1995, Hart and Brumbach 2007) The in situ versus migration controversy has shaped Central New York archaeology and affected how the cultural chronology of the area has been written and viewed (Ritchie 1928, Ritchie and MacNeish 1949, Snow 1995).

There are types from the Middle Woodland present at Levanna which categorized as a Late Woodland site (Table 1, Figure 4). This has many archaeological and social implications as it supports the Haudenosaunee people’s traditional belief and the “in situ” theory that the Haudenosaunee people developed and were present in Central New York as early as 900 AD. This tends to contradict the “migration” theory that the Iroquois displaced or integrated the Algonkian people who were living in New York previously.

Museums still have human remains in their collections from archaeological sites as cultural continuity between the Haudenosaunee and sites dated prior to 1400 A.D. have been debated. The sites from which the remains were excavated were dug during the time period when the “migration” theory was popular, so the human remains have been deemed Algonkian. The Levanna site itself had multiple human remains collected and
accessioned into a public museum in the early half of this century. The Haudenosaunee Tribal Council would like to have these remains repatriated to them for proper burial.

The results of data analysis from the ceramics support the idea that the Haudenosaunee people could have made these ceramics. The types and styles found are from inside the pre-Iroquois typology, yet they are from previous or later time periods than would be expected at a Late Woodland site with a short occupation. The Haudenosaunee people are not only matrilineal, but also matrilocal. It would be feasible to suggest that type styles could last longer in matrilocal cultures as the women of the family all live together throughout their lives, passing technology, style and tradition down from grandmother to daughters to granddaughters. This passing of information and knowledge through the women of the family could also account for the melding of different designs, technologies and styles on a singular sherd.
CHAPTER TWO: BACKGROUND

My interest in the Haudenosaunee people and the archaeology of Central New York began in 1999 while taking anthropology and archaeology classes on the area with Dr. Jack Rossen and Dr. Brooke Hansen at Ithaca College. These two professors introduced me to the community organization SHARE (Strengthening Haudenosaunee and American Relations through Education), of which they were founding members. SHARE purchased an organic farm in the Cayuga Nation Land Claim area of Central New York in 2001, and shortly after I began volunteering there. The SHARE farm is located on traditional Cayuga Nation land (Figure 5). This farm was transferred back to the Cayuga Nation’s traditional tribal council in 2005. This signifies the first land in the traditional Cayuga Nation territory that has been tribal owned since General John Sullivan burned the Cayuga settlements in the 1779 Sullivan Expedition (Cook 1887). The Sullivan Expedition destroyed all of the Cayuga villages in the area and it is known that many of the Cayuga survivors of the Sullivan Campaign hid in nearby Great Gully to escape from the burning (Tobin 2002).
The SHARE Farm is now called the Cayuga SHARE Farm and is taken care of by Cayuga Nation member Dan Hill (Heron Clan) and Donna Silversmith (Snipe Clan). The Cayuga SHARE Farm is an example of how collaboration and repatriation are important aspects in fostering positive relations between Native Americans, the local community and both anthropologists and archaeologists. As an archaeologist, Dr. Jack Rossen has been working with Dan Hill and the Cayuga Nation to ascertain what archaeological projects would be most beneficial to the Cayuga Nation. As stated above, in 2007, after completing test excavation units at the previously historically excavated Levanna Site, Rossen found a large part of the site’s integrity intact. The excavation was approved by the Cayuga Tribal Council and it was decided that this intact portion should be excavated. Along with various other Haudenosaunee tribal members, Donna Silversmith from the Cayuga Nation participated and observed the excavations. The Cayuga Tribal Council approved the excavations as the known approximate time period of the site could help show cultural continuity with the Cayuga Nation. One reason this was approved is the
data could aid NAGPRA based repatriation to the Cayuga of the burials that had been previously excavated at the Levanna site and are still being held in the New York State Museum. An adjunct to this goal is that the information obtained from this ceramic study and the excavations at Levanna can potentially say things about the people who lived at the site during this period in the past. They can possibly tell us about the culture, family structure and marriage practices of the people who lived at Levanna.

**Iroquoian Cultural Origins and Archaeological History**

The Levanna site fits temporally inside of the Woodland stages, which are further divided into Middle Woodland (A.D. 100-900) and Late Woodland (A.D. 900-1500), Levanna fits squarely inside of the Middle to Late Woodland transition (Figure 4) (Ritchie 1969) based upon both past dates (Ritchie 1928, Follette 1957) and recent dates (Rossen personal communication 2008-2014). In fact Ritchie’s final culture historic charts for New York State deem the Late Woodland phase to not start until A.D. 1000 (Figure 4) (Ritchie 1969).

Levanna has historically been thought to be one of the earliest Late Woodland sites (Ritchie 1969); it was assumed to date around A.D. 1000-1100. Radiocarbon dates taken from the site vary, and the first round of dates seem to be earlier than the most recent, but most have pushed the site occupation dates back as early as the 10th century (Figure 6) (Rossen personal communication 2009). This would place it at the beginning of the Late Woodland phase, or according to William A. Ritchie’s taxa, at the end of the Middle Woodland phase (Ritchie 1969).
The archaeological record in New York has been further described in a series of phases that fit inside of the Woodland stages. These are Point Peninsula, Early to Middle to Late Owasco, Oak Hill, Chance and then on to the modern Iroquois (or preferably Haudenosaunee) culture (Snow 1995:11, Ritchie 1969) (Figure 4). “Owasco” is a culture historic taxon defined by W. A. Ritchie (1936) to define the culture group present during the beginning of the Late Woodland stage. The specific term “Owasco” has recently fallen out of favor as it is a culture concept derived by archaeologists and is not coherent in terms of the cultural attributes used to originally define it (Hart and Brumbach 2007). Hart and Brumbach explain that “Owasco” is a construct of modern culture-histories and was subjectively defined by A.C. Parker and W.A. Ritchie and not by the actual culture-history itself (Hart and Brumbach 2007). Though Hart and Brumbach successfully deconstructed the term, it is still quite common throughout historical and even modern writings about East Coast archaeology.

Robert E. Funk catalogued modern history of New York archaeology into periods (Funk 1997). The beginnings of actual archaeology work in New York State are described as being dominated by collection and revolving around European contact and

<table>
<thead>
<tr>
<th>Radiocarbon Dates:</th>
</tr>
</thead>
<tbody>
<tr>
<td>raw date</td>
</tr>
<tr>
<td>1175+/-30 B.P.</td>
</tr>
<tr>
<td>1115+/-35 B.P.</td>
</tr>
<tr>
<td>1090+/-40 B.P.</td>
</tr>
</tbody>
</table>

Figure 6. First set of radiocarbon dates to come out of the Levanna site from the 2008 excavations. These dates are slightly earlier than the most recent radiocarbon dates (Rossen personal communication 2009).
expansion, thus the exploitation of America’s Native people. Funk called the first American archaeology period the Speculative Period (1492-1840) (Funk 1997). Lewis Henry Morgan influenced the following archaeological period, the Classificatory-Descriptive Period (1840-1914) (Funk 1997). The next period described is the Classificatory-Historical Period I (1914-1940) (Funk 1997); it is in this time period that most of the early archaeological excavations were completed at Levanna. Much of this period is based on the New York archaeology completed by Arthur C. Parker, Harrison Follett and W. A. Ritchie, all who excavated at the Levanna Site. Parker considered the Levanna site “Third Period Algonkian” (Parker 1922:49) as in related to the Algonkian or Algic speakers that lived around the Haudenosaunee in New England, Canada and the Great Lakes Region. This assumption was based on the “migration” theory, or the idea that the Algonkian peoples had populated the area previous to the Haudenosaunee migrating into the Northeast.

The culture history and the history of the archaeology of New York State are important aspects of researching the ceramics found at the Levanna site. These periods helped to determine the direction of archaeologists who developed the chronology and typologies of the prehistoric people living in New York. As stated above, Parker, the first archaeologist deemed the Levanna site as Algonkian, which propagated and propelled the migration theory into the minds of future archaeologists who did work at Levanna. Researching the history of the archaeology conducted in the area helps to understand the theories, the reasoning and the conclusions archaeologists came to while they were conducting research.
The Classificatory Historical Period I was contingent on classifying artifacts. Artifact typologies were then used to construct cultural chronologies. Radiocarbon dating and other dating technologies were not invented yet, so typologies were one of the most important tools for constructing timelines. The earliest academic archaeologists in the New York area, such as Arthur C. Parker and William A. Ritchie, were on a mission to find the beginning or the origin of the Iroquois people. They used a methodological system for interpreting the past, with a timeline for the cultural historical taxa of the area, through excavations and research of the artifacts found in those excavations. The first timeline for the area was developed in 1922 by Parker, and then later revamped by Ritchie. Ritchie stayed close to the chosen dates and time periods of Parker, but chose to replace Parker’s “Third Algonkian period” (Parker 1922:49) with a different term or period he named “Owasco” (A.D. 900-1300) (Ritchie 1969:273.)

Little did Ritchie know that in the future, the term “Owasco” would become one of the most debated terms/periods known to the Haudenosaunee people and Northeastern archaeologists (Hart and Brumbach 2007). This change of terms helped to bring the in situ versus migration debate into focus and changed the way archaeologists saw Central New York. In 1949 Ritchie and MacNeish developed the previously unheard of hypothesis that pre-Iroquoian pottery was more than likely early Haudenosaunee pottery rather than Algonkian pottery (Ritchie and MacNeish 1949). This along with Ritchie’s publication of the term “Owasco” (Ritchie 1969) supported the in situ development of the Haudenosaunee instead of the theory that the Haudenosaunee migrated to New York. The adoption of an “in situ” theory of development of the Haudenosaunee instead of the
“migration” theory was a complete new theory when it came to the archaeology of New York. The Haudenosaunee oral tradition stating that the Iroquois had lived in the area for centuries never been taken seriously as archaeologists were the ones deciding the prehistoric chronology, not the Native people themselves.

It was Ritchie’s new cultural classification timeline of New York that spurred the next period of archaeology in New York, the Classificatory-Historical Period II (1940-1960) (Funk 1997). This period developed out of the Classificatory Historical Period I and built upon the research and excavations that had been completed during that period. Though the Haudenosaunee “migration” theory had been developed during the Classificatory-Historical Period I, the “in situ” theory began growing in popularity during the Classificatory Period II. The theory that the Haudenosaunee developed in place (in New York and Canada) and did not migrate into the area to integrate or remove the Algonkians became the predominant paradigm in New York archaeology (Ritchie 1969). This change occurred because emerging research leaned towards a slow and steady development of technology, from Point Peninsula to “Owasco” instead of a distinct and abrupt change from Algonkian to Haudenosaunee. MacNeish’s 1952 ceramic typology study of Iroquoian pottery supported Ritchie’s 1969 publication and both were important catalysts for this change of thought (MacNeish 1952, Ritchie 1969). Other aspects or technology besides the ceramics that supported the “in situ” theory were the oral history of the Haudenosaunee and the slow growth of house shape from circular to longhouses which supported the matrilocal and matrilineal Haudenosaunee culture instead of the patrilocal and patrilineal culture of the Algonkian.
Ritchie and MacNeish published a study of the ceramics from Woodland and earlier sites, and came to the conclusion that the more modern Haudenosaunee pottery seemed to be developed directly from “Owasco” (Ritchie and MacNeish 1949). Some researchers, both today and in the past, have debated this cultural continuity between the Owasco and the Iroquois. Others debated the relevance of associating pottery change or pottery continuity with ethnicity or culture (Deetz 1965, Kramer 1977). This project does not attempt to be the only archaeological aspect to associate Levanna to the Haudenosaunee; it is in fact a contributing factor in addition to the other yet unpublished research on aspects of the site (Rossen in progress 2014).

Dean Snow is a recent proponent of the migration theory, and his works revived this “in situ” versus “migration” debate (Snow 1995). As stated above, John P. Hart and Hetty Jo Brumbach deconstructed the term “Owasco” and deemed it “an extensionally defined culture-historic taxon” (Hart and Brumbach 2007:75) that was developed in theory by Arthur C. Parker and then named “Owasco” by Ritchie (Parker 1922, Ritchie 1969). They believe this term should not be used as culture-historic taxa and that all of the taxonomic units used in Northeastern archaeology are, in fact, constructs of the modern world and should not be embraced as truths.

This research by Hart and Brumbach can be taken in opposite ways. The demise of the term Owasco could have two meanings. It could mean there is no cultural continuity between the Haudenosaunee and the Owasco. Or it could mean there were “Owasco” people, and in fact these “Owasco” people are really just the ancestors of the Haudenosaunee. This brings back the above mentioned in situ vs. migration debate that
has been happening in Northeastern archaeology for decades, if not for a century (Morgan 1904, Ritchie and MacNeish 1949, Snow 1995, Hart and Brumbach 2007). Much of the archaeology of the area, including the pottery analysis, has been done in order to try and support either the in situ theory or the migration theory. Europeans came to America interested in the past and wanted to know if the Iroquois were, in fact, the original inhabitants of the area or not. Early European and American anthropologists and linguists such as Lewis Henry Morgan (Morgan 1904) wanted to know if the Iroquois developed in the Northeast. The question if the Iroquois had moved into the area and integrated the Algonkians into their own culture, or if they instead had conquered or pushed the Algonkians out of New York state, was an early interest of American anthropologists (Morgan 1904). The in situ versus migration debate is important to this study as the cultural continuity of the Haudenosaunee, along with the presence of a matrilocal society making the pottery at Levanna, can help to explain the idiosyncrasies seen inside of the ceramic sample (n=150).

The longstanding in situ versus migration debate has affected the still present Haudenosaunee people in New York in contemporary issues as well. The Haudenosaunee have not been allowed to receive human remains excavated from sites across central New York that are being held in museums across the state and country. These remains are labeled as Algonquian due to early archaeologist’s migration theory. The research undertaken at the recent excavations at the Levanna site has helped to associate the Haudenosaunee with prehistoric people of New York as far back as to the 10th century A.D (Rossen personal communication 2013). Besides the ceramic sherds that link
association to the Haudenosaunee, the size and shape of the excavated proto-longhouse, the presence of smoking pipes decorated with Haudenosaunee symbols and the oral history of the Haudenosaunee support the repatriation of human remains and associated items along with the reevaluation of the prehistory of New York State.

Ceramic Typology of the Area

The Pre-Iroquoian Pottery of New York State was the first early New York archaeological ceramic typology of its kind (Ritchie and MacNeish 1949). The reasoning behind the study was to “obtain a more minute chronological differentiation of the Owasco and Point Peninsula cultures” through pottery analysis (Ritchie and MacNeish 1949: 97), not just to type sherds. They chose samples of pottery sherds from ten archaeological sites in New York State and then looked and compared multiple attributes of this ceramic sample to form a typology.

The analysis and construction of pottery typologies is one of the most common aspects of studying an archaeological assemblage (Rice 1986). Ceramic characterization and the study of pottery have grown to be one of the most important aspects of archaeological research. Pottery is used as a chronological indicator since “changes in styles, forms and methods of decoration and manufacture could be monitored through time, and these changes could then be matched against other, associated, artefact types” (Gibson and Woods 1990:6). Looking at changes in pottery has long been a determining factor in deciphering the archaeological record (Orton, Tyers and Vince 1993). Large differences and changes in production techniques, types and styles in the ceramic record
can correspond with culture change, and Ritchie and MacNeish (1949) were hoping to see a culture change exemplified through the ceramic record inside of the ceramic sample they gathered from the ten Central New York prehistoric sites to form the pre-Iroquoian typology (Ritchie and MacNeish 1949). Ritchie and MacNeish gathered pottery samples from sites in both the Middle and the Late Woodland chronology and defined them further as Point Peninsula or Owasco (Figure 5).

Ritchie and MacNeish made no qualms about why they wanted to make a typology in 1949; as stated above, they admit,

“it was believed that such an analysis, breaking down the existing ware divisions into finer type inventories, would prove useful in obtaining a more minute chronological differentiation of the Owasco and Point Peninsula cultures than would be possible on any other basis…” (Ritchie and MacNeish 1949: 97).

This basically admits that the New York pre-Iroquoian typology was constructed with a goal to differentiate between the two supposed cultures of Point Peninsula and Owasco. In the article, there is a ceramic characterization classification that divides the pottery into two separated cultural types, “Point Peninsula” and “Owasco”. The idea that the Point Peninsula and Owasco were two separate cultures was held before the typological study was undertaken by Ritchie and MacNeish. Like Hart and Brumbach proposed with the term “Owasco”, it seems the sherds from the ten sample sites were cataloged into a pre-constructed cultural taxon that was a construct of archaeologists.

Ritchie demonstrated in previous publications that the Iroquois had migrated to the New York area and it seems as though MacNeish agreed with this assumption before he had a chance to analyze the ceramics (Ritchie 1928, Ritchie and MacNeish 1949). The fact that the older Point Peninsula ceramics had been made using a coiling method, while
the pots they called Owasco were made with a paddle and anvil, was used to support the theory of cultural change in Central New York. The 1949 pottery study looks for a distinct change from Point Peninsula and Owasco pottery and found it in this movement from coiling to paddling the pottery. This change in the way the pottery was manufactured (from coil to paddle and anvil) has been used as a major supporter of the migration theory.

This becomes a problem because it must have skewed the results of the typology and the way the typology was constructed in the first place. In this case Ritchie and MacNeish (1949) had already derived an answer from the ceramics before characterization studies were undertaken. The pottery classification study was a tool used to try and forward their already derived conclusions that there were two distinct and separate cultural groups, Point Peninsula and Owasco, which could be seen by analyzing the pottery from different time periods. Studying and analyzing pottery can give archaeologists many clues to the cultural continuity of the area as “the changes in pottery fashion over time can be monitored to distinguish between gradual development and rapid change” (Gibson and Woods 1990:6), and this typology was developed for this reason. Distinct changes inside of ceramic typologies had come to be associated with culture change, since it was thought that changes in technology, form, function or design meant the influence of another culture instead of the advancement of a stationary or sedentary culture.
Pottery Analysis and Culture

Change in technology, style and decorations are constantly occurring throughout pottery typologies; techniques and fashion is an example of this. The movement of the Eastern Woodland pottery, from the earliest being made in a pinch pot, then later to a coiling technique and finally to the technique of pottery present at Levanna, the paddle and anvil fashion was not an immediate and dynamic change in the archaeological timeline (Figure 5). Pottery technology and techniques seem instead to have been a slow and conscious change from only smoothing coiled pots, to coiling and then smoothing them with the more advanced and complicated method of paddle and anvil. In the worldwide archaeological record, the paddle is “normally used as a secondary forming technique” or as an aid to coiling or pinch pots (Gibson and Woods 1990: 41). There is evidence that some of these pots may have been coiled, though most were likely made with a paddle and anvil method. These pots could easily have been made with both the pinching of the bottom of the pot, the coiling of the sides, and then, the paddle and anvil as a tertiary method of strengthening and thinning the walls of the coiled pots. This shows a significant pattern of learning and not a distinct jump from one technology to the next, “Archaeologists and ceramic technologists should be aware that combinations of techniques may have been employed” (Gibson and Woods 1990: 42).

Ritchie and MacNeish gloss over this when writing. They describe Point Peninsula vessels as being coiled and Owasco pots as being paddle and anvil, but never note there could be a melding of these two techniques (Ritchie and MacNeish 1949). The melding of these techniques could signify the slow and deliberate movement from one
distinct technology to the next. The ceramics at Levanna were paddle and anvil, but this
does not mean they were not related, influenced or precluded by coiled pottery. The
sherds analyzed show some of the same decoration techniques (such as Vinette designs
and Rocker Stamping) present in Point Peninsula pottery. This means the pottery at the
Levanna site, with its melding of different types of decoration and styles, is ideal as an
example of technological advancement, melding and mixing of types and decorations
which are supposed to be from completely different time periods.

One of the problems of the 1949 typology is the authors separated types that were
similar because they were found at sites with different occupation dates; they cataloged
sherds into separate types because they came from a Middle Woodland site or a Late
Woodland site (Table 1, Figure 4). Because Ritchie and MacNeish set out to differentiate
between the Middle Woodland and Late Woodland (or Point Peninsula and Owasco)
pots, it can be assumed they encountered one of the classic typology problems of
“splitting” (Adams and Adams 1991). The weakness in Ritchie and MacNeish’s typology
is they split similar pot sherds into distinct and different types because of dates. The
pottery found at a Point Peninsula site and a type found at an “Owasco” site Levanna
were supposed to be different, yet they are similar; an example would be Jacks Reef and
Levanna Cord on Cord, which are two types that are very similar, yet Jack’s Reef is
found in the Point Peninsula sequence, and Levanna Cord on Cord is found in the
Owasco sequence (Table 1, Figure 4). These types are so similar that Ritchie and
MacNeish note they are closer in typology than types occurring within their own horizon
(Richie and MacNeish 1949: 121), this splitting of such similar types demonstrates the
propensity of Ritchie and MacNeish to conduct constructs based upon their early belief in the migration theory, the theory that the prehistoric people living in the Middle Woodland were not related to the prehistoric people of the Late Woodland.

Though Ritchie and MacNeish went into making the typology in order to support migration theory, they did have the sense to disagree with their earlier proclamations and note that there is, in fact, a high probability that Point Peninsula and Owasco types were related to and built upon each other (Ritchie and MacNeish 1949:123). This set the foundation for the in situ paradigm, which would go unchallenged until the mid 1990’s (Snow 1995). This in situ paradigm, and the end conclusions of Ritchie and MacNeish (1949) (Ritchie 1969) helps to support the conclusions derived from the ceramic analysis research I completed at the Levanna site, that the Haudenosaunee developed in place, and did not displace the Algonkians.

**The Levanna Site History**

At the Levanna site, large 15-20 foot thunderbird, bear and salamander “clan” animal effigies made of fire affected/ fire cracked rock (FAR/FCR) were found during the 1930’s excavations (references). These effigies were the focal point of tourist visits (Figure 3). There was much debate over these effigies and whether or not they were, in fact, real or if they were devised by the archaeologists in order to achieve sensationalism and bring tourists to the site. Tourism was encouraged at the site. Local Natives were hired to perform dances while a small museum displaying human remains, a cultural
center and a recreation of a longhouse were built by Follett and the land owner Fred Sherman.

This sparked many disputes regarding the Levanna site. Parker and Ritchie did not agree with the claims by Follett and his associates that the FAR/FCR had been shaped into animal effigies, which led to an ongoing investigation involving many outside archaeologists over the authenticity of the effigies. More debates occurred over the ownership of artifacts with the local landowners, leading to a documented court case (Levanna site archives). Excavations conducted in 2007 and 2008 revealed the “bear” effigy and determined it to be an “earth oven or cooking platform” by Rossen (2010). The history of these early excavations and controversies at Levanna have been recorded through a large collection of photos and documents, many of which are held in personal archives and at the New York State Museum in Rochester, New York.

The excavations by Ritchie and others at Levanna were not complete or analyzed correctly by today’s archaeological standards. There are no known field maps of the
Levanna site besides an early site map inside of Ritchie’s 1928 publication. It does identify twenty two structures at the site, but “it is not clear what evidence was used to identify these locations.” (Schulenburg 2007: 56) Ritchie does not mention post holes or the size or shape of houses. Only a “thin black stratum containing sinkers, potsherds, anvil and hammerstones, scant refuse of bone and shell and an occasional arrowpoint or awl covered the surface” (Ritchie 1928 :14) is his analysis of the living structures. There is no record as to what size or shape these living structures were, which would have pointed towards a cultural affiliation. When Follett and the landowner built the “museum” at Levanna, a longhouse was used as a representation of the house form.

Also, ceramics found at Levanna were included in Ritchie’s report to prove continuity between Point Peninsula and Owasco cultures (Ritchie and MacNeish 1949:108 & 110), but the descriptions lack specifics about the artifacts.
CHAPTER THREE: POTTERY MAKING AT LEVANNA

The ceramics at Levanna were likely made by the women at the site (Englebrecht 2003). Ceramic production was traditionally done by Haudenosaunee women, and historically it is noted that the production was done by women and largely unspecialized (Sagard-Theodat 1939). The clay used at Levanna was most likely gathered from local stream and river beds (Ritchie and MacNeish 1949). The pots were different colors dependent on where the clay had been gathered. Some of the clay may have been sought out for its specific color and texture. All clays were earth toned; charcoal gray, light gray, terracotta orange and different shades of brown are the most common (Figure 8).

![Diagnostic Sherd Color Chart]

Figure 8. Color bar chart of 150 total diagnostic ceramics.

After clay was gathered it was kneaded and then possibly mixed with a temper of crushed rock to hold it together. It is possible that some clay sources held enough
impurities so that temper did not have to be added, but were already included inside of the clay source. Temper or inclusions are not a decorative portion of the vessel and does not affect shape, so it was not noted in this study as often as others. Much of the temper in the pottery at Levanna is crushed quartz, one of the most common inclusions used worldwide (Rice 1987:94), which gives some of the clays and the vessels a slight sparkle. Water would be added after the temper to make the clay more pliable, especially if the clay had substantially dried out after gathering. The inclusions in the pottery excavated at Levanna are abundant in most sherds and range from small to large sized pieces. Quartz, feldspar and small gravel are the most common tempers (Figure 9).

![Figure 9. Sherd 58. Example of quartz temper inclusions inside of paste.](image)
Paddle and Anvil

The ceramics found at Levanna seem to all have been made with a paddle and anvil method, which is a technique used to make a thinner and more compact ceramic vessel than coiled pots or hand modeled pots. Some of these could have been hand modeled, but the consistency and the size and shape lead me to believe these were all paddle and anvil made pots. They were most likely started with a modeling method (as noted below) or could have been started with a coiled base, but as undiagnostic body sherds were not analyzed in this study, an easy distinction cannot be made. MacNeish quotes Gabriel Sagard-Theodat, who watched a Huron woman make pottery in 1632.

“The women make them, taking suitable earth, which they clean and knead very well, mixing in a little sandstone, then the mass being reduced to a ball, they make a hole in it with the fist, which they enlarge continuously while beating it inside with a little wooden paddle, as much and as long as it is necessary to complete them” [MacNeish 1952: 7]

This technique was used at Levanna, though the temper is not always sand, but also grit and crushed rock. The paddles noted by Sagard-Theodat were made of wood and is therefore the probable cause of why no evidence of paddles was found at excavations at Levanna. In a subsequent excavation at the 15th century Myers Farm site, a possible stone paddle/anvil was found during excavations (personal communication with Dr. Jack Rossen 2014). Sagard-Theodat does not describe the anvil, which was usually a smooth flat rock held on the inside of the hollowed out ball of clay while the paddle was used to hit the outside of the ball of clay to form a uniform surface. The anvil is sometimes what Sagard-Theodat describes as the paddle being used to hit the inside of the pot. This is not
the method most described as the paddle and anvil method, since hitting the inside severely restricts the paddle movement (Gibson and Woods: 1997). Sagard-Theodat may have been witnessing a combination of a paddle and anvil and a “rib and hand” technique that can be used together. In the rib and hand technique, a hand is used as an anvil on the outside of the pot and the inside is smoothed and spread with a wooden rib or paddle. This does not compress the clay like a paddle and anvil method, but it is faster and can be used in conjunction with each other.

Though Sagard-Theodat wrote about a paddle, he neglected to mention an anvil. The anvil was an important part of the paddle and anvil process. The shape, size and material of the anvil determine how the clay is compressed. Anvils were usually smooth rocks, disks of wood or even disks made of ceramic themselves. The shape of the anvil effects how the clay spreads and is compressed. A round/circular anvil helps the clay to be compressed in all directions; an oval anvil will help the clay to spread either vertically, if the anvil is held horizontally, or horizontally, if the anvil is held vertically against the clay (Rice 1987:137).

The paddle and anvil method was preceded by the coiling method, in which clay is shaped into coils, then stacked on top of each other and smoothed. It is easy to see that none of sherds from Levanna were made like this because of the way the sherds are broken. Ceramics that were made with a coil and fillet method fracture between where the coils of clay had been smoothed out. None of the sherds found at the site have coil fracture planes. Also the interior of the ceramics at Levanna are smooth with no coil ridges or channels present. The paddle and anvil method began with using a paddle and
anvil on already made coiled pots. This progressed to the Point Peninsula ceramics, usually made with a coiling construction, while “Owasco” pots are made with paddle and anvil. This switch from coiling to paddle and anvil was not a distinct and drastic movement. Instead, it seems to have been learned with some sites having both paddle and anvil and coiled pots. The movement to paddle and anvil helped to prevent ceramics from breaking so quickly. There are no thin points on the pots to fracture easily when using paddle and anvil.

The more uniformity in the pot thickness also affects cooking time and the temperature the pot would be able to withstand when placed over a fire (Rice 1986). Coiled pottery is substantially thicker than paddle and anvil made vessels, and the thicker walls hindered cooking time. Thinner vessel walls allow for heat to travel quickly over the surface of the pot and help to disperse heat and heat the contents of the pot evenly. The thinner paddle and anvil vessels were also able to boil water faster and were less prone to cracking. The increased development of agriculture and the use of corn in the diet at turn of the century sites also could be a reason for this change in pottery. The move to using paddle and anvil was a technological advance as it improved the functionality of the pottery, which meant an improvement in quality of life.

Firing

After the pot is formed, but before it is fired, it must be dried, which can take days or weeks depending on the vessel and the weather. Pots dried too quickly in the sun have a tendency to crack, and variable weather such as wind, rain and snow can keep pots
from drying evenly. Due to the common fluctuation of weather in the Finger Lake region, it is possible the vessels made at the Levanna site could have been dried inside the proto-longhouse (Arnold 1989:61). Clay pots were fired in open pits with low heat as high heat would break the vessels. Wind and rain cause the temperature of the open fire to fluctuate greatly, which can cause the pots to fire unevenly, crack, spall or break. Timing the firing with perfect weather conditions would be an important aspect of constructing vessels. There are limited times of the year when weather is conducive to the open firing of pots in Central New York, and the time of day must also be considered, as afternoon winds or thunderstorms would destroy a carefully constructed vessels (Arnold 1989:61-98).

The open fire pits would most likely have a slow burning fuel on the bottom. Vessels would be placed on top and then a higher/faster burning fuel is placed between and on top of the unfired pots (Rice 1987:153). These low burning and long lasting fires would have caused a large amount of smoke and would have been placed downwind or away from the immediate living areas (Kapches 1994:101). The open hearths can have oxidizing conditions, when there is an oxygen rich firing atmosphere, or reducing conditions where there is a lack of oxygen during the firing process. The pots fired with high or excess oxygen tend to be lighter in color or more red or orange, as the iron particles in the clay have oxidized (Gibson and Woods 1990, Shepard 1956, Sinopoli 1991). Though it is impossible have a completely reducing atmosphere with an open hearth, vessels starved of oxygen have a darker color. Open hearth firing also produces a large amount of pottery with blackened fire cloud marks due to the fluctuation of
temperature and weather conditions (Gibson and Woods 1990, Shepard 1956, Sinopoli 1991).

None of these clay firing pits were found at Levanna during the excavations of 2008 and 2009, as they were most likely located farther away from the excavated area. Open firing is a difficult method of producing evenly fired, uniform pots, and often pots are broken during the process. The losses of pots that are openly fired can range from 0% loss to a 100% loss (Rice 1987:173).

Fire Clouding

Another issue with open firing of pottery is the subsequent fire clouding. This results when the temperature inside the open firing flares and becomes too hot in a specific spot. The vessel is then scorched leaving a black carbon stain on the pot (Figure 10). It can also occur at each point of contact where wood, fuel or two or more pots are touching each other, or leaning on each other inside the firing pit (Gibson and Woods 1990:49). The touching transfers heat and leaves the telltale fire cloud mark. Many of the pots from Levanna have fire clouding marks on them, evidence of the open hearth firing that occurred. Firing also can impart a carbon streak that can also be known as a black zone, in the center of the sherd. Carbon streaking happens often in open firing as the carbonaceous matter in the paste does not have time to oxidize completely (Gibson and Woods 1990).

It can be difficult to tell the difference between fire clouding and pots that have been burned from use as cooking pots, which sit over a fire countless times for food
cooking (Figures 11-12). Cooking vessels often have systematic blackening around the base of the pot and on the inside, while fire clouding is more sporadic. The small fire clouding marks could also have been done intentionally as decoration (Figure 10), though there was no evidence of this inside of the Levanna sample (n=150).

Figure 10. A distinctive fire cloud mark on the outside of a singular cord wrapped or a cws decorated body sherd.

Figure 11. Sherd 74. Outside of rim sherd without burning.
Vessel Body Shape

It is difficult to get an accurate rim diameter and to designate the exact shape of the pots themselves. It is likely that most were used as cooking vessels. The location of where the pottery was found can also suggest what the vessels were used for. Since the selection of sherds studied here was found inside and around a living area, likely the most
common pieces found would be sherds from cooking, food storage pots and water 
vessels. The shape of most of the pots was globular with a slightly constricted neck and 
slight outflaring rim. Some pots had globular bodies with square shaped rims or necks. 
Size ranged from small children’s pots or cup sized vessels to large storage pots. All of 
the vessels analyzed from the Levanna site had rounded globular shaped bodies. 

Vessel Necks

There are no large necks on the Levanna vessels. The necks are either straight or 
constricted and there is little variation in construction between the constricted and the 
straight necks. The rims usually slightly flare outward from a constricted neck. 
Unfortunately, most of the sherds were broken right below the rim and it was almost 
impossible to compare constricted to straight necked pots. Most of the diagnostic sherds 
at Levanna that were studied have been decorated at the neck. The necks of the pots are a 
part of the vessel and were not appliquéd or added to the pot after forming the body. 
Appliquéd necks were much more common when pottery was made from coiling clay, 
the neck would be added after. The necks of the Levanna pots rise from the body of the 
vessel itself, which is also evident from studying the fracture lines, as coiled pottery is 
much more likely to fracture in horizontal parallel lines where two coils or the neck and 
body were joined and then smoothed together (Rice 1986:128). The Levanna pot fracture 
lines do not support an added neck or coiling as they are usually angular and not 
horizontal (Figures 11-12).
Vessel Collars

The collar of the vessel attaches to the neck when a collar is present on the pot. Sometimes there is no collar and only a rim is present at the top of the neck of the vessel.

Collars on the most of the vessel types at Levanna are also different from the collars made at early sites (Brumbach 2011). Collars on vessels in the central New York area seem to have a linear progression through time (Ritchie and MacNeish 1949). The few collars on the early Point Peninsula ceramics were appliquéd on top of the coiled pot. After coiled pottery stopped being made and the paddle and anvil style became the most common, collars began to be made by extending the neck of the pot when the vessel was being formed. Later in time additional clay was added to the neck of the paddle and anvil made vessel to make a larger collar. It is more common in later vessels in the pottery series to have a more pronounced collar (Snow 1994:13). These collars on the later Owasco pottery are more like the collars on later Haudenosaunee pottery.

Besides forming collars with extra clay, the vessels present at the Levanna site have decorated collars. This is when the collar area of the pot has been decorated with a design. The decorated collars seem to designate the area around the neck of the pot as a collar, even if they did not have extra clay appliquéd or added to the vessel body. This collar decoration is noted as decorated only and as a type of collar in itself.

In addition to extending necks, Ritchie and MacNeish (1949) note, and in fact named types based of, when an additional application of clay was added to form a collar on a pot. These types include Jack’s Reef Dentate Collar, Jack’s Reef Corded Collar,
Levanna Corded Collar, Owasco Corded Collar and Bainbridge Collared Incised (Figure 4, Table 1). These collars are considered incipient collars. Incipient collars are made by applying a filet of clay on top of the already formed neck of the vessel. This is the same process used to form a larger collar, just on a smaller scale. Recent research on the early collars note them as being only rim extensions (Brumbach 2011). The collars on the Levanna vessels look to be much more than rim extensions; in fact they seem to be distinct small collars, not at all different from the large collars on known Haudenosaunee pottery (Figure 14). Fifty five sherds with some type of collar (added, incipient or decorated) were seen inside of the Levanna sample (n=150) (Figure 15).

![Collar Types on Diagnostic Sherds](image)

Figure 14. Collars types on diagnostic sherds.
Vessel Rims

Some of the most diagnostic features of a vessel are rim shape, rim thickness and rim diameter. Out of the diagnostic sample (n=150) 93 were rim sherds while 55 were body sherds and one was unknown (Figure 16). Rim shape not only gives a good indicator of the functionality of the pot, but also a clue as to what the rest of the vessel might have looked like. The thickness of the rim versus the thickness of the body is another measurement used to determine how the pot might have appeared and been used. The diameter is one of the best indicators of the size of the vessel and therefore determining what function the vessel had; i.e. smaller diameter rims for water pots, medium diameter thin rims for cooking pots, large diameter thick rims for storage pots etc. (Figure 17). It would have been interesting if more rim diameters were able to be determined from the Levanna sample as it would have helped to shed more light on
vessel functions. Nine approximate rim diameters were able to be taken from the diagnostic sample (Figure 18). Rim thickness ranges from 5mm to 12.8mm with the average rim being 8.45mm. Body wall thickness ranges from 4.2mm to 11.2mm with the average being 7.14mm. Rim size is on average 1.35 mm thicker than the average sherd wall size (Figure 19).

Figure 16. Total of 150 sherds; 93 rims, 56 body, 1 unknown.
Figure 17. Sherd 45. A rim sherd with a 40 cm plus diameter; likely used as a storage pot. It has been cordmarked and then possibly smoothed.

Figure 18. Nine approximate rim diameters were determined out of ninety three rim sherds.
Rims were decorated in different ways at Levanna and in the Eastern Woodlands (Ritchie and MacNeish 1949). One of the most common attributes of the rims for both the earlier Point Peninsula and the later Owasco series are cordmarked or cord-impressed designs. Various enhancements were made to the rims at Levanna, including medially encircling cord marks, cord wrapped stick and cord wrapped paddle. The rims on some of the pots analyzed at Levanna were square at the top and not rounded. Some of the pots at Levanna also have castellations along the rims. Castellations are areas along the rim where added clay makes the rim or collar taller in certain places along the rim line of the pot. This is common in Iroquoian pottery, and the castellations are also found on Owasco pottery. The castellations noted were rounded, scalloped or square (Figures 20-21). The Owasco castellations are smaller and less noticeable than the Iroquoian castellations, which are larger and more pronounced.
Figure 20. Sherd 28. Small square castellation on Vinette Dentate rim sherd.

Figure 21. Sherd 39. Scalloped or rounded castellation from Vinette Dentate rim sherd.
Decorating the Vessel

Decoration versus Finishing Techniques/Functional Finishes

There is a debate whether surface treatments of vessels are for function or for decoration. Vessel decoration may not only be for artistic or beautification purposes, but serve different utilitarian purposes. Many pots that at first glance seem to be decorated solely for design purposes are actually decorated for specific functional reasons. Roughing the surface of a pot is common across the world in prehistoric vessels for multiple reasons. Pottery is not only fragile; the creation of it is time intensive. At Levanna, the pottery would most likely have been made in the summer or warmer seasons as the ground and clay would have been frozen during the winter (Arnold 1988: 61-98).

Roughing the body of the pot makes for a surface that is easier to handle and less likely to slip through the hands. A vessel can be cordmarked and then smoothed slightly to give it a rough texture instead of a slick smooth texture (Figure 17). Vessels made to be carried and used for cooking often have surface treatments on the body of the pottery for this reason (Rice 1987:137). Pottery used for holding water and for cooking can easily become slippery if water spills onto the pot, and making the pot rough helps with grip. Another common reason for surface treating a vessel is to help evenly distribute heat across the pot while over the fire (Rice 1986:138). Roughened or surface treated pottery is used for cooking vessels to improve heat transfer over the body of the pot and to help food to cook evenly over an open fire or hearth where temperature control is important. Another reason to change the surface of the vessel was to make it easier to differentiate
pots from one another in the dark or in dimly lit areas. In a January 18, 2012 conversation between the author and Carmen Lucas, an elder from the Kwaaymii Laguna Band of Indians in Southern California, Ms. Lucas noted this as a reason why her family traditionally marked their pottery with different surface decorations.

Vessels seem to have been decorated or textured when the pot had just been made or was at a soft and still workable leather hard stage after drying for a portion of time. At this stage of the process the clay is much easier to work with since it is not dripping wet, yet still can be molded. The clay is still plastic yet hard enough to hold its shape, makes it easy to impress designs onto the surface (Gibson and Woods 1990:42).

Cordmarking and Cord Wrapped Paddle

The vessel sherds that were collected from Levanna are usually cordmarked on the body of the pot. This was done with a paddle that was wrapped with cord. The cord impressions were not only good for roughing the pot as a functional aspect of the forming of the vessel, but they also were decorative. Texturing the surface of a vessel can be debated as to whether it is a functional aspect done as part of the construction of the pot, or as a decorative additive after the pot has been formed (Rice 1986:138).

Cords or cordage were woven together out of singular small threads into different patterns and designs. Some cords are thin, others thick, some are knotted, others smooth while some are wrapped or twisted to the right, some to the left, others overlap. Different designs could be realized by using different types of cords and by hitting the pot in different manners with the cord wrapped paddle. Other times a singular cord could be
wrapped around the vessel in different areas such as the rim, the neck, the body or the lip of the pot. This gives a singular cord mark horizontally around the globular body or rim of the vessel (Figure 12).

Cordmarking is popular throughout sites in both the Point Peninsula and Owasco series of New York. In fact, Ritchie and MacNeish (1949) found it almost impossible to distinguish some of the Point Peninsula cordmarked pots from the Owasco cordmarked pots apart. The Levanna pottery was cordmarked in various ways from different types of cords. Since cordmarking was so common, solely cordmarked body sherds were not deemed to be diagnostic in this study.

The most common decorative and functional design on the Levanna pots was made with a cord wrapped paddle (Figure 17) (Ritchie and MacNeish 1949). A paddle is wrapped with a cord in order to give texture to the pot, a larger surface area and easy way of decorating the pot. When the pot is hit with the cord wrapped paddle, the imprint of the specific type and style of cord is imparted to roughen the surface of the pot (Rice 1986:138). Cordmarking occurs on both the inside and outside of many of the vessels (Figures 10-11) (Ritchie and MacNeish 1949). Some of the vessels do not have cordmarking extending into the interior of the pot, since it is much harder to reach a paddle into the inside of a vessel than it is to paddle the outside. Thus many times it is only the insides of the necks of the pots that are cordmarked with a cord wrapped paddle.
Smoothing

After using a cord wrapped paddle and an anvil, the surface of the pot was often scraped or smoothed over in order to keep the pot slightly textured, yet still give a smoothed surface to impart decorative designs (Figure 22). If the clay was still slightly soft, a piece of cloth or a hand could be used, yet if it was more leather hard, a rock or smooth tool would be used to rub out some of the cordmarking (Rice 1986:137). This lessens the amount of the background decoration and makes the vessel surface smoother. Smoothing was also done only on portions of the vessel, while leaving another portion highly cordmarked. Smoothing is a different type of a finishing technique than burnishing. Burnishing is when an already smoothed vessel is then highly polished with a tool to make the pot have a slicker, shinier surface (Gibson and Woods 1990:42). The Levanna sherds were all smoothed at some point in the construction process, but none are obviously burnished.
Figure 22. Sherd 73. A smoothed body sherd which has been decorated with punctate (possibly punctate dentate), likely using a comb or dentate tool.

Cord Wrapped Stick (CWS)

A dowel or a thin stick of some sort would be wrapped with a single piece of cord and impressed onto the damp clay (Brumbach 2011). This can give as many different patterns on the pot as the stick can be manipulated in many different directions (Figure 23). Altering the cord by tying knots, or adjusting the spacing between how the stick is wrapped with the cord (wide spaces versus smaller, narrower spaces), also gives different aspects to the design. Over the course of this study it was noted that the same cord wrapped stick was used on the same pot over and over, as evident by the same repetitive spacing/knots that match different lines of design on the vessel.
Stamping

Stamping is used to “impress a repeated pattern of identical motifs” (Rice 1987:145). Stamping differs from simple impressing in the unitary rather than continuous character of the decoration (Rice 1987) (Figure 24). The dentate designs on the pots are a type of stamping, though they seem related more to cordmarking, being similar in design. Many times it is difficult to tell the difference between a dentate design and a cord-marked stick design. Stamping can be made by rocker-stamping, which is a mix of stamping and rouletting, where an object such as a shell or an edge of an implement (such as a cordmarked paddle) is rocked back and forth to impart a design (Rice 1986:140). It is possible that some of these designs were rocker-stamped with a shell or bone.
Dentate

Dentate is a type of stamping common in Point Peninsula, Owasco and Iroquois pottery. Much of the dentate design could have been made by rocker-stamping the pottery (Rice 1986:144). The literal meaning of dentate is having a toothed margin or tooth-like projections or processes (Figure 25). Dentate stamping makes a series of lines composed of small tightly and similarly spaced indentations. These decorated lines are altered to form patterns, the most common of the Levanna being in a herringbone design. Exactly how the dentate designs were impressed upon the vessel is still somewhat of a mystery as no specific tools have been found during excavations matching the designs on the vessels. Some conclusions can be made by studying designs on sherds to see how they were made. A wooden comb or notched stick would be perfect for making dentate designs. Another option would be a bone implement or even a lithic specifically shaped with small teeth or notches to impress the design into the leather hard clay (Gibson and Woods 1990:42). Notched lithics with similar patterns to the dentate designs were found at the
15th-century Corey Site located approximately 5 miles from the Levanna site (Rossen personal communication 2014).

Figure 25. Three associated Owasco Herringbone sherds from Levanna (from outside n=150) with a typical Owasco Herringbone dentate design -possibly rocker stamped dentate. Design has been impressed on cordmarked than smoothed surface.

Incising

Incising is a technique used to cut designs or decoration into the surface of the vessels. It occurs at the same point of vessel production as the stamping; when pots are leather hard- still plastic but semi-dry. This is evident from the lack of chipping that would have occurred around the edges of the incising if it had been done on dry or fired clay; instead, the clay has been displaced by the incising (Figure 26). The edges of the lines are clean and the tips of the lines are smaller and not chipped, which all suggest pre-firing decoration. Incising could have been made with a sharp stick, a piece of wood, a stone or a bone tool or even an awl- any kind of sharp implement (Gibson and Woods 1990:42). A substantial amount of rodent teeth were found during the 2008 and 2009
excavations, and these could have been used as incising tools (Rossen personal communication 2014). Incising, like dentate can also be made with a type of sharp toothed comb that can be dragged across the pot instead of stamped across the vessel leaving evenly spaced incised lines (Rice 1986:146). This is one of the forms of incising used at Levanna.

![Figure 26. Sherd 145. Incised oblique lines on a rim sherd.](image)

Punctate

Punctate is a type of decoration where a sharp implement, likely a bone or stick, is pressed into the leather hard clay leaving staccato impression marks on the vessel (Figure 22). Different shaped tools can be used imparting a wide variety of designs onto the pottery including circles, squares, diamond shapes, etc. (Rice 1986:145). Besides a singular implement, the ends of a comb or a tool with notches can be used to impart evenly spaced punctate marks onto a vessel.
Combination of Decoration

It is common to see a combination of techniques on the vessels (Figure 27-28). This melding of different forms of decoration is evidence of a great sense of artistic awareness and consciousness. It seems to be quite common that multiple types of decoration were mixed and matched and placed onto the same vessel at Levanna. At least three different types of design are evident on individual sherds found in the diagnostic sample. Some combinations include cordmarking the body of the pot, then overlaying or adding dentate designs, cord wrapped stick (cws) designs, incising or dentate punctate markings.

Figure 27. Sherds 8, 9 and 13. These sherds show three types of decorative design on the associated sherds. For example sherd 8 has cord wrapped paddle or cloth impressions on the bottom, the middle is oblique cord wrapped stick or cord wrapped paddle, while the top is dentate punctate stamped.
Figure 28. Sherd 116; Body sherd that has been incised on the top with oblique lines, then marked with a cord wrapped stick in horizontal parallel lines.

The above described pottery making techniques and decoration styles are important aspects of analyzing and typing ceramic sherds. This forms the basis of knowledge needed to organize sherds into pre-constructed typologies, and this information was used to analyze and organize the 2009 Levanna ceramic sample. The intricate decoration analysis completed with this sample is unusual as it was very in depth. The analysis of the specific types of decoration, combinations of the decorations and the details of how these pots were designed helps to give a face to the people who made these pots. The decisions they made when they decided what types of designs to impart, whether they used designs popular in the past, or combined types of decorations popular in the past with newer additions such as collars and castellations is an indication of the complexity and thought process the people of Levanna had when they decided how to form the pots and how to decorate them (whether for function or beauty).
CHAPTER FOUR: DISCUSSION

Statistical Methodology

The use of statistics is important in the study of ceramics. I collected large amounts of both nominal and ordinal data while analyzing the ceramics from Levanna. When such a large amount of data is collected, statistics are necessary in order to make sense of such a large amount of categories. Gathering information regarding the decoration, the shapes and the sizes on the diagnostic sherds was a priority. These attributes are some of the most influential when it comes to learning about pottery individually and or as a sample. Looking at small and specific details on the sherds helps to gather information about more than just the individual the sherd. The evolvement of style, form and function gives insights into the people who were making and using these pots. One statistical feature of this project is that there is not a comparative sample, so the ceramics can only be compared to themselves. This could have been a problem, but it was advised to keep the statistics as basic as possible. This kept the project easy to understand and most consisted of basic counts.

The chosen data set ended up inside a large data matrix inside of an Excel spreadsheet. This matrix evolved from the analysis of the ceramic sherds and contained both nominal and interval data. As stated above, these were placed in vertical columns at the top of the spreadsheet; sherd number, unit number, level, north or south, east or west half of 1x2 meter unit, date excavated, person dug by, rim or body sherd, rim diameter,
collar, shape or flared, collar or rim thickness, rim or collar decoration on top of sherd, rim or collar decoration on outside of sherd, rim or collar decoration on inside of sherd, wall thickness, color outside, color inside, types of decoration, spacing of decoration, space between decoration lines, length of decorated lines, decoration outside, decoration inside, burning or fire clouding marks, Ritchie and MacNeish Pre-Iroquoian typology, MacNeish Iroquoian typology, photo number and other information and notes. A second excel chart was made with units, levels, zones rims, diagnostic sherds, diagnostic totals, undiagnostic counts and undiagnostic weights. Some of these fields did not end up being useful in the final analysis, but were gathered under the assumption that it is better to have too much data instead of too little data.

Bar charts were made with counts gathered from the different attributes analyzed. Much of the data gathered was considered nominal data. It was simple to make bar charts out of the different attributes from the nominal data (such as color counts, rim or no rim etc), but in order to do more elaborate statistics on this data, numbers were assigned to the nominal data.

A few unpaired t-test’s were performed to compare different sherd attributes. An alpha of .05 was used. The first unpaired t-test was comparing rim sizes from Levanna sherds typed inside of the “Owasco” series and Levanna sherds typed inside of the Point Peninsula series in order to determine there was a significant difference between the two series in construction style. When this was done there was no significant difference between the Owasco series sherds and the Point Peninsula series sherds inside of the Levanna sample the t=1.22 and the critical value= 2.05. Anthropologically speaking this
means the pots rims were close to the same thickness, and possibly were constructed by the same people and being used for the similar types of functions.

Another set of unpaired t-tests were performed to further analyze decoration and compare detailed attributes of the sherds. I compared the rim sizes of vessels decorated with solely dentate decorations and the rim sizes of dentate decorated over cordmarked sherds. There was no significant difference between the rim size of the dentate decorated ceramics and the dentate cordmarked ceramics from the site of Levanna as the $t = -0.554$ and the critical value= 2.048. Anthropologically speaking there seems to be no significant difference between the two which means the pots rims were close to the same thickness. This also could support the theory that Carpenter Brook Cord on Cord should not have been its own type. This is statistic is reasoning for not separating the dentate and the dentate cord into different types, but instead consolidating them as was done inside the Levanna sample (n=150).

I then re-ran the dentate to dentate cord unpaired t-test with an alpha of .01 to see if there was a highly significant difference. The $t$ is still much smaller than the critical value. Anthropologically speaking there seems to be no highly significant difference between the rim size of the dentate decorated ceramics and the dentate cordmarked ceramics from the site of Levanna. This means the pots rims were close to the same thickness. Again, this also could mean that Carpenter Brook Cord on Cord should not have been its own type. This is statistic is reasoning for not separating the dentate and the dentate cord into different types, but instead consolidating them together. This could also say that the different decoration styles, the cordmarked dentate which was more popular.
in Point Peninsula ceramics and the solely dentate decorated sherds which were more common in later Owasco ceramics were similarly produced and, likely made for the same functions (cooking) and could even have been made in the same batch by the same person or people in the same family. This helps to support the argument that these different types and decoration styles were merged and though have different designs, are similar in many other ways. This also can be seen as an indicator of support that the people who made these pots were matrilocal.

Theory

There has been an evolution of archaeological ceramic theory throughout the years. The original ceramic theory used by W. A. Ritchie and Scotty MacNeish was based on the direct historical approach. In 1946, MacNeish was asked by James B. Griffen to take a yearlong research fellowship at the University of Michigan to solve the problem of the origin of the Iroquois while he was a graduate student at the University of Chicago. MacNeish partnered with William A. Ritchie to analyze the ceramics from New York State’s prehistory. Together they used the direct historical approach which had been “first deliberately used in the Southwest about 1915 by Nelson, Kidder, Speir and Kroeber and in New York State by Parker and Harrington about the same time” (Steward 1942: 337). The direct historical approach begins by developing a hypothesis and then setting out to support (or contradict) the hypothesis with the cataloguing and description of artifacts.
MacNeish and Ritchie formulated their 1949 ceramic typology using the direct historical approach to try and support the hypotheses of the Iroquois migrating into New York State and displacing the Algonkian people. After the development of the typology and the analysis of the ceramics, they ended up ultimately disagreeing with the migration hypothesis. This was unusual for the time as many of the proponents of the direct historical approach would later be accused of skewing data by trying to support the original hypothesis they had developed. It is commendable that Ritchie and MacNeish chose to discount previously published works, including works written by Ritchie himself such as his article on the Levanna site (Ritchie 1928) and instead support the in situ theory of Iroquois development. They note that Point Peninsula, Owasco and Iroquois ceramic types were most likely related to and built upon each other instead of each being completely separate entities (Ritchie and MacNeish 1949: 119). There was no clean break in the ceramic styles to suggest in-migration. This groundbreaking typology study brought the previously less popular in situ theory of Iroquoian development to the forefront of the New York State archaeological theory.

Cultural Ecology

The in situ theory also fit with the trending theories of Leslie White and Julian Steward and other advocates (White 1943, Steward 2008) of the theories of cultural historical archaeology and cultural evolutionism that were fashionable during the late 1940’s. In 1955, the theory of cultural ecology was established by Julian Steward. He brought to light the idea that the adaptation and progression of culture is tied to changes
in the natural environment (Steward 1955). Steward believed that the development, structure and changes in the social organization of cultures could be explained by the influence of environmental factors. This theory became popular in the 1950’s and the 1960’s. Julian Steward was a student of the Boasian line of anthropologists (Erickson and Murphy 2003: 119). He studied at the University of California, Berkeley where he was taught by Boas’s students Alfred Kroeber and Robert Lowie. Richard S. MacNeish was heavily influenced by Steward and his theories.

Steward taught at Columbia University, University of Illinois and at the University of Michigan, where the anthropologist Leslie White developed the theory of cultural evolutionism (White 1943). Though Steward was, in a way, also a cultural evolutionist, he argued that his theory of cultural ecology is different from White’s cultural evolution theory because cultural ecology is multilinear. Steward believed that cultures did not follow a set series of stages as in the unilineal or universal theory of cultural evolution. Steward described cultural ecology to be multilinear because he believed the environment and natural world can make a culture adapt in different directions, as opposed to the theory of cultural evolutionism which has a set path of evolution for culture. Steward deemed cultural ecology to be a science of particulars as opposed to Whites theory, which he described as all encompassing.

The debate between White and Steward continued until the 1960’s, when the University of Michigan anthropologists Marshall Sahlins and Elman Service tied White’s evolutionary theory and Steward’s ecology theory together and deemed them complimentary not antagonistic (Sahlins and Service 1960). The new combination of
cultural ecology and cultural evolutionism gave a strong background for the “new” archaeologists such as Lewis Binford (White 1943, Steward 1955, Binford 1965). The intertwined theories of Steward and White influenced Binford’s theories of processual archaeology. Binford agreed that cultures do adapt to changes in the natural environment along with adapting to changes that occur in surrounding cultures (Erickson and Murphy 2003: 122).

MacNeish and Ritchie grew into processual archaeologists in the sense that they had embraced the migration theory at first and were led to a different hypothesis later. Processual archaeologists like Lewis Binford believed that archaeology should be conducted with multiple hypotheses, with one eventually supported by the evidence collected at archaeological sites. Binford continued to evolve and published Robert J. Whallon’s article on pre-Iroquoian ceramics in 1968. This article is an example of the context of New Archaeology or the post processual archaeological theory prevalent in New York State at the time (Whallon 1968). Inside of it, Whallon uses Deetz’s Arikara ceramic study as a stepping stone built off of, and to further analyze, the pre-Iroquoan ceramics found in New York State (Whallon 1968, Deetz 1965).

These theories are what shaped the typologies and the anthropologists that made the typologies. There is a direct link between these theories, the typology made by Ritchie and MacNeish (1949) and, therefore, this project. These anthropological theories helped to shape the ceramic typologies (Ritchie and MacNeish 1949) and the migration versus in situ debate. Both the typology and the migration versus in situ debate are
important aspects to this ceramic study, and it is imperative to understand why they were formed and developed in the first place.

**Synchronicity and Scale**

Levanna is a single component site which gives a virtual slice of time. It is a short term occupied site. The radiocarbon dates suggest an occupation in the 900’s A.D. and it is reasonable to suggest that the site was occupied for 30 consecutive years or less. The pottery that was excavated is from a proto-longhouse shows that it was occupied for a much shorter time span. The number of burials that were excavated on previous excavations came to twenty eight burials and with an average of one death per year at a small site like this, it was likely inhabited for approximately thirty years or less (personal communication, Rossen 2014). Both the small number of burials found in previous excavations and the distinct stratigraphy in the recent excavations shows there were not hundreds of years of occupation happening at Levanna, but instead the site was occupied for a short time.

Instead of looking at the Levanna site’s ceramics and comparing them to and with other ceramics from sites in the Finger Lakes area of New York, the Levanna ceramics were looked at synchronically. It is virtually a small study, a frozen slice of time. Because the site was so briefly occupied, the study of the ceramics is different from that of most other archaeological ceramic studies. This is a fine-grained site, and the ceramic assemblage inside of the proto-longhouse is an example of its short term intensive occupation (Binford 1980). The pottery excavated recently at Levanna signifies a narrow
time period. The diagnostic ceramics analyzed come from a specific location within the narrow strata and a fine grained feature of the Levanna site. The proto-longhouse is a singular feature, with no overlapping features or contention over its tight, narrow and intact stratigraphy. This means all of the pottery sherds are contemporary, used by the same people within a short amount of time.

It is important to note the scale of the research completed at the Levanna site. This research was done on a microscale level as it looked in depth at the diagnostic sherds from two levels of the excavation out of the specific living area at the site, “scale can range from as short as a single event to as long as the entire breadth of prehistory” (Knapp and Miroff 2009: xvii). Using a microscale approach to study aspects of an archaeological site can help an archaeologist to understand the artifacts and therefore the inhabitants of the site, on a different and more intensive level.

One of the main questions that was attempted to be answered for this project is how many types and variations of pottery were found from one specific point in time from one specific home, likely from one specific family unit. The most similar study to this would be Hart and Engelbrecht’s (2012) longitudinal study which was diachronic. Hart used 116 archaeological sites ranging in dates from AD 1350-1650 to come to his conclusion that the traditional linear development of the Point Peninsula to Owasco to Iroquois was not true. Instead of the traditional linear development common in Iroquois development archaeology, Hart developed the rhizotic model of development which points at a more diverse origin of the Haudenosaunee (Hart and Englebrecht 2012). Hart and Englebrecht believe the rhizotic model fits versus the popular linear development or
cladistic model of development that MacNeish was a proponent of. Hart does concede that ceramic styles last longer than expected and overlap more than was previously believed (Hart and Brumbach 2012). This corroborates with the results of this study, though Hart and Englebrecht complicate and conceal the overlapping and extension of types and ceramic styles with the rhizotic model.

The overlap and concession that ceramic styles last longer than what was once thought (Hart and Brumbach 2012) helps to support the in situ theory instead of rhizotic model or the migration theory. This corroborates the idea that the ceramics in the study could have been made by a matrilocal society as styles and types can last longer than the typology suggests, and therefore, could support the in situ theory.

**Ceramic Analysis**

Ritchie and MacNeish divided ceramics into two series. They list a total of sixteen types in the Owasco series of pottery which are supposed to range from 900-1300 A.D. and fifteen types in the Point Peninsula series AD300-700 or 900. The Levanna site is listed as falling squarely inside of the Owasco series by Ritchie and MacNeish. That stated there should be sixteen choices of Owasco pottery types to place the sherds found at Levanna. The sixteen types of pottery describe in the Owasco series are Wickham Corded Punctate, *Carpenter Brook Cord on Cord*, *Levanna Corded Collar*, *Canandaigua Plain*, *Levanna Cord on Cord*, Castle Creek Punctate, *Owasco Herringbone*, *Owasco Platted*, *Owasco Corded Horizontal*, *Owasco Corded Oblique*, *Owasco Corded Collar*, *Castle Creek Beaded*, *Castle Creek Incised Neck*,
**Bainbridge Collared Incised**, Bainbridge Linear, and Bainbridge Notched Lip. Out of the sixteen Owasco series types, eleven were used to describe sherds found inside of the Levanna sample (in bold). The five which were not found in the diagnostic sample were Wickham Corded Punctate, Castle Creek Punctate, Owasco Corded Oblique, Bainbridge Linear and Bainbridge Notched Lip.

As the carbon dates from Levanna are within what Ritchie and MacNeish call the Owasco series, there should be little or no Point Peninsula series pottery found at the site. The fifteen types listed by Ritchie and MacNeish are Vinette I, **Vinette Dentate**, **Vinette Complex Dentate**, Point Peninsula Corded, **Point Peninsula Rocker Stamped**, Point Peninsula Plain, **St. Lawrence Pseudo Scallop Shell**, Wickham Incised, Wickham Corded, Wickham Punctate, Kipp Island Crisscross, **Jack’s Reef Dentate Collar**, Jack’s Reef Corded, **Jack’s Reef Corded Collar**, Jack’s Reef Punctate. As eight of these types were listed in the Levanna diagnostic sample (in bold), it provides many arguments ranging from the continuation that Ritchie and MacNeish do note, to the idea that the sorting and classification used to make this typological study was flawed. This exemplifies that the typological study of Ritchie and MacNeish was too strict in its temporal boundaries, and more work needs to be done to expand upon their typology. Hart and Englebrecht agree the typology is not succinct, but instead of revising or expanding the existing typology, they developed an entire new, and possibly out of context, theory (braided stream) (Hart and Englebrecht 2012).

Though discussed for decades in the academic community, the idea of what a type is and how a type was deciphered became a popular topic of conversation with
archaeologists in the late 1920’s and early 1930’s. The 1927 Pecos conference, in Pecos, New Mexico, addressed this subject and came to the conclusion that a type is “the totality of characteristics which make a given ceramic group different from all others” (Rice 1987: 282). After this description was established, the debate continued throughout the 1940’s and 1950’s. Though it was agreed that types have intrinsic values which are able to be organized, the question was asked whether the artifact makers themselves had mental templates of types, or if types were a construct of the archaeologist (Spaulding 1954, Ford 1953).

Pre-Iroquoian pottery had not been successfully classified or sorted and therefore not typed before Ritchie and MacNeish assigned values to them in 1949. According to Adams and Adams

“typologies, unlike many other classifications are always made for some purpose of the classifier that dictates the choice of variables and attributes that are to be considered in the typology, and that choice in turn determines the nature of the types that result”(Adams and Adams 1991:48).

Ritchie and MacNeish were part of the classificatory period that occurred in archaeology from the 1920’s through the 1950’s. Though Adams and Adams admit this was a much needed era in archaeology and contextualized the large amount of archaeological data that had been gathered over the years (Adams and Adams 1991:267), they also admit the classificatory period was flawed noting “that classification is arbitrary” (Adams and Adams 1991:273).

Another pertinent issue Adams and Adams discuss is the concept of splitters and lumpers (Adams and Adams 1991: 280). Typologists are often typed themselves into one of two different groups, lumpers or splitters. Ritchie and MacNeish’s 1942 typology
exemplify what a can happen when classifying types. Lumpers tend to see similarities while splitters tend towards complexity and emphasizing differences. The similarities and differences between types in the pre-Iroquois typology are vague and Ritchie and MacNeish used splitting to decipher between sherds that could be comparable or related instead of grouping sherds together. Splitting tends to help the typologists to fit sherds into modern constructs. Consolidating types can also have negative connotations, but it seems to give more power to the actual ceramics. It can allow the sherds to speak for themselves by expanding on the similarities between them instead of focusing on the differences.

A good example of how Ritchie and MacNeish could be seen as splitters instead of combiners would be the typing of Carpenter Brook Cord on Cord inside the Owasco Series of pottery. The Carpenter Brook Cord on Cord type basically combines any of the following three design elements of Owasco Corded Oblique, Owasco Herringbone and Owasco Platted imposed over cordmarking. Ritchie and MacNeish also had a hard time with this type and “Attempts were made to subdivide this type on the basis of design without success, for trends appeared to be the same for each variant” (Ritchie and MacNeish 1949: 108) A decision was made to take use the typology of Owasco Corded Oblique, Owasco Herringbone and Owasco Platted as opposed to Carpenter Brook Cord on Cord because the size of the sample sherds inside of the Levanna sample are so small. In many cases it was impossible to tell if the design had been imparted over a cordmarked pot or a smoothed one because of the small size of the sherds. As cordmarking was so common on almost every pot, and not considered in this sample to be diagnostic, it made
sense to divide based solely on the highly diagnostic designs present and not to further subdivide based upon cordmarking.

Some sherds were obviously smoothed and not cordmarked, and this contradicts Ritchie and MacNeish’s typology, as they note all Levanna sherds were cordmarked (Ritchie and MacNeish 1949:120). This is unusual in the short time span the site was occupied should show sherds that are all very similar and not diverse; unless there was a melding of types and a linear progression this would not be seen at a “tight” or short term occupied site.

**Matrilocality and the Haudenosaunee**

Traditionally Haudenosaunee women take care of the crops while the men hunt and fish to add to the diet of “three sisters” (maize, beans and squash) (Bruhns 2007). The sexual division of labor present in the Haudenosaunee society could have helped the development of the traditional matrilocality that is still evident today in the Haudenosaunee culture. In matrilocal societies, men marry into, join and even live with the woman’s family. This is in contrast to patrilocal societies, where women marry into the men’s families, and join into the household of the husband’s mother and father. The Haudenosaunee are also matrilin as opposed to patrilineal. Bloodlines are passed through the mother, and the children belong to the clan and nation of the mother, not the father.

There are many theories about the development of this type of society, which is unrelated to the patrilocal Algonquian societies living in the area previous to the
emergence of the Owasco. The division of labor that occurred with the introduction of agriculture is thought by many to have jump started the development of matrilocality. Women were living in villages farming while men were off hunting and fishing, making the women the central people in each village. The men would have married into the static households as opposed to women moving into the always changing temporary men’s hunting and fishing camps (Hart 2001). The ceramics in this sample support the theory that they were made by people in a close-knit family group. They are very similar to the types made in the Middle Woodland/Point Peninsula time periods and similar to vessels made by the Haudenosaunee. Instead of supporting the in migration theory and showing a very significant difference in the sherds being made by separate cultures, they exemplify a linear progression and a melding of types from the past and the future. This could be explained by the in situ theory and that they were being made by a matrilocal group.

Many archaeologists believe that warfare was a reason behind the development or implementation of matrilocality inside of a culture (Snow 1995, Bruhns 2007). Warfare keeps men away from home and matrilocality can be an indicator of powerful women. Though the Haudenosaunee are matrilineal, matrilocal and have a political system that is in a way ruled by women, their society is not matriarchal. The men are in fact the sachems (chiefs) and heads of the Six Nations, but it is the women delegates who choose which men will be placed in charge. The women also have a right to “dehorn” or take away the power of a sachem (Bruhns 2007). Women are in fact much more powerful than it would seem from an outside perspective in Haudenosaunee society. There are different theoretical constructs that can be used to interpret the data set of ceramics. These
constructs relate to testing ideas with regard to matrilocality. A number of previous archaeologists have looked at material remains as a way of studying matrilocality. James Deetz reported on his study of a ceramic data set in regard to matrilocality (Deetz 1965). Though he used a completely different type of ceramics and a different region and culture, he made headway in linking relationships between ceramics and matrilocal society. Deetz’s inferred that matrilocal groups would have less stylistic variability and their ceramics would be more similar throughout generations as ceramic styles would be passed unaltered down through static lines of the women in the families. Patrilocal groups on the other hand would have more stylistic changes as women moved into other families when they married and learned new ceramic techniques (Deetz 1965).

Though there are a wider variety of ceramic types seen at Levanna than were expected, these types all fall within the pre-Iroquoian typology or are mixtures of the pre-Iroquoian types. They show a continuous and linear mode of development though styles and technologies may overlap. These ceramics are all similar as they grow from each other, and though different, are still so similar that they do not show a complete technology change or have intense changes in technology or style. They have gradual changes in technology and style, which supports the familial and learned change that would happen over generations of the same family, instead of the drastic change that would happen when women moved households in a patrilocal society.

There was also another study done by archaeologist Robert Whallon Jr. of New York State’s Iroquois/pre-Iroquois ceramics and their relation to matrilocality (Whallon 1968). This study was quite similar to Deetz’s, though was comparing ceramics from
many different sites instead of one in-depth study of a specific site like Arikara. Deetz and Whallon charted stylistic variability, or lack of stylistic variability, in the ceramics by using statistics, charts and graphs. As stated earlier, the introduction and intensification of agriculture has long been thought be a factor in the development of matrilocal societies. A recent article even traced this evidence through isotopes inside of teeth in Thailand’s Neolithic population (Bentley, et al. 2005). This study implies that matrilocality was present because of the local and sustained diet of the women whereas immigrant men had a more diverse diet (Bentley, et al. 2005:1). Other studies of matrilocality have been done by analyzing other artifacts, structures and space, including some studies involving the Haudenosaunee. Mimi Kapches 2007 article on the Iroquoian longhouse (Kapches 2007) examined the relationship of space to matrilocality, and gave conclusive evidence that longhouses are important aspects of Haudenosaunee matrilocal society. The house found at Levanna is close to the shape of a longhouse, though it is slightly shorter, and has been deemed a proto-longhouse.

Lewis Binford’s paradigm of processual archaeology is important in order to understand the relationships of the above stated, related studies to my personal project and to understanding the ceramics and the features at the Levanna site. Future work comparing the ceramics at the Levanna site to other Haudenosaunee sites and typologies would allow me to categorize, and possibly see evidence of matrilocality through stylistic comparisons, variability and similarity (Binford 1967).

The site of Levanna might be the missing link dating the Haudenosaunee people back to the early 10th century. Since there have been no archaeological excavations in the
area in over fifty years (Rossen personal communication 2008), there could be important evidence that was overlooked when these early excavations were excavated. This site could have many positive repercussions for the local Cayuga people and could affect the archaeological record and timeline for New York State.
CHAPTER FIVE: ANALYSIS

The Diagnostic Levanna Sherds

After analyzing the sherds in the diagnostic sample, it was realized that an in-depth description of some ceramics would provide insight into the complicated relationship between specific design attributes and the types in the 1949 typology. The ceramic types below show how difficult it can be to assign the 1949 types to sherds.

Owasco Herringbone

Owasco Herringbone is one of the most common types of diagnostic pottery here at Levanna. There were approximately thirty Owasco Herringbone sherds found in the diagnostic sample. The Owasco Herringbone sherds are identifiable by the decorated herringbone pattern of series of oblique/diagonal lines that alternate in direction, forming chevrons, or almost arrows of design (Figure 29).

Figure 29. Sherd 58. An Owasco Herringbone dentate rim sherd.
Sherd 125 from Unit 58, level 3 (15-20cm) is a brown body sherd designed with an Owasco Herringbone motif (Figure 30). This motif has been incised or rocker stamped into the leather hard clay before the pot was fired. Rocker stamping is said to be an indicator of earlier times by Ritchie and MacNeish, and this is a good example of the melding of the Owasco Herringbone type and of a rocker stamped decoration being used after the Point Peninsula time period. A closer look shows the design was likely stamped with a small, slightly curved implement and the design was repeated with the same implement in rows. Directly above the herringbone motif, at least two rows of horizontal cord marking are impressed on the vessel. The surface of the pot has been smoothed with absolutely no suggestion of a cordmarked body. In fact, it is so smooth it is almost at a burnished or polished state.

Sherd 145 from Unit 63 from Level 2 (10-15cm) is a brown Owasco Herringbone rim sherd (see Figures 31-32 below). This sherd has been incised with an Owasco Herringbone motif. The clay on the outside of this vessel is not extremely smooth. The roughness of this pot is possibly from being shaped with a cord wrapped paddle during the paddle and anvil technique of thinning the vessel and then being subsequently slightly smoothed over. The cordmarking does not distinctly show through behind the incising. It possibly has been slightly smoothed over after forming to give a better surface for the design, or it could have been just a non-cordmarked, yet unsmoothed, vessel. The oblique incised marks were made with a very small, sharp and thin implement; possibly a small stick or bone. These marks are located on both the top of the rim, the exterior and the interior of the sherd.
Figure 30. Sherd 125. Rocker stamped smoothed Owasco Herringbone sherd.

Figure 31. Sherd 145. Inside of sherd 145 showing the paste, temper and incised design.
Vinette Dentate

Sherd 5 from Unit 12 Level 2 (10-15cm), Sherd 28 and Sherd 35 from Unit 24 Level 3 (15-20cm), Sherd 39 from Unit 25 Level 2, Sherd 49 from Unit 29 Level 2, Sherd 61 from Unit 29 Level 3, Sherd 76 from Unit 45 Level 2, Sherd 138 from Unit 60 Level 2 are eight sherd (5, 28, 35, 39, 49, 61, 76 and 138) that are similar (Figure 32). They could have originated from one specific vessel or they could be from multiple vessels that had been made with the same clay, decorated with the same implement and fired in the same batch of pottery. These sherds were found scattered throughout seven separate 1x2m units at the site, but all seven units were within the sample (n=150) and inside the walls of the proto-longhouse. These sherds are a good example of the Vinette Dentate type which was commonly found in the diagnostic sample, though not supposed to commonly occur outside of Early Woodland and the Point Peninsula series. The coloring of these sherds is a bright orange/red suggesting they were fired in a highly oxidized environment. There is no evidence of fire clouding or scorch marking.

There is not much of a collar on this vessel, yet the rims in this collection have two different types of castellations and some different aspects. One of the rim sherds (sherd 28) has an identifiable small square castellation (Figure 20), while another rim is scalloped in a rounded fashion (Figure 21). The diameters are unknown and it is possible that at least some of the sherds are from a square vessel. Two rims measure 7.1 mm, one 6.4 mm and the scalloped rim 5.9 mm. It is possible there were both scalloped and square castellations on the pot, or that these are from two different vessels.
These sherds are all decorated with oblique dentate punctuate or cord wrapped stick (cws) impressions. These could have been made with a specific cord wrapped stick, with some kind of dentate comb implement or possibly even a roulette. For a Vinette Dentate pot, these impressions are large and distinct. It can be seen that the same implement was used to mark some of these sherds as all eight pieces have the same or similar markings. The wall thickness of the pot varies from 5.5-7.5mm.

Figure 32. Sherds 5, 28, 35, 39, 49, 61, 76 & 138. Vinette Dentate sherds.

Sherd 78 from Unit 45 level 2 (10-15cm) is a broken and glued red colored Vinette Dentate body sherd (Figure 33). This body sherd is likely from a storage vessel since its body thickness is 10.8mm, making it one of the thickest sherds in the diagnostic sample. It is evident from this sherd that the same exact piece of cord, cws or roulette was used to make the horizontal lines. Each line has exactly the same details as the line above and below it. This sherd also looks to be intentionally smoothed and does not have any evidence of subsequent cordmarking beneath the decoration.
Figure 33. Sherd 78. A Vinette Dentate body sherd.

Levanna Cord on Cord

Sherd 59 from Unit 29 Level 3 (10-15cm) is a thick rough rim sherd (Figure 34). It is cordmarked over the entire sherd including the top of the rim. Imparted on top of this cordmarking is a medially encircling cord mark. These marks on the top of the rim/lip are the identifying features. These marks could place this particular sherd inside several different types including Owasco Herringbone and Levanna Cord on Cord. The cordmarking and lack of herringbone design below the rim suggests a Levanna Cord on Cord vessel instead of the Owasco Herringbone, though it technically does not fit as a Levanna Cord on Cord because it is the wrong color.

Instead of noting the small differences in these types of sherds, I think it is important to note the similarity of the medially encircling cord mark placed immediately down the center of the top of the rim.
Jack’s Reef Corded Collar

Sherd 98 is from Unit 51 Level 2 (10-15cm). This rim sherd has an extra large lip made with an application of a fillet of clay on the top of the vessel (Figures 35-36). The rim has been designed with oblique dentate markings on both the top of the lip and inside the vessel. The outside of the vessel is cordmarked underneath the protruding lip.

All signs point to this sherd being an almost perfect example of the Jack’s Reef Corded Collar type. This type is from the Point Peninsula series, which places it earlier than the Owasco series of pottery in Ritchie and MacNeish’s 1949 typology.
**Castle Creek Beaded**

Sherd 104 was found in Unit 58 Level 2 (10-15cm), Sherd 107 found in Unit 58 Level 2 (10-15cm), and Sherd 130 was found in Unit 60 Level 2 (10-15cm). The top of
the rims/lips on sherds 104, 107 and on Sherd 130 are different than most. They have two
distinct levels of rim/lip (Figures 37-40). The closest way to type this unusual rim shape
is to integrate it with the Castle Creek Beaded type from Ritchie and MacNeish’s Owasco
series. Castle Creek Beaded is noted by Ritchie and MacNeish to have a rim with “a
small bead or ridge below it” (1949:114). This could be one way to describe the rim
shape of sherds #104 and 130. The Castle Creek Beaded is a different type or shape of
rim than the other Owasco series pots, as are the two above mentioned rim sherds from
the vessels in this assemblage. Though these rims could be described in different terms
than the Castle Creek Beaded, this type is the closest fit to the Ritchie and MacNeish
typology.

Ritchie and MacNeish make note that the Castle Creek Beaded type possibly
developed from the Owasco Oblique type and there may be a linear connection from
Wickham types to Castle Creek types, instead of Wickham types to Levanna types. In
fact, these sherds seem to look like either a devolved or an evolved Levanna type. The
shoulder on the rim of these sherds is reminiscent of the medially encircling cord-mark or
incised mark along the top of the lip/rim which is common on Levanna Cord on Cord and
Owasco Herringbone types. It is unknown if this beaded or shouldered type of rim
decoration wrapped around the entire rim of the vessel or if it was in fact only present on
a portion of the pot.
Figure 37 and Figure 38. Sherd 104. Castle Creek Beaded rim sherd.

Figure 39. Sherd 107. Castle Creek Beaded Rim Sherd.
Point Peninsula Rocker or St. Lawrence Pseudo Scallop Shell

Sherd 115 from Unit 58 Level 2 (10-15cm) is a gray body sherd with an unusual type of decoration (Figure 41). The impressions in the pre-fired clay were made with a scalloped implement, possibly a shell. This was overlaid onto a partially smoothed, but still cordmarked, surface. The shell itself could have been turtle or the design could have been imparted with the notched edge of a paddle which Ritchie and MacNeish note in their description of Point Peninsula Rocker Stamped type (1949: 102). This sherd has fractured through the center and the inside is not attached, so it is unknown if the inside was decorated or blackened/channeled as Ritchie and MacNeish note was common (1949:102) The outside design was made with a shell or implement pressed into the clay and then rocked or impressed to form a design different from the usual dentate and cordmarked designs. It then looks as though the implement was turned over and the
stamping was repeated to form the same design in another direction. Though the secondary design cannot be seen in entirety, the pattern was imparted to look similar to a herringbone design, with one oblique pattern above another oblique pattern. The color of the sherd does not match with Ritchie and MacNeish’s descriptions of a Point Peninsula Rocker Stamped sherd along with the fact that the sherd is not covered in “an all-over pattern” (1949: 103) and is not the usual cws or dentate design of a Point Peninsula Rocker Stamp. It could be a St. Lawrence Pseudo Scallop Shell or related to one, as it is scalloped and the impression was made with a shell like tool. This design is also in alternating oblique stamps, like an Owasco Herringbone pattern.

Figure 41. Sherd 115. Likely shell stamped body sherd.

Unknown or Sherds with New Attributes

Sherd 111 from Unit 58 Level 2 (10-15cm) is the most unusual sherd in this diagnostic collection (Figures 42-43). In fact, if any of the sherds were imported from
outside the local area than this would be the likely candidate. It is dark brown, almost black. It likely came from a different clay source than other Levanna sherds and was fired in a less oxygen rich atmosphere, with higher reducing conditions, changing the color of the pot to become dark. The clay itself is high quality with little to no temper visible. Another unusual aspect to this sherd is how smooth it is. Though the sherd is small and no burnishing marks are visible, it has definitive finishing techniques performed upon it. Likely it was burnished, lightly glossed or smoothed while still wet or in a leather state. The lip of the pot has been added and folded outward. The protruding lip is thin and sharp, not at all rounded. This rim and lip is extremely different from the rest of the Levanna sherds rims or lips. The top of the rim was smoothed to be flat and then was medially cord impressed. This cord mark is lightly impressed and does not run through the center of the rim, but was placed towards the inside of the vessel. The walls are both decorated with punctate, dentate, dentate cord, cordmarking and plain. It is too small to ascertain the complete decorations, but the time taken with this vessel and the differences in it versus the other Levanna sherds make it obvious it was special in some way.

Figure 42 and Figure 43. Sherd 111. Unusual construction and type, possibly a sherd from a traded or imported vessel.
Sherd 117 is also from Unit 58 Level 2 (10-15cm). It is unusual and the decoration type was not noted in Ritchie and MacNeish’s typology (Figure 44). This decorated sherd was double marked horizontally and then vertically, giving the illusion of a decorative plaid. This decoration could have been made in different ways, possibly by fabric impressing or by intricately weaving cord around a paddle or stick. A piece of fabric could have been wrapped around the paddle. It also is reminiscent of a basket impressed sherd, which is unusual and unmentioned in Central New York archaeological history, but common in other areas of the United States. Since this is a body sherd, no type can be given but the decorative design is noteworthy.

Figure 44. Sherd 117. Body sherd with an unusual plaid decoration.

Sherd 19 from Unit 12 Level 3 (15-20cm) is a buff rim sherd and sherd 146 from Unit number 63 Level 3 (15-20cm) is a brown rim sherd (Figures 45-46). The design impressed on both is stamped obliquely and in the shape of a barbell with two small circles connected by a line. It is unknown what implement was used to make this design. There are no descriptions or photos any sort of similar pattern in Ritchie and MacNeish’s
typology or in any of the traditional readings on pre-Iroquois ceramics. The barbell impression could be seen as a simplified, more refined dentate stamp with only the two ends of a maggot mark and a straight line between them.

Figure 45. Sherd 19. Figure 46. Sherd 146. Two sherds with a “barbell” design impression.

Sherds Crossing Established Types

Sherd 3 is from Unit 12 Level 2 (10-15cm). It is a brown rim sherd too small for a rim diameter (Figure 47). The rim is rounded and flared with an 8.0mm thickness. The rim has a medially encircling cord mark through the center of the top of the rim, like a Levanna Cord on Cord pot. It is decorated with a diagonal dentate herringbone design on both the inside and the outside and typed as Owasco Herringbone. The wall thickness was measured at 9.0mm. There is 2.2 mm of spacing between the dentate lines with an unknown length of design due to the size of the sherd. The inside surface of the sherd is blackened, possibly from its use as a cooking vessel. This sherd has aspects of both an Owasco Herringbone and a Levanna Cord on Cord pot with the medially encircling cord mark/incising or cleft along the top of the lip. This could point to the melding of types, or that types should not have been so split so drastically. This refers to the propensity of
Ritchie and MacNeish to be splitters when it came to writing the 1942 typology. The cleft or medially encircling cord mark on the top of the lip of this pot is deep and was pressed into the wet clay using a significant amount of force, to not only impart a design, but also to make almost a double rim/lip on the pot like a Castle Creek Beaded type.

Figure 47. Sherd 3. Outside and top of the rim of an Owasco Herringbone with Castle Creek Beaded like rim.

Owasco Herringbone/Carpenter Brook Cord on Cord

Sherd 128 from Unit 60 Level 2 (10-15cm) is formed from two sherds which have been refitted (Figure 48). This sherd is a reddish brown body sherd and has the distinct dentate Owasco Herringbone motif present on so many Owasco era sherds. It was made with the same dentate tool repeatedly pressed into the vessel. The surface of this pot was cordmarked, smoothed over and then impressed with the dentate stamping. As this design was placed previous to cordmarking, it would be typed as either a Carpenter Brook Cord on Cord, in Ritchie and MacNeish’s opinion, or as an Owasco Herringbone with
cordmarking on the body. Ritchie and MacNeish likely would have cataloged this sherd as Carpenter Brook Cord on Cord, and then sub-cataloged it as an Owasco Herringbone. It was decided to catalogue it based on the actual diagnostic herringbone dentate design placed on the vessel, and not because the dentate stamping was placed on top of an unsmoothed or cordmarked vessel (Appendix B). This same designation can be given for Sherd 88 and for sherd 110 (Figure 49 and Figure 23). On sherd 88 the cordmarking reaches all of the way to the rim of the vessel.

Figure 48. Sherd 128. Owasco Herringbone or Carpenter Brook Cord on Cord.

Figure 49. Sherd 88. Owasco Herringbone or Carpenter Brook Cord on Cord.
Levanna Corded Collar or Jack’s Reef Corded Collar

Sherd 2 is from Unit 12 Level 2 (10-15cm). It is a black rim sherd that has been burned or fire clouded (Figure 50). This sherd did yield an approximate rim diameter. The diameter is approximately 22cm around, which puts it in range of a cooking pot. The blackening on this sherd could support this analysis. The rim is 8.0mm thick and the body wall thickness is 5.9mm, which is about average for the diagnostic sherds found. The lip of the sherd has been made by folding over excess clay at the top of the rim.

It has been typed as either a Levanna Corded Collar or a Jack’s Reef Corded Collar. There are no determining differences between these two types. Ritchie and MacNeish indicate a relationship in the strong similarities between Jack’s Reef Corded Collar and Levanna Corded Collar, or that Jack’s Reef Corded Collar is a “direct descendant” (Ritchie and MacNeish 1949: 107) of the Levanna Corded Collar (Ritchie and MacNeish 1949). This means the sherd could be catalogued either within the Point Peninsula or Owasco series. Ritchie and MacNeish seem to have only distinguished between the two based on what site and where in the temporal timeline the site was occupied.
Unknown

Sherd 18 is from Unit 12 Level 2 (10-15cm) and Sherd 109 was found in Unit 58 Level 2 (10-15cm), both are decorated rim sherds. These two sherds could be related though they are different colors (buff and brown) and were found in different units. If not physically related, they could have been made in the same likeness, or by the same artist.

Sherd 18 is small and the vessel has a strong curvature at the rim indicating a small diameter (Figures 51-52). It also is one of the thinner vessels with a rim thickness of 5.7mm and a wall/neck thickness of 5.0mm. This could have been a drinking cup, because of the 5.0-9.0cm rim diameter. This vessel is light colored with a smaller temper than found in most of the Levanna sherds. The pot has been smoothed on both the outside and inside. The outside has a short (approximately 5.6mm in length, spaced approximately 2.6mm apart) right oblique cord wrapped stick or edge of a cord wrapped
paddle band below the slightly out-flaring lip. These maggot markings are small and segmented decorations. Below the decorated band is another smoothed surface and a below that a horizontal encircling cord mark. The inside of the pot is also smoothed and has vertical cord wrapped stick or edge of cord wrapped paddle maggot markings abutting to the lip of the vessel. These are basically the same length and the same distance apart as the markings on the outside of the pot. These short vertical lines seem to be an early form of lip notching. Lip notching is common in Iroquois pottery and this could be a transitional movement into the notched lip Iroquois pottery.

Like Sherd 18, the top of the lip has been medially encircled with a cord marking the top of the rim into a cleft lip on Sherd 109 (Figures 53-54). The rim thickness is 5.5mm and the wall thickness is 5.2mm. The dentate maggot marks are slightly longer (6.4 mm in length) than Sherd 18’s and are spaced slightly wider apart (3.8mm apart). The lip of the rim has not been substantially flattened as is common in Owasco pottery, but has been left more rounded at the top, indicative of a Point Peninsula series vessel. This sherd could possibly be typed as a Levanna Cord on Cord because it has a medially encircling cord-mark throughout the top of the rim but with a significant difference.

These sherds could be many different types. There are small discrepancies that rule out specifying the exact type. The medially encircling cord-mark on the rim points to Levanna Cord on Cord. The horizontal singular cord wrapped line points to Owasco Corded Horizontal. The oblique marks point to Owasco Corded Oblique. The maggot marks could be Jack’s Reef Corded Punctate marks. The small maggot marked notches on the inside of the rim look as though it could be related to a Dutch Hollow Notched.
Iroquois type. None of these type descriptions exactly fit this small sherd, and the types span from Point Peninsula up to Iroquois. It does seem to fit solidly with Owasco type pots though.

Figures 51 and 52. Sherd 18. Decorated rim sherd.

Figure 53 and 54. Sherd 109. Decorated rim sherd.

Sherd 89 is from Unit 54, Level 3 (10-15cm). This rim sherd is gray and is slab fractured so the inside is not able to be seen (Figure 55). Since the rim was broken, accurate measurements were not able to be taken, but it is known the rim was thicker than 8.8mm. This sherd is an example of the technological advancement present inside of the Levanna sample (n=150). Sherd 89 has not been typed inside of the Point Peninsula or
the Owasco series as it employs a variety of attributes belonging to different types both inside and outside of the 1949 typology.

The rim itself is notched and the outside has an incipient collar made from oblique incised lines. The length of the oblique lines runs down approximately 1.55cm from the rim, forming a decorated collar. A singular stick or sharp object was used to individually place the lines instead of a comb (Figure 55). Oblique incising running from the rim to form or decorate a collar is a commonly used technique in Cayuga pottery and throughout the Haudenosaunee typology, “Decoration is usually by incising on the collar, though it sometimes appears on the lip” (MacNeish 1952). Sherd 89 has attributes more similar to a Haudenosaunee ceramic sherd than anything found inside of the 1949 pre-Iroquois typology. This sherd is an example of how the types are extremely diverse inside of a short time span, but also an example of the correlation between MacNeish’s 1952 Iroquois pottery typology and Ritchie and MacNeish’s 1949 pre-Iroquois pottery typology. This sherd is similar to a variety of types inside of the 1952 typology, including types in the Cayuga series.
Figure 55. Sherd 89. Outside of sherd with notched lip/rim and oblique incised lines.
CHAPTER SIX: RESULTS

The detailed attribute analysis of the Levanna ceramic sample (n=150) yielded unexpected conclusions. It was assumed the results of the 2009 ceramic analysis would fit with the Ritchie and MacNeish 1949 typology; instead it was found that the sherds do not always fit within the established types, and types temporally overlap more than the 1949 typology allowed. The Levanna site is an example of how “early” and “late” design elements occur on ceramics inside of an extremely short time period. According to Ritchie and MacNeish (1949), these ceramic styles should not be contemporary, and this means they should have occurred either before or after the occupation at Levanna. The short time period Levanna was inhabited gives a snapshot in time. Only specific types occurring during this timeframe should be found in the assemblage. Besides early and late technologies being evident in the Levanna sample, the majority of diagnostic vessels fit directly between the earliest Point Peninsular pot types and Iroquois vessels. Ritchie and MacNeish found all sherds from their sample of 253 Levanna sherds to be corded (Richie and MacNeish 1949:120). Of the 253 sherds, 192 of them were divided into eight types (Table 1 and Figure 56) (Ritchie and MacNeish 1949:118). It is unknown what the other 61 sherds were typed as, though they were likely undiagnostic corded sherds. The 2009 Levanna sample (n=150) from 2009 found evidence of a much larger variety of types. In total sixteen different types were noted, double the amount of types Ritchie and MacNeish found within of their sample (Table 2 and Figure 56). Besides sixteen
identified types, many sherds were typed as two or more types (25) or as unknown (20).

Though archaeologists are familiar with the frustration of classifying artifacts with modern descriptions of types, the sixty five year old Ritchie and MacNeish typology (1949) still is in use and is useful for classificatory purposes, but placing these 45 sherds from 2009 into specific types from the Ritchie and MacNeish typology was often difficult. Though aspects of the sherds fit with some types, these 45 sherds were more fluid and were instead individually described.

Table 2. Counts and percentages of types found in 2009 and 1949 diagnostic ceramic samples from the Levanna site.

<table>
<thead>
<tr>
<th>Ceramic Types</th>
<th>Rogers 2009 Levanna Sample</th>
<th>Type Percentage (%) Inside sample</th>
<th>Ritchie &amp; MacNeish Levanna Sample</th>
<th>Type Percentage (%) Inside R&amp;M Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owasco Herringbone</td>
<td>29</td>
<td>19.3%</td>
<td>46</td>
<td>23.9%</td>
</tr>
<tr>
<td>Carpenter Brook Cord on Cord</td>
<td>0</td>
<td>0%</td>
<td>50</td>
<td>26.04%</td>
</tr>
<tr>
<td>Levanna Cord on Cord</td>
<td>11</td>
<td>7.33%</td>
<td>56</td>
<td>29.16%</td>
</tr>
<tr>
<td>Vinette Dentate/Complex Dentate</td>
<td>29</td>
<td>19.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Two or More Types</td>
<td>25</td>
<td>16.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Unknown</td>
<td>20</td>
<td>13.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Owasco Corded Horizontal</td>
<td>6</td>
<td>4%</td>
<td>10</td>
<td>5.2%</td>
</tr>
<tr>
<td>Levanna Corded Collar</td>
<td>6</td>
<td>4%</td>
<td>8</td>
<td>4.16%</td>
</tr>
<tr>
<td>Owasco Corded Oblique</td>
<td>0</td>
<td>0%</td>
<td>12</td>
<td>6.25%</td>
</tr>
<tr>
<td>Canandaigua Plain</td>
<td>2</td>
<td>1.33%</td>
<td>4</td>
<td>1.04%</td>
</tr>
<tr>
<td>Owasco Platted</td>
<td>0</td>
<td>0%</td>
<td>6</td>
<td>3.12%</td>
</tr>
<tr>
<td>Castle Creek Incised Neck</td>
<td>5</td>
<td>3.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Owasco Corded Collar</td>
<td>4</td>
<td>2.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Castle Creek Beaded</td>
<td>4</td>
<td>2.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Jacks Reef Dentate</td>
<td>2</td>
<td>1.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Jacks Reef Dentate Collar</td>
<td>2</td>
<td>1.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Wickham Corded</td>
<td>2</td>
<td>1.33%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Point Peninsula Rocker Stamped</td>
<td>1</td>
<td>0.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Wickham Incised</td>
<td>1</td>
<td>0.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Wickham Corded Punctate</td>
<td>1</td>
<td>0.66%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Totals</td>
<td>150</td>
<td>100%</td>
<td>192</td>
<td>100%</td>
</tr>
</tbody>
</table>
Besides the sherds with aspects of more than one type, the 2009 sample found sherds from the Point Peninsula series and sherds that show significant Iroquois attributes. Rocker stamped shell vessels (see Sherd 115, Figure 35 above) occurred during Early to Late Point Peninsula time (600-900 A.D.) (Ritchie and MacNeish 1949:102, Ritchie 1969). The Rocker stamped decoration should not be evident at a site occupied around after 900 A.D. according to Ritchie and MacNeish (1949:103). Vinette Dentate should only occur during early to Middle Point Peninsula times, well before Levanna was occupied (Ritchie and MacNeish 1949:100).

Non-corded sherds were never mentioned within Ritchie and MacNeish’s 253 diagnostic rim sherd sample from Levanna (1949:120), yet there are examples of non-corded vessels at Levanna inside the 2009 sample (n=150). For example, Figures 23, 27,
46-50 are all sherds that have been decorated over a very smooth surface. These non-corded or smoothed vessels are common and much more indicative of later Haudenosaunee pottery, according to the typology, yet Ritchie and MacNeish never mention smoothed vessels. Instead they noted that all diagnostic rim sherds from Levanna were corded as a surface treatment (1949:120).

The movement towards an elongated collar began in the earliest Point Peninsula (approximately 600 AD) Vinette vessels by decorating the collar or adding extra clay to the rims of pots. These additions proceed systematically until they developed into the late Iroquois pots with large collars with castellations. Incipient collars, decorated collars or rims with additional clay added are all prevalent in the Levanna sample, exemplifying the movement from vessels with no collars to large collared pots. Some of the 2009 sample have no aspect of collars at all while others have decorated or incipient collars, some with castellations. This makes evident the large variability found inside of this synchronic sample. All of the sherds are contemporary to each other, and this is an example of a large amount of variability inside of such a short time span.

Constructing ceramic typologies is problematic as they are created by archaeologists and not the actual producers of the pottery. The typologies are devised using essentialism to define traits. One end result is that typologies become complex or simplified, i.e. the splitters or lumpers debate (Adams and Adams: 2007). The typologies are developed upon questions archaeologists are trying to answer. Ritchie and MacNeish constructed the 1949 pre-Iroquois typology to answer questions regarding the in situ versus migration debate, and believed the typology would support the migration theory.
They knew there was a technological advance from early coiled pots to the later paddle and anvil vessels, and surmised it would support the migration theory. In fact the movement from coiling to paddle and anvil does not support this. Ritchie and MacNeish’s typology (1949) demonstrates one of the classic typology problems. The 1949 typology ended up splitting vessels into smaller and smaller types instead of consolidating them together to acknowledge the developments and variations of decorations, forms, and functions within a specific type. The analysis of the assemblage supports this. Many sherds from Levanna fit inside of a specific type but almost all the sherds have are missing a certain attribute of the specific type, or share attributes with another type (see Table 1). Grouping these sherds together highlights the similarities present on these sherds instead of the small differences between them. It is up to the archaeologists to decide where lines are drawn between sherds. Too much splitting of types occurred in some aspects of the 1949 typology. An example would be Richie and MacNeish’s construction of the type of Carpenter Brook Cord on Cord, which is just a mixture of decoration styles (i.e. Owasco Herringbone) over cordmarking. This negates the design of the Owasco Herringbone itself.

The results of this 2009 ceramic sample exemplify how the basis of Ritchie and MacNeish’s 1949 typology is sound, but there are more discrepancies than have been previously noted. The typology should give types a wider berth and accept they existed through longer time spans than noted by Ritchie and MacNeish. For example, the type of Vinette Dentate/Complex Dentate should explain more about the expansion and development of types and how they are related to each other, and should show the
understanding that types were not stagnant and do occur outside of the expected time span. This Levanna study shows the reality that early types (Point Peninsula) can build upon and lead into other types (Owasco) which also are related to and have almost identical design aspects to Haudenosaunee pottery; all while occurring inside of a tight time frame.
CHAPTER SEVEN: CONCLUSION

The results of the analysis of this diagnostic sample supports two ideas, the in situ development of the Haudenosaunee and the cultural affiliation of the Haudenosaunee back in time to the 10th century. Again, not only are types similar to the early Point Peninsular pottery found inside of the Levanna ceramic sample, but there are also types highly similar to much later Haudenosaunee pottery. This can be seen as a micro-sample, a take on microscale approach, in which a small sample’s attributes are highly analyzed. This sample is unusual as it was found inside of a singular living space, a proto-longhouse which was not occupied for longer than thirty years. The sample ended up being surprising, as the array of types and styles were much more varied than would be expected from a proto-longhouse floor, located at a short term occupation site.

This sample goes on to show why the debate between in situ and migration continues, as the ceramic analysis from this study supports an in situ development of the Haudenosaunee. The short term occupation of Levanna is tied with the past and with the future through its ceramics. This supports the traditional Haudenosaunee oral traditions that state they occupied this area as early as the 10th century. The idea of cultural continuity in Central New York continues to be popular, and this study and proponents of the migration theory need to reevaluate. Not only do the Levanna ceramics show a strong similarity between themselves and the ceramics in the Iroquois typology, but based upon
the high propensity of Point Peninsular types found at Levanna, it associates the Haudenosaunee with archaeological sites even older than Levanna.

The Levanna site was occupied for a short amount of time, likely less than 30 years, and the ceramics found at this short term occupation show a much larger variability in types, styles and technology than the 1949 typology suggests (Ritchie and MacNeish 1949). This elongation of types and styles along with the combinations of decoration seen on the Levanna sherds could support the in situ theory and that these sherds were made by the Haudenosaunee, who are a matrilocal society, instead of the Algonkians, who are a patrilocal society. Though pottery types and styles can be made or designed by any culture or human (Kramer 1977), and this study and these sherds are not a one hundred percent indicator of cultural affinity, the sherd analysis does exemplify a linear and progressive cultural development instead of a drastic technological change that would be indicative of an in-migration change of culture. The linear development of the sherds are not the only aspects of support for an in situ theory of development, they are a contributing factor to other aspects of the Levanna site, including the size and shape of the living structure, the presence of ceramic smoking pipes with Haudenosaunee attributes and the oral tradition of the Haudenosaunee people. This study of ceramics from Levanna merits the re-evaluation of previous works on the site (Ritchie 1928, Follett 1957) and the possible implementation of the site as a contributing factor into the rewriting of the cultural chronology of Central New York’s prehistory.

This analysis can be used as a base for future research. The spatial analysis of the proto-longhouse and the area surrounding it has already been started. Adding location
information to the ceramics will be informative as it can give answers regarding the occupants of the home, the ceramics themselves and the post-depositional processes at work inside of the proto-longhouse. Expanding the ceramic analysis to include more units situated around and just outside of the proto-longhouse would also add not only to the ceramic sample, but to the spatial information that has begun to be gathered. Throw areas, use areas, and artifact or type concentrations would add data to the ceramic analysis. As stated, this ceramic study was completed on a microscale level, and increasing its scope could be informative.
ADDENDUM: RETHINKING LEVANNA CERAMICS

The years between 900 and 1100 AD are complex in terms of archaeological history. The early cultivation of native North American plants and the implementation of maize agricultural ended the solely hunting and gathering lifestyle for many groups across North America. The adoption of a more sedentary, agriculturally based lifestyle increased the socio-political complexity of villages which then helped to encourage trade networks, alliances, and the development of large scale ideology and ceremonial practices. These changes are visible to archaeologists inside of the archaeological record.

The Mississippian culture was one of the largest and most successful of these newly formed sedentary groups. Like the Hopewell cultures that had preceded them, the Mississippian cultures had a large range and a wide scale trade network (Pauketat 1994) which spanned much of the Midwestern and Southeastern portions of North America. During the Middle Woodland time period, the Hopewell tradition grew all around eastern North America, though the different Hopewell groups should not be treated as one cultural unit, instead as similar separate culture groups (Coon 2009:49). It is possible that one of the groups Hopewell people influenced development in the Eastern Woodlands or even migrated into Central New York during the Middle Woodland phase. Western Pennsylvania has Hopewell style burial mounds which would make this a possible situation.
The Middle Woodland period in Central New York is when a large technology change occurred in the ceramics of the area; potters went from constructing pottery by coiling clay to making ceramics with a paddle and anvil. This distinctive technology change occurred with the Eastern Woodland’s Point Peninsula (Figure 4) ceramics and this change could have been related to, or influenced by, Hopewell interactions. The migrating Hopewell people possibly were adopted or integrated into the culture of the people who already lived in Central New York during the Middle Woodland time period. This scenario of integration does fit with the common Haudenosaunee model of adopting other cultures and people into their own (Snow 1995).

The Mississippian trade network could also have reached into the Eastern Woodlands and even could have reached small sites such as Levanna, possibly spreading technology such as maize agriculture and influencing style, ceremony and political development in the Eastern Woodlands. This socially complex Mississippian society was already beginning to be formed during the time the Levanna site was occupied. This was a transitional time as it is the end of the Middle Woodland and the beginning of the Late Woodland. Besides the large scale complex cultures developing in the Midwest and Southeast, the Eastern Woodlands saw widespread implementation of predominately maize agriculture and the development sedentary villages with complex social structure and ideology (Hasenstab 2007). The highly decorated ceremonial ceramic smoking pipes found in the Levanna excavations could be representative of this.

Evidence shows the Late Woodland villages were usually relocated or abandoned after a generation or so of occupation due to soil exhaustion (Hasenstab
This model fits with the Levanna site evidence of a short, thirty year or less, site occupation. In these terms, the Levanna site exemplifies a late period Eastern Woodland village site that had agriculture and sedentary houses, both of which foster the development of a more complex socio-political atmosphere. The flotation samples from the Levanna excavations show that agriculture at Levanna consisted of at least two thirds (corn and squash) of the traditional Haudenosaunee crop of the three sisters, or corn, beans and squash (Rossen personal communication 2010), more evidence of a developing, transitioning village site.

The house shape at the Levanna site is not like the Early or Middle Woodland round or dome shaped houses present in New York State. The house at Levanna is in the shape of a proto-longhouse; instead of being round, the house is longer and rectangular with rounded corners (Rossen personal communication 2009). The house likely had doors on both ends, yet one end of the structure had been disturbed by previous excavations at the site. Sherd counts from inside of the house are larger in the center of the structure where an inside hearth would likely be located. This is where pottery would be used more often for cooking and would likely break more often. This house shape is much closer to that of the Haudenosaunee people, who were matrilocal and had an extended family living inside of a large singular house, instead of a patrilocal culture that would have small nucleated families living inside of small round houses. The longhouse is “an archaeological recognizable indicator of cultural identity, i.e. Iroquoian (Kapches 2006:174), and having a proto-longhouse at the Levanna site helps to associate the site to the modern day Haudenosaunee. No palisades were found around the proto-longhouse or
the living areas at Levanna (Rossen personal communication 2014). This could be chalked up to the socio-complexity of the village and the people living at the Levanna site. Not having palisades at an Eastern Woodland site likely means the people at Levanna were living during a time of peace. Possibly the Levanna inhabitants were positively associated with their neighbors, were related to their neighbors, or were a part of a larger, more complex and stable socio-political group like the Haudenosaunee Confederacy.

The pottery found inside of the Levanna proto-longhouse is all decorated. There was only one instance of a plain ware found in both the sample (n=150) and the non-diagnostic sherds. This high propensity for decoration should be addressed with a digression about the style of the pottery. Not only about the style of the decoration, but also about the stylistic attributes of form and function present in the ceramic assemblage. The theory of style can explain some of the aspects of the designs and the decorations. Style can be seen as being influenced by functionality and this is likely why the vessels at Levanna are globular shaped with slightly constricted necks and thicker rims. This shape is not like the pottery found in the Hopewell/Mississippian cultures, which often have flat bottoms and are sometimes slipped and painted. The shape, the stylistic variation and decoration choices of the potters at Levanna could be seen as choices, not only because the shape and decorations are functional, but possibly to differentiate their ceramics from other culture group’s pottery. The Levanna ceramics were more likely consciously designed to be similar to pottery found around the Finger Lakes, which in turn associates
the Levanna ceramics with nearby people or cultures related to them, all while differentiating them from other groups in North America.

The choices of style made by the women who constructed the pottery at the Levanna site are conscious choices. The styles and designs are extremely similar to styles and designs from across the Fingerlakes area. These styles and designs began with cord marked pots in the earliest Point Peninsular times, which is a style that lasted over 1000 years and is seen in Iroquois pottery. Though the Levanna ceramics have a much wider array of variability than was expected to be seen in a short-term occupation site, the overall technology, design attributes, and decorations found at the site are not extremely variable. We are not seeing painted pottery, ollas and plates, yet the Levanna pots have very similar design elements as Early Woodland pottery and Iroquois pottery. The Levanna sherds have decorations that range from cord marking, cord wrapped stick impressions, incising and stamping, all of which are present on the earliest pottery and on Iroquois Confederacy aged pottery.

The interesting aspects of the Levanna site ceramics is the melding of what were thought of as very specific types, sherds that have different combinations of decorations, the specific placement of these decorations, and that types last much longer than the 1949 typology suggests. This melding of designs and styles on the Levanna pottery could be seen as something other than just a reflection of the development of types or reuse of types and decorations. The choices of the potters at the site to meld and continue styles could be something other than just functional choices or just the continuation or improvement of previous decorative styles. The melding of types and
decorations and the lasting use of others could be sending a message about the ethnic identity of the people at the site. Possibly the people at Levanna were using pottery as a tool to comment on who they were and who they were related to.

The similarity of the decorations, styles and shapes do not necessarily mean a linear progression of culture, but more likely a visible manifestation of the possible cultural continuity between the earliest central New York people and the Iroquois Confederacy. The people living in Central New York could have been influenced by people from outside of New York State due to the complex trade routes and socio-political cultures present around North America from the Middle Woodland through the Late Woodland time period. The Levanna ceramics are a visible slice in time, a snapshot of what pottery was like at the turn of the millennium in Central New York. The high variability of central New York types from earlier and later time periods, all found at such a short term occupied site, gives evidence of a cultural continuity between people living during the Late Woodland and Haudenosaunee people.
REFERENCES

Adams, William Y. and Ernest W. Adams

Arnold, Dean E.

Arnold, Phillip J.

Bentley, R. Alexander, Michael Pietrusewsky, Michael T. Douglas and Tim C. Atkinson

Binford, Lewis R.


Birch, Jennifer and Ronald F. Williamson
2013 The Mantle Site: An Archaeological History of an Ancestral Wendat Community. AltaMira Press, Lanham, Maryland.

Boas, Franz
Bolnick, Deborah A.  
2007  Migration and Social Structure Among the Hopewell: Evidence from Ancient DNA. *American Antiquity* 72:627-644

Brumbach, Hetty Jo  

Bruhns, Karen Olsen  

Chapdelaine, Claude  

Claassen, Cheryl, and Rosemary A. Joyce, eds.  

Clemmer, Richard O., L. Daniel Myers and Mary Elizabeth Rudden  

Colwell-Chanthaphonh, Chip  

Conyers, Lawrence B.  
2004  *Ground Penetrating Radar for Archaeology*. Volume 1. AltaMira Press, Walnut Creek, California.

Cook, Fredrick  
Coon, Matthew S.

Costin, Cathy Lynne

Crawford, Gary W., and David G. Smith

David, Nicholas, and Carol Kramer

Deetz, James

Ehrenberg, Margaret

Engelbrecht, William
2003  *Iroquoia: The Development of a Native World*. Syracuse University, Syracuse, New York.

Erickson, Paul A and Liam D. Murphy

Fagan, Brian M.

Fie, S. M.

Flannery, Kent V. and Joyce Marcus
Fletcher, Mike and Gary R. Lock

Follett, Harrison C.

Ford, James A.

Funk, Robert E.

Gibson, Alex M. and Ann Woods

Griffen, James B.


Hansen, Brooke, and Jack Rossen

Hart, John P.


Hart, John P. and Hetty Jo Brumbach


Hart, John P and William Engelbrecht

Hart, John P., Robert G. Thompson, and Hettie Jo Brumbach

Hasenstab Robert J

Hegmon, M.

Hodder, Ian and Clive Orton

Johansen, Bruce Elliot and Barbara Alice Mann
Jemison, Peter G.

Kapches, Mima


Knapp, Timothy

Knapp, Timothy and Laurie E. Miroff

Korotayev, Andrey

Kramer, Diane

MacNeish, Richard S.
Michaund-Stutzman, Tracy S.

Michelaki, Kostalena

Mitchell, Barry M.

Morgan, Lewis Henry
1904 *League of the Ho-de-no-sau-nee or Iroquois.* Dodd, Mead and Company, New York.

Nelson, Sarah Milledge, ed.

O’Hearn, Macy

Orton, Clive, Paul Tyers, and Alan Vince

Parker, Arthur C.

Pauketat, Timothy R.


Peregrine, Peter N.

Read, Dwight W.

Reith, Christina B.

Rice, Prudence M.

Ritchie, William A.


Ritchie, William A. and Robert E. Funk

Ritchie, William A., and Richard S. MacNeish

Rossen, Jack

Sackett, James R

1985 Style and Ethnicity in the Kalahari -a Reply to Wiessner. American Antiquity 50:154-159

Sahlins, Marshall and Elman R. Service

Sagard-Theodat, Gabriel

Schulenberg, Janet K.

Shepard, Anna O.

Sinopoli, Carla


Smith, Bruce D.

Snow, Dean R.

<table>
<thead>
<tr>
<th>Year</th>
<th>Author</th>
<th>Title</th>
<th>Publication Details</th>
</tr>
</thead>
</table>
Whallon, Robert J.


White, Leslie

Wobst, H. Martin

Wiessner, Polly

Figure 57. Excavation unit and geospatial unit map from Levanna 2009.
APPENDIX B

Ho: There is no significant difference between the rim sizes of pots from the “Owasco” typological series and pots from the Point Peninsula typological series. H1: There is a significant difference between the rim sizes of Pots from the “Owasco” typological series and pots from the Point Peninsula typological series.

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>8.68</td>
</tr>
<tr>
<td>Variance</td>
<td>2.638296296</td>
</tr>
<tr>
<td>Observations</td>
<td>55</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
</tr>
<tr>
<td>df</td>
<td>27</td>
</tr>
<tr>
<td>t Stat</td>
<td>1.229595116</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.114728173</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.703288423</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.229456346</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.051830493</td>
</tr>
</tbody>
</table>

Ho: There is no significant difference between the rim sizes of solely dentate decorated pots and dentate and cordmarked pots (i.e. Owasco Herringbone and Carpenter Brook Cord on Cord). H1: There is a significant difference between the rim size of dentate decorated pots and dentate and cordmarked pots. (i.e. Owasco Herringbone and Carpenter Brook Cord on Cord)
<table>
<thead>
<tr>
<th></th>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>8.064285714</td>
<td>8.430769231</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td>3.788626374</td>
<td>4.331015385</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>14</td>
<td>26</td>
</tr>
<tr>
<td><strong>Hypothesized Mean Difference</strong></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>df</strong></td>
<td>28</td>
<td></td>
</tr>
<tr>
<td><strong>t Stat</strong></td>
<td>-0.554265065</td>
<td></td>
</tr>
<tr>
<td><strong>P(T&lt;=t) one-tail</strong></td>
<td>0.291898844</td>
<td></td>
</tr>
<tr>
<td><strong>t Critical one-tail</strong></td>
<td>1.701130908</td>
<td></td>
</tr>
<tr>
<td><strong>P(T&lt;=t) two-tail</strong></td>
<td>0.583797687</td>
<td></td>
</tr>
<tr>
<td><strong>t Critical two-tail</strong></td>
<td>2.048407115</td>
<td></td>
</tr>
</tbody>
</table>

H0: There is no highly significant difference between the rim sizes of solely dentate decorated pots and dentate and cordmarked pots (i.e. Owasco Herringbone and Carpenter Brook Cord on Cord) H1: There is a highly significant difference between the rim size of dentate decorated pots and dentate and cordmarked pots. (i.e. Owasco Herringbone and Carpenter Brook Cord on Cord)
\[
\begin{array}{ll}
P(T\leq t) \text{ one-tail} & 0.291899 \\
t \text{ Critical one-tail} & 2.46714 \\
P(T\leq t) \text{ two-tail} & 0.583798 \\
t \text{ Critical two-tail} & 2.763262
\end{array}
\]
APPENDIX C

I have completed a geophysical survey of the Levanna site (ground penetrating radar [GPR], magnetometry and resistivity), but I also analyzed the site on an even smaller scale in order to develop a better understanding of the ceramics found in the longhouse area at Levanna. This spatial analysis was used by looking at the locations, counts and weights of the ceramics found inside of the longhouse/living structure at Levanna. The spatial analysis is ongoing and can be finished and combined with the completed ceramic analysis, the GPR, magnetometry and resistivity in future research. Below are examples of some of the spatial and geophysical analysis in progress.

Figure 58. Levanna spatial map; ceramic analysis units in yellow, proto-longhouse boundaries in red, ceramic pipe and sherd throw or discard areas in green, ceramic counts inside some units in blue.
Figure 59: Yellow marking ceramic analysis units, red marking the proto-longhouse, green marking throw areas, orange marking units to be further analyzed in future ceramic analysis.