"Recipes of Disaster:" Northern Iroquoian Shell-Temper Practices in the Early Contact Period (A.D. 1615-1650)

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Introduction

Scholars increasingly recognize that fine-grained studies can help archaeologists understand broader questions of knowledge transmission, culture change, and social interaction (Michelaki 2007; Roddick 2016). In this poster, I use petrography to explore variations in tempering practices during a period of great social change at two Neutral Iroquoian sites, Christianson and Hamilton (Fig. 2, 3). Researchers have found that before the late 1500's and early 1600's A.D. Iroquoian potters in Southern Ontario and New York State only used "grit," (a broad typology for a rock and mineral paste) in manufacturing vessels. By the terminal Neutral period (term. 1651 A.D.), shell tempering appears common. For instance, shell-tempered vessels represented 64% of the Hamilton assemblage and 63% of the Bogle II assemblage (Lennox 1981, 1984; Figure 1). In my MA research, I explore this trend and consider how the tempering typologies of 'shell' and 'grit' might mask local historical processes that emerged as a result of European-disease epidemics, regional violence, and forced migrations that characterize the Iroquoian Early Contact Period experience (A.D. 1615-1650). The Christianson (A.D. 1600-1632) and Hamilton (A.D. 1632 – 1651) sites provide a useful sequential chronology to track historical changes of these potting practice at local scales.

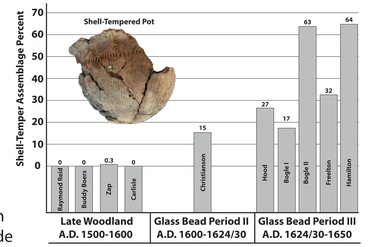


Figure 1: Diachronic trend for shell-tempering adoption in one Neutral Iroquoian site cluster (Derived from Michelaki 2007)

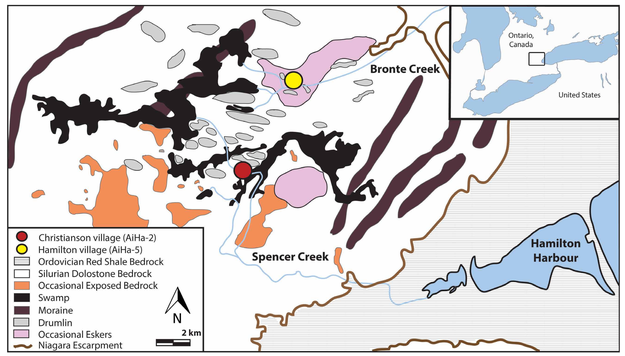
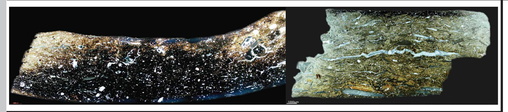
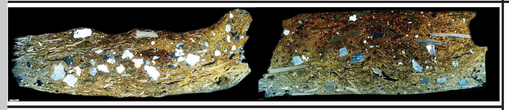
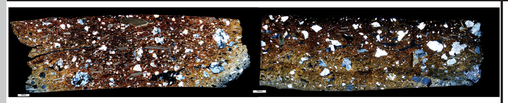
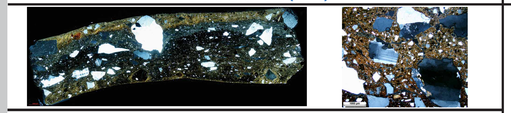
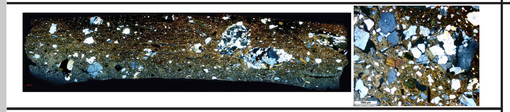
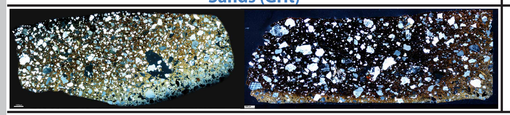
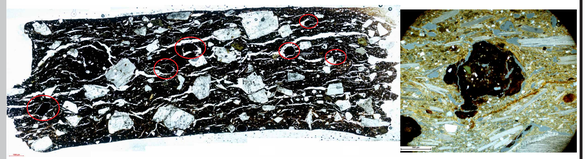


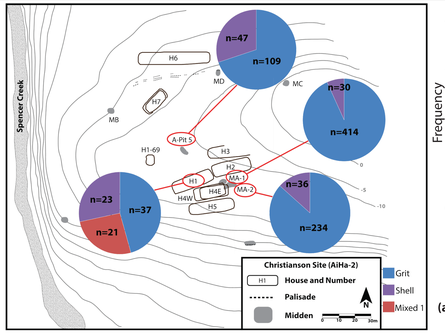
Figure 2: Sites locations and local physiography. Notes the glacially formed features on the landscape which contained igneous and metamorphic lithcs deposited from glacial actions (Derived from Chapman and Putnam 1973; Marich 2010)

Background & Methodology

The sites of Christianson and Hamilton are located in the Spencer-Bronte Creek Neutral site cluster, in Hamilton, Ontario (Fig. 2). They are within 5 kms of each other and thus potters had access to similar raw materials. Calcium rich sedimentary bedrock is superimposed by glacially formed drumlins, and moraines, and glaciofluvial deposits such as drift, kames, and eskers (Marich 2010). I collected multi-attribute data and created thins sections from a smaller sub-sample at both Christianson (n=966/n=34) and Hamilton (n=515/n=24). I produced the thin sections at the Laboratory for Interdisciplinary Research of Archaeological Ceramics (LIRAC) and Sustainable Archaeology (McMaster University). I ordered my representative thin sections into 11 different paste groups using qualitative and semi-quantitative techniques (Quinn 2013), specifically comparing minerology, the volume of inclusions, the angularity/roundness and shapes of inclusions, and the level of sortedness. I also considered mineral colours (felsic/mafic) to be a meaningful boundary for my raw material findings and for Iroquoian potter choices.

Findings

	Samples	Texture & Minerology
Shell Temper 	CHR = 4 HAM = 3	- Largest Inclusion variation 4.3-2.04mm - angular-subrounded - Sorting: very poor-moderate - Volume range: 20-45% - Elongated shape - Inclusions: Shell, fine sand quartz and orthoclase
Shell and Felsic Inclusions (Mixed 1) 	CHR = 3 HAM = 2	- Largest inclusion variation: 4.84-3.44mm - angular-subangular - Sorting: very poor-moderate - Volume range: 20-40% - Elongated and equant shapes - Inclusions: Shell, alkali feldspars, quartz
Shell and Intermediate Gravels (Mixed 2) 	CHR = 0 HAM = 3	- Largest inclusion variation: 3.83-1.8mm - Angular to subrounded - Sorting: poor-moderate - Volume range: 25-35% - Elongated and equant shapes - Inclusions: Shell, Mafic lithics, syenites, amphibolite, schists, biotite, hornblende
Felsic Gravels (Grit) 	CHR = 8 HAM = 5	- Largest inclusion variation 3.92-2.54mm - Angularity: angular-subangular - Sorting: very poor-moderate - Volume range: 10-40% - Elongated and equant shapes - Rock types: alkali feldspar syenite, quartz monzonite, granites, felsic gneiss
Intermediate-Mafic Gravels (Grit) 	CHR = 11 HAM = 5	- Largest inclusion variation 4.5-2.5mm - Angularity: angular-subrounded - Sorting: very poor-moderate - Volume range: 15-40% - Equant and elongated shapes - Rock types: amphibolite, schists, syenites
Sands (Grit) 	CHR = 11 HAM = 6	- Largest inclusion variation 2.62-1.41mm - Angularity: angular to rounded - Sorting: poor-strong - Volume range: 15-50% - Equant and some elongated shapes - Quartz, alkali feldspars and some sands with high mafic contents
Grog 		- Largest inclusion variation: 2.13-1.32mm - Angularity: angular to subrounded - Equant and anhedral shapes - Composes 2-30% of inclusion abundance - Often high optical density (reduced atmosphere of initial firing) - Contain 'groundmass' of silt inclusions - Figure 4 for sample distribution



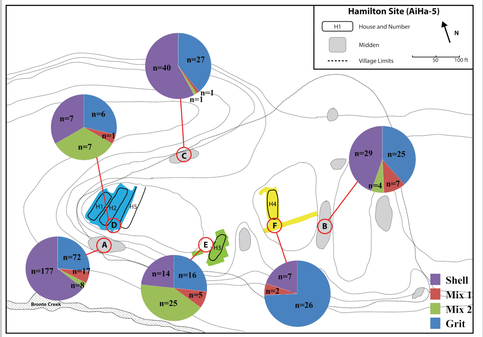


Figure 3: Spatial distribution of the three Shell-paste types and a grouped "grit" category at the Christianson (top) and Hamilton (bottom) villages. Samples are derived from macroscopic paste observations. Note the the differing distribution of paste types in the midden and household contexts.

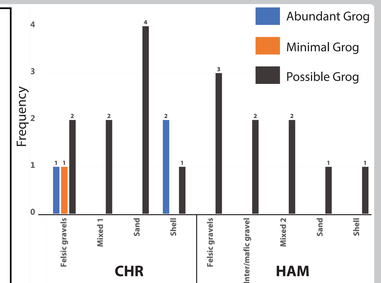


Figure 4: Thin section frequency and distribution of grog (and suspected grog inclusions) across paste types and sites.

- I found a variety of inclusion types, and textures under the 'grit' category. Potters used felsic and intermediate-mafic, medium to coarse-grained, plutonic igneous and metamorphic gravels, and sands (Udden-Wentworth scale). These findings corroborate with other Iroquoian petrographic studies (Braun 2012, 2015; Holterman 2007).
- The shell category can be broken down into three paste groups based on their minerology, volume, and texture. These categories are distributed in different percentages across midden and household contexts at the two sites (Fig. 3).
- Samples across the shell or grit typologies contained grog (Fig. 4). This typology masked the practice and macroscopic observations of grog can be difficult with assemblages fired in reduced conditions. Archaeologists found grog in only one other sample of Ontario Iroquoian ceramics (a pipe; Braun 2015).

Conclusions

In this study, I found that qualitative assessments of thin-sections ceramics can break down the grit versus shell dichotomy in Early Contact Neutral Iroquoian assemblages. These paste groups exhibit spatial trends at both the Christianson and Hamilton sites (Fig. 3). Embedded in the spatial distribution of practices might be 'micro-histories' of altered learning frameworks and a differing adoption of alternative tempering practices such as shell and grog (Fig. 4). I suggest that the possible "blending" of raw material choices in the two shell & grit mixed pastes highlights an historically contingent emergence of the practice through time within these communities of potters.

Acknowledgements

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Poster: “Recipes of Disaster:” Northern Iroquoian Shell-Temper Practices in the Early Contact Period (A.D. 1615-1650)

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