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Cultural Continuity in a Nipmuc Landscape

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CULTURAL CONTINUITY IN A NIPMUC LANDSCAPE

A Thesis Presented

by

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ABSTRACT

CULTURAL CONTINUITY IN A NIPMUC LANDSCAPE

June 2013

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This thesis examines the lithic assemblage from the 2005-2012 field seasons at the Sarah Boston site in Grafton, Massachusetts. The Sarah Boston site is associated with a multi-generational Nipmuc family living on the site during the late 18th through early 19th centuries. In total, 163 lithic artifacts, primarily quartz flakes and cores, were found throughout the site with concentrations north of a house foundation associated with the Nipmuc family. Reworked gunflints and worked glass were examined as examples of lithic practice associated with artifacts that are conclusively datable to the period after European arrival. Presence of quartz artifacts in an undisturbed B-horizon demonstrates a much-earlier Native component to the Sarah Boston site. Lithics and ground stone tools present in the later intact midden deposit demonstrate that the Nipmuc family interacted with these materials. Given the concentration of flakes found within the midden, it is likely that some portion of these flakes as well as the reworked gunflints and

knapped glass were actively used, and perhaps produced, by the occupants of the house as an alternative or replacement of other tools, including iron. This thesis concludes that the practice of knapping persisted on this site into the 19th century indicating a cultural continuity of Nipmuc cultural practices and identity in addition to the adoption of European-produced ceramics, iron knives, and other later materials.

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CHAPTER 1

INTRODUCTION

Many see Native American cultural groups that persist to the present as having undergone radical transformation in cultural identity due, primarily, to the fact that the physical objects, religion, and cultural practices that make up modern Native American ways of life do not fit an outsider's idea of what a Native American looks like and does. This thesis examines cultural continuity of Nipmuc practices, specifically identifying lithic production or knapping as one of several possible practices that continued beyond the arrival of Europeans, despite the outward appearance of change in the form of material culture.

Cultural continuity is identified here as those practices that persist over time through the transfer and inscription of memory (Jones 2007). Continuity in Native American cultural practices challenges the preconceived notion that Native American populations in existence today have undergone so much change that they no longer can present themselves as "authentic" and therefore have lost their cultural identity (Mrozowski et al. 2009; Gould 2010;2013). This division is emphasized by the use of the term "prehistoric" to describe Native Americans prior to the arrival of Europeans, and "historic" to describe the period following, which implies that Native Americans did not

have a history prior to the arrival of Europeans, and also defines that history and cultural narrative by European events. Archaeology possesses the ability to challenge these ideas of cultural loss due to changing practices by examining the physical remnants of these cultures diachronically, questioning if these represent changes in identity, practices, and material culture with the ultimate goal of eliminating the prehistory/historic divide.

An archaeological site that could address these issues must be associated with Native American occupation over a broad period of time, including both before and after the arrival of Europeans. The Sarah Boston archaeological site is a domestic farmstead located in Grafton Massachusetts on a former 17th-centuury Praying Indian Town and Nipmuc settlement that predates the 17th-century. This site is definitively associated with a Nipmuc family who lived in the house in the 18th and 19th centuries, and whose foundation and surrounding landscape is the focus of recent archaeological investigation. The artifact assemblage, numbering over 100,000 artifacts, is dominated by goods produced in Europe or by Europeans; however, excavations also revealed 163 quartz and quartzite lithics as well as ground stone tools, worked gunflints, and worked glass. Do these lithic represent the continuity of lithic practices by this 19th -century Nipmuc family or are they representative of an earlier component of the site?

Chapter 2 begins with an overview of the historical narrative recorded through documentary records of the occupants of the Sarah Boston site. Following this overview, the various phases of archaeological investigation of the site are discussed. Finally, the archaeological narrative of the area upon which the Sarah Boston site is located, Keith Hill, is discussed as it will provide contextual, spatial, and site function data used in the

analysis of the Sarah Boston site. Chapter 3 discusses the archaeological theory incorporated into this thesis, specifically the interrelations between memory, practice, *habitus* and *doxa.* A discussion of object morphology will demonstrate its potential impacts on memory and practice. The methods employed in identifying, isolating, and recording physical data on the lithics and pottery used in this research are covered in Chapter 4, including a description of classification criteria used for each of these artifact classes. Chapter 5 will detail the analysis used to interpret the artifact assemblage, including detailed descriptions of the significant artifacts and their potential roles and impacts on the daily lives of the residents of the Sarah Boston site. A discussion of cultural continuity at the site is covered in Chapter 6, which includes some consideration of assemblages from related sites that provide additional interpretative data. This last chapter concludes by broadening the study of cultural continuity to its impact on the discussion of the historic/prehistoric divide in archaeological practice.

Using the lithics of the Sarah Boston site, the analysis presented here will demonstrate cultural continuity of lithic practice. Examination of context will reveal that several of the flakes were located within B soils, indicating an earlier occupation period that predates the construction of the house foundation. A Neville-like point, discovered nearby during the first phase of archaeological survey on the project (Gary 2005) indicates the presence of Native people on the property and in the region as early as 7,000 years ago. Analysis of lithic concentrations within the site will show that despite plowing and bulldozing, it is possible to demonstrate that the lithics found north of the house

foundation were deposited in a primary 18th -19th -century midden, indicating direct interaction and possible production of some of these lithics by the occupants of the house.

The use of these lithics can be viewed as an alternative or replacement of other tools, including iron. Iron objects may have been too valuable to be used outside or perhaps were already in use elsewhere for other functions requiring the occupants to use or create these flakes from the readily-available quartz deposits nearby. Another possible interpretation of the flakes is continuation of a tool or practices that remained useful or significant during a period in which iron tools were also actively used. Both uses could be possible at the same time.

Gunflints and worked glass show clear evidence of having been deliberately modified, through knapping, into tools that differ from the function for which they were originally produced. Developing the concept of morphology as part of a discussion of practice, this thesis will demonstrate that these tools represent a continuity of the practice of knapping, but by using additional materials that possess similar desired physical traits as local lithic materials. Therefore, the changes in material usage do not represent a change in cultural practice; rather, these artifacts represent a continuity of practice, just using a viable alternative material.

The lithic practices, including use of quartz and quartz crystals, on colonial Nipmuc sites is not unique to the Sarah Boston site. The nearby Deborah Newman, Magunkaquog, and Cedar Swamp sites, all associated with Nipmucs and European-style houses, have associated quartz lithic scatters, and, in the case of Magunkaquog (Mrozowski et al. 2009) and the Sarah Boston sites, the presence of quartz crystals near

the foundations of a house. These sites represent several hundred years of Nipmuc occupation within the same general region, demonstrating a connection to Nipmuc culture in deep time and the continuity of lithic practice across the Nipmuc cultural landscape from the 17th through 19th centuries. Outside of the Nipmuc region, work on the Eastern Pequot reservation has already shown evidence of 19th -century butchering of domesticated animals conducted with stone tools (Cipolla 2007).

This thesis seeks to make a contribution to the discussion of cultural continuity in a colonial landscape. Similar to other attempts to identify lithic practice in indigenous cultures after the arrival of colonists (Cobb 2003; Curmody 2003; Johnson 2003; Nassaneu and Volmar 2003; Silliman 2003; Martindale and Jurakic 2006; Cipolla 2007) it couples physical evidence of the continued practice of lithic use with several raw materials spanning the Middle Archaic (7,000-5,500 BP) through 19th century. It establishes the presence of this practice across several related archaeological sites, and provides a supporting argument for the abolishment of the artificial distinction between prehistoric and historic periods in Native American studies.

The continuity of lithic practice after the arrival of Europeans negates the implied break in cultural presence and identity imposed by this false temporal division. This artificial divide and the archaeological practice of studying the two periods before and after "contact" separately is detrimental to Native communities as it it implies a lack of continuity in Native American culture after the arrival of Europeans (Lightfoot 2005), it does not recognize the changes within the culture of colonists who interacted with and adopted practices from Native Americans (Lightfoot 2005), and it implies the loss of

Native American cultural "authenticity" in today's Native populations (Silliman 2009; Gould 2010;2013). This division must be abandoned in scholarly discussion in order to finally end the complacency of archaeological discourse through the designation and dismissal of Native people, who are still very much present, as "prehistoric." Many Native cultural practices continue from deep time to the present, and the continuity of lithic practice does not preclude the continuity of other practices, nor is it the sole representative of cultural continuity in Native culture.

On a fundamental level, this thesis questions the preconceived and widely-held notions that cultures who have survived acts of colonialism, throughout the world, persist despite these acts and struggle to this day to rise above assumptions that their culture and identity has been lost. While their voice is best heard through their own mouths, archaeology is proving its use (Mrozowski et al. 2009) in the fight to establish cultural connections between communities in the present and their ancestors. This thesis establishes the lithics are one way to identify Nipmuc identity as a continual presence in the landscape, clearly able to withstand the trials and tribulations of colonial practices, throughout history, into the present.

CHAPTER 2

SITE BACKGROUND

History of Hassanamisco

The Sarah Boston site is located on land that was once part of the Hassanamisco Praying Indian Town, now the town of Grafton, Massachusetts (Figure 1). Prior to European settlement, Nipmuc settlements were located in central Massachusetts, northeast Connecticut, and northwest Rhode Island (Gould 2010:41). Hassanamisco was formed from a pre-existing Nipmuc settlement in Grafton in 1654 by preacher John Eliot as the third of fourteen towns created in Massachusetts to preach Christianity to Native Americans and "civilize" them through English indoctrination and surveillance (Gary 2005; Gould 2005; Law 2008). This indoctrination included the requirement to clear and improve the land they lived upon, build European-style houses, and abide by English land practices, gender roles, and social orders (Gary 2005; Law 2008). By 1674, Hassanamisco was a square-shaped parcel of roughly four square miles (10,000 acres) including what is essentially the entire town of Grafton, which retains its square shape (Gary 2005). The creation of these towns and the desire to isolate Native people within their borders was a deliberate attempt to separate Native populations from European colonists and each other, though interactions between Native peoples across a wide region continued (Gary 2005; Law 2008).

Keith Hill Archaeological Resources

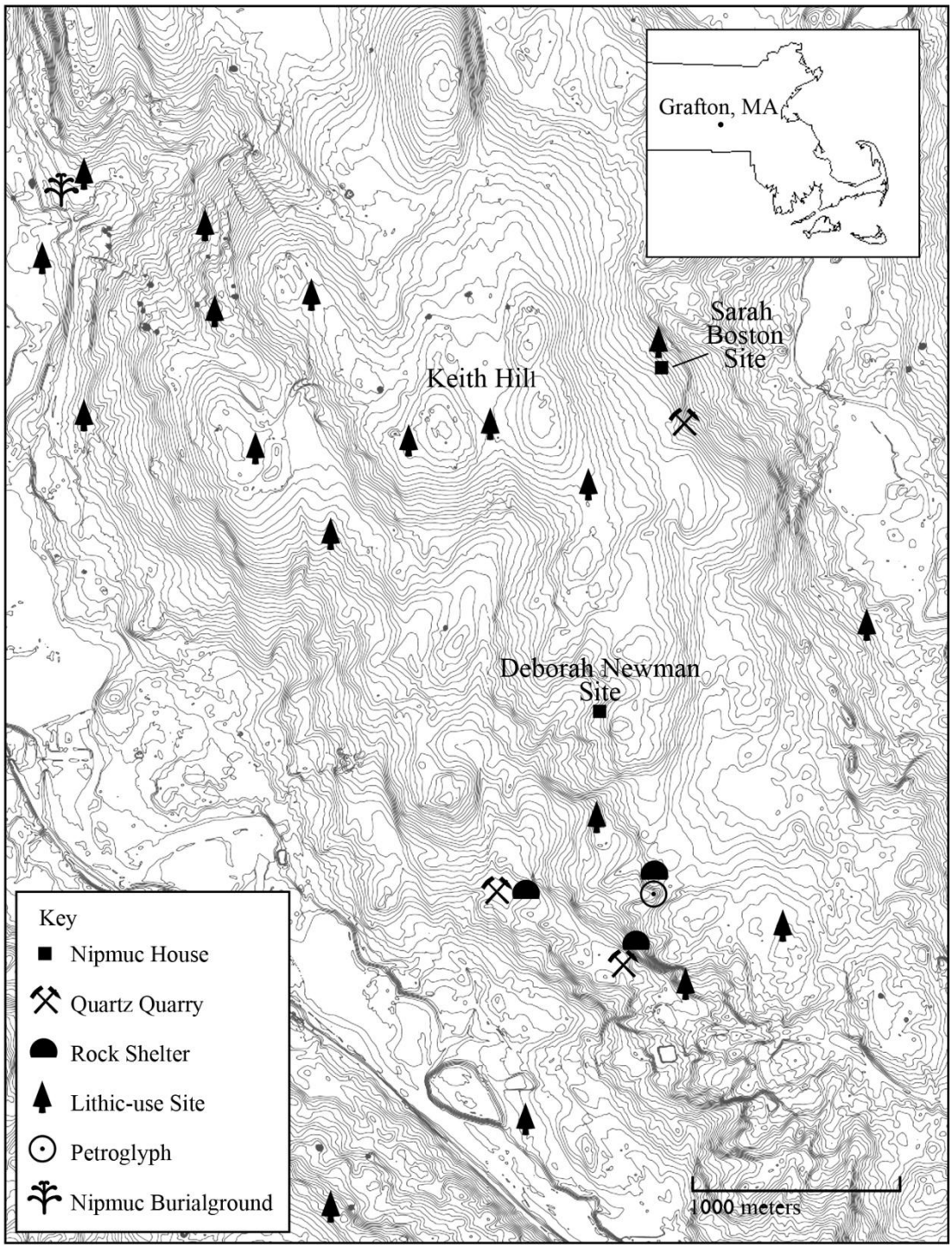

Figure 1- Sarah Boston Site, and nearby archaeological sites in Grafton, MA

With the outbreak of Metacom's Rebellion (King Phillip's War) in 1675, an attempt by Native Americans to drive back the expansion of European colonists into land occupied by local Native communities, Native people who sympathized with the colonists were moved to several existing praying towns, including Hassanamesit and Natick (Doughton 1997). During the height of the war, in the fall of the same year, all Praying Indian Towns became targets for both Native and European antagonism. Due to the overwhelming threat of attack from Native forces, the colonists immediately restricted movement of people between Praying Indian towns, resulting in some Hassanamisco residents becoming trapped in Natick. Though the Nipmuc of Hassanamesit were allegiant, colonists attacked Hassanamesit, burning the crops of Native inhabitants (Doughton 1997). King Philip's troops also attacked Hassanamisco, resulting in the capture of around 200 Nipmuc men (Doughton 1997). The remaining inhabitants were evacuated by the colonists to Deer Island in Boston Harbor where they faced extreme conditions and little provisions (Doughton 1997). Throughout their diaspora, many of those removed from Hassanamesit, including many living in Natick, could not return to their homesteads despite their continuing claim of ownership on their property (Law et al. 2008).

In 1694, guardianship over Hassanamisco and other Native towns was taken from the Natives and given to English guardians (Kawashima 1969). In 1727, these guardians began to sell off much of the original Hassanamisco property, shrinking the land holdings of the Nipmuc people at Hassanamesit from 10,000 acres to 1,200 acres. The same year, colonial guardians decided to allow the return of Nipmuc people to the remaining 1,200

acres; however, they restricted the allotment of land to those families who could tie their lineage to a family in the 1654 Praying Indian town. Only seven families qualified to receive parcels within the remaining 1,200 acres of Nipmuc land at Hassanamesit (Law 2008). The proceeds of the sale of the 7,500 acres of Hassanamisco, 2,500 pounds, were kept by the guardians, with the yearly interest from this fund to be divided among these seven families (Law 2008). The story of the many Sarahs who owned one of these seven parcels begins here.

Sarah Boston's Lineage

The Nipmuc followed a practice of transferring property rights and naming tradition from mother to daughter (Mrozowski 2013). In the case of the family studied in this thesis, mothers passed on their first name, "Sarah," much like the European practice of passing on a father's last name to their children.

Peter Muckamaug and Sarah Robins were a married couple with genealogical ties (through Sarah) to Sachem Petavit, one of the original occupants of Hassanamissit (Gookin 1674; Earle n.d.). Continuing the Nipmuc tradition of passing ownership of property down matrilineal lines, Sarah Robins' ties legitimized their 1727 claim to their 200 acre allotment in Grafton (Law 2008). In 1729, both Peter and Sarah moved from Providence, where their families had been living since the King Philip's War, to their lot, creating the Muckamaug parcel (Earle Papers 1:2).

Peter died in 1740, and Sarah Robins' health diminished such that in 1746, Sarah Muckamaug, their daughter who was living in Providence at the time, moved to her

family plot in Grafton to care for her ailing mother (Mandell 1991). While caring for her mother, Sarah Muckamaug met and married Fortune Burnee, an African American, and gave birth to a daughter, Sarah Burnee, in 1744 (Law 2008). It is important to note here that this was not Sarah Muckamaug's first daughter, but Sarah Burnee was the first daughter born on her mother's land, which may be the reason for Sarah Muckamaug's decision to continue not only the tradition of naming daughters "Sarah," but also the bestowing of inheritance rights to Sarah Burnee through her name (Law 2008).

Sarah Robins died in 1749 and left her land to her daughter, Sarah Muckamaug in accordance with the Nipmuc tradition. Sarah Muckamaug immediately sold 46 acres of her 200 acre inheritance to raise money to create a homestead for herself and Fortune. Hezekiah Ward, a colonist, purchased this property and, as part of the agreement, built the house for Sarah and Fortune on their remaining parcel. Sarah Muckamaug soon fell ill and was cared for by Ward in his home on the 46 acres sold to him, despite Sarah having her own home and a capable husband. Upon her death in 1751, Ward requested payment for his services to Sarah Muckamaug and her burial. Fortune was forced to sell more of their land in order to repay Ward for his unneeded "help." (Law 2008)

Sarah Burnee, who was just seven when her mother passed away, lived in the house with her father, Fortune, until 1765, at which point she turned 21 and declared independence and sole ownership of the remaining 154-acre property of her mother. This declaration triggered a disagreement with her half-brother, Joseph Aaron, resulting in the

equal division of the land between them in 1771. Sarah received the half with the house, barn, and many of the growing fields. (Law 2008)

Sarah Burnee married Boston Phillips, who claimed to be full-blooded Indian, in 1786. Documentary records show Sarah and Boston repaired their home in 1795. This is the house that is now associated with the foundation found during recent archaeological investigations conducted between 2005 and 2012. Sarah Burnee and Boston Phillips had a daughter around 1780, and continuing Sarah's mother's tradition, named her Sarah Boston. Financial struggles following the death of Boston Phillips resulted in the sale of 20 acres in 1797 reducing her property to 52 acres. (Law 2008)

Although Sarah Boston is one of the least-well recorded of the Sarahs in official records (state, town, etc.), she was a legendary figure amongst the people of Grafton and was regularly recorded in the journals and diaries of locals during her lifetime. Sarah lived in the house that is currently undergoing archaeological investigation until her death in 1837. During her time there, Sarah was regularly visited by Euro-Americans and Native Americans, worked her and other townspeople's fields (her strength and size was legendary), and traveled greatly. She was a skilled basket maker and prided herself in her garden (Forbes 1889). Archaeological evidence shows that her house was constructed on a fieldstone foundation upon an eastern terrace of Keith Hill. (Law 2008)

Sarah Boston struggled financially and was forced to sell portions of her land, leaving her 19-year-old daughter, Sarah Mary Boston, just 20 acres of land after Sarah Boston's death in 1837. Sarah Mary also inherited her mother's debt, which she was unable to pay off, forcing her to sell the remaining 20 acres in 1854. At least two more

Sarah's in the lineage of Sarah Robins, however these two Sarahs did not live upon or maintain ownership of any of their ancestor's property. (Law 2008)

Archaeological Investigations at the Sarah Boston Site

Professional archaeological investigations at the Sarah Boston Site began with an Archaeological Reconnaissance Survey (Bonner and Kiniry 2003) of a 203-acre parcel known as the "Robinson property," in Grafton, by the Center for Cultural and Environmental History (now the Fiske Center for Archaeological Research) of UMass Boston on behalf of the Trust for Public Land. This non-invasive survey concluded that the parcel included land that was once part of the original Hassanamesit settlement, likely contained the location of John Eliot's "church," and also contained the Muckamaug parcel, a lot of land owned by a 19th -century Nipmuc family (Bonner and Kiniry 2003:62). Bonner and Kiniry (2003:62) recommended an intensive (locational) archaeological survey of the property, which would include below-ground invasive archaeological sampling.

An Intensive (locational) survey of the same parcel of land was conducted between 2004 and 2005, also by the Center for Cultural and environmental History of UMass Boston (Gary 2005). The 386 50x50cm shovel test pits on 10 and 20 meter grids located six historic archaeological sites, including the Sarah Boston site, and one Native American lithic quarry south of the Sarah Boston site (Gary 2005:ii). Later analysis of the collection by the author of this thesis identified scattered lithic debris in the area around the Sarah Boston site, including the confirmation of Gary's (2005) identification of a

Middle Archaic Stark or Neville-like spear point (5,000-7,500 years old) north of the house foundation, chipping debris, biface fragments, and lithic cores. Because the property was in the process of becoming a public park and no additional construction or disturbances were planned on the parcel, no further archaeological survey was recommended (Gary 2005:55).

Beginning in 2006, the Fiske Center for Archaeological Research at UMass Boston conducted a large-scale open excavation and field school of an area identified in the Intensive survey to find and identify the location of a possible structure within the densest artifact concentration identified in the 2005 survey (Law et al. 2008: 6-7). During this survey, the area within the artifact concentration was divided into 10x10 meter blocks, with 2x2 meter excavation units dug in arbitrary 10cm levels within natural stratigraphy (Law et al. 2008:31). A ground penetrating radar (GPR) survey of the artifact concentration area identified the location of the anticipated cellar hole (Law et al 2008:35).

UMass Boston has offered a field school at this location every year since the beginning of large scale excavations began in 2006, named the Hassanamesit Woods project. These excavations resulted, to date, in the excavation of 68 2x2 meter units, the conclusive association of the house foundation with the late 18th and early 19th-century occupation of (at minimum) Sarah Boston and her mother, Sarah Burnee, and the recovery of over 120,000 artifacts. While the full archaeological assemblage is still being cataloged, several UMass Boston students have already begun academic study of various aspects of the site.

Academic examination of the Sarah Boston Site

To date, three theses have been completed by UMass Boston students enrolled in the Masters in Historical Archaeology program. This thesis and a dissertation by Heather Law of University of California, Berkley demonstrates ongoing academic analysis of the Sarah Boston site.

Law (2008) studied the glass tableware of the 2006-2007 field school assemblages and documentary records to examine the restrictions placed upon the Nipmuc occupants of the Sarah Boston site. Law's thesis is the first to recognize the occurrence of flaked glass tools (totaling 19 examples) on the site, as well as the use of glass as a raw lithic material and viable alternative to iron cutting tools (Law 2008: 105)

Guido Pezzarossi (2008) examined the same overall assemblage, focusing on ceramics rather than glass artifacts to examine the continuity of Nipmuc culture in addition to the adopted use of European artifacts, and also the role of consumerism in this 19th -century Nipmuc household. Pezzarossi's thesis examines similar issues to this thesis, however with a focus on the incorporation of European practices, whereas this thesis examines the continuity of Native American practices.

Finally, Amélie Allard (2010) examined the faunal remains from the 2008 and 2009 field seasons to identify Nipmuc food ways in a colonial setting, as well as the role of cultural identity in the adoption of animal husbandry. Specifically, Allard's research found evidence for the continued practice of hunting and fishing of wild game, especially turtle, while adopting the practice of animal husbandry. Also, faunal evidence suggests communal food sharing, which can be associated with Nipmuc cultural practices. Again,

the continuity of cultural practice in these three theses plays a significant role in the study of this site as it demonstrates the persistence of Nipmuc cultural identity while this family adapted to the restrictions and newly-introduced practices of their colonial environment.

Archaeological Investigations in the Surrounding Area

While the Hassanamesit Woods project has been ongoing since 2003, it is by no means the only archaeology occurring within the original Hassanamisco Praying Indian town. Within the area around Keith Hill, there have been 14 professional archaeological surveys, which document 17 Euro-American archaeological sites and 24 Native American sites, making Keith Hill one of the most archaeological-studied areas in the state of Massachusetts (Figure 1). The Native American sites identified in Figure1 demonstrate the spatial distribution lithic use in the area, the proximity and abundance of nearby rockshelters, quarries, and the overall abundance of Native American-related archaeological resources identified through archaeological investigations on and around Keith Hill.

Of the 18 documented sites dating to after the arrival of Europeans, only the Sarah Boston site represents a Native American-occupied European-style house in the Keith Hill area; however, the Hassanamisco Reservation (Printer allotment/Cisco Homestead) on nearby Brigham Hill in Grafton is a standing structure built and occupied by several generations of Nipmuc families including the Printers, Gimbees, and Arnolds (Gould 2010). The Deborah Newman site, identified during the archaeological surveys by the Fiske Center, is a second documented Native American house site on Keith Hill, however

its official classification into the state archaeological database is pending submission. Two other house sites in this areas, on the southwest of Keith Hill (GRF.38 and GRF.30) date to the same period as the Sarah Boston site and do not yet have a definitive ownership association and may also be related to the returning Hassanamesit families, or they may be one of the many colonists who settled on their former land.

While the majority of archaeological surveys on Keith Hill have produced mostly find spots and scatters of chipping debris (Mulholland et al. 1986; Pagoulatos 1988; Glover 1998; Tritsch 2006), two larger-scale projects have identified significant archaeological sites in the area. The Highfields archaeological survey, located on the southwest slope of Keith Hill, identified eight archaeological sites including six Native American lithic processing sites and two historic house foundations (Fragola and Ritchie 1996). The Highfields 1 site produced a Middle Archaic (5,000-7,500 years old) Stark projectile point made of rhyolite and 39 pieces of quartzite chipping debris (Fragola and Ritchie 1996). While the Massachusetts Historical Commission classifies these Native American lithic processing sites as dating to the period before the arrival of Europeans, this thesis will show that it is no longer appropriate or accurate to exclusively associate lithic sites to this time period. Thus, these sites and other similar sites will be noted simply as "Native American" to indicate cultural association; however, no dating refinement is possible.

The Brookmeadow archaeological survey, located due south of Hassanamesit Woods, included several historic granite quarries, house foundations, a small bridge, and Native American sites (Ritchie and Van Dyke 2005). Significantly, two rock shelters

were identified. One of the rockshelters, the Brookmeadow Rockshelter site (19-WR-829), contained quartz chipping debris within the shelter, and on the exterior of the rock overhang, Ritchie and Van Dyke identified a petroglpyh of a circle with a dot in its center (2005:49) (Figure 2). Near the rockshelter, a quartz quarry was identified (Milford Road Quartz Quarry 19-WR-515), which was heavily damaged in more recent times by mineral collectors as it contains not only excellent quality quartz for knapping but relatively large faceted crystals (Ritchie and Van Dyke 2005).

The 2005 archaeological survey of Hassanamesit Woods (Gary 2005) identified a quartz quarry, located approximately 2,000 feet south of the Sarah Boston site. This quarry produced milky-white quartz samples, likely from an intrusive igneous vein in the

Figure 2- Petroglyph on Brookmeadow Rockshelter (Ritchie and Van Dyke 2005: 50)

parent bedrock. Surface remains at the site include cairn-like mounds of quartz cobbles of indeterminate age. Examination of the 2005 Intensive survey material by the author of this thesis identified 30 lithic artifacts including a quartz triangular projectile point (Late Woodland (1000-400 years old)), large quartz cores, numerous quartz flakes, two flakes of quartzite, and one rhyolite flake. While the quartz is most likely from the site itself, the quartzite is not local to the immediate vicinity; however, quartzite is commonly found in Grafton and outcrops north and west of the Sarah Boston site (Walsh et al. 2011). The rhyolite is from one of the local sources near the Blue Hills in the Quincy/Milton area showing that while quartz was abundant on the site, working of other stone materials was also conducted on the spot, likely because the place was a recognized location to work stone tools, regardless of the material present on the site.

While these sites are not part of the assemblage specifically studied here in this thesis, they do offer some insights into the uses of the landscape for stone tool production and sourcing and provide possible locations for the materials found on the Sarah Boston site. Overall, the presence of numerous Native American sites documented through archaeological investigation establishes a wide variety of practices and traditions occurring in the Keith Hill area throughout time.

CHAPTER 3

THEORETICAL BACKGROUND

This thesis discusses the continuity of practice in a colonial environment. This particular chapter will examine the theoretical framework that informs my examination of the artifacts from the Sarah Boston site. The study of continuity has recently become a major theme in the archaeological examination of colonialism. With its foundation in practice theory, this thesis will focus on the key combination of memory and practice as mechanisms for cultural continuity. I will also introduce the concept of entanglement (Hodder 2012) and object morphology that will enhance practice theory by providing an outside variable in continuity, with critical implications and impact on *doxa* and *habitus* (Bourdieu 1977).

Practice Theory

Pierre Bourdieu revolutionized the study of culture through his "Theory of Practice" (Bourdieu 1977:1). Bourdieu's central elements of theory are the overarching ideas of *doxa* and *habitus* (Bourdieu 1977). *Doxa* is a backdrop of givens, which structure, compose, and create the mundane activities of everyday life (Bourdieu 1977:168), whereas *habitus* is the individual conditions of the mind created and

maintained by the experiences of everyday life in a certain social group or structure (Bourdieu 1977; 1990:55). To use a sports metaphor, *habitus* is a person's position on a field, which helps determine the specific actions a person does during a game, and *doxa* are the rules of the game.

These both relate to practice in that *habitus*, which functions within an overall *doxa*, allows an individual to perform a near-infinite number of practices; however, these practices are fundamentally restricted with the boundaries created by a person's *habitus* (Bourdieu 1990:55). In other words, while there are many things that one can do, create, think, or ask, those actions are restricted by the world view experienced by the person enacting them. A refinement of Bourdieu's theory includes the more intimate exploration of memory and practice on smaller scales, such as domestic environments (Ortner 2001; Silliman 2001, 2009; Smith 2001).

Memory

Memory is defined as a range of remembered social practices and ideas (Jones 2007:1; Mills and Walker 2008: 4-6; Mills 2008). Memory is a key component of continuity as it is the main mechanism through which practices continue. Memories are passed on to others through transmission, which can also be direct, whereby a memory of one person is inscribed, verbally, from one person to the next, or through physical recording of memory upon or within an object (Jones 2007:222; Mills and Walker 2008:8). The transmission of memory through the mechanism of objects is a

fundamental principle of archaeological practice in that without this transmission, we would have no means of interpreting the past through the objects left behind.

While objects are a mechanism for memory transmission, they should not be viewed as storage receptacles for memory. Memories, inscribed within objects, are transmitted through the active *engagements* between objects and their interpreters (Jones 2007:27). This transference between generations represents the true memory of an object. This transfer is unregulated and does not have built-in mechanisms to ensure accurate re-inscription in the mind during interpretation of a memory, resulting in the ability for memories to be inscribed incorrectly, inexactly, or simply lost (Jones 2007:1). Therefore, each instance of transmission creates the opportunity for change, and, when compounded over a long period of time, this simple mechanism can account for many of the cultural changes and variability of practices and physical objects visible in the archaeological record. Clearly, some objects such as those that contain written records or images, are an attempt by their creator to solidify memory or restrict changes in memory transmission.

Practice

Practice, as defined above by Bourdieu (1977), is the product of *habitus*. In archaeological study, practice is a mechanism through which *habitus* can be reverse-engineered allowing, in theory, for the identification and interpretations of the mundane and daily activities of people in the past. Practices can be interpreted in terms of temporal periods whereby each defined archaeological period is interpreted, individually, to determine the various lifeways of people; however, when viewed diachronically

(throughout the colonial period in New England, for example), the ways in which practices change, allow for interpretations of cultural change (Joyce 2008:26).

Practice is a broad term, and while it does incorporate anything someone does, it is not correct to use it as a blanket term for *everything* a person does (Ortner 1984:149; Silliman 2001:192). This distinction is significant as "all" correctly implies the range of possible practices available within a *habitus*, whereas everything implies that practice is all-encompassing, which loses both its strength as an analytical tool and its ability to refer to specific actions. Additionally, practice should not be interpreted as technique. Practice functions similarly to *habitus*, creating a structure within which numerous actions or techniques can produce numerous outcomes or products. This thesis focuses on practices as performed actions informed by memory; however, it also includes object morphology, or "thingness" (Hodder 2012), as the physical structure and properties of the lithic objects found at the Sarah Boston site were influencing factors in the continuity of practice and the choices made by the occupants of the site.

Morphology

Morphology, the non-cultural physical characteristics of an object, affects practice in much the same way *habitus* affects practice. It creates a restricted framework that fundamentally limits practices; however, it allows for broad variation and applications of practices within that framework. As a non-cultural characteristic, it is important to note that interpretation and reaction to morphology, as well as the reasons for seeking out or avoiding certain physical attributes of an object for use in a practice, is fundamentally

based on an individual's *habitus*, which is itself composed of practices and their memory. In other words, an object's morphology is independent of its value and function, and the assigned value or function of an item is culturally-dependent. This thesis will emphasize the independence of morphology from practice.

If practice is independent of morphology, then changes in the physical objects used in a practice do not necessarily change the practice itself. Rather, the practices continue, entangled with objects (Hodder 2012) creating dependencies and new interactions with things that arise from their physical structure. An object's materiality determines the range of practices that can be associated with it. People can become entangled with objects when their practices continue over long periods of time, or when the objects themselves become so greatly associated with cultural identity or practice that their "thing power" begins to shape practices themselves (Bennett 2010; Hodder 2012). An example of this would be if Nipmuc people persisted in the use of quartz tools over iron cutting edges because quartz has become so engrained in the cultural practices and identity of their people that changing materials would fundamentally alter their value of a practice. This persistence will be demonstrated in this thesis.

Objects can also be interchanged if the physical characteristics deemed valuable are present. An example of this would be making a knife out of glass instead of quartz because both make sharp edges and are whitish in color. It is simply a substitute material that still fulfills the desired morphological characteristics required to perform a practice, and perhaps serves an economic purpose if one material is more-readily available on the site. Together, entanglement and artifact interchangeability can account for both the

persistence of older cultural materials (quartz tools), the adoption of new materials (iron knives), and the interchanging of materials (knapped glass).

A fundamental parameter of morphology is an object's durability (Jones 2007). Durability, as used here, refers to an object's ability to preserve in a certain climate or physical setting over a period of time. An artifact with poor preservation (ancient bone in acidic soils for example) will not be able to be used by archaeologists to determine cultural practices because it does not survive to be studied. Durable goods have a longer period during which they can potentially interact with people. Their innate physical properties enhance their "vitality" and increase their cumulative influence on people (Bennett 2010). This interaction with older materials forms "citations" (Joyce 2000) that create or modify memories and practices. Durability is just one of the many ways morphology impacts, independently, practice and memory. Lithics are an ideal artifact class to study the continuity of practices, as they preserve well enough to be studied archaeologically, and this same preservation enables them to interact with people across time.

Colonialism and Practice

Colonialism has been frequently studied dichotomously, separating Native from colonist, prehistoric from historic, and "contact" from colonial (Hart et al. 2012). Silliman (2005) argues that the use of the term "contact period" to describe Native American history soon after the arrival of Europeans does not adequately account for the prolonged interactions between Natives and colonists, the violence and destruction of colonial actions towards Natives, and the variety of cultural practices that continue or

change during this dynamic period. This polarization and essentialism is detrimental to the understanding of history, the collective narrative of history, and continues old and outdated concept that assumes fundamental loss of culture through change in practice (Mitchell and Scheiber 2010). Colonialism, as a practice, did not cease at commonly-used dates that mark the end of various colonial periods (Silliman 2012). This cultural benchmarking (Silliman 2010a:269) creates a particularly problematic dichotomy when discussing Native communities. Many view the culture of Native Americans, prior to the arrival of Europeans, as "purer" than later periods (McGhee 2008). Benchmarking does not allow for cultural continuity, as first-time adopters of new or modified practices are cited as having "changed". While change is undeniable, in these cases, this change is (wrongly) associated with a loss in cultural identity, and their descendants, who are continuing this practice, are again accused of "changing" since they are compared with the benchmark when they are simply continuing a practice from the previous generation (Silliman 2009). While some have argued that changes in the types of objects used, and adoption of new materials and practices, as defined by non-natives, produce fundamental and irreversible loss in Native cultural identity, others have examined the change and continuity of practice as a means through which Native American cultural persistence can be found (Cipolla 2007; Jacobucci 2006; Law 2008; Pezzarossi 2008; Silliman 2009, 2010a, 2010b, 2012; Allard 2010; Scheiber and Finley 2010; Farley 2012; Hayden 2012; Panich 2013).

In the same way that change in practice cannot always be interpreted as loss of cultural identity, all apparent cultural continuity should not be cited as an act of

resistance. Rather, continuing the mundane daily activities of the past may simply be an act of persistence (Panich 2013). If the use of a particular tool or a particular method of producing a good worked in the past, continuing this practice in the face of new materials or practices should not be exaggerated as resistance (Silliman 2009). This overemphasis of resistance sensationalizes what more likely was a desire to make one's life continue, as they feel most comfortable doing, which may simply be continuing the "old" way despite "new" options (Silliman 2009). This more mundane interpretation avoids the pitfalls one can make in automatically assuming change and continuity, especially in the face of colonialism, as representing the extremes of identity loss and resistance (Silliman 2009; Panich 2013).

It appears as though massive cultural change followed the Nipmuc people who returned to Hassanamesit/Grafton. These families were forced to follow colonial rules created by their guardians, which required that they express an outward appearance of European practices, including improving their land and constructing European-style homes. These rules may have implied, but could not enforce, that domestic life would similarly reflect European practices. This minimal freedom, within the privacy of a rural domestic landscape, allowed for the separation of a private and public *doxa* that permitted the occupants of the house to engage in a variety of practices, which as this thesis demonstrates included creating stone tools, within the framework of a supposedly European-like lifestyle.

In a colonial setting, these outward and inward appearances have political impacts on Native American people. Once again the familiar structure exists whereby

colonialism creates a regimented framework that fundamentally constrains practice, but allows great variability of practice within those constraints. This issue is especially problematic at the Sarah Boston site where the outward expression of daily life was dictated and regulated by outside forces whose job it was to enforce the rules of public appearance.

Archaeologists interpret artifacts, the created or modified objects of the past, as indicators of history, memory, and practice. People have the ability to interact with artifacts so long as their durability allows them to physically persist. These durable artifacts can influence memories and practices through this interaction. Lithics are particularly durable artifacts, and allow for the examination of practice over a long period of time. The lithics recovered at the Sarah Boston site provide an excellent opportunity to examine the possible continuity of the practice of knapping. First, however, it must be determined if these represent a disturbed deposit that dates to before the arrival of Europeans, the reuse of artifacts after the arrival of Sarah and Peter Muckamaug, or the creation of lithics in the 18th or 19th century. The theoretical background discussed here will provide the framework for the analysis of memory, practice, and morphology.

CHAPTER 4:

METHODS

Identification of Lithics

During the Phase I survey of Hassanamesit Woods in 2004-2005, it became clear that the vicinity around the Sarah Boston site contained artifacts that could be associated with earlier periods of Native American occupation, including a Neville-like projectile point, associated with the Middle Archaic period (7,500-5,000 BP) and chipping debris (Gary 2005). Subsequent field investigations identified numerous other artifacts typically associated with Native American cultures predating the arrival of Europeans. These included stone tool fragments, additional chipping debris, and two fragments of a soapstone vessel. Carved soapstone bowls are most-often associated with the Late Archaic period (5,000-3,000 BP) (Truncer 2004), a transition period whereby the practices of hunting and gathering were transforming into a more sedentary and agricultural system. By the time the author joined the field investigations, it was already clear that although the Sarah Boston site assemblage contained artifacts associated with European settlers of the 18th and 19th century, this growing assemblage of stone tools provided tantalizing evidence for a more complicated cultural history at the Sarah Boston site.

Prior to the arrival of Europeans, lithics-- specifically flaked stone tools-- were created almost exclusively from naturally-occurring siliceous (silica-rich) stones with little to no crystal structure. This combination of physical attributes allows for predictable breakage (conchoidal fracture) with a sharp and durable edge through the act of knapping. Knapping is the practice of creating stone tools through the manipulation of conchoidal fracture to modify a siliceous material to the desired tool form, shape, or function, which invariably includes the production of a sharp cutting edge. Native American populations in Massachusetts have used these types of local stones, which include quartz, quartzite, rhyolite, argillite, chert, slate, and hornfels. The arrival of Europeans introduced a wide variety of new materials to Native American populations including flint (in the forms of ballast and gunflints) and glass. Both flint and glass have similar physical properties (morphology) to the local lithic materials. With the presence of these materials on-site, it was necessary to broaden the approach of the lithic analysis to include all types of siliceous materials, specifically worked glass and flint.

Isolation of Siliceous Materials

Because of the massive volume of artifacts recovered from the eight field seasons at the Sarah Boston site, cataloging was not complete for the entire artifact assemblage when this research project commenced. Fortunately, a preliminary inventory had been completed, which specifically accounted for lithics. Two previous field reports and three masters theses documented several significant artifacts that were the focus of this research (Gary 2005; Law 2008; Law et al. 2008; Pezzarossi 2008; Allard 2010).

The recovery of the dataset used in this research began by isolating artifacts based on the three materials included in this analysis: knapped glass, stone tools made from local materials, and stone tools made from raw materials of European origin. Glass was limited to a single possible glass tool for one primary reason: This thesis focuses on the presence or absence of knapping as a practice through the 18th and 19th centuries, so a single undeniably-knapped glass artifact was sufficient evidence to support the presence of glass-knapping on-site. Heather Law identified nine other worked glass artifacts in the 2006-2007 artifact assemblage (Law 2008: 109). The ingle artifact that I focus upon in this thesis, the base of a tumbler, comes from the densest intact area of the midden deposit.

Local stone tools were first identified through the preliminary inventory sheets under the heading "Other" or "Lithics" depending on the specific form used. Each context containing counts for these two categories were checked for stone tools. Identification of stone tools was done through the physical examination of stones collected from the site, specifically looking for flake-like characteristics, tools exhibiting unifacial or bifacial reduction, and examining other lithic materials appropriate for stone tool production.

Flakes are the pieces of stone that break off while executing the practice of knapping. In theory, each flake exhibits characteristic physical traits, illustrated in Figure 3, including a platform, bulb of percussion, and feathered edges. In reality, many flakes in the dataset lack one or more of these characteristics due to the exact execution of

knapping techniques, physical traits or flaws in the stone (quartz), or other processes that occur to the flakes after they are produced (crushing, trampling, use, etc.).

In the case of the Sarah Boston site, the local materials consist of quartz, as quartz quarries exist in close proximity to the site (Figure 1), and quartzite, also a locally available material. While the quartzite deposits consist of massive rock formations, local quartz deposits are dominated by vein formations. These veins form in cracks of parent bedrock where siliceous lava can intrude and form deposits of quartz. While vein quartz is not rare, deposits of a quality that allows for ready use of the quartz for stone tools are. There are only 62 documented lithic quarries on file with the Massachusetts Historical Commission, and most are related to the procurement of rhyolite in eastern Massachusetts. Three quartz quarries have been identified on Keith Hill.

Like all of New England, the Sarah Boston site was once glaciated, producing the small round stones that are the defining characteristic of the landscape. Despite quartz's tendency to break off in angular chunks due to numerous interior faults and cracks, this glacial action smoothed and weathered all naturally-occurring stones, and their rounded appearance is readily visible throughout the landscape surrounding the Sarah Boston site. The identification of worked quartz was greatly aided by this fact. Any quartz pebbles or rocks that would have broken off naturally from the quartz veins would have been weathered by the glacier (if old enough) or located immediately adjacent to their original source if of a younger origin. Therefore, any sharp or angular quartz fragments bearing flake-like characteristics on or within the vicinity of the Sarah Boston site can be attributed to the deliberate breaking of quartz, brought to the site for the purpose of stone

tool production. Other more internally-consistent materials including quartzite and rhyolite were more likely to have obvious flake-like characteristics.

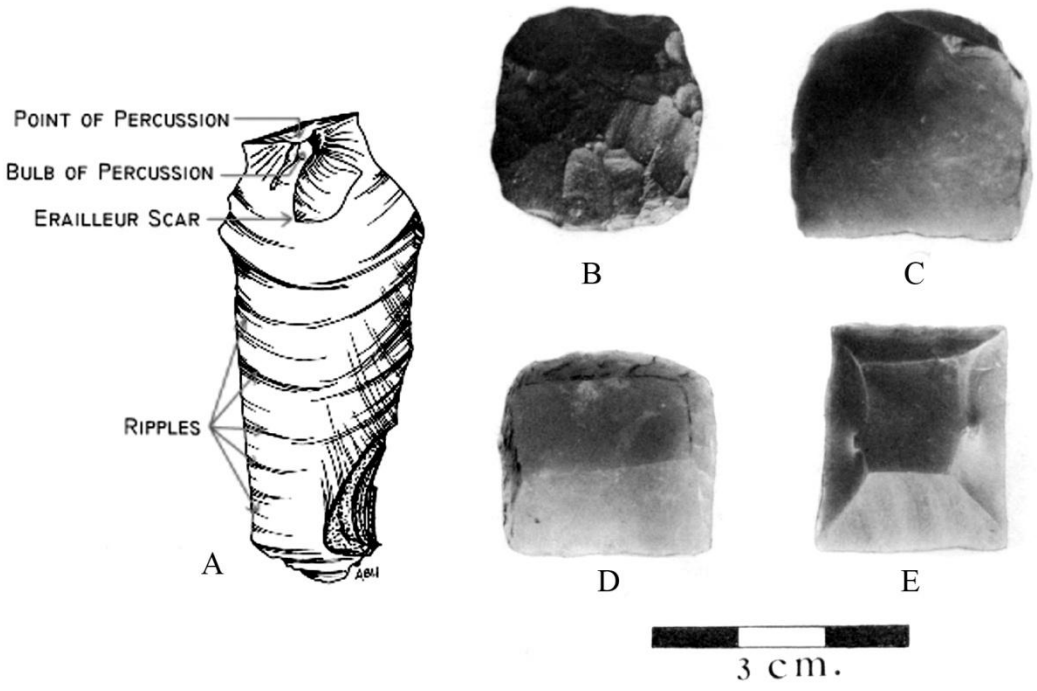

Figure 3- A- Flake morphology; B- Bifacial gunflint; C- Spall gunflint; D- French blade gunflint; E- English blade gunflint. (Kent 1983, 28; Whittaker 2004)

Cataloging lithics

A catalog of the domestic and imported (Appendix A) lithics was created as part of this thesis. There is no catalog for the single possible worked glass artifact. For domestic lithics, each artifact was recorded using its context number, unit, strata, level, and depth. Forms include flake, core, biface, and uniface. Flakes are those pieces of stone that possess at least two of the flake characteristics defined in Figure 2. As previously stated, quartz is especially prone to angular shattering and the author knows

from personal experience that knapping quartz does not necessarily produce the "predictable" breakages associated with many other lithic materials, and a single blow on a quartz fragment can produce more than one flake or angular fragment, often both. Because of this, flakes are more broadly defined, in this thesis, as those pieces that display both flake-like characteristics and the angular fragments that could also be produced during the same knapping mechanism. The non-quartz chipping debris was much easier to categorize using the above definitions.

Bifaces and unifaces were identified as those stone tool fragments exhibiting flaking on one (uniface) or two (biface) margins and containing physical characteristics such as lens-shaped cross sections or regularized outline that differs from a core in that it clearly indicates a more deliberate attempt at the production of a finished tool rather than the production of flakes.

For gunflints, a separate catalog was created to accurately record the wider variety and gunflint-specific physical attributes (Table 2). Each gunflint was measured including length, width, and thickness. Physical characteristics including retouch, color or type of flint, and typological form were included in the catalog. Typological form was determined based on the definitions and descriptions accumulated from a variety of sources. Figure 3 illustrates the four defined and widely-accepted gunflint forms.

In order to study the gunflints outside of the laboratory, to record the present appearance of the gunflints, and to make accurate lithic illustrations, each gunflint was photographed. This process included photographing each side and edge of the gunflint from multiple lighting angles. By changing the lighting angle in the photograph, flake

scars that may not be visible from certain angles are enhanced by the shadows created from alternative lighting. This allows for accurate analysis and illustration of the actual physical modifications to the gunflint that occurred after production of the gunflint.

Glass analysis focused on the single tumbler base first identified by Heather Law in her 2008 master's thesis. Photographs of the tumbler were taken from multiple angles; however, it was clear that the fine flaking on the edge of the tumbler was not adequately recorded with this method due to the fact that the clear nature of the glass shows flakes from both sides of the tumbler in the photograph, confusing the appearance of the flakes in the photos. To remedy this, white Sculpey III, a synthetic sculpting medium, was rolled flat and the edge of the glass artifact was rolled across the material, recording a cast of the flake scars. This was repeated for both the interior and exterior of the glass artifact as well as the edge. The Sculpey was baked according to the package's directions, solidifying the material and making it sturdy and durable for handling and photography without accidental modification to the impression while the materials were still soft.

These casts were photographed using oblique light to best enhance the flake scars. This method not only accurately recorded the flake scars, but also allowed for a single side of the tool to be analyzed at once without the confusion of the clear glass showing scars on the opposite side, and the flat nature of the Sculpey medium allowed photography of the entire flake scar progression, rather than portions of the edge of the glass artifact along its curved surface

Finally, lithic illustrations of the gunflints and glass artifact were created using the standards and practices established in Lucile Addington's lithic illustration monograph (1986). These illustrations (Figures 9 and 10), coupled with the digital photos described above, provide an accurate depiction of the actual forms of these siliceous tools.

Supporting artifacts

The process of identifying and removing lithic materials from the overall assemblage resulted in the identification of other non-siliecous tools and artifacts that have potential for providing additional information regarding the periods of occupation at the Sarah Boston site. These artifacts (Appendix A) include but are not limited to two refitting steatite bowl fragments, numerous fragments of Native American pottery, a pestle, and other ground stone tools. These artifacts were each photographed from multiple angles to record their forms.

The Native American pottery was examined to determine if decorations were present on the outer surfaces. Because of the lack of decoration on any of the fragments, it was not possible to limit the dating of these artifacts other than after the beginning of the Woodland period (3,000 BP), which is defined as the period beginning with the adoption of pottery into Native cultures in the Northeast.

Ground stone tools were included in this report as they provided possible examples of artifacts that pre-date the 18th century. While the whetstones are of indeterminable age, the pestle fragment and steatite bowls, discussed further in the analysis section, are examples of artifact types that could be significantly older than the

house foundation and possibly indicate the reuse or interaction with older Nipmuc artifacts by the later occupants of the site.

Spatial Data

Once the artifacts had been isolated and cataloged, it was necessary to study the context of these artifacts to aid in the analysis of periods represented at the Sarah Boston site. To do this, plan maps of the overall site were used as base maps for the distribution of the artifacts included above. To show overall distribution of gunflints, Native American pottery, and lithics, counts were made per unit and graduated circles were placed on each unit representing the overall counts of each artifact type. This map shows the overall distribution and contractions of these artifact classes (see Chapter 5, Figure 6). These spatial data, coupled with all of the methods presented above, provide the necessary data set to answer the question of the continuity of lithic practice at the Sarah Boston site.

CHAPTER 5

ANALYSIS

The presence of both domestic and European lithics on the Sarah Boston site provides an excellent opportunity to examine cultural continuity through the lens of the practice of knapping. This section will begin with descriptive statistics of the lithic assemblage, followed by analysis of the domestic flaked lithics, gunflints of European lithics, flaked glass, and finally auxiliary artifacts including ground stone tools and Native American pottery. The analysis provided here demonstrates the lithic practices represented at the Sarah Boston site, the presence of an early Native American component beneath the 18th -century site, and the contemporary deposition of lithic artifacts within the domestic refuse of the site.

Descriptive Statistics

Cataloging procedures remain ongoing for the more than eight field seasons of field school excavations at the site. Preliminary inventories put the total artifact count at a minimum of 120,000 artifacts, which, while not a final number, will provide an informative baseline for the discussion here. In total, 68 2x2 meter excavation units have been fully excavated, predominantly in and around the house foundation and the area just

north of the foundation. Other units have been scattered throughout the immediate area in the hopes of establishing areas of high and low use. The assemblage discussed in this thesis consists of 216 artifacts, including 169 domestic lithics, 17 gunflints or European lithics, and 30 Native American pottery fragments. At just over .13% of the total artifact assemblage (a number that will likely decrease after total artifact counts are finalized), it is clear that domestic lithics are a very minor component, in number, to the archaeological site; however, their significance, as discussed throughout this thesis, lies not with their count. At just over .01%, the gunflints and European lithics are also very minor components at the site, in number.

Lithic artifact classifications, as discussed earlier, are arbitrary, but still relevant to the analysis presented here as they provide valuable descriptive data on the overall appearance and potential functions of lithics found at the site. Forms found at the Sarah Boston site are summarized in Table 1. The predominant lithic type on the Sarah Boston site is lithic production debris (flakes and cores), representing 97.6% of the domestic flaked stone tool assemblage. Non-flaked stone tools, including hammerstones, pestles, steatite, and whetstones, represent 5.3% of the lithic assemblage, and finally flaked tools, consisting of bifaces and unifaces, are just 2.6% of the overall domestic lithic assemblage. From these numbers, it is clear that the refuse from lithic production far outnumbers finished tools. Whether this indicates that the site is a lithic workshop, and not a site more heavily dominated by finished tools like a settlement or small camp, is discussed below.

Lithic type	Count	Percentage of total
Biface	2	1.3%
Uniface	2	1.3%
Core	22	13.8%
Flake	134	83.8%
Total	**160**	

Table 1. Domestic lithic artifact classifications s from Sarah Boston site

Sourcing

The predominant material represented in the lithic assemblage is quartz. As discussed earlier, several known quartz quarries exist nearby, one less than .5 miles from the site. The presence of a single piece of smoky quartz is slightly problematic. While the nearby Milford Road Quartz Quarry was nearly destroyed by relatively recent mineral collectors seeking its well-formed crystals, there is no indication that the crystals present at the site were anything other than white or clear quartz. Therefore, some other source is needed to account for this material.

The two known nearby quartz quarries are both located in areas where natural fluvial erosion has exposed bedrock outcrops, which coincidently included quartz veins. It is possible that there are other quartz veins not yet discovered or already lost to development that contained the smoky variety of this mineral. Additionally, smoky quartz is abundant in other areas, though not well documented. For instance, the author often encountered large quantities of smoky quartz in CRM surveys within the state of Rhode Island, which is known for containing large deposits and outcrops of high quality massive quartz crystal including smoky quartz.

The quartzite present in the site could have come from a wide variety of nearby locations. The area east of Worcester, which includes the town of Grafton, has very

extensive bedrock outcrops of the Westborough Quartzite formation, a metamorphosed sandstone. Its visual similarities (pinkish and sandy texture) to this material indicate that any of these outcrops could have served as the source of this material.

The steatite vessel cannot be sourced to a specific location, though many steatite quarries exist in central Massachusetts and northeast Rhode Island. That said, it is not likely that the steatite used in the construction of the vessel was sourced outside of the general region. Specifics of this vessel's possible sources will are discussed below.

The pestle is of a fine grained dark-colored material, likely Braintree slate, which could have been gathered in person, traded to the location, or collected from glacial till and river deposits. The schist whetstones are likely very local in origin given that schist is commonly found throughout the region. The single piece of basalt chipping debris is also likely to be local as many episodes of rifting in geologic history have allowed not only veins of quartz but also veins of basalt to interject the local bedrock. The domestic lithic assemblage contains no exotic materials, and it is possible for nearly every artifact to have been made from materials found on Keith Hill (excluding the Braintree slate, steatite, and rhyolite).

Dating

Due to the relative lack of finished tool forms, and the partial nature of the tools that do exist, no definitive dates can be provided for the domestic lithics recovered from the Sarah Boston site. One slight exception is a large projectile point, recovered almost 100 meters north of the house foundation, dating to the Middle Archaic (5,000-7,500 years old). Although it is not close enough to the site to comfortably associate it with the

Sarah Boston house foundation, it nevertheless is the closest datable lithic artifact to the deposits encountered at the site.

While no calendar dates can be assigned to the gunflints, their creation out of lithic materials (European flints) indicates that they could not have existed on the site prior to the appearance of colonists as early as the late 16th century. Further discussion of the gunflint forms, below, expands on possible dating interpretations; however, the overall lack of 17th-century cultural materials at the site and the strong association of the site's assemblage with the late 18th and early 19th centuries (Law et al. 2008: 63) indicate the deposition of the gunflints sometime during this period of significant occupation.

Groundstone

Groundstone tools are created by manually pecking and grinding the surface of a dense stone. Typically, the raw materials used in these stone tools are not the same used for knapping. These tools are ground or pecked either to produce a desired form (for example, an adz), in the process of using them (whetstone), or as a side effect of working with another object (hammerstone). Basalt, Braintree slate, and fine grained granite are typical stone materials utilized for ground stone tools, all local to the eastern half of Massachusetts. At the Sarah Boston site, seven ground stone tools were identified (Figure 4). A single hammerstone was identified, distinguished by its overall smooth surface and distinct pitting on one end where it clearly and repetitively struck a hard object. This hammerstone was found within the secondary deposit of the house foundation. The materials found within the house foundation are considered "secondary"

Figure 4- Sarah Boston site ground stone tools. Clockwise from upper left: Pestle with use-wear or production scratches (unit E1 foundation fill), whetstone (unit B5 foundation fill), whetstone (unit F21 foundation fill), and possible ground stone stemmed blade or whetstone (unit C15 level 2A).

as they were originally located elsewhere in the site and were re-deposited into a secondary context sometime after their original deposition.

Two whetstones, both made of schist, which can be procured locally, were identified within the house foundation fill in units B5 and F21. These two artifacts clearly show usewear on multiple surfaces. It is difficult to interpret when these tools were made as whetstones are found on sites from all periods prior to the arrival of Europeans, and are also commonplace on sites associated with European colonists. A third schist artifact may be a third whetstone; however its shape appears to be the base of a broken stemmed blade. The narrowing of one end is beveled and symmetrical and the broad area at the opposite side, near the break, is lenticular in cross-section, indicating that the tool may have been deliberately shaped into its form for use as a cutting blade. This possible ground stone stemmed blade was recovered from unit C15, north of the house foundation.

Two steatite fragments (Figure 5), which refit to create a portion of a carved stone bowl with a lug handle were identified, both north of the house foundation. The production and use of steatite vessels was a significant technological development during the Terminal Archaic period (3800-2800 BP) (Truncer 2004). The physical properties of steatite allowed it to withstand cooking on an open fire, which was the only durable material possible for this purpose prior to the adoption of pottery. Steatite is an extremely soft, naturally occurring stone (Mohs scale 2) and is easily carved using stone

Figure 5- Steatite fragments combined. Drill mark shown on left.

tools. Bowls and other steatite vessels are associated with the Terminal Archaic period in Native American history (3800-2800 BP). Recent evidence supports their use for processing of meat and plant materials including pine resin; however, residue analysis on these vessels has proven problematic given preservation and interpretation issues arising from their age (Truncer 2004; Hart et al. 2008). In the Northeast, three major areas of naturally occurring steatite were used in the past for bowl production: the Wilbraham, Massachusetts area, the area east of Worcester, Massachusetts, and the area in and around Providence, Rhode Island (Bullen 1940; Bullen and Howell 1943; Howes 1944; Fowler 1961, 1966, 1968; Truncer 2004).

Both fragments are found in association with an 18th -19th -century midden deposit, between 2 and 6 m from the house foundation and in association with a dense deposit of late 18th -century artifacts. Irregularities in the rim shape and curvature of steatite vessels do not allow for accurate reconstruction of the diameter of the vessel based on the rim curvature; however, the general trend of the overall shape of this vessel indicates that it was likely nearly as wide as it was tall (globular). The base of the vessel is 1.6 mm thick and there is a pronounced conical lug on the upper half of the outer wall of the vessel. This lug is typical of steatite vessels from the Transitional Archaic. Fowler (1966) includes a drawing of a steatite bowl that approximates the globular form and lugs present on the example.

The most conspicuous feature of this vessel is a distinct cone-shaped drill mark on the outer surface of the vessel (Figure 5). Because of the value of steatite vessels and the investment of time and energy they represent, they are often found showing distinct evidence of repair (Moffett 1947). These repairs typically consist of holes drilled on opposite sides of cracks or breaks in the wall of the vessel with some sort of fastening device, likely organic, used to mend the break.

The break in this vessel shows evidence of a purple-red crystalline structure, likely an intrusive ultra-mafic mineral vein within the rock that weakened the vessel wall leading to eventual failure and breakage. The drill mark extends across both sides of the break, indicating that drilling occurred prior to breakage.

The final ground stone tool identified at the Sarah Boston site is a significant stone pestle. Pestles are rod-shaped stone artifacts that are used, with a bowl-shaped

mortar, to crush, grind, or otherwise process things, especially food. This pestle measures 11.4x5.9x4.3 cm, however is broken at one end. It is made from a fine grained gray stone material, most likely Braintree slate. Overall it is rounded in cross section; however, one side of the pestle has been ground flat. It is not immediately clear why this was done, as the end of the pestle--presumably the end that would have been used to crush food such as corn--is rounded and has clear pitting from use. This artifact is often associated with processing of plant materials, which are typically associated with the Woodland (3,000-400BP) and later periods, and the introduction of agriculture to the region. It is possible that this tool was made during the occupation of the house as the technique and raw material both are equally viable during the Woodland period or 19th century.

Domestic Lithic Analysis

Quartz is a problematic material to study. Glass and quartz share an identical chemical formula, SiO_2. Pure quartz would behave, physically, the same way as glass when struck with a hard object: predictable conchoidal fracture. This makes quartz a good material, in theory, for knapping. In practice, however, crystal growth within the mineral are unpredictable creating planes of weakness, fracture points, and general inconsistencies that make flaking irregular. Even in crystal quartz, internal growth structures can make predictable flaking problematic. Given this, it is often difficult to distinguish between flakes, cores, and bifaces as the scars left behind from knapping are so irregular it is difficult to distinguish the difference between a flake, the natural texture of the rock, and random fractures from internal crystal flaws.

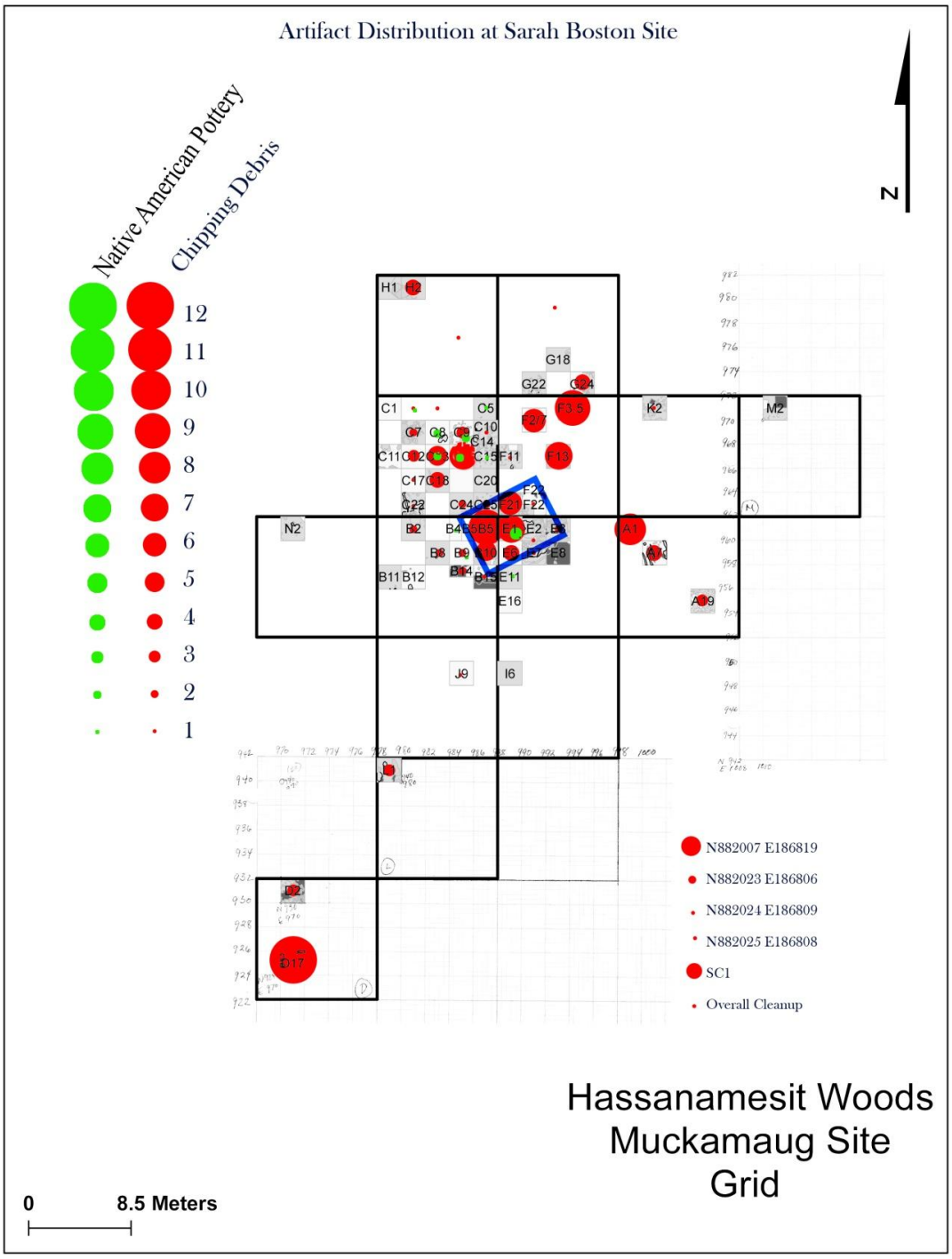

Figure 6- Map showing distribution of lithics and Native American pottery on Sarah Boston site

These flakes appear widely across the site (Figure 6); their distribution is discussed below. The flakes themselves represent what appear to be all stages of reduction or tool making from raw material collection (cores), to large flakes, small flakes, and shatter. At all stages of reduction, the flakes produced by working quartz would have been usable as tools themselves.

Native American Pottery

Sixteen total pieces of Native American pottery were identified within the Sarah Boston site representing an MNV of 1. Overall, most were found in a concentration north of the house foundation, with others located within the secondary house fill (Figure 6). No Native American pottery was identified outside of this area. This indicates that the area north of the foundation was either the location of Woodland period occupation or was an area where Woodland period pottery was redeposited within historic deposits.

Figure 7- Decorated rim on pottery sherd MS408

Of the fragments, three were pieces of vessel rims; however, none were large enough to accurately indicate the original size of the vessel. Only one clear notch-like impression along a rim sherd indicated deliberate decoration (Figure 7); however, most pottery pieces showed evidence of fabric

paddling used to combine coils in making the pot, or perhaps the vessel was rested on a textured surface during production. All fragments had grit, as opposed to shell, temper, indicating they were produced well away from coastal areas.

The Native American pottery identified at the Sarah Boston site are a critical component to this analysis. A first assumption is that they date to the period prior to the arrival of Europeans, based solely on their similar appearance to Woodland pottery; however, none of the typical decorations, including incised lines, which are commonplace on rims from the late Woodland period, were identified on any of the sherds raising the possibility that these pottery fragments could be examples of colonoware, or Native American pottery made after the arrival of Europeans. If the pottery is in fact Woodland period in age, it is a clear indication that early artifacts were somehow mixed in with later colonial period artifacts. The climate of New England coupled with the fragility of the low-fired pottery means that if the pottery fragments were Woodland period in age, they had likely broken to a point where their small size would have made them un-usable for cooking and storage if they were found or re-used in the 18th through 19th centuries.

Gunflints and European lithics

This thesis focuses on lithics as a material class over a broad period of time. Because of the potential for knapping to have existed as a practice on the site anytime between the arrivals of Native Americans to the area through the present, all lithics, including gunflints and glass, are included in this study. The Nipmuc family who lived at the site may have used the gunflints, as gunflints, strike-a-lights, lithic tools, or raw

material (European flint). This section will discuss the implications of the various styles or forms of gunflints followed by a discussion of how these artifacts may have been used.

The gunflint assemblage (Table 2) represents the 16 artifacts made from European flint, including 4 flakes of flint, 10 gunflints complete enough to study, and 2 partial gunflints too fragmentary for this analysis. Flakes may be evidence for knapping, however they also occur naturally as a gunflint is used in a firearm, so these flakes cannot

Ctx #	Unit	Level	Object	Weigh t (g)	Width	Leng th	thick ness	Type F=French E=English	Color
9	A07	3A	Gunflint	2.2	20.2	14.8	5.2	F blade	gray
74	B12	4AB	Gunflint	2.0	18.9	14.7	5.2	F blade	honey
126	C07	2A	Fragment	1.0	na	na	na	Na	
133	C07	3A	Fragment	0.2	na	na	na	Na	
142	F02/7	2A	Flake	0.1	na	na	na	Na	
321	E01	5AB	Gunflint	3.9	20.5	19	9.6	Biface	dk gray
327	B09	4A	Gunflint	4.5	22.1	21.8	7.9	Spall	gray/black
354	E01	6C	Gunflint Fragment	0.6	na	na	na	Na	white
416	B05	3A	Gunflint	1.4	14.4	16.2	4.2	F blade	honey
416	B05	3A	Gunflint	2.6	24.3	16.5	5.8	Eblade	honey
464	E02	6A	Gunflint	2.9	21.6	15.4	7.2	F blade	honey
517	B10	1A	gunflint	3.8	20.1	17.9	7.8	Spall	black
557	B05	6A	Gunflint	3.8	18.2	21.2	5.7	E blade	black
766	E03	SW BALK	chipping debris	0.1	na	na	na	Na	
791	K02	1A	fragment	1.2	na	na	na	Na	gray
933	N882024 E186809	2A	Gunflint	1.4	14.1	14.4	4.4	F blade	honey
1040	C02	1B	Gunflint	3.2	20.9	17.9	6.3	E blade	Grey/black

Table 2- Gunflints and European lithics at Sarah Boston Site

be ruled out as accidental wear. Categorization of the 10 gunflints is made difficult due to reworking of some gunflints and do not conform easily to the four style categories (biface, spall, European blade, French blade (see Figure 3)). Barbara Luedtke's (1999) exhaustive survey of "what makes a good gunflint" notes that symmetry, regular flaking, straight edges, and evenness of color, were all contributing factors in a reliable spark-making gunflint, which determined both the quality and price of a gunflint in a highly regularized and standardized industry. None of the gunflints found at the Sarah Boston site would be considered first-quality by these standards. These artifacts indicate that the Sarah Boston family likely purchased or obtained gunflints that were not high quality, and therefore less expensive, than first-quality gunflints.

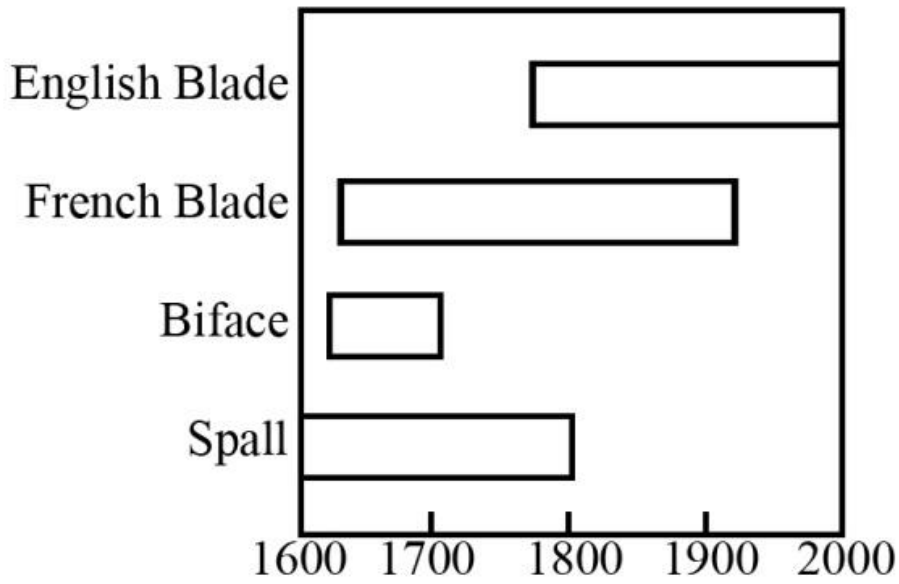

Figure 8- Idealized gunflint dating range, based on (Luedtke 1999)

Gunflint forms have often been associated with various periods of history. Figure 8 shows the often-used dating rubric for gunflints. Caches of unused gunflints of a variety of forms (Honerkamp and Harris 2005) have shown that a dating of gunflints based on forms is imprecise and potentially misleading. The Sarah Boston site contains bifacial, wedge, French, and English blade gunflints, all within a site clearly associated with the late 18th and early 19th century. This could be the result of curation or reuse of older gunflints, incorrect dating strategy by archaeologists, and the ability of someone to make a bifacial gunflint out of ballast flint at any time in history.

Five gunflints stand out in the assemblage. One is the bifacial gunflint mentioned above, one shows retouching inconsistent with gunflint use, and the remaining three, despite appearing in form as French and English blade gunflints, show clear examples of reworking along their edges in the form of notching. Gunflint "parts" include a heel, the back end of the gunflint held in the clamp of a flintlock mechanism, two sides, and the edge, which strikes the frizzen. All of the gunflints show wear along their sides, heels, and edges some due to the reduction techniques employed in their production (French blades, especially), and the repetitive and violent striking of the gunflint upon the frizzen did produce crushed edges and flakes, which are the primary reasons why flint flakes have been excluded from further study in this thesis.

These five gunflints show wear that cannot be explained by normal use as a gunflint in a flintlock gun mechanism. The frizzen, throughout the history of its use, is a flat metal striking platform. If a relatively straight edge of a gunflint repetitively struck the flat surface of the frizzen, the flaking pattern would be relatively consistent small

flakes and crushing, with minimal overall curvature of the blade edges. Figure 9 illustrates these five gunflints.

MS 321 (Figure 10) is made from English flint, worked bifacially with a pronounced area of chalky cortex. Gunflints of near identical description from the 17th century site of Aptucxet on Cape Cod in Massachusetts are discussed by Barbara Luedtke (1998). These gunflints, though likely significantly earlier in date to this example found at the Sarah Boston site, were made from ballast flint deposited nearby as an alternative to traded finished gunflints during periods when they were not available. It is very likely that MS 321 is also made from ballast flint, as traded gunflints would have been made using highly standardized and mechanized processes in England (Luedtke 1998; 1999). Grafton is a good distance away from the coast where ballast dumps would have occurred "naturally" however the same trade networks that brought the rhyolite from the Milton/Quincy region easily could have brought with it the gunflint or raw material used to make it. Additionally, one face of the gunflint shows evidence of more than 13 Hertzian cones representing strikes upon the face of the gunflint that did not produce a detached flake. Failed cones often indicate someone struggling to work with a difficult material or someone without the strength or skills to remove flakes from strikes. Either way, the presence of a Nipmuc family on the site coupled with the presence of this bifacial gunflint indicates that this artifact may have been made by a Native person.

MS 416a is a small and thin French blade gunflint. The heel and one side of the gunflint show features associated with normal gunflints. The edge and second side, show evidence of fine bifacial retouching producing a curved scraper-like edge.

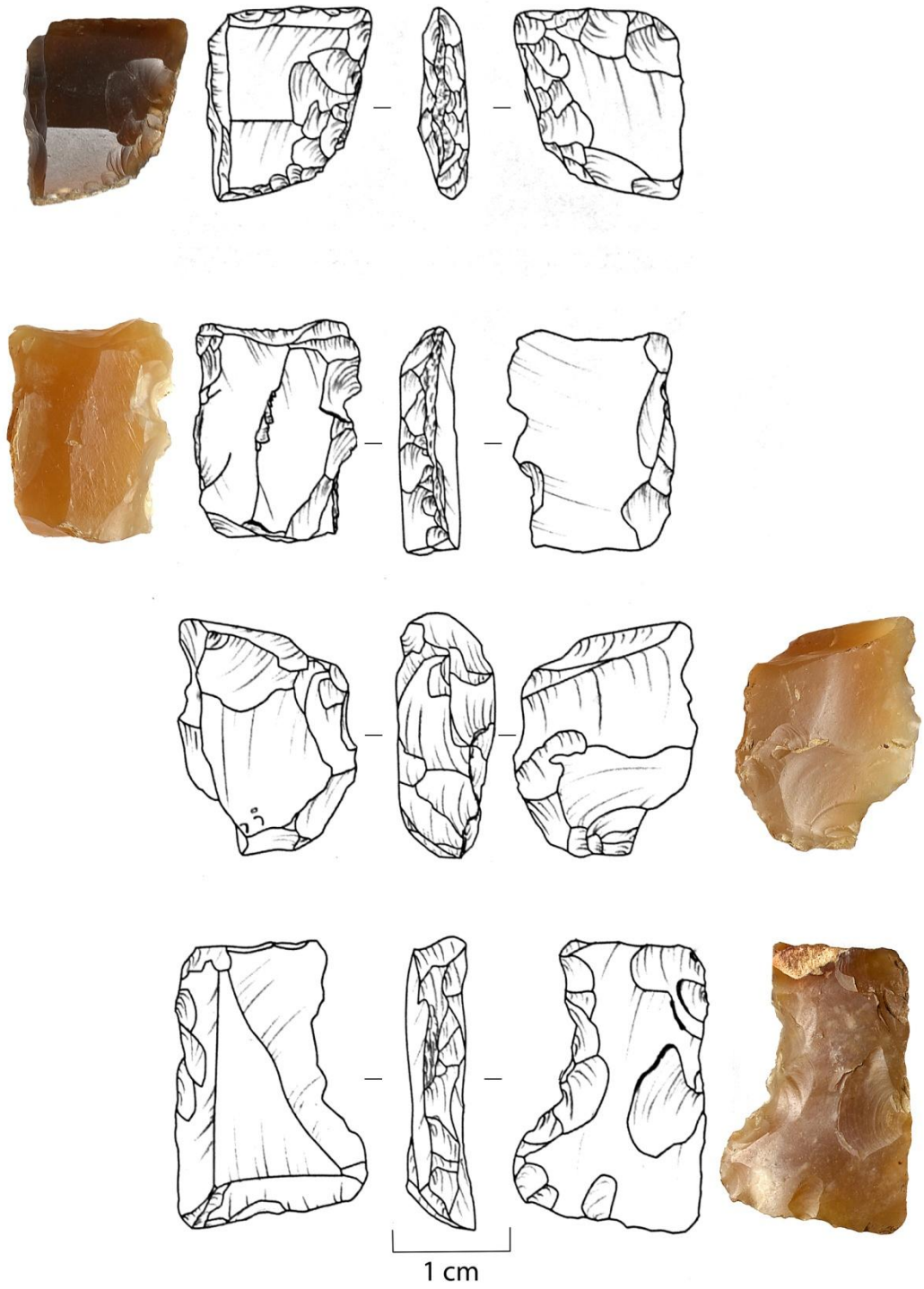

Figure 9- Gunflints. Top to bottom: MS416a, MS74, MS464, MS416b

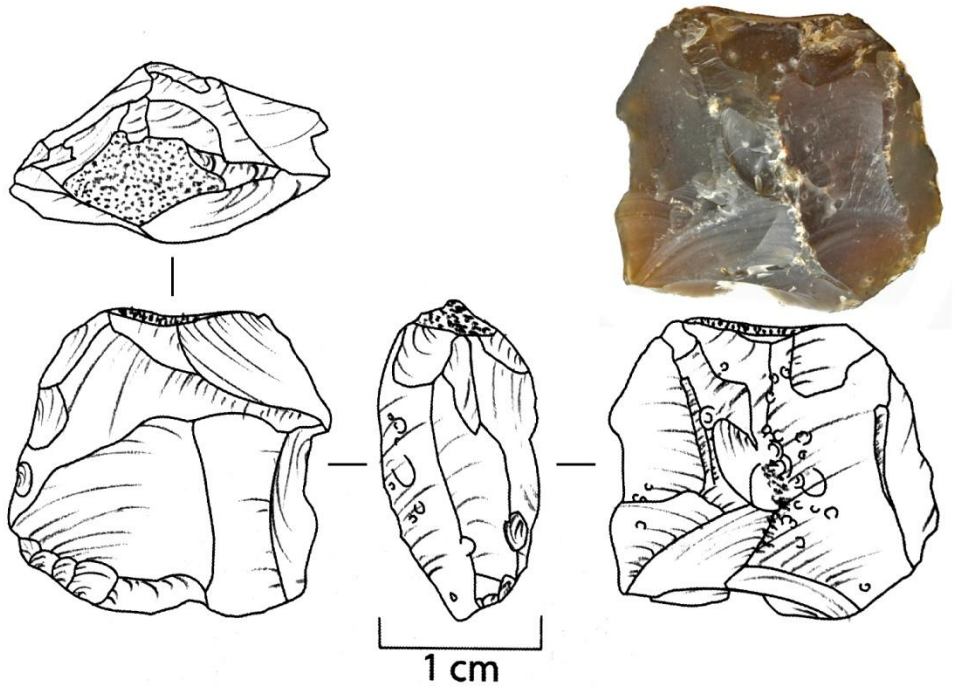

Figure 10- Bifacial gunflint MS321

Though bifacial, this small gunflint could have been used as a scraper, given its resemblance to thumbnail scrapers found throughout earlier period assemblages. It is also possible, given that many of the gunflints appear to be "seconds," that this retouching is actually a manufacture product, however manufacture retouching of gunflints is unifacial, strongly indicating that this gunflint was reworked into a different stone tool than its original gunflint function.

MS 464 is an extremely thick French blade gunflint showing extensive flaking on nearly all faces of the gunflint. One edge shows the typical crushing and flaking scars

associated with the retouching around three sides of a French-style gunflint; however, these gunflints are produced on blades, meaning flake scars are only present on one face of the gunflint. The presence of large and numerous flake scars on all edges of the face of the gunflint most often free of these features indicates that this gunflint has been retouched for reasons outside of gun use. It is possible that the overall size of this gunflint presented the Nipmuc family an opportunity to use this object not just as a gunflint but also a small tool. The retouching does not seem patterned or regular, indicating the flakes either came from relatively erratic retouching or from extended use. The lack of the full D-shape typically associated with French gunflints may indicate that this gunflint is a fragment of a large French gunflint that, after breaking, was reworked into a new tool. It is possible that this gunflint was used as a strike-a-light; however, there are no clear notches associated with this use.

MS 74 is a small French-style gunflint with two deep and prominent notches. Close examination of the notches reveals that each is similar in shape and could be the result of two massive blows with a strike-a-light that had a square cross section. This is just one explanation as it is impossible to rule out pressure flaking or usewear from other uses of the gunflint. Metal residue was present on the edges and face of the gunflint; however, experimental reconstruction with modern examples on steel screens and drying racks showed that metal residue can easily be accumulated by rubbing a gunflint on field or laboratory equipment. This, unfortunately, ruled out metal residue, as an indicator of their use a strike-a-light.

MS 416b is a large and thin French-style gunflint. It is very short in length giving it a rectangular appearance, and if not retouched would have been difficult to use in a gunflint mechanism. A broad and deep curvature is present across one end parallel to the striking edge. The retouching is unifacial with flakes appearing on the blank side. This large gunflint may have been used to scrape a hard object like bone or wood producing unofficial retouch/usewear on one edge. Also, the irregular curved edge closely resembles the wear seen in a modern gunflint that was struck over 100 times with a rounded cross-section strike-a-light. An iron oval ring was recovered from the Sarah Boston site in the first level unit B8 (figure 11), just west of the foundation. While other possible functions of this iron artifact exist, it is possible it was made for or used as a strike-a-light. Either way, the wear on this particular artifact is outside the normal wear associated with gunflint use for the function of a flintlock mechanism.

These five artifacts demonstrate evidence of knapping at the Sarah Boston site. Unlike other sites such as the 17th-century Mashantucket Pequot Monhantic Fort, where Native American use of gunflints is directly associated with warfare and defense (Kelly 2011), these gunflints appear to have been used in a domestic setting where hunting and food processing appear to be the primary use of these gunflints. Additionally, with the exception of gunflint MS321, the gunflints presented here do not appear to have been made in Europe using standard gunflint production techniques. As a material that could not exist prior to the arrival of Europeans, these artifacts clearly indicate that the reworking of the gunflints represents knapping that occurred after what was once generally agreed to be the end of the practice of knapping stone tools.

Figure 11- Possible strike-a-light from Sarah Boston Site. Photo courtesy of Heather Law.

Worked Glass

The worked glass tumbler is evidence for careful and conscious use and modification of glass artifacts for the purpose of creating a tool. The regular size and distribution of flakes, on both sides of the cutting edge, cannot be attributed to crushing or grinding of the tumbler under more passive conditions (Figure 12). The fragile nature of glass and its ability to easily flake would not have resulted in regular spacing and size of flake removals under anything but a controlled environment. As a knapper of glass, the author of this thesis notes that when working glass, it is often too easy to produce

flakes, resulting in larger-than-desired flakes or the removal of more flakes than intended with each strike. Accidental pressure or striking of a sharp glass edge can easily produce numerous and erratic flake scars, as seen on most archaeologically excavated glass objects. This further emphasizes the deliberate and anthropogenic origin of this carefully flaked glass artifact.

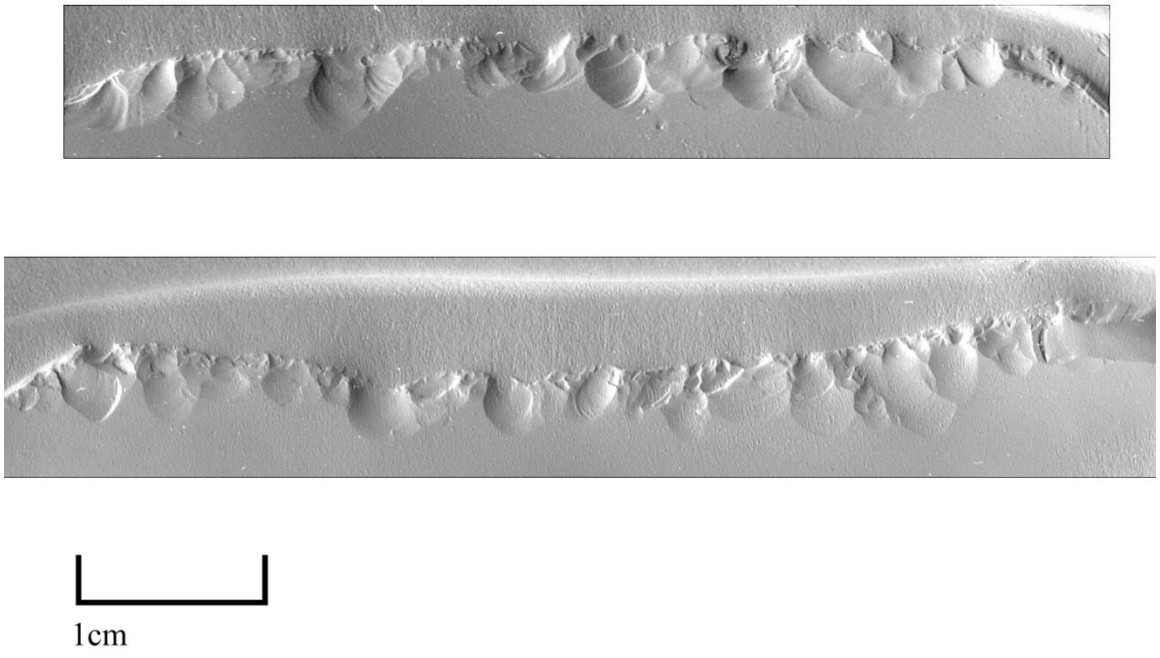

Figure 12- Molded impression of regular flake scars along glass tumbler edge. Above: Exterior. Below: Interior

Site Transformation Processes

Figure 6 can be used not only to visually represent artifact locations, but also to demonstrate what may have happened to the site after the initial deposition of its

associated artifacts. The northern portions of block C and F contain concentrations of artifacts; however, the greatest concentrations overall are within the house foundation. The foundation was clearly filled in, given that it was once an open basement and when first encountered archaeologically it was level with the surrounding area to an extent that the field crew did not notice it. Photo documentation and oral history (Law 2008) clearly indicate that the site experienced bulldozing, but what effect did this have on the archaeological deposit, the distribution of artifacts on the site, and the ability of archeologists to interpret this potentially disturbed area?

The greatest concentration of artifacts is within the house foundation, with two smaller concentrations in Unit C14 and F3.5 (Figure 4). What is clear from the distribution of artifacts is that the area north of the foundation has a large concentration of artifacts, the area west of the site has a consistent distribution of artifacts, and a clear "gap" in the artifact counts exists between the foundation and the concentrations to the north.

This gap can be interpreted two ways. First, this area is a "yard," which was swept clean of artifacts due to regular use. The second interpretation is that this area was disturbed by the bulldozer, removing much of the material culture that was once present in the location and redeposited it elsewhere. The latter is most likely true. Given that the house foundation would not have been completely filled in immediately after the house fell out of use, the artifacts must have entered the foundation from elsewhere. Since very little evidence of later artifacts exists at the site and the assemblage within the house closely resembles the assemblage outside of the house, the artifacts most likely did not

accumulate from trash deposition in the foundation by later occupants after the house was no longer protecting the open cellar hole. Despite this, there is some concentrations, such as iron artifacts, that appear to be greater within the foundation fill.

Also, the artifact concentrations within the foundation far outnumber concentrations outside the house as noted above. If the open foundation (without the house above it) was not used for domestic purposes at a later time, artifacts would not be greater inside the foundation than around. The gap in artifacts between the foundation and the area to the north is a key indicator. What this gap likely represents is the area where the bulldozer pushed in soils towards the foundation, filling the foundation with artifacts from what would later be several excavation units. While C14 and the surrounding units are identified as an intact primary deposit, F3.5 may be interpreted as areas where the bulldozer, in backing up from pushing soil into the house foundation, pulled with it some soils from the "middle" units concentrating artifacts (to a lesser extent than the foundation), or F3.5 may also be a primary midden deposit like the C14 area.

18th through 19th -century lithic use

The descriptions of the artifacts assembled for this analysis shows clear evidence that stone tools and Native pottery, both previously associated with Native American practices that predate European arrival, were found in the same primary deposit as artifacts from the 18th through 19th centuries. When describing the continuity of practice over time, it is necessary, in this case, to determine if the period of time represented at the site spans thousands of years, or if the people living in the European-style home were

actively producing artifacts that follow forms typical of the past. In order to make this distinction, a careful analysis of the stratigraphy and context of each lithic artifact was conducted. As will be discussed in detail below, the results of this analysis indicate the presence of Native American cultural materials in soil deposits that must date to well before the arrival of Europeans. Also, the correlation of the density of both lithics and all other artifacts indicate that the occupants of the house site deposited and therefore interacted with (and possibly produced) the lithics found within their household refuse.

This process, overall, is complicated by two factors: the site was excavated in 2x2 meter units, which favored vertical resolution over horizontal resolution, and the disturbed nature of the site (bulldozing, farming, and orchard planting) meant that vertical distribution of artifacts were often unreliable. That said, this analysis shows that despite these two issues, stratigraphic differentiation still exists within the site.

In the Northeast, the first two levels of soil encountered during excavation are typically the A and B soils. A horizon soils represent dark organic deposits associated with plant decomposition and relatively recent deposits. In farmed areas, these A soils are often associated with plowing and are sometimes designated "plow zones." B soils are typically located below A soils and are the zone in which iron and other minerals collect as they pass through the natural soil deposits turning the soils a reddish color. This soil takes many hundreds of years to form. In the Northeast, artifacts found in the B soils are associated with Native American activities prior to the arrival of Europeans. A plow zone, located in all areas of the site and cutting into the B soil horizon, did not allow for any conclusive determination of early components to the site found within this

particular horizon; however, the undisturbed B soils did. Despite the fact that many of the lithics studied in this thesis were cataloged as coming from the B horizon, careful review of the field forms, profiles, and plans indicated that in all but two cases, the domestic lithics were found in pockets of A soil or features that extended into levels that were overall labeled B soil. The two exceptions, however, are clearly located within B soils. The presence of lithics within natural B soils is strongly associated with pre-European cultural deposits. These deposits represent an earlier occupation of Native Americans at the same location as the house foundation, prior to the arrival of Europeans.

Having established an occupation at the Sarah Boston site predating the formation of the European-style house, the presence of stone tools on the site must be addressed. It is possible that the residents of the home studied in this thesis created a steatite bowl, stone pestle, Native American-style pottery, and stone tools; however, the overall abundance of artifacts closely resembling forms from a broad period of production makes this scenario highly unlikely. That said, so long as these artifacts exist, together in a deposit that dates to a period after all of their "typological forms" have been introduced, it is possible that these artifacts are reproductions mimicking the forms of earlier artifacts.

Alternatively, these artifacts may be part of the earlier site identified through the artifacts found in B soils that were then mixed into the site through plowing and bulldozing after the main occupation of the house ended. Additionally, the concentrations in block D and east of the house foundation also indicate possible mixing of an earlier site into the later site (Figure 6). This scenario implies that the people living on the site were unaware of the presence of these earlier materials, literally below their

feet, and their presence in the mixed deposit only occurred after the occupants had left. However, it does still allow for passive interaction with these objects through occasionally or accidental encounter through digging at the site or through erosion. A second scenario implies that the artifacts do pre-date the house, and although they may have been present on the site as an earlier component, they could have come from any other location occupied during the periods associated with the use and production of those forms and styles. If the artifacts came from elsewhere, then the only way they could have ended up at the site would be through their transportation to and deposition within the site along with other daily refuse. This thesis argues the latter, but to do so, it must demonstrate that 1) the artifacts could have been made before the return of Sarah Muckamaug to the house parcel (see description of artifacts above for this evidence), and 2) the artifacts are deposited at the site in the same intact primary deposits as other household artifacts used during the 18th- and 19th -century occupation.

Deposition of Lithics at the Sarah Boston Site

First, it must be stated that of the lithic and pottery assemblage, no evidence exists to indicate the date of the quartz flakes and cores, which make up a majority of the assemblage discussed here. This coupled with the disturbed nature of the site overall means there is no way to conclusively state who produced the flakes. However, as this section will show, the residents had in their possession quartz flakes, quartz cores, knapped glass, and other stone tools, and later deposited them in their midden.

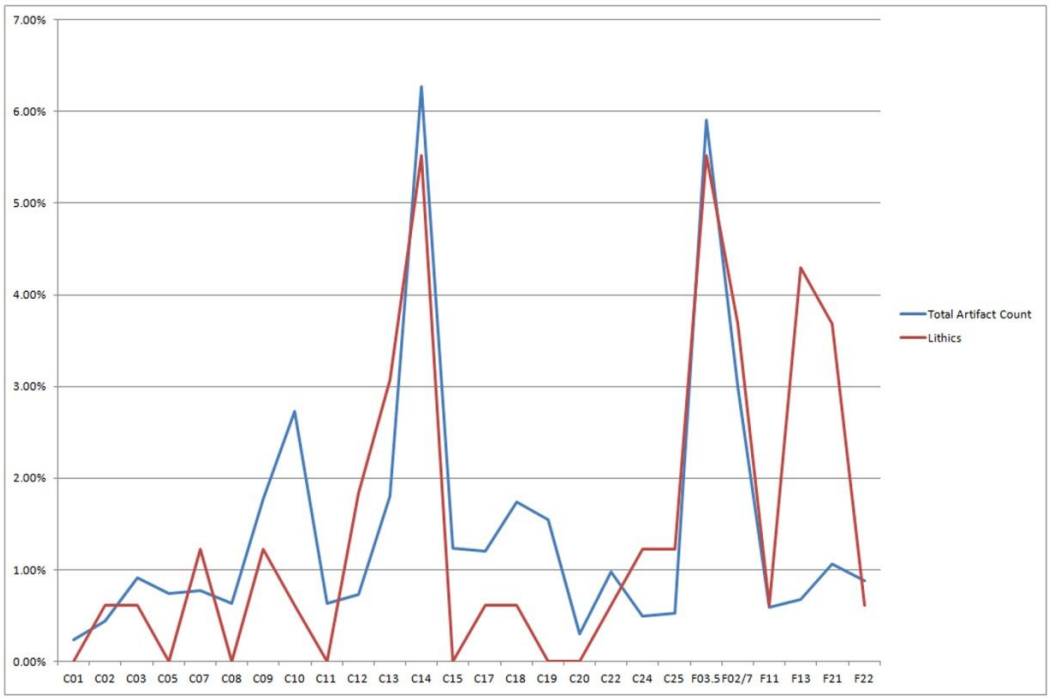

Figure 13- Distribution of lithics and all other artifacts. Lithics are % of total lithics per unit, Other artifacts are % of total artifact count across site. Spikes are in units C14 and F3.5.

An examination of the distribution (Figure 6) of artifacts north of the house foundation reveals two things. First, the two concentrations of lithics exactly match the two concentrations of total artifact counts in this area of the site, and the correlation continues for all non-foundation units in C and F block (Figure 9). The high artifact counts in these two units (C14 and F3.5) are not a reflection of deeper or more thorough excavations in these two particular units as 95% of the 7,125 artifacts in unit F3.5 were found in the first three levels (30cm), and 97% of the 7,561 artifacts in unit C14 were found in the same 30 cm of excavation. A correlation analysis of the total counts of lithics compared to counts

of ceramics in C and F blocks (figure 14) shows a correlation (R^2=0.544) between lithics and European-made ceramics

Second, the distribution of Native American pottery fragments seen in figure 6 does not appear in the same concentrations as lithics or ceramics. A correlation analysis of the total counts of Native pottery did not correlate with lithics (R^2=0.0002) (Figure 15). These results indicate that lithics were deposited under the same conditions as the ceramics in the midden, but the pottery was not.

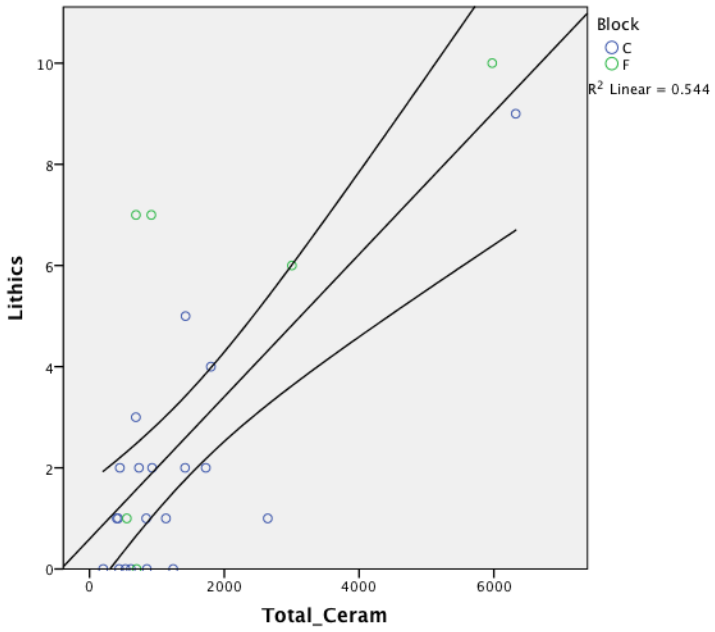

Figure 14- Correlation analysis between lithics and ceramics in blocks C and F

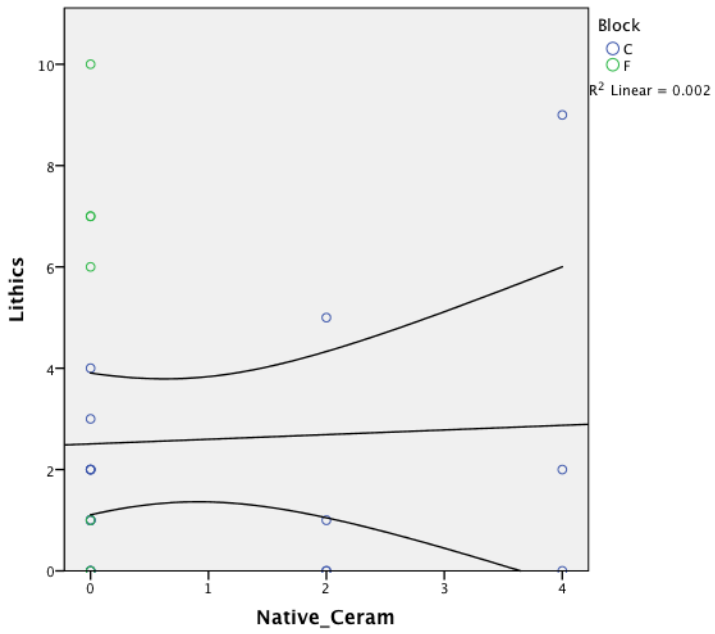

Figure 15- Correlation analysis between lithics and Native American Pottery showing no correlation (John Steinberg 2013, elec. comm.)

The Native American pottery identified at the site, while not possible to assign to any particular time period, strongly indicates the presence of a Woodland site on the exact area that the house was constructed. Both small and dark in color, their utility as functional objects and their ability to be visually recognized in dark soils is highly limited. If we assume this lack of recognition and utility would have correlated with a diminished interaction with the pottery, it is possible that they are located in relatively the same area(s) they were originally deposited. The fact that their concentrations do not correlate to the distributions of lithics or other artifact classes supports this idea (Figure 6).

It is highly tempting to use the size of the units and the disturbed nature of the site to completely write-off the "stratigraphic" or spatial distribution of artifacts within the

site, however as the evidence shows above, meaningful and significant information is present in the artifact and contextual data at this site. This spatial analysis coupled with lithics in B soils has demonstrated that an earlier component to the Sarah Boston site exists that dates to at least the Woodland period (somewhere between 3,000 and 400 BP), that the residents of the house actively engaged with lithics (including worked glass, gunflints, and quartz), and that they may not have noticed the pottery present beneath their feet. While it is impossible to prove who made the quartz artifacts, worked steatite, pestle, and other stone tools, the breadth of time periods represented by these artifacts suggests that at least some of these stone tools may have already been thousands of years old when they were picked up, possibly re-used, and then redeposited in the household refuse midden. The worked gunflints and glass, however, show strong evidence that the Nipmuc family was actively engaged in knapping of these materials, which also suggests that some if not all of the quartz flakes and cores in the midden may have been produced by them, too. With this analysis complete, it is necessary to explore these practices further, which will reveal and expand the complex nature of the archaeological deposits, landscape, and continued practices exhibited at the Sarah Boston site. The continuation of these practices established, this thesis can aid in the abolishment of the "prehistoric/historic" false divide, as cultural practice and identity continue despite the impacts of and adaption to colonialism.

CHAPTER 6

CONTINUITY OF LITHIC PRACTICE AT THE SARAH BOSTON SITE

The 192 lithic artifacts (including stone tools, gunflints, and glass) studied in this thesis are an ideal dataset to study the continuity of a specific Nipmuc cultural practice (knapping) over a prolonged period of time during which the Nipmuc people experienced and reacted to the introduction of European artifacts and practices. The clear evidence of lithics located at an earlier deposit on the Sarah Boston site, and the knapping and modification of gunflints--an artifact whose origins are clearly associated with Europeans--demonstrate that lithic practices existed on the site both prior to and after the construction of the European-style house. The contextual and spatial evidence of a combination of lithic use, interaction, modification, and/or creation indicates that these Nipmuc family members were producing and depositing lithics in the midden.

While the continuity of lithic practice at the Sarah Boston site is demonstrable, the mechanisms for this continuity are less clear. How did the presence of lithics on the site impact the residents of the house and their modifications of gunflints? Was there a period during which stone tools were not used? Did the residents create stone artifacts for use as tools, or for some other reason? To answer these questions, we must take a slightly broader approach to the landscape surrounding the site to fully understand the

role of *doxa, habitus,* memory, practice, and morphology in the continuity of lithic practices.

The Sarah Boston site is situated on the eastern slope of Keith Hill. This region, long known to be an area related to the Hassanamesit Praying Indian town, has been targeted for state archaeological review resulting in the numerous archaeological surveys identified in Chapter two. This dataset of archaeological sites, though only a sample of the true number or extent of archaeological deposits likely in the area, shows that this landscape has been in use by Nipmuc people for thousands of years. While burial, petroglpyh, and rockshelter sites are included in the landscape, it is clear that one of the most significant resources is the presence of several quartz procurement quarries. The closest of these quarries is only 2,000 feet from the Sarah Boston site, within the former boundaries of their family land, and to this day has a scatter of quartz cobbles visible on the surface.

As stated earlier, a person's *doxa* is a backdrop of givens that compose everyday life (Bourdieu 1977:168). The landscape of Keith Hill contained several quartz outcrops and more than several lithic processing areas with quartz flake scatters. From the moment people recognized the potential usefulness of the quartz present in outcrop form in the area, the artifacts created through the physical modification of the raw material had the ability to transmit the practice of knapping through interaction or use. Archaeologists often associate a site or an artifact with a specific period of time, but this fails to recognize the impact these can have on people of any time period who come in contact with an artifact after its creation. The presence of a quartz quarry in close proximity to

the site is more than enough evidence that Sarah Boston, her ancestors, descendants, friends, and family all could have come in physical contact with the quarry, artifacts made from the quarry, or simply the "idea" of the quarry on her property. The presence of this quarry and the numerous archaeological sites and deposits within her immediate cultural landscape all were part of her and her relations' *doxa.* If *habitus* is the conditions of the mind created by the experiences of daily life (Bourdieu 1977; 1990:55), and practice is the product of *habitus* (Bourdieu 1977), then the practices exhibited at the Sarah Boston site must have been influenced by "citation," the repeating of a practice in reference to another period or location, to the objects and sites left behind by people in the past.

The question of whether the practices of knapping had been lost is difficult to answer without the tightly-controlled resolution of a well-stratified site, which the Sarah Boston site is not. However, the presence of worked gunflints and worked glass tools are one way to begin the exploration of this question. The tumbler base used as a lithic material was most likely not initially made by a Native; however, the flaking on its surface is clearly of Native origin demonstrating clear and careful knapping techniques. Most of these gunflints were created and manufactured in Europe by specialists out of local flint deposits, which produced regular and usable lithic artifacts for use in hunting and producing sparks. Many of the gunflints present at the Sarah Boston site do not exhibit usewear outside of what would be typically-associated with normal use as a gunflint in a flintlock gun. These artifacts are assumed to be part of the standard artifact assemblage associated with any other site in the 18th or 19th century. It is notable that

only the five modified gunflints (out of the ten identified at the site) are considered in this thesis as contributors to the discussion of lithic practice on a Native American site. True, it is impossible to determine if the other five gunflints were used by the Nipmuc family at the Sarah Boston site for any use other than the one they were made for when there is no physical or contextual information to indicate alternative use.

It is possible that the Nipmuc people living on the Sarah Boston site would have, through the memories either continued or cited through interaction with older lithics, recognized that the morphology of a gunflint allowed them to enact the practice of knapping to repurpose a gunflint into a different stone tool. It is clear from the Mashantucket Pequot fort site discussed earlier; Native American people in the region were familiar enough with lithic production to produce gunflints on-site in the 17th century (Kelly 2011). By the period represented at the Sarah Boston site, it is clear that gunflints were brought to the site complete, with minimal evidence of local production of gunflints as seen in gunflint MS 321. The use of a gunflint for a cutting edge is notable due to the overall abundance of available metal cutting edges. With around 30 identified iron knives in the archaeological assemblage, it is clear that the occupants of the house chose to use and create lithic tools in addition to those available to them in the form of metal knives (Law 2008:109). Why were they modifying these gunflints when other cutting tools were available? Again, morphology likely played a significant role. In the case of all of the modified gunflints, they each show a form that may not have been available in the metal or other material "tool kit" at the site. Gunflint MS 464, 416a, and 416b each have curved bifacially-worked cutting edges, either concave or convex.

Perhaps the creator of these tools desired to have a very small cutting or scraping edge that would allow them to reach into a small space or make fine adjustments to a form through a tool that would fit within a person's fingers, a "thumbnail scraper", but would still be able to withstand use on tough materials like wood or bone. While it is not outside of the realm of possibilities to create a small curved cutting blade, perhaps it was more convenient to enact the practice of knapping to modify a gunflint than to modify an iron tool. Possibly, worn-out gunflints or those too poor to sell at full-price may have been a better economic choice to create these tools than to modify an iron (or other material) tool. While it could be argued that certain materials such as glass were chosen for use due to their superior quality lithic material than locally-available rock resources, this is most likely not accurate. While glass is indeed sharper and more easily worked than materials such as quartz and quartzite, it is also more fragile and wears out faster during use, which makes raw material "quality" a relative, not absolute measurement. It is just as likely that a knapper would avoid glass for these very reasons, especially if the object they wanted to use the lithic tool on required a stronger tool. Regardless, the presence of lithic technology use, despite the co-presence of iron alternatives, represents one of the many "active daily negotiations of colonialism" (Silliman 2001: 203) that have been identified in numerous colonial Native American sites.

Gunflint use is clearly diverse across Native American populations in the Northeast. The notched gunflint MS74 is the best candidate for use as a strike-a-light, a tool form also identified at the Mashantucket Pequot fort (Kelly 2011); however, it too may have been worked as a notched cutting tool or notched through some other use,

either deliberately to produce the notches, or the notches were a resulting "use wear." Again, the presence of a strike-a-light can be interpreted as a lithic practice that lies outside the more common uses of a gunflint; however, strike-a-lights critical in environments where creating spark or flame is difficult. As a result, the presence of a strike-a-light on an 18th-or 19th-century site should not be interpreted as a practice that is Native American in origin or unique to this site.

Gunflint MS321 is so unlike the other gunflints that it is difficult to state with complete confidence that it is in fact a gunflint, including its thickness and the presence of cortex. What does support this identification is its overall square shape, with straight sides, and the fact that it is made from English flint. As stated earlier, this gunflint was likely made domestically from European material and closely resembles gunflints made by European colonists from ballast flint and recovered at the early colonial site of Aptucxet near Cape Cod (Luedtke 1998). It is possible that it was made on the Sarah Boston site, though the only flint flakes that were found were significantly smaller than the flake scares exhibited on this gunflint. That said, the failed cones of percussion indicate that the person who created this gunflint was not a knapping expert, but rather someone trying to produce a usable tool without a thorough understanding of the mechanics and physics involved with knapping.

The presence of a steatite bowl, pestle, and other ground stone tools within the site is significant not just because it likely indicates an early component of the site or nearby site, but also because of their context within the midden. It is not appropriate to assume that the presence of an object in a midden deposit means the person who made or

used the artifact no longer assigned a cultural value to the object as refuse is produced for numerous reasons, including the likelihood that the artifact had simply broken to a point where its function or significance was no longer enough to warrant curation, not that it never was valued.

These objects may have been brought to the site from afar. Sarah Boston, and likely her entire family, were well traveled people who regularly interacted with the local Nipmuc populations and Native populations in Providence and elsewhere (Law 2008). This level of transportation indicates that the family was well aware of their landscape and regularly experienced it firsthand. Additionally, as farm hands and laborers (Law 2008), this family may have regularly come in contact with artifacts from their ancestral past. There is no reason to doubt that these artifacts found at the site, nearby, during travels, while working, or within their own fields, could not have been picked up by the family members and brought back to the house site. Also, it is possible that the artifacts were found near the yard of the house, given the presence of an earlier site and the identification of other stone tools in the vicinity during the phase II survey (Gary 2005).

This Nimpuc family was capable of recognizing artifacts from their cultural past. If European settlers and colonists collected Native American artifacts from their tilled fields, construction sites, and looted burials, there is no reason to assume that people whose ancestors created these objects would not be able to recognize that these stone tools were produced by people in the past. This interaction with objects from the past could represent basic curiosity with "new" objects, or they could represent something more significant. Stephen Silliman's examination of an Eastern Pequot site in

Connecticut, dating to the same period as the Sarah Boston site, revealed similar stone tools and other artifacts well predating the house site within a refuse deposit in association with a European-style home (Silliman 2009). Silliman states that these objects formed physical connections with the past that re-introduced cultural practices and memories through interaction with past objects (Silliman 2009: 224). At the Sarah Boston site, the presence of these earlier artifacts does not negate the reality that the people living in this house were participating in a colonial environment with European-produced consumer goods, and the presence of European goods in the same deposits do not negate the clear connection these Nipmuc people had with their cultural past.

Despite the availability of European-produced goods, this family still produced and/or used quartz tools. The quartz materials are predominately quartz flakes and cores. It has been established that at least some of these quartz flakes may be related to the site that lies beneath the Sarah Boston site. While it is not possible to prove that these flakes were made by the residents of the house, it is highly likely, given that there are dozens of flakes located within the greatest concentrations of later artifacts, and fewer outside, that some number of these flakes were either made by the residents of the house or brought to the site from elsewhere. The quartz quarry south of the foundation is the most logical orign of these flakes. As stated earlier the quarry was within the land owned by the residents of the house. Today, cobbles of quartz are visible on the surface of the quarry, possibly cores or blanks removed from the ground many years ago and never processed further. Why these flakes were produced or brought to the site is difficult to determine; however most researchers justify the use of an item for economic reasons, either through

convenience of location, convenience of use, or its relative price (free). In the cases of these flakes, they fulfill all three possible economic reasons. First, if flakes or cores were readily turning up during regular use or while farming their fields, these same flakes could have been collected and used for brief cutting needs without needing to carry a knife. Just as likely, the abundance of quartz in the area could mean that the cores present at the site were brought there essentially as a go-to knife source where flakes could be struck, as needed, when a sharp edge was desired. This, again, did not require the use of metal knives, which had to be purchased, and perhaps was conscious decision to use lithics in place of metal objects whenever possible. Also, since Sarah Boston was a skilled basket maker and sold her goods, this freed-up the knives on site for this use, which was an income producing venture. Perhaps these tools were associated with the production of artifacts relating to practices that predate the arrival of Europeans. If the production of an object is entangled (Hodder 2012) with specific types and forms of tools, quartz, glass, or knapped gunflints may have served specific cultural functions whereby a final product's identity was incomplete without the use of knapped tools. Alternatively, these tools are all relatively small--most between 1 and 2 cm in size. Perhaps if all cutting or scraping edges available through iron tools were long knives, these tools would have filled a niche function on the homestead.

Several sites in the vicinity of Sarah Boston provide similar quartz scatters on Native sites with European-style homes (Figure 16). In Westborough, a 19th-century cellar hole, associated with Nipmuc occupants, was identified in the National Register listed Cedar Swamp archaeological district (Leveillee et al 1994). The interpretation of

this site includes the use of the swamp land by the Nipmucs, considered undesirable land by the colonists, for harvesting of cedar for European-style homes (for sale and personal use). Like the Sarah Boston site, this house is located in very close proximity to numerous earlier Native American sites. Also like the Sarah Boston site, 16 test pits around the foundation produced 45 pieces of quartz chipping debris (flakes) and a quartzite biface (Leveillee et al 1994: 50). The Magunkaquog Hill archaeological site, also excavated by UMass Boston, identified the 17th-century house site directly associated with the Magunkaquog Praying Indian village (Mrozowski et al. 2009) with quartz flakes, quartz crystals, and worked gunflints. Finally, the Deborah Newman house, also located within the Hassanamesit Woods property, is a second documented 18th -19th -century Native American site on Keith Hill with quartz flakes.

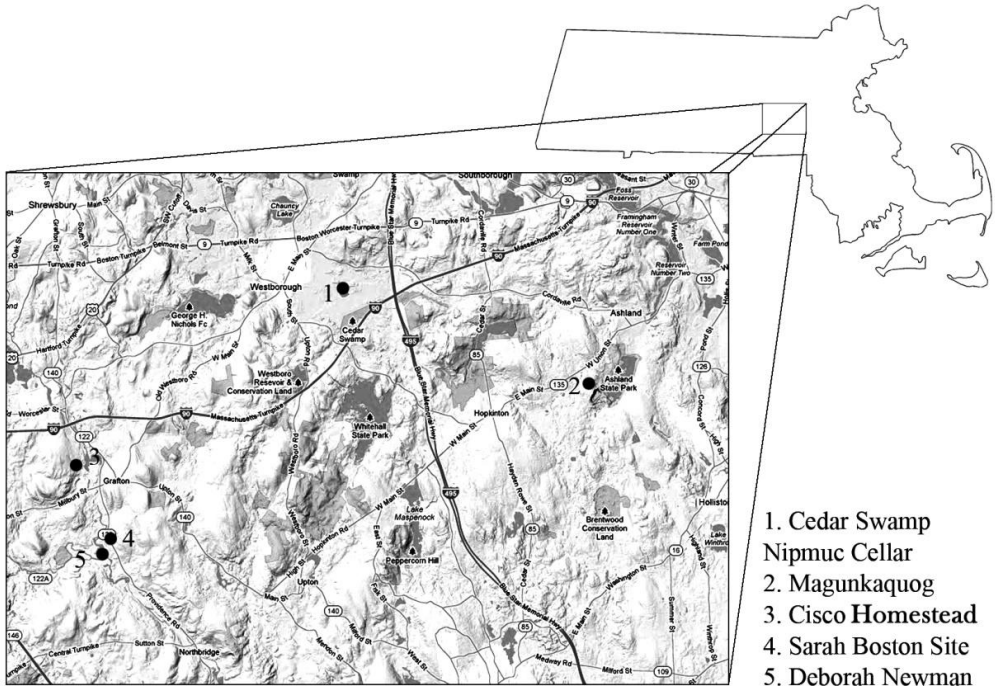

Figure 16- Nearby Nipmuc sites

What is notable about these four sites, including the Sarah Boston site, is that each of these have quartz flake scatters, and in the case of Deborah Newman, an earlier Native American occupation beneath the later 18th-century occupation. While the Cedar Swamp cellar site is located within dense earlier archaeological deposits, these deposits are dominated by quartzite. The quartz surrounding the house site is the exception to the general knapping practices in this area. At the Magunkaquog site, quartz flakes were identified and interpreted as either an earlier occupation of the site, or a continuity of lithic practice at this 17th--century site. Also notable at Magunkaquog, is the presence of smoky quartz crystals and re-worked gunflints. The crystals were found in the corners of the house foundation (Mrozowski et al. 2009).

The Cisco Homestead, which is noted in Figure 16, is included in this discussion as it the oldest standing structure directly associated with a Nipmuc family. Built in 1801 on Moses Printer's 1727 allotment, while the Sarah Boston site was actively occupied, this house represents the symbolic and real presence of Nipmuc people, specifically the Printer, Gimbee, Arnold, and Cisco families and their descendants who all lived in the house, as well as the continuity of the Nipmuc identity to the present (Gould 2010). No quartz artifacts were identified during archaeological survey of the property in 2006 and 2007. The five sites indicated in Figure 16 and other sites in Worcester and the surrounding towns in central Massachusettes represent a continual Nipmuc presence upon the landscape of central Massachusetts since the arrival of Europeans. (Gould 2010)

A single smoky quartz crystal, different from the milky or white crystals found at the two nearby quartz quarries, was found near the foundation of the Sarah Boston site. In the Magunkaquog example, these crystals were interpreted as evidence of Native American religious practices, and the gunflints were interpreted as continuity of lithic practice using newly-introduced materials (Mrozowski et al. 2009). While complete analysis of the lithic assemblage of the Deborah Newman site is outside the scope of this thesis, a cursory examination of the assemblage revealed over 40 pieces of quartz chipping debris in levels associated with Deborah Newman's occupation. A Neville point, dating to between 7,000 and 5,500 years old, was found in B soils within the site indicating the presence of a much-older occupation directly beneath this 18th-century Nipmuc house.

All four of these sites are located within an area heavily dominated by quartzite outcrops and formations. While the Sarah Boston and Deborah Newman sites have documented quartz quarries nearby, it is still notable that central Massachusetts is more associated with other lithic material use. With all four sites having quartz artifacts associated with later occupation, there may be some cultural practice shared between these Native American sites. While a quartz flake scatter indicates a functional usage of the tools, the presence of crystals at the Magunkaquog site, the Sarah Boston site, and the crystal quartz quarry utilized in the Late Woodland (1,000-400 BP) on Keith Hill indicates the possible religious use of these artifacts (based on similar interpretations at Mugunkaquog and discussion below). Additionally, these two sites are located stratigraphically above earlier sites. While the location of the lots was often assigned to

these Nipmuc families, the exact placement of their houses was up to them. The presence of these four sites within a landscape that contains earlier archaeological deposits may indicate a desire or practice by Nipmuc people to deliberately associate themselves or place their homes within areas they know or believe to be culturally significant based on possible surface scatters of artifacts or other factors including topographical environmental preferences that relate to long-held practices, though this may be difficult to prove.

The morphological implications of quartz may provide an additional interpretation for these repetitive phenomena, which needs additional sites to fully support. Quartz is, without question, the most visible artifact class used prior to the arrival of Europeans. In nearly all locations in central Massachusetts, the soils are dark in color; therefore any quartz artifacts located on the ground surface would be highly visible. The color of quartz, a component of its morphology, makes it more likely to be noticed by those who encounter it than other artifacts. If we couple this fact with the assumption that Native Americans in the 19th century were aware of their own cultural existence prior to the arrival of Europeans and either knew of or actively practiced knapping, we can assume that Native Americans, if they came upon quartz artifacts on the surface of a site, would recognize the association of that spot and those objects with their ancestors.

While the whiteness and crystalline morphology of the flakes make them especially visible, there is also cultural meaning to the color white in regional Native American practices. Many Native American burial contexts in Massachusetts contain

white beads and crystals (Brewer 1944; 1956; Robbins 1959; Fowler 1975; Hoffman et al. 1999; Murphy 2002). Crystals were found in the corners of the religious site associated with the 17th--century Magunkaquog site (Mrozowski et al. 2009). These artifacts are interpreted by others as the continuation of older Nipmuc religious practices (Mrozowski et al. 2009). A smoky quartz crystal present just outside the foundation of the Sarah Boston site may be an indicator of similar practices at this later site. This interpretation is admittedly hard to prove; however, it is clear that the color and crystalline structure of these objects were significant morphological aspects to Native American people (Murphy 2002).

This morphological substitution can be interwoven into many aspects of the lithic practices at the Sarah Boston site. The gunflints, glass, and quartz may have served the same morphological requirements (sharp, durable, knappable), and thus could have been interchangeable within the practice of making stone tools. Similarly, the physical quality of sharp and durable materials could have made them ready-substitutions for metal knives. Therefore, it is not possible to conclude that the repurposing material culture at this and any other Nipmuc site represents a fundamental change in practice. Changes in material culture cannot be cited as representing a loss of cultural traditions or cultural identity in Nipmuc culture; rather they can represent an incorporation of and reaction to colonial practices and objects into the continuity of Nipmuc cultural practices (Silliman 2009) or a social change in reaction to political pressures (Silliman 2001).

Conclusion: Nipmuc Continuity and the End of the Historic/Prehistoric Divide

The Sarah Boston site represents a rare example of a documented Nipmuc homestead, used for several generations in the 18th and 19th centuries. This Nipmuc family, who named their first daughters Sarah, lived in a world dominated by colonial control and oppression, where finances were restricted under laws setup to diminish their autonomy. The archaeological assemblage from the site represents a massive volume of European-made cultural items, clearly integrated and used in daily life by this Nipmuc family. Among this assemblage are numerous examples of quartz stone tools, ground stone tools, Native American pottery, worked gunflints, and worked glass. Together these artifacts represent an earlier Nipmuc presence on the site, interaction with quartz materials found within primary midden deposits, and the continuity of the practice of knapping.

The presence of sites from a number of earlier periods in close proximity to the Sarah Boston site provide numerous possible origins for the artifacts of earlier date. Alternatively, these objects could have been found immediately on-site due to the presence of an earlier occupation beneath the 18th -century Nipmuc occupation. Regardless, the continuity of lithic practices and the reuse of earlier objects during the later occupation are attributable to regular contact and interaction with the physical remnants of ancestral Nipmuc people, whose sites were readily accessible and potentially visible through erosion, high-contrast white lithics such as quartz, or through coincidental encounter by the residents of the house who traveled and worked in local farm fields.

This continuity is not unheard of as at several other nearby Nipmuc sites, the use of quartz on domestic European-style homesteads is well documented. While these artifacts do represent a continuity of cultural practice, specifically knapping, the discussion of morphology, presented above, demonstrates that the continuity of cultural practices can persist despite changes in material culture. In other words, while the lithics show a more obvious continuity of practice, many other practices that one would consider "traditional" to Nipmuc people (i.e. prior to the arrival of Europeans), may well have continued through this period, but are represented physically in ways less recognizable in the archaeological record. For example, matrilineal family structure and naming the first born daughters "Sarah" are great examples of continued non-object Nipmuc practices (Gould 2010:287).

This continuity underscores a rising discussion in archaeology: the end of the prehistoric/historic divide. As stated earlier, this thesis is deliberately written without the terms "prehistoric," "pre-contact," and "historic." This distinction has come under fire recently (Lightfoot 1995; Den Ouden 2005; Gould 2010; Silliman 2012; Schmidt and Mrozowski 2013) as it essentially divides people into those with history (Europeans) and those that came before history (Native Americans). While the archaeological practice of this dichotomous categorization is meant to distinguish between periods in time before the written record and after, in reality it mostly refers to the period before and after the moment of European "contact," though even that has become a vaguely defined moment in history (Silliman 2005). No dictionary definition of the word "historic" includes the requirement of written records, and the use of "historic" is not employed across all

cultures with writing (Maya, Greek, Roman, Chinese, etc.). In North America it is wrongly used distinguish Native Americans from Europeans with the implications that Native Americans either disappeared or became completely insignificant after European arrival.

This dichotomy also creates a false break in the cultural narrative of Native American people. There is no denying the fact that the arrival of Europeans was devastating to the population of Native Americans in the region; however, there has been a population of Native Americans living their lives, practicing their cultural practices (both "traditional" and those adopted by the introduction of Europeans), continually, between the first arrival of Europeans and the present. Therefore, this divide, which has served to create a false "end" to Native American culture at the erroneously-named "contact" period (Silliman 2005), must be abandoned for the sake of public perception and general recognition of the continued role of Native Americans in their own lives and in society as a whole.

While this thesis discusses the continuity of a specific practice on a specific site in Grafton, Massachusetts, the ideas presented here support the abolishment of this dichotomy. The false divide creates a structure within which archaeologists and others seek changed, alternative, and adopted practices and objects. Today, many descendant communities live in a reality where others believe they have lost or so fundamentally changed that their cultural identity that their relationship to the past is no longer authentic (Gould 2013). This is by no means restricted to Native Americans. On a broader scale, this thesis demonstrates the need for the scientific community to actively support

descendant communities and their needs. While archaeologists study the people of the past, they should honor the descendant communities they are studying. Connections to deep time demonstrated through the scientific study of the historic remains of the past can be used in the pursuit of governmental recognition of descendant communities (Mrozowski et al. 2009;Gould 2013). The reality presented in this thesis is that of a family of Nipmuc people, living their lives to the best of their abilities, and conducting their own family practices within the confines of their private domestic landscape--practices that can have origins in their ancestral Nipmuc heritage and in Europe concomitantly. While the practices discussed here are given great attention and discussion for their evidence of continued Nipmuc practices, the reality of daily life on this farmstead is not that of resistance or conscious attempts to preserve their identity (though it does not exclude these as possibilities), but rather a desire to persist, as a family, in the face of oppression, control, racism, and threats to their landownership and, in the fullest extent possible, to continue the practices they desire. Nipmuc people and other Native American communities have withstood centuries of misconception that their people are gone, they are no longer an authentic members of the Native community, and that their cultural practices and identity in existence today due to deliberate fabrication and re-creation. This lack of acknowledgement emphasize the struggle to maintain some resemblance of a normal life---as this Nipmuc family chose to define it---is testament to the persistence of Nipmuc and Native American identity in the face of adversity.

This family's struggle to survive, culturally and physically, in this the face of colonialism emphasizes the reality that on a daily basis and in a domestic setting,

resistance and perseverance would naturally be supplanted by the mundane activities of daily life in this colonial environment. The Nipmuc and colonists both continued many of their cultural practices from the time they first encountered each other to well over 100 years later before the construction of the house at the Sarah Boston site, with adjustments, substitutions, and additions resulting from their new physical environment or relative access to goods. The Nipmuc landscape upon which the Sarah Boston site is located, which includes the house, house lot, Keith Hill, Hassanamesit, Grafton, and most of central Massachusetts, contains both the physical remnants of Nipmuc people of the past, and current Nipmuc people, who to this day continue be Nipmuc, no matter the physical appearance of goods they make and use.

APPENDIX A

CATALOG OF STONE ARTIFACTS OF THE SARAH BOSTON SITE

Ctx #	Unit	Level	N	Object	Color	Material	Weight (g)	Notes
4	C05	2A	1	pottery, body	BN ext, BN int	grit-tempered	0.6	
6	A07	2A	3	chipping debris	white	quartz	11.5	flake
9	A07	3A	1	chipping debris	GY/BN	Flint	2.2	Heavily reworked, waisted, rectangular
11	A07	4AB	1	chipping debris	colorless	quartz	1.2	flake
21	B02	1A	1	chipping debris	white	quartz	0.5	biface fragment
26	C09	2A	1	chipping debris	white	quartz	0.9	flake
26	C09	2A	1	pottery, body	BLK ext BLK int	grit-tempered	1.1	Exterior paddled
27	A01	1A	1	chipping debris	white	quartz	3.3	flake
27	A01	1A	1	chipping debris	colorless	quartz	12.3	flake
30	C09	3A	1	pottery, body	BN ext, Blk int	grit-tempered		exterior paddled
31	A01	2A	3	chipping debris	white	quartz	5.6	flake
38	C09	4AB	1	chipping debris	white	quartz	1.1	flake
40	A01	3A	3	chipping debris	colorless	quartz	15.8	flake
49	B02	4AB	1	chipping debris	white	quartz	0.7	flake
61	D02	2A	2	chipping debris	white	quartz	3.3	flake
63	B08	1A	1	chipping debris	white	quartz	0.8	flake
64	D17	1A	7	chipping debris	white	quartz	18.9	flake
65	D02	3A	1	chipping debris	colorless	quartz	2.6	flakes
68	D17	2A	4	chipping debris	White	quartz	3.5	flake
69	C13	2AB	1	chipping debris	colorless	quartz	1.4	flake
69	c13	2AB	2	Pottery, body	body		2.3	INT/EXT smooth, oxidized
70	B08	2A	1	chipping debris	colorless	quartz	1.0	flake

74	B12	4AB	1	ground stone	Honey	Flint	2.0	rectuangular, gunflint, notched reworking, retouching
74	B12	4AB	1	ground stone	Honey	Flint	2.0	rectuangular, gunflint, notched reworking, retouching
74	B12	4AB	1	ground stone	Honey	Flint	2.0	rectuangular, gunflint, notched reworking, retouching
76	C13	3AB	3	chipping debris	colorless	quartz	14.1	flake
97	D17	4B	1	chipping debris	white	quartz	0.2	flake
105	E03	1A	1	chipping debris	white	quartz	0.3	flake
113	C13	4AB	1	chipping debris	colorless	quartz	0.4	flake
121	F03.5	2A	1	chipping debris	white	quartz	51.8	core
121	F03.5	2A	1	chipping debris	colorless	quarts	0.8	flake
121	F03.5	2A	4	chipping debris	white	quartz	2.9	flake
121	F03.5	2A	1	chipping debris	white	quartz	0.9	flake
124	F03.5	2A	1	chipping debris	white	quartz	49.8	core
126	C07	2A	1	chipping debris	tan	quartzite	2.7	scraper
126	C07	2A	1	ground stone	WT/GY	Flint	1.0	some cortext, difficult to see edges
126	C07	2A	1	ground stone	WT/GY	Flint	1.0	some cortext, difficult to see edges
126	C07	2A	1	ground stone	WT/GY	Flint	1.0	some cortext, difficult to see edges
132	F03.5	3AB	1	chipping debris	white	quartz	0.8	flake
133	C07	3A	1	Gunflint	WT and BN	Flint	0.2	Flake of GF, White speckled
134	F02/7	1A	2	chipping debris	white	quartz	2.0	flake
142	F02/7	2A	1	chipping debris	white	quartz	3.1	flake
142	F02/7	2A	1	Gunflint	GY/BN	Flint	0.1	From gunflint, scars on dorsal side
145	C07	4A	1	chipping debris	colorless	quartz	0.7	flake
148	F13	2AB	3	chipping debris	white	quartz	1.0	flake
149	F02/7	3A	2	chipping debris	white	quartz	10.9	core
156	F02/7	4AB	1	chipping debris	tan	quartzite	0.3	flake
157	C17	3AB	1	chipping debris	colorless	quartz	0.2	flake
159	F13	3AB	2	chipping debris	white	quartz	0.7	flake

174	F13	4B	2	chipping debris	white	quartz	0.6	flake
177	F03.5	1A	1	chipping debris	white	quartz	7.9	core
210	G24	3A	4	chipping debris	white	quartz	51.5	flake
215	C12	3AB	1	chipping debris	white	quartz	2.5	flake
215	C12	CAB	1	chipping debris	colorless	quartz	9.6	flake
220	C12	3B	1	chipping debris	colorless	quartz	10.4	scraper
238	H02	2A	1	chipping debris	Colorles s	Quartz		Core
238	H02	2A	1	chipping debris	colorless	quartz	313.5	Core, large
240	C08	1A	1	pottery, body	BN ext, BN int	grit-tempere d	1.6	brushed
241	H02	3A	1	chipping debris	colorless	quartz	1.7	flake
246	C14	1A	5	chipping debris	colorless	quartz	8.0	flake
246	C14	1A	1	ground stone	gray	granite	236.4	possible hammerstone
246	C14	1A	1	pottery, body	BN ext, BN int	grit-tempered		brushed
246	C14	1A	1	pottery, neck	BLK ext BN int	grit-tempere d	0.9	exterior paddled
259	C08	3A	1	pottery, body	BLK ext BN int	grit-tempered		smooth
261	C14	2A	2	chipping debris	white	quartz		Shatter
273	H02	1A	1	chipping debris	colorless	quartz	1.2	flake
290	E01	2A	1	chipping debris	white	quartz	2.6	flake, possible biface
292	C14	3AB	1	chipping debris	White	Quartz		Core
292	C14	3AB	1	chipping debris	white	quartz	567.6	Core, large
293	F11	2A	1	chipping debris	white	quartz	3.4	flake
295	E01	3A	1	pottery, body	BN ext, Blk int	grit-tempere d	0.9	brushed
295	E01	3A	1	pottery, rim	BN ext, BN int	grit-tempere d	0.9	brushed
307	B09	2A	1	chipping debris	colorless	quartz	0.2	flake

315	B09	3AB	1	chipping debris	white	quartz	39.6	core
315	B09	3AB	1	pottery, rim	BN ext, miss int	grit-tempered	2.2	Excurvate rim, streaked
321	E01	5AB	1	chipping debris	colorless	quartz	0.9	flake, possibly glass
321	E01	5AB	1		GY/BN	Flint	3.9	Not a gunflint, bifically worked flake
333	B04	2A	1	pottery, body	BN ext, BN int	grit-tempered	2.8	fabric paddled
340	E01	6AB	1	ground stone	gray	braintree slate	429.1	pestle, adz, and hammerstone
403	C18	1A	1	chipping debris	white	quartz	33.8	core
403	C18	1A	1	chipping debris	white	quartz	1.2	flake
408	C15	2A	1	ground stone	gray	schist	36.0	stemmed blade, or whetstone
408	C15	2A	1	pottery, rim	BN ext, Blk int	grit-tempered	0.9	Rim decorated, carbon on interior
411	B05	FEA 37 LEV 1	3	chipping debris	white	quartz	0.6	flake
416	B05	3A	1	Gunflint	GY/BN	Flint	1.4	Diamond-shaped, heavily retouched
416	B05	3A	1	Gunflint	Honey	Flint	2.6	Heavily reworked, Rectuangular Spoke shave?
417	C24	2A	1	chipping debris	white	quartz	2.8	flake
417	C24	2A	1	pottery, body	BLK ext BLK int	grit-tempered	1.9	fabric paddled
421	C25	4B	1	chipping debris	smokey	quartz	5.2	flake
422	B05	4A	2	chipping debris	colorless	quartz	3.0	flake
427	C18	2B	1	chipping debris	white	quartz	5.0	core
427	C18	2B	1	chipping debris	colorless	quartz	1.4	flake
428	C24	3C	1	chipping debris	colorless	quartz	0.4	flake
442	F21	1A	1	chipping debris	colorless	quartz	0.3	flake
453	E11	2A	1	pottery, body	BLK ext BN int	grit-tempered	1.9	Ext paddled, finger nail prints interior
455	B14	2A	2	chipping debris	white	quartz	5.2	flake
456	F21	3A	5	chipping debris	white	quartz	9.6	flake

464	E02	6A	1	gunflint	Honey	Flint	2.9	retouched, reworked, very small
501	F21	6A	1	Gunflint	gray	slate	119.1	whetstone
516	F11	BACKDIRT	1	ground stone	gray	granite	684.6	Rounded stone, possible pestle or hammerstone
517	B10	1A	1	chipping debris	colorless	quartz	0.9	flake
517	B10	1A	1	Gunflint chipping	GY/BN	Flint	3.8	Heavily worn/used. Not reworked
524	B15	2A	1	debris	white	quartz	1.0	flake
557	B05	6A	1	Gunflint chipping	GY/BN	Flint	3.8	Possibly retouched
561	B05	A7	1	debris chipping	white	quartz	0.8	flake
563	J09	A2 4	1	debris chipping	tan	quartzite	18.5	flake
569	C25	CLEANUP	1	debris	smokey	quartz	2.2	flake
580	C22	2A	1	biface chipping	white	quartz	0.7	projectile point tip
580	C22	2A	1	debris chipping	white	quartz	33.6	core
581	C10	2A	1	debris	white	quartz	6.7	flake
582	B05	2A	1	Gunflint fragment chipping	gray	schist	43.6	whetstone
603	B05	16A	1	debris chipping	white	quartz	0.2	flake
679	F22	2A	1	debris chipping	white	quartz	58.1	core
681	E06	2A	1	debris chipping	white	quartz	3.2	flake
693	E06	4A	2	debris chipping	white	quartz	1.8	flake
702	E01	11AB	1	debris chipping	white	quartz	0.2	flake
703	B10	15AB	1	debris chipping	colorless	quartz	2.3	flake
716	B10	18AB	1	debris chipping	white	quartz	4.1	flake
719	E01	13AB	1	debris chipping	white	quartz	1.6	flake
726	B10	19AB	1	debris chipping	white	quartz	23.4	core
732	E06	10AB	1	debris	white	quartz	0.4	flake
753	B10	21AB	1	ground stone	gray	granite	41.1	rounded stone, possibly with smooth notch
766	E03	SW BALK	1	Gunflint Fragment	GY/BN	Flint	0.1	No sign of flake scars
767	E01	19AB	1	ground stone	gray	granite	438.8	hammerstone
775	SITE	cleanup	1	chipping debris	white	quartz	0.9	flake

791	K02	1A	1	Gunflint Fragment	GY/BN	Flint	1.2	Appears to be broken GF
802	L01	3A	3	chipping debris	white	quartz	19.0	flake
803	K02	3A	1	chipping debris	white	quartz	1.0	flake
829	B10	CLEANUP	1	chipping debris	white	quartz	0.2	flake
849	E07	6B	1	ground stone	gray	basalt	1.5	small rounded broken pebble, possibly worked
851	E03	CLEANUP	1	chipping debris	white	quartz	2.7	flake
914	SC 1	1A	1	chipping debris	white	quartz	22.0	core
920	H14	2A	1	chipping debris	white	quartz	9.5	core
921	SC 1	2A	2	chipping debris	white	quartz	24.9	core (421?)
921	SC 1	2A	1	chipping debris	black	basalt	1.2	flake (421?)
922	A19	2A	3	chipping debris	colorless	quartz	6.5	flake
930	G08	3B	1	chipping debris	white	quartz	2.3	flake
931	E02/7 N8820 24	cleanup	1	chipping debris	white	quartz	0.7	flake
933	E18680 9	2A	1	Gunflint Fragment	Honey	Flint	1.4	French-like, Triangular
976	E07	10AB	1	chipping debris	colorless	quartz	0.3	flake
984	C03 N8820 23	4A	1	chipping debris	white	quartz	1.6	Shatter
992	E18680 6 N8820 24	2A	2	chipping debris	colorless	quartz	4.6	flake
1001	E18680 9 N8820 25	3A	1	chipping debris	white	quartz	38.7	core
1004	E18680 8 N8820 07	5B	1	chipping debris	tan	quartzite	11.1	flake
1005	E18681 9 N8820 07	3A	1	Chipping Debris	white	Quartz	1.0	Core
1005	E18681 9	3A	1	chipping debris	white	quartz	188.8	Core, large

1005	N882007 E186819	3A	3	chipping debris	colorless	quartz		flakes
1012	C02	4A	1	chipping debris	colorless	quartz	6.8	flake, possible knife
1017	B05	cleanup	1	chipping debris	colorless	quartz	2.8	flake
1017	B05	cleanup	1	chipping debris	white	quartz	2.4	flake
1028	E01	cleanup	1	chipping debris	colorless	quartz	2.3	flake
1028	E01	cleanup	2	chipping debris	Tan	quartzite	6.8	flake
1040	C02	1B	1	Object	GY/BN	Flint	3.2	retouched, slightly triangular

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