NEGOTIATING BOUNDARIES OF COLONIALISM: NINETEENTH-CENTURY LIFEWAYS ON THE EASTERN PEQUOT RESERVATION, NORTH STONINGTON, CONNECTICUT

A Thesis Presented by CRAIG N. CIPOLLA

Submitted to the Office of Graduate Studies and Research, University of Massachusetts Boston, in partial fulfillment of the requirements for the degree of

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ABSTRACT

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August 2005

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The processes of colonialism involve the selective adoption of the foreign along with the recasting of the traditional. Native American participation in these processes is popularly downplayed in recounts of colonial pasts, portraying Native American peoples as docile and malleable -unable to resist assimilation into the "dominant" European colonist-culture. In 17th-century Connecticut, European colonists officially declared Pequot peoples extinct with the Treaty of Hartford after murdering and selling the majority of Pequots into slavery. Despite this, Pequot peoples persevered and returned to their homelands, forcing colonists to "give" them reservation lands in the mid- to late-17th century. The Eastern Pequot Tribal Nation reservation was officially established in North Stonington Connecticut in 1783. In the late 18th and early 19th centuries, Euroamerican encroachers began to call Eastern Pequot authenticity into question in attempts to appropriate tribal lands for pastureland and colonial development. The archaeological record from this time period speaks to Eastern Pequot identity and habitus

and paints a picture of Eastern Pequot peoples as agents of change, constantly negotiating their places within colonial structures. This work adheres to a model of colonialism that is more complex than accultuationist perspectives that simplify colonialism as a monodirectional process with the "dominant culture" infusing into and over the "passive", leaving no traces of the latter.

Zooarchaeological analyses of two household assemblages on the Eastern Pequot reservation open windows into the everyday lives of Eastern Pequot peoples living on the reservation in the early 19th century. The faunal remains attest to the hardships of reservation life and the maintenance of an Eastern Pequot ethnic identity. Meat sources were processed intensively and shared between household groups. Furthermore, traditional practices such as non-metal tool use and bone smashing tied 19th-century Eastern Pequot peoples to their common pasts and, in turn, to each other. By adhering as a community and maintaining ties to their pasts while at the same time changing with the times, Eastern Pequot agents actively negotiated their places within the political and social climate of 19th- century Connecticut. For John Cipolla, my grandfather

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CHAPTER 1

INTRODUCTION

This work intertwines zooarchaeological and historical data to interpret and explore Eastern Pequot habitus, ethnic identity and agency as part of reservation life in the 19th century. Zooarchaeological analysis offers insights into past foodways and cultural practices, such as food usage, food preparation, and butchery technology. Archaeologists commonly conceptualize foodways as strong markers of ethnic identity; when constructing menus, individuals in colonial contexts drew upon the introduced and the indigenous, the foreign and the traditional. This is evident in the types of food selected and the techniques used for procurement and preparation (Deagan 1983; Landon 1996; Lightfoot et al. 1998:209-210; Reitz 1990; Reitz and Cumbaa 1983; Scarry and Reitz 1990; Silliman 2004a: 153-177).

Eastern Pequot peoples negotiated the structures of 19th-century colonialism as social agents. Furthermore, the practices of everyday life on the reservation, as evidenced by the archaeological record, speak to the commonalities of experience shared by Eastern Pequot peoples. I explore these topics by applying a practice-based framework to the zooarchaeological remnants of 19th-century reservation life and relate my interpretations to the macro-scale contexts of North American colonialism, specifically that which has influenced life in the northeastern United States from the 17th century to the present. The central tenets of this thesis are based on zooarchaeological data and comparative analysis

between faunal assemblages from two distinct household contexts on the Eastern Pequot reservation. In this introductory chapter, I present an outline of this work, while discussing the general framework that follows in subsequent chapters.

Site and Project Context

The Eastern Pequot Reservation was formally established in 1683, but has been occupied continuously by Eastern Pequot peoples and their ancestors for thousands of years to the present (Cave 1996; Hauptman 1990; McBride 1990,1991). The reservation is located in North Stonington, Connecticut, and spans about 224 acres (Figure 1.1).



Figure 1.1 Map of Connecticut

The majority of the reservation is forested area, dotted with cultural features; fieldstone features are prominent throughout the landscape, including foundations, walls, possible field-clearing piles and other types of enclosures, which may be animal pens. To date, the only detected structural remnants are European-style framed houses, a pattern most likely

related to the early stages of the project's investigations and the ephemeral residues left by wigwam structures in the highly acidic soils characteristic of the Northeast. The landscape is topographically varied, with several prominent wetland areas, which are mostly small swamps and streams. To the west of the reservation lies Long Pond stretching approximately 190 km north to south.

To date, Dr. Stephen Silliman and the Eastern Pequot Tribal Nation have run a collaborative archaeological field school for a total of two five-week seasons. The initial season, in July 2003, involved a reservation-wide pedestrian survey noting all evident cultural features, intensive shovel testing, and excavation of several 1-x-1 meter test units. The 2004 season utilized an even more rigorous shovel testing and excavation strategy, focusing mainly on two early 19th-century framed-structure foundations and their associated features. Both foundations contained features in or around them that yielded large quantities of animal bone along with various types of material culture, including ceramics, glass, pipe bowls and stems, various metal artifacts and a few stone tools.

Theoretical Groundings

This work focuses on the ways in which Native American individuals selectively incorporated introduced foodways and practices while maintaining select traditions. The dialectical relationship between structure and agency, embedded in the residues of everyday life and practice, can speak to indigenous reinterpretation and reconstitution of practices and, more importantly, to Native Americans as active agents negotiating change. The Eastern Pequot Reservation is a prime example of a Native American context where lifeways shifted as a result of Native American negotiation of colonial

interactions and institutions, including exposure to Euroamerican encroachment, racism, violence, and the economic hardships that ensued from confinement to reservation boundaries. This work aims to interpret the commonalities of experience, ethnic identities, and relations between the inhabitants of two Eastern Pequot households at this time, relating these factors to the colonial transformations that surrounded them. The theoretical framework used in this research is presented in Chapter 2.

Contextualizing the Archaeological Record

I employ a contextual comparative approach. Previous anthropological and archaeological research conducted in Connecticut (Bendremer 1999; Burgess et al. 1998; Den Ouden 2005; McBride 1990,1991; Salwen 1970) and various historical sources (e.g., Bragdon 1996; Calloway 1997; Calloway and Salisbury eds. 2003; Cronon 1983; DeForest 1964; Russell 1976) are used to contextualize the archaeological record. This information provides temporal context, illustrating what Pequot lifeways might have been like before and after European colonization.

Similarly, historical and archaeological studies provide multiple scales of context. The 19th-century Eastern Pequot households under study were a microcosm of colonialism in the Northeast. By juxtaposing my interpretations of the faunal collections from the Eastern Pequot Reservation with the broader aspects of Native American interactions with colonists in southern New England, colonial experiences of the Eastern Pequot can be better understood. Eastern Pequot experiences during this time period will be more clearly defined within larger colonial processes of change, setting them apart from essentialist accounts of colonialism that portray Native American groups as parts of a monolithic, pan-Indian "culture". An examination of the political and social climates

during the early 1800s further contextualizes these interpretations (Den Ouden 2005). In attempts to appropriate tribal reservation lands from Native Americans during the late 18th and 19th centuries, non-indigenous settlers questioned Native American groups in regards to their "authenticity" because they were seen as existing in "non-traditional" ways. In Chapter 3, I present an Eastern Pequot cultural history as gleaned from historical and anthropological literature.

Methodologies

Household faunal assemblages, such as those under study, are usually formed through the repetition of everyday practices, making them a perfect fit for a practicebased approach. The detection of disparities and similarities between household faunal assemblages on the reservation helps facilitate a discussion of economic and social issues, particularly when assessing the reservation as a community of individuals ensnared in a colonial structure. Eastern Pequot peoples forged ethnic identities by maintaining communal ties, sometimes in the form of cultural persistence, or maintained Eastern Pequot traditions, which may have distinguished them from non-indigenous settlers.

Uses of indigenous and domesticated animal taxa speak to people's relations to the physical environment. By piecing together the importance of domestic and nondomesticated indigenous taxa in the diet, archaeologists can interpret the degree of environmental impact. For instance, a diet based on indigenous taxa, comprising small mammals, deer, fish and birds would have had far less environmental impact than one based heavily on domestic animals. Raising cattle and sheep require the clearing of fields for grazing and the construction of animal pens to prevent loss of animals (Cronon 1983).

These activities require significant landscape alteration and are drastically different from pre-colonial Native American lifeways. By constructing age profiles based on epiphyseal fusion, tooth eruption and tooth-wear analyses of domestic animals (Grant 1982; Hillson 1986; Landon 1996; Payne 1973, 1987), the nature of animal husbandry in 19th-century Eastern Pequot lifeways becomes more accessible. Zooarchaeologists use this information to interpret different types of animal usage (Landon 1996:96-115; Rackham 1994:49).

A discussion of technologies is facilitated by analyses of butchery modifications found on animal bones. Zooarchaeological analysis sheds light on the taphonomic histories of faunal materials, such as identifying the types of cutting tools used to process carcasses. These analyses of the Eastern Pequot faunal collection will assist in the indirect identification of tools, perhaps not yet recovered, as well as the direct interpretation of various knives and other implements that were recovered archaeologically. As discussed later, soil science, experimental archaeology, and material culture analysis are all used to bolster the final interpretations. The bulk of archaeological methods and findings are presented in Chapter 4, while the comparative portion of this work is presented in Chapter 5.

Conclusion

Archaeologists have shown, time and time again, the advantages of strengthening their interpretations by intertwining multiple lines of data and making use of comparative analyses. This research project is modeled after these holistic approaches in hopes of crafting empirically-based and theoretically-informed interpretations of the archaeological record. Again, I mainly intertwine zooarchaeological and documentary

analyses to accomplish this task. Chapter 6 ties together all previous chapters with the interpretations and conclusions of this research project, which demonstrate some of the ways that Eastern Pequot peoples negotiated colonialism in the 19th century. This research offers information and insights into tribal history that will hopefully prove useful to the Eastern Pequot Tribal Nation as they continue their historic preservation collaboration with the University of Massachusetts Boston.

CHAPTER 2

THEORIZING AN ARCHAEOLOGY OF COLONIALISM Introduction

Setting the theoretical framework for this project requires contextualizing the branch of social theory known as practice and illustrating its utility in archaeologies of colonialism. Although Pierre Bourdieu is often though of as the innovator of practice theory as presented in *Outline of a Theory of Practice* (1977), it would be an inaccuracy to single him out as the sole source of practice-based approaches drawn upon in archaeology today (Dobres and Robb 2000: 3-6; Ortner 1984). In addition to Bourdieu, Anthony Giddens, and a variety of others, many of them archaeologists, have positively added to the growing corpus of work blanketed under the general heading of practice theory. This chapter is not meant to provide an in-depth history of theories of practice, nor pedestal practice as the only relevant form of theory used by archaeologists. Its purpose is simply to outline the advantages that a practice-based approach can offer archaeologists interested in colonialism. Before I turn the discussion to focus on practice, a brief overview of archaeologies of North American post-Columbian colonialism is presented in order to contextualize themes used throughout this chapter.

Approaching Colonialism

The complexities of colonial interactions for Native Americans and Europeans alike are incredibly difficult to sort out; both Europeans and Native Americans altered their lifeways by drawing on introduced and traditional concepts. In some instances these alterations brought about large-scale cultural changes, which are still prominent in contemporary America. It is important that we, as anthropologists, recognize that our

understandings of the past are a product of the present and therefore are quite vulnerable to the influences of the colonialism, imperialism, and nationalism that have always permeated the United States of America. Thus, we must maintain a critical perspective when constructing a theoretical base to apply to anthropologies and archaeologies of colonialism.

Anthropologists have used a number of theoretical models for understanding cultural change in the context of colonialism. Some acculturationists view cultural change brought about by colonialism as a unidirectional phenomenon. In this model, European imperialism is conceptualized as the "kicker" that brought about Native American assimilation into European colonial societies. These models of acculturation assume that the "dominant" culture diffuses into and over the passive, leaving no traces of the latter. Archaeologists that used acculturation models like these often calculated the ratio of European to Native American artifacts at a colonial site in order to assess the stage of Native American assimilation (e.g. Quimby and Spoehr 1951; Salwen 1970). These types of analyses are based on the premise that European goods would increase through time as Native Americans were virtually transformed into Europeans or Euroamericans (for critique see Lightfoot 1995, Lightfoot et al. 1998).

The Eurocentric undertones of these acculturation models portray Native Americans as passive, malleable and docile. Most importantly, they assume that Native Americans were not active agents of cultural change and that Native American lifeways were nearly static until European imperialism spurred change. However, introduced European practices were not always "received" by Native American groups in the same ways and, in at least one context, failed to persist even for European colonists living in

North America. Reitz (1990) provides evidence that Native American groups in Florida responded differently to European-influenced subsistence strategies. Similarly, European colonizers could not always rely solely on European foodways; Scarry and Reitz (1990) show evidence of Spanish colonizers in Florida relying heavily upon Native American foods. Judging from the prominence of Native American populations with diverse and persistent Native American identities in our country today, acculturation is not a sound model for understanding the synergistic qualities of colonialism in North America (Rubertone 1989, 2000).

Some anthropologists use the concept of creolization to move away from the Eurocentric biases inherent in acculturation models by portraying colonial interactions, more accurately, as exchanges and thus, portraying Native Americans as active agents of change. Archaeologies informed by a creolization model of cultural change often employ a more complex analytical approach to the archaeological record than the previously discussed methods. Material culture analyses have been used to illustrate the hybridization of different types of material culture (e.g. Ferguson 1992), and more recent studies take advantage of spatial analyses to further contextualize the meeting of Native American and European lifeways (Lightfoot et al. 1998; Lightfoot 2004). Although the concept of hybridization is highly useful in studies of archaeological residues, its utility wanes when the idea is taken too far. There is no direct correlation between "hybridized" archaeological residues and actual cultural groups in the past. For example, a colonoware vessel that combines traditional Native American- and European-styles represents a complex cultural interaction resulting in new colonial practices and representations based on traditions and cultural exchanges, rather than a simple potpourri of autonomous

cultural traditions melding together (Thomas 1994). Practice-based approaches can further develop the concept of colonialism as a synergistic exchange and reinterpretation resulting in the production of distinctly new cultural forms that were not in existence prior to the meeting of North Americans and Europeans. This is because practice theory, as discussed below, purports that individuals "both organize and make sense of their lives" (Lightfoot et al. 1998:201) through daily practices such as organizing space and performing everyday tasks (Pauketat 2001:73). Practice, thus, allows analysts to access the process that individuals and groups went through as they became acclimated to new colonial contexts.

Practice Theory, Past and Present

Stemming from the writings of Karl Marx (e.g. Marx 1963; Marx and Engels 1970) and growing in opposition to Structuralism (sensu Levi-Strauss 1969), practice theory is now a crucial part of social theory (Dobres and Robb 2000; Giddens 1984:16-25; Ortner 1984). More importantly, as I reason here, practice approaches are particularly fit for sorting out the complexities of colonial interactions (Lightfoot 2004; Lightfoot et al. 1998; Silliman 2001; Trigg 2005) and understanding the persistence of ethnic identities in colonial contexts. Before discussing practice theory in detail, I present a brief history of its roots in order to contextualize the practice movement in social theory. Although practice theory encompasses a wide array of theoretical approaches and applications (Dobres and Robb 2000; Ortner 1984:146), a detailed discussion of each of these is far beyond the scope of this work; here, the primary objective is to present a general synopsis of the school of thought and its relevant applications that shape the larger thesis at hand.

The seeds of practice theory were sown with Marx' idea of history as a cultural construct that shapes and is shaped by cultural activity in the present (Dobres and Robb 2000:4-6, referencing Marx 1963). People are responsible, in varying degrees, for creating and shaping the structures that influence the way they and others live their lives. Social structures are not set in stone. It is the social unit of the individual, the family, the community, or the nation state that can consciously or unconsciously create and manipulate structures; of course, these social units are sometimes only capable of producing slight changes in social structures, while other times, major change is produced.

From the 1970s into the early 1990s, sociologists Pierre Bourdieu (1977, 1990) and Anthony Giddens (1979,1984) developed practice theory into a mature and distinct theoretical perspective. The theoretical directions of both individuals have had a profound influence in anthropology in the past quarter-century (Ortner 1984), shedding new light on understandings of social change, or in some cases, the apparent lack thereof. Bourdieu and Giddens further developed the concept of social action as the progenitor of social structure. Practice theory builds upon Functionalist and Structuralist schools of thought, while simultaneous opposing them, as discussed below. Also, practice-based approaches stand in stark opposition to concepts of human action as *behavior*. *Behavior* is an instinctive, unconscious response to a stimulus (Giddens 1984:8; Hodder 2000:22; Pauketat 2001:86; Wobst 2000:40-41); conceiving of human actions only as such strays dangerously towards determinism, misrepresenting the complexity and depth of process that individuals and groups go through as they live their lives. Individuals or groups do not always react to stimuli in the same manners because each individual or group

possesses a unique perspective on the world. This is not to say that groups cannot share life experiences and histories that predispose them to react in similar ways to outside forces (Bourdieu 1977; Sahlins 1985), but it is important to note that these reactions and interactions are culminations of each individual's unique experience as part of the group (Bourdieu 1977).

A general discussion of terminology is necessary. *Practice* is all human action, although the most important actions in this case are those that are politicized, both intentionally and unintentionally (Ortner 1984:149; Silliman 2001). *Agency* is an act of power in the sense that it is a negotiation of the individual's possible range of practice in regards to "transformative power" (Barrett 2000:61-62; Giddens 1984). "To be able to 'act otherwise' means to intervene in the world, or to refrain from such intervention, with the effect of influencing a specific process or state of affairs" (Giddens 1984:14). In other words, *agents* must have the capability of making a difference in their social environments, always having the option of influencing those around them, and in turn, changing the structures of everyday life, no matter how subtle. As agents interact with social structures, seemingly similar practices that exist for long periods of time and over large areas become systemic, that is, they exhibit structural properties. Institutionalized practices, which exhibit the longest and widest time-space presence are often conceptualized as traditions (e.g. Pauketat, ed. 2001).

Tradition has several different meanings for archaeologists. Culture historians and processual archaeologists conventionally used the term to refer to practices that transcend time. Traditions were viewed as cultural identity markers that invariably persisted from generation to generation and, hence, were used to distinguish different groups or

"cultures" in the archaeological record. Aspects such as lithic tool types or ceramic vessel forms were often seen as the archaeologically visible residues of such traditions. Implicit in this way of using tradition is the concept of punctuated equilibrium, or long static periods of cultural persistence punctuated by periods of dramatic cultural change (Lightfoot 2002).

Archaeologists informed by practice-based approaches conceptualize traditions in novel ways, moving away from the idea of punctuated equilibrium as a model for change, and find merit in conceiving of traditions, resembling those of the distant or recent past, as constantly reconstituted and redefined in the present as they are put into practice (Pauketat 2001:74). While traditions appear to be directly reproduced, they are actually renegotiated and transformed in a continuous flow of change that is only superficially rooted in the past. As Lightfoot describes, traditions are: 1) contingent on history and human agency, 2) forms of continuous cultural production, and 3) linked to a practice-based approach, which "emphasizes the importance of day-to-day practices for understanding how traditions are created and transformed over time" (2001:239).

According to Bourdieu (1977), traditions are transformed over time by the interplay of *habitus* and structure. *Habitus* is an individual's embodied predisposition to act in specific manners (Bourdieu 1977). Each person's habitus is an amalgamation of his or her life experiences. Habitus is what makes individuals or groups distinct from all others, as each individual or group has at least slightly different life experiences and histories; the same holds true for communities or ethnic groups that might share a habitus. As discussed later, the formation of ethnic identities is closely linked to a shared habitus.

The habitus, the durably installed generative principle of regulated improvisations, produces practices which tend to reproduce the regularities immanent in the objective conditions of the production of their generative principle, while adjusting to the demands inscribed as objective potentialities in the situation, as defined by the cognitive and motivating structures making up the habitus. (Bourdieu 1977:78)

Bourdieu implies that the relation between habitus and structure is dialectical; that is, each influences how the other will take shape or change. The dialectic "views the social whole as a complex web of internal relations within which the relation of any given entity to others governs what that entity will be" (McGuire 1992: 249). Duly, habitus shapes practices, which reproduce the regularities that exist within the individual's mind and body in the physical and social world (*structure*); in turn, the physical and social world (*structure*) influences individuals' habitus and, thus, their future practice.

Similarly, Giddens' theory of *structuration* (1979, 1984) relates agents to the social structures in which they exist. *Structuration* draws upon the concepts of structure and system, while recognizing that the two are tied together in a dialectical relationship.

Structure thus refers, in social analysis, to the structuring properties allowing the "binding" of time-space in social systems, the properties which make it possible for discernibly similar social practices to exist across varying spans of time and space and which lend them 'systematic' form. (Giddens 1984:17)

Functionalists and structuralists each conceive of social structures in different manners. Functionalists treat social boundaries, or *structures*, as a pattern of social relations, while structuralists and post-structuralists conceive of it as the rules that lie behind those patterns, just as rules of grammar lie behind language (Giddens 1984:16-25). Again, *structure* provides the social rules and boundaries, existing as memories of practices that span time and space, but also the resources, or social conditions, which guide individuals to act in specific ways. As Giddens points out, "the concepts of systems (*practices that persist in time and space*) and structuration (*how systems are perpetuated*) do much of the work that "structure" is ordinarily called upon to perform" (1984:18-19, emphasis added). The structure, or rules and resources referenced to perform an action, influence peoples' actions, which influence how structures are regenerated.

Routines of everyday practice that are somewhere in between the realms of unconscious and conscious action, are direct correlates of habitus and can speak to ethnic identities (Jones 1997) and to structuration. Like Bourdieu, Giddens emphasizes the importance of consciousness when discussing individuals' roles in shaping society. *Practical consciousness*, which is similar to habitus, is an integral part of the structuration process that structuralists have failed to consider (Giddens 1984:7-16). This level of consciousness lies in between unconscious intents and discursive consciousness. It is through the practical consciousness of practice that individuals reinforce structures. Giddens (1984:19) uses the example of how people living in capitalist societies reinforce the structure of capitalism through daily practice. These reinforcements are often in between the realms of unconscious and conscious intent. On one hand, a person using a credit card tends not to think of their actions in terms of the capitalist structure they are helping to support. On the other hand, this person is not completely or constantly unaware of the relations between capitalism and the use of their credit card.

Critiques of both Bourdieu and Giddens suggest that neither should be treated "as ready-made interpretations rather than as jumping-off points for building theory" (Pauketat 2001:79). Some liken Bourdieu's portrayal of the relationship between habitus and social agency as deterministic (Jones 1997:89-90). Similarly, Giddens is criticized

for putting too much emphasis on structures rather than agents, "leaving little room for transformative action" (Hodder 2000:22-23; see Pauketat 2001: 78-79). Therefore, it is best to treat the intersection between the theories of practice (Bourdieu 1977) and structuration (Giddens (1984) as baselines for archaeological theory. This strategy allows archaeologists to select what works from each body of theory and to combine these portions with other types of theory to strengthen their interpretations. Despite these shortcomings, the works of Bourdieu (1977,1990) and Giddens (1979,1984) contain concepts that are highly applicable to the cultural residues that archaeologists are often left with to interpret. By allowing analysts to view past human action and the residues left behind by it in new and meaningful ways, the works of both Bourdieu and Giddens have engendered many archaeological interpretations, an example of which can be seen in Silliman's work (2001), discussed in Chapter 6.

Identities

Social identities congeal as individuals or groups define and distinguish themselves from other individuals or groups. An objective of this work is to investigate how Eastern Pequot peoples living on the reservation in the 19th century might have identified with one another and defined themselves in relation to surrounding Euroamerican colonists. It makes sense to pursue this objective by thinking in terms of ethnicity. Ethnic identity is "that aspect of a person's self-conceptualization which results from identification with a broader group in opposition to others on the basis of perceived cultural differentiation and/or common descent" (Jones 1997:xiii). I use this anthropological definition of *ethnic identity* throughout this thesis.

In a recent paper, Sarah Tarlow (2005) discussed the current state of "identity studies" and highlighted what she saw as the weaknesses in this new and trendy focus in archaeology. I use Tarlow's critique as a point of departure for discussing the abilities of archaeological inquiry to access past identities, a task that, I contend, is highly useful for archaeologists and greatly facilitated by practice-based approaches (Jones 1997:84-92).

Tarlow's thesis is that archaeologists' use of identity is not as meaningful as they assume it to be, and that discussing past lifeways in terms of identity "risks underplaying the significance of cultural values, tradition, meanings, beliefs, economy and the other factors that inform historical relationships and practices" (Tarlow 2005:5). She makes her case by examining a recent study by Gavin Lucas (2003), which interprets some transferprinted ceramics from an early 19th-century assemblage in England in terms of identity. Lucas (2003) argues that the owners and users of the ceramics under study were expressing middle class respectability. The central tenet of his argument rests on the presence of a minor percentage of transfer-printed ceramics in the assemblage, which are decorated with scenes from literature. Tarlow points out that the correlation between the transfer-printed ceramics and social identity might not be as meaningful as Lucas contends.

One problem with Tarlow's argument is that she exemplifies the problems inherent in *all* archaeologies of identity by referencing only one study. Furthermore, the study she does reference (Lucas 2003), privileges the historical record over the archaeological, and de-contextualizes the limited archaeological data upon which it is based. Tarlow's (2005) critique overlooks multiple contextual studies of identity that are based on multiple lines of archaeological data, which are treated as equally important as

the historical and oral sources drawn upon (e.g. Harrison 2002; Lightfoot et al. 1998; Lightfoot 2004; Silliman 2001, 2004a). These studies do not correlate archaeological remains with social identities as specific as that which Lucas does; instead they use the archaeological record in conjunction with other lines of evidence to tease out nuanced aspects of identity, which made individuals and groups unique from those that surrounded them. As Harrison (2002:353) states, "social identity is fluid and fashioned out of appropriation and exchange". Separating social identities into discrete categories such as race, class and gender is arbitrary and does not represent the actual lived experiences of people of the past (Meskell and Preucel 2004:121).

"Identity may be constituted by categories of practice, but we must recognize that individuals associate and live with multiple categories in the course of their life trajectory and further connect to others by various practices of identification" (Meskell and Preucel 2004:122).

Even though Bourdieu (1977) was not interested in the processes of identity formation, his concept of habitus is closely linked to the ways in which societies become subdivided into ethnic groups (Jones 1997:87-92). Although each individual has a habitus of their own, people with similar life experiences or histories also share a habitus. The shared habitus provides people with a sense of "shared sentiment and interest", which culminates in the conscious creation of symbols of ethnic identity, and provides a common predisposition for certain cultural practices and representations, some of which are transformed into symbols of ethnic identity (Jones 1997:87-92). Thus, people's shared experiences and histories lead them to identify with one another, which transforms certain aspects of their shared cultural practices and representations into symbols of membership in that group. The difficulty here is distinguishing between all practices derived from a shared Eastern Pequot habitus and those that were conscious expressions of ethnicity. Did someone act in a certain manner because they were Eastern Pequot, or were they Eastern Pequot because they acted in a certain manner? Although this is a fine line, expressions of ethnic identity are still sometimes evident in the archaeological record; furthermore, investigating the shared habitus of a group is also insightful, especially in regards to agency and its role in shaping group habitus. I demonstrate these points in Chapter 6 by making use of practice theory.

To conclude, I suggest that archaeological inquiries of social identity are still meaningful despite Tarlow's concerns. Archaeologies of identity can benefit from the following: 1) incorporating practice theory, particularly the concept of the shared habitus; 2) contextualizing archaeological data by using multiple lines of evidence; 3) treating archaeological, historical, oral, and other sources of data as equally important parts of analysis; and 4) refraining from dividing social identity into arbitrarily imposed social categories such as class, race, and gender (see Meskell and Preucel 2004: 121-142).

Critiques of Practice

Theories of both practice and agency have been subject to several critiques. Joan Gero (2000:34) argues from a feminist perspective that the concept of agency in archaeology is portrayed as a distinctly male quality, and that "what is valorized in agency is masculinist". She also points out that "in its rejection of passivity, agency downplays or devalues other critical social moves such as building community and consensus, averting conflict, preserving social and economic balances, or restricting and controlling self-interested expressions of power" (Gero 2000:35). She goes on to liken agency theory to a meta-narrative in that "all human action is expressed as a single (suitably vague) dynamic, divorced from context, content and condition, and agents in

any single socio-historic movement are made to be roughly equivalent to agents in any other" (Gero 2000:38).

Gero is primarily addressing a faction of Neo-Darwinian theorists that focus on individual aggrandizers as agents of change (e.g. Clark and Blake 1996: Hayden 1995). With respect to these studies, her critique is warranted, as this approach portrays agents of change as universalized, dominant males; thus when applying agency theory, one must avoid the pitfalls of androcentric, universalist thinking.

For a Marxist critique of practice-based approaches, Randall McGuire (1992) makes a key point.

People make history. They do not however, make it as individuals free to act as they please. They make is as members of social groups whose common consciousness derives from the shared social relations, lived experiences, cultures, and ideologies that link them to each other and oppose them to other social groups in the world around them. (McGuire 1992: 249-250)

This concept is modeled after Marxist authors' ideas of praxis, or "theoretically informed practice" (McGuire 1992:22-23). According to praxis, the only way for people to induce social change is by organizing into factions. McGuire (1992:134) suggests that those that use practice-based approaches impose a false dichotomy on the world because they conceptualize structures and agents as separate entities when they are actually dialectically related. Marxists use praxis to explain the importance of class and class tensions in societies, arguing that agents do not evoke change, classes do.

Although the word "dialectic" is not used in either, most any reading of Bourdieu (1977) and Giddens (1984) reveals their understandings of the dialectical relation between structure and agency. Each acknowledges that agents are fundamentally linked to the social structures that surround them and that influence their actions; however, class

tensions are not the only social structures that can be used to explain actions. Marxists' strict adherence to praxis is sometimes lucrative when interpreting change in capitalist societies, but things are not so simple. There are other factors that influence agency such as habitus, which may or may not be linked to class tensions. Marxists rely on the assumption that class tensions are universal. Since there is no convincing evidence that this is true, practice theory is still useful. This is not to say that archaeologists using practice should ignore power issues and Marxist theories. Both Marxism and practice-based approaches can co-exist in archaeology, but it seems that practice theory is applicable to a wider range of archaeological contexts, specifically colonial contexts, which Marx himself was not particularly interested in (McGuire 1992).

Conclusions

The meeting of Native American and European worlds that took place during colonialism offers a particularly interesting case for applying a practice-based approach. "The idea of practice focuses attention on the creative moments in time and space where change was actually generated" (Pauketat 2001: 87). Practice theory offers new ways of interpreting colonial interactions and exchanges, particularly the negotiation of ethnic identities. The complexities of colonial interactions for Native Americans and Europeans alike are incredibly difficult to sort out. Despite these complexities, colonialism offers a unique opportunity to view cultural practices; in these contexts, the "introduced" was potentially adopted and reconstituted while the "traditional" was potentially imbued with new sets of meaning (Harrison 2002).

In conclusion, I contend that practice theory is well suited for archaeologists investigating contexts of colonialism, and is adept for fleshing out the subtleties of

colonial processes. The final chapter intertwines the central concepts outlined here with the historical and archaeological data presented in the subsequent three chapters in order to imbue them with new meanings, teasing out issues of Eastern Pequot habitus and ethnic identity that have thrived for the past 300 or so years despite oppression and subjugation by Euroamerican encroachers.

CHAPTER 3

EASTERN PEQUOT CULTURE HISTORY

Introduction

In this chapter, I provide a general outline of Eastern Pequot culture history in order to contextualize the archaeological research at the heart of this project. Archaeological and historical data sets can be interwoven to craft informative views of the past; however, neither data set should be privileged over the other. When viewing these sets of data together, inconsistencies sometimes become evident, which are often highly insightful. Fitting interpretations to both data sets offers informative understandings of the past.

Archaeological, anthropological, and historical sources are drawn upon to sketch Pequot peoples through time. This chapter is not meant to represent the entire history of Pequot peoples, but to provide the reader with a trajectory in which the archaeological data can be placed. The history I provide, which starts approximately 500 years before colonialism, demonstrates the dynamics of pre-Columbian lifeways. Historical archaeologists need to strive towards contextualizing their archaeological sites by understanding what came before and after, despite the presence or absence of documents (Lightfoot 1995). Also, there is a need for archaeologists studying colonial contexts to recognize the dynamics of pre-colonial lifeways for Native Americans. Here, I focus mostly on the history of colonial foodways (17th century to present), particularly during the 18th and 19th centuries. Although I do not deny the validity and usefulness of oral

traditions or primary historical documents concerning Pequot lifeways, this chapter is based largely on archaeological findings and secondary historical sources.

Non-Document-Aided Histories

The advent of horticulture in the Northeast hunter-gatherer-fisher landscape took place sometime after 1,000 years ago with maize, beans, squash and tobacco as the main crops (Dincauze 1990; Simmons 1986:11). There is still much debate over the exact timing of adoption and degree of reliance of these cultigens, particularly maize (see Bendremer 1999; Bragdon 1996; Chilton 1999). Native American adoption of these cultigens in the Northeast allowed the formation of denser settlements with bigger populations. The only type of domestic animal used by Native Americans at this time was the dog, which was not usually a food source (Simmons 1986:11). Thus, subsistence continued to revolve around gathering, fishing and hunting, while horticulture began to take hold (Starna 1990:34-35). Hunted vertebrate fauna include deer, bear, raccoon, opossum, eastern cottontail, gray squirrel, porcupine, gray fox, weasel, mink, meadow vole, deer mouse, muskrat, beaver, duck, turkey, Canada goose, brant, common loon, Atlantic sturgeon, striped bass, scup, tautog, striped sea robin, sheepshead, sandbar shark, tomcod, skate, and cunner (Starna 1990:34-35). The Sandy's Point site, on Cape Cod, Massachusetts, contains the remnants of a corn hill from this time period that was most likely occupied on several short-term occasions (Mrozowski 1994). Mrozowski considers the site a maize processing station occupied during the Late Woodland period and at least once in the early 17th century. Similarly, the Burnham-Shepard site in Connecticut contained the remnants of a grass lined storage pit with maize, bean, and sunflower remains, while the Woodchuck Knoll site in Windsor, Connecticut, contained similar
storage pits (McBride 1978). The Burnham-Shepard site speaks to early maize cultivation and storage by the 14th century (Bendremer 1991).

By the late 16th and early 17th centuries, the importance of domesticated plants was ever increasing in Native American lifeways, populations continued to grow, and permanent settlements were established (Bragdon 1996:80-102; Simmons 1986:11; Willoughby 1906:128). These processes, based on a mixed maritime/horticultural subsistence economy, paved the way for increased territoriality and trading networks (McBride 1991:65). Permanent settlements sometimes developed into fortified villages, a process McBride (1990:101) associates with European colonization. By this time, Native American groups living in the Southern New England area had developed a distinct Mohegan-Pequot language, which distinguished them from the other surrounding language-groups (Simmons 1986:11). Territories were divided into sachemdoms, or small political groups, lead by sachems, or chiefs (Simmons 1986:13). Sachems collected tribute from the surrounding groups that they "ruled" over, sometimes in the form of shell beads, also called wampum. "The Pequots, in general terms, seem to have exerted influence over, and exploited the resources of, a large area of the land" (Starna 1990:33); this is one facet of Pequot lifeways that changed dramatically with colonization.

Colonialism in Pequot Territory

Europeans began setting foot in Pequot territory in the 16th and 17th centuries; in many cases, European trade goods and diseases preceded them (Bragdon 1996:92). The degree of impact that European diseases had on Native American groups during this time period is a topic that has been widely debated. It is generally agreed that the effects of European diseases, such as smallpox, seriously reduced Native American populations,

which were further reduced by warfare fueled by colonial tensions (Cave 1996). Both of these factors have had profound influence on Native American histories up to the present. I begin this discussion by focusing on the Pequot War of 1636-1638, a particularly gruesome moment in Pequot histories.

The Pequot War was closer to genocide than an actual war (Cave 1996; Hauptman 1990:48-80). Although the English justified the murder of hundreds of Pequot peoples by referring to them as "irrational, unpredictable, malicious, treacherous, and inhumane" savages (Cave 1996:2), the Puritan explanations for war do not stand up to close examination, as economic motives probably also played an important role (Cave 1996: 1-13). The reasons for English attack are, however, not as important here as the actual events they contributed to, specifically the declaration of an "official" extinction of the Pequot as a people in 1638.

Prior to the conflict, the Pequot had 15 villages in southeast Connecticut, two of which were the most powerful, Fort Mystic and Fort Hill. Out of the 26 Pequot sachems at the time, a sachem named Tatobem was the most powerful (McBride 1990:103). In the early 1630s, Dutch and English traders began to expand into Pequot territories, a move that would eventually lead to the Pequot War. Tatobem was murdered over a trade dispute at this time. The Pequot retaliated with the 1634 murder of John Stone, a Virginia trader; this would become the main English justification for attacking the Pequot. The new Pequot sachem, Sassacus, attempted to quell the conflict by meeting most of the Massachusetts Bay officials' demands for retribution. "The Pequot agreed to hand over Stone's killers, to allow English purchases of land and settlement in the Connecticut Valley, and to pay a substantial indemnity of four hundred fathoms of wampum, forty

beaver skins, and thirty otter skins" (Hauptman 1990:72). This attempt by the Pequot to make peace was forgotten when John Oldham, a trader, was murdered off the shores of Block Island by either Eastern Niantic or Narragansett individuals, and in 1636, English colonists lead an "expedition against the Pequot" (Hauptman 1990:72). Between 1636 and 1637, the Pequot and the English retaliated against one another on a few occasions. Also during this time, the English formed an alliance with Mohegan and Narragansett warriors against the Pequot. The final blow of the Pequot War occurred in May of 1637, when the anti-Pequot alliance surprised Fort Mystic with an attack, resulting in the deaths of between 300-700 Pequot women, children and elderly and the burning of Fort Mystic. The opposing side only suffered two English deaths and 20 injuries and 20 additional injuries to Mohegan and Narragansett individuals. After only an hour, only seven Pequot people from the fort were alive. Following this genocidal act, additional Pequots were captured and tortured, killed, or sold into slavery (Newell 2003:106-137). Pequots sold into slavery at this time number around 250 (Newell 2003:108). The "war" formally came to a close with the signing of the Treaty of Hartford in 1638.

The Treaty of Hartford declared the Pequots as virtually extinct, and later, colonial lawmakers prohibited using the name "Pequot" altogether (Den Ouden 2005:17; Hauptman 1990:76). The treaty divided the remaining Pequot males between the Mohegan and Narragansett (McBride 1990:104). Despite the public claim of Pequot extinction and the scattering of Pequot peoples across southern New England, the same year that the treaty was signed, Roger Williams wrote John Winthrop to inform him that Pequot peoples had gathered back together in the vicinity of their original lands (Den Ouden 2005:20). In the second half of the 17th century, colony officials acknowledged the

existence and persistence of Pequot peoples by imposing laws on the two Pequot communities they then recognized. Each of these communities was "given" reservation lands in the next 20 years or so. In 1666, reservation land in southeastern Connecticut was "given" to the group now know as the Mashantucket Pequot, and in 1683, the group now known as the Eastern Pequot was "given" reservation lands in Stonington, Connecticut. The reservation system imposed multiple restrictions on Pequot lifeways, not the least of which included encroachment by government officials and other Euroamerican individuals on Pequot lands.

Changes in Mohegan and Mashantucket Pequot Lifeways

In this section, I discuss changes in Native American lifeways during the colonial era in order to contextualize the archaeological data presented in the next few chapters. This portion is based upon several studies of Native American foodways in colonial Connecticut. Salwen (1970) assesses changes in colonial foodways by comparing two periods of occupation at Fort Shantock, a Mohegan fortified village. He characterizes the earlier site, dating from 1620-1685, as a "self-sufficient Indian village" (Salwen 1970:6). Mammals make up 96.3% of the assemblage, while birds, fish and turtle represent the remaining 3.7%. Indigenous animal remains dominate the mammalian faunal assemblage from this site, composed of 94.5% deer, 1.9% black bear, 1.8% small mammal and 1.7% domesticated animals, which include sheep, cow and horse remains. In contrast, Salwen classifies the later site, dating between 1720-1750, as "part of the colonial economic network" (1970:6). Mammals make up 95.3% of the collection, while birds, fish and turtle represent 4.7%. The mammalian assemblage is comprised of 59.8% domesticated animals, 38.5% deer and 1.7% small mammals. Interestingly, relative compositions of

bird, fish and turtle specimens are basically the same despite the clear distinction in mammalian composition between the two assemblages.

McBride's (1990, 1991) research on Mashantucket Pequot foodways throughout the reservation period shows similar findings, although McBride offers a different interpretation. During the early reservation period, 1666-1720, Pequot foodways appear very "traditional"; gathering, fishing, horticulture, hunting and seasonal movements to the coast are the central methods used for securing subsistence at this time (McBride 1990:108-109, 1991:66-67). The only documented European-influenced food sources used by Pequots at this time were pigs and apples. The 50 or so years after the second quarter of the 18th century marks a time of change in Pequot foodways as Pequot peoples adopted European-influenced subsistence practices as a result of the reduced land base of the reservation. At this time, the Pequot adopted European subsistence technologies and European domesticated animals. Pequot peoples became more and more reliant on animal husbandry over the subsequent 50 years (1775-1825), although McBride notes that traditional food procurement was still practiced at this time, including hunting and movement to the sea for fishing and shellfish collecting. During this time period, cattle remains are a rare occurrence in zooarchaeological assemblages, which are normally dominated by young sheep and pigs (McBride 1990:109). Overseers' reports from the 19th century document large quantities of foodstuffs being purchased for inhabitants of the Mashantucket Pequot reservation. "Clearly, the Pequots grew increasingly dependent on European technology and subsistence practices as time went on" (McBride 1990:109).

Unlike Salwen (1970), who characterizes the changes discussed above as "rapid acculturative change", McBride (1990, 1991) recognizes the persistence of traditional

Pequot lifeways in spite of the ever-increasing reliance on European-influenced subsistence strategies. This is the interpretation I favor, given my discussion of the pitfalls of acculturationist theories of change presented in the previous chapter. Similarly, Den Ouden (2005:132-140) discusses the maintenance of Pequot traditions as a form of resistance to colonial lifeways, as colonists looked down upon traditional Pequot practices, which were not centered on "improving" the land as a commodity. Colonists "lacked the conceptual tools to realize that Indians were practicing a more distant kind of animal husbandry of their own" (Cronon 1983:52); one that did not impact the landscape like the traditional European practices engrained in colonists' heads as the only "right" way of living off of the land (Burgess 1998:34-35).

The Structures of Reservation Life

Den Ouden (2005:22) describes the reservation system as "a form of colonial control that was actively maintained and justified" by colonists in order to maintain power over Native American groups, facilitate the spread of colonial settlement in the area, and quench the ever-growing colonial thirst for pastureland (Den Ouden 2005:194). Reservation lands served as prisons for Pequot peoples, restricting them from outside resources and making them vulnerable to colonial usurpers. The "significant impact" Den Ouden refers to below, is one of the topics addressed through this thesis.

Corn crops were often destroyed by the wandering livestock of colonial neighbors; for people who had long depended on harvesting the ocean's resources, being deprived of access to the coast by threat of arrest for trespassing on colonial property, as Mashantucket Pequots noted in a 1713 petition, would have a significant impact on subsistence practices; and colonial encroachers not only disregarded reservation boundaries, but knocked down fences built by reservation communities, helped themselves to the timber reservation trees provided and in some instances subjected the Native proprietors of reservation lands to threats and acts of violence. (Den Ouden 2005:30)

The forced sedentism of reservation life was in stark contrast to pre-colonial Pequot lifeways, where hunting and gathering territories were plentiful, and there was enough fertile soil to support horticulture. In particular, the restriction of Pequot people from entering "colonial lands" most likely altered fishing, gathering, and hunting practices, as the reservation land was limited and resources were used up quickly (Den Ouden 2005:206; McBride 1990:97-107). In the third quarter of the 17th century, the Mashantucket Pequots petitioned the Connecticut government for more land because their reservation lands were already worn out and had no remaining firewood.

In the 18th century, Eastern Pequot peoples living on the reservation resided in both wigwams and small, framed houses (DeForest 1964:441). There were only 38 persons reported living on the reservation by 1749, most of them females (DeForest 1964:431). Many Eastern Pequot males were employed as soldiers or seamen, spending years away from their families (Burgess et al. 1998:35). For the most part, reservation life in the 18th century was full of hardships (DeForest 1964:441). Euroamericans looking for land to use for animal husbandry practices often encroached on Eastern Pequot lands. In the mid-18th century, Isaac Wheeler purchased the Eastern Pequot reservation land "for" the Eastern Pequot peoples so he could make use of it as pastureland (DeForest 1964:432).

It had been bought by Isaac Wheeler of Stonington, with the promise that Wheeler was to have the whole of the pasturage, and the Indians were to be at risk of protecting their own crops from the incursions of his cattle. (DeForest 1964:432)

These encroachments made it difficult for Eastern Pequot peoples to raise crops; uninvited domestic grazing animals often intruded and grazed upon gardens and other planting areas (Cronon 1983). Subsistence was based upon traditional ways of life and the maintenance of an Eastern Pequot community on the reservation.

These [subsistence] strategies, which arose out of economic necessity, were yet largely premised on a traditional subsistence pattern, one which depended on seasonal mobility within a well-defined region, use of a combination of cultivated and wild resources, division of labor by gender with women undertaking the majority of agricultural work, and community interdependence cemented by reciprocal exchange. (Burgess et al. 1998:34).

In the early 19th century, wigwams and small, framed houses were still used on the reservation (Burgess et al. 1998:54). In 1820, there were 50 individuals reported as living on the 240-acre reservation. It was nearly impossible for families living on the reservation to be completely self-sufficient. Again, farming remained difficult at this time due to the deleterious effects that grazing animals, usually owned by Euroamericans, had had on reservation soils over the last 100 years or so; this coupled with the rocky nature of reservation soils made farming quite challenging (Burgess et al. 1998:35). In spite of these hardships, Eastern Pequot peoples eked out livings by maintaining systems of exchange, both on and off the reservation (Burgess et al. 1998:34-36; DeForest 1964:443).

In these circumstances, reciprocal exchange, the sharing of food, labor, and other resources, cooperation in childcare, and other strategies, likewise consistent with the traditional kin-based economy, took on even greater importance through time. (Burgess et al. 1998:36)

Into the 20th century, Eastern Pequot communal ties also remained strong. For instance, during the Depression, hunting on the reservation and food sharing were still important parts of subsistence strategies for Eastern Pequot peoples (Burgess 1998:55).

In addition to the imposed restrictions of reservation life, Pequot peoples have had to fight for their land continuously as the colonial structures around them continue their attempt to choke out tribal presence. Starting in the late 18th century, colonial usurpers turned to the issue of "race" to justify their actions (Den Ouden 2005:35-36). The premise behind this argument is that the Native groups that were "given" lands in the late 17th century intermarried with other groups -including African Americans and Euroamericans- and became acculturated with exposure to Euroamerican lifeways, thus, nullifying their "authentic" Indianness and their claims to reservation land. Phenotypebased pan-Indian stereotypes were, and still often are, the measuring stick of "authenticity" used by many Euroamericans for determining just how "Indian" someone is (Berkhofer 1979:55-62). To this day, Native Americans are the only groups of people in the United States who have to demonstrate their bloodlines in order to claim rights to the lands and other sacred items their ancestors held so closely. In 2003, the Eastern Pequot tribal nation was federally recognized after going through an extensive petitioning process. Despite this, in an unprecedented decision, the federal government recently stripped the Eastern Pequot of tribal recognition because of a supposed lack of evidence for tribal organization in the 20th century, stating that possessing a reservation and living on it are not evidence of tribal existence; thus, it appears that change comes very slowly in the colony of Connecticut.

The maintenance of traditional Eastern Pequot practices in the 19th century is the focus of this thesis. In the subsequent chapters I set up an argument for a distinct 19th-century Eastern Pequot habitus and identity, evident in the remnants of foodways. Despite the dominance of European domestic animal remains in the 19th-century Eastern Pequot contexts I examine, the assemblages exude ties to Pequot lifeways long ignored by 19th-century Euroamerican usurpers.

CHAPTER 4

METHODS AND FINDINGS

Introduction

The archaeological methods employed in this research project center on the analysis and interpretation of a faunal assemblage from the Eastern Pequot reservation. In this chapter I discuss the archaeological laboratory methods used throughout this project, as well as present initial findings. Thus, one major focus of this chapter is archaeological, particularly zooarchaeological, methods; the other is the faunal data gleaned from these methods. In Chapter 6, I interpret and tie these data with the theory and historical sources discussed in previous chapters.

Field Methods

The faunal assemblage comes from 1-x-1 m and 1-x-0.5 m test units excavated during the summer 2004 and one 1-x-1 m test unit from summer 2003. In total, the assemblage represents 6.7 cubic meters of excavated soil from 17 test units, each varying in excavation depth. All test units were screened through 1/8th inch mesh and excavated to sterile soils. All test units analyzed here are associated with two field stone foundations. Based on the presence of domestic debris such as food waste, ceramics, and glass, these foundations most likely represent residential structures.

Foundation 1 contexts include nine 1-x-1 m and four 1-x-0.5 m excavation units. Of these, four 1-x-1 m and two 1-x-0.5 m excavation units were outside of foundation 1, and five 1-x-1 m and two 1-x-0.5 m units were inside. Almost all of the exterior units, save one, contained sections of a large trash pit, approximately 1.5-x-2.75 m in size and 35-40 cm deep. This feature lay outside the southwest corner of foundation 1 and

contained high frequencies of faunal specimens, ceramics, charcoal, glass, clay pipes, metal items and lithic materials. The interior units contained several ash deposits, or burned areas, covered over by the remnants of a chimney fall.

Foundation 2 contexts include a total of four 1-x-1 m units, two outside and two inside of foundation 2. One of the exterior units contained a 35-40 cm-deep trash deposit, with fragments of ceramics, charcoal, glass, clay pipe, and metal items; interestingly, only one faunal specimen was recovered from this feature. Two ambiguous soil stains, excavated as features, were identified in the other exterior unit. Since these features were very shallow with hardly any material culture, it is unclear what they represented. The interior units contained similar materials as the exterior units, but contained no features.

Based on the initial ceramic and clay pipe analyses, both foundation contexts appear to be contemporaneous. Both assemblages contain ceramics manufactured from the second half of the 18th century into the 19th century. These include shell-edged pearlware (1780-1840), mochaware (1795-1895), banded annular ware (1785-1840), hand-painted pearlware (1780-1840), transfer-printed pearlware (1784-1840) and small amounts of creamware (1762-1840)(Noel Hume1969: 102-145). Some whiteware (1830-present) was also recovered from both assemblages. In addition to the ceramics, several clay pipes recovered from both foundations contain bowl decorations that date to the late 18th century and the first half of the 19th century (Reckner and Dallal 2000). Based on both of these lines of evidence, the foundations were most likely used in the late 18th or early 19th century. Furthermore, previous analysis of ceramics recovered from shovel-test-pits around one of the foundation areas yielded a mean ceramic date of 1817 (McNeil 2005:70).

Laboratory Identification

All faunal remains were lightly dry brushed in the field or in Dr. Stephen Silliman's laboratory at the University of Massachusetts Boston. Wet washing was not used initially for any specimens in order to preserve the more fragile faunal materials that might break or become damaged when put in contact with water. All bone and shell specimens were then pulled from the general artifact bags and placed into separate bags marked with the appropriate context information. Before any analysis took place, inventories of the contents of each faunal bag were recorded and entered into a Microsoft Excel spreadsheet. When all inventories were complete, bones were labeled with the appropriate context information using a labeling marker and solution whenever possible. During the labeling process, select bones were carefully washed using water and a toothbrush in order to remove excess soil that dry brushing failed to remove. Small bags labeled with the context information were used for those bones that were either too small or fragile to undergo the labeling process. Labeling reduces the risk of bones being shuffled out of context during the identification stage of analysis. All shells were placed into bags labeled with context information instead of being labeled individually. After the labeling process was complete all faunal materials were transported to Dr. David Landon's zooarchaeology laboratory at the University of Massachusetts Boston for further analysis.

In December of 2004, analysis on the Eastern Pequot faunal assemblage began. A Microsoft Excel spreadsheet was designed to record the following information for each faunal specimen: catalogue number; unit coordinates; excavation level; count; class; taxon; element; utility; portion; proximal fusion; distal fusion; symmetry; weathering

stage; burning; presence of butchery modifications; number of cut marks; number of chop marks; number of shear marks; number of saw marks; tool types; presence of rodent gnawing marks; presence of carnivore gnawing marks; weight in grams; foundation context; tooth wear stage, and additional comments. The contents of each faunal bag were sorted into "diagnostic" and "non-diagnostic" specimens. Specimens considered "diagnostic" were those intact enough to identify to a taxonomic level higher than class or as a specific skeletal element. All specimens recognized as "non-diagnostic", which mainly consisted of very small fragments of bone and shell, were catalogued on the spreadsheet discussed above. Of course, most of the data categories listed above were unobtainable with these initial "non-diagnostic" specimens. Counts, weights, classes and some taphonomic data were collected for most specimens at this stage. Several of these specimens were also identifiable to size class and element. I then separated all specimens identified as "diagnostic" by taxonomic class and skeletal element, when possible. Those specimens not identified at that time were set aside for further analysis.

After the initial sorting and cataloging process, mammalian specimens were examined by groups of elements and identified by the author using several reference books and, mainly, the University of Massachusetts Boston faunal reference collection. For example, all radii were examined at the same time and identified to the most discrete taxonomic level possible while noting all other apparent marks left on the specimen by taphonomic processes. After being cataloged, specimens were placed into master-bags labeled by skeletal element and set aside for future reference. This same process was carried out for all mammal specimens with the exception of jaw and cranial fragments with teeth intact and loose teeth; for these elements, tooth type and wear stage were also

recorded. Some of the remaining unidentified "diagnostic" mammal specimens were identified with the help of Dr. David Landon, while the remainder were put aside to take to the Harvard zooarchaeology laboratories for further comparison with species that the University of Massachusetts Boston zooarchaeology laboratory lacks.

Shellfish, bird, reptile and fish specimens were analyzed in the same general manner as the mammalian remains. Shellfish and bird remains were identified using the University of Massachusetts Boston comparative collections. Only one diagnostic bird specimen remained unidentified after this process and was set aside for comparison with species only available at the Harvard zooarchaeology laboratories. Reptile and fish specimens could not be identified to any taxonomic level using only the University of Massachusetts Boston comparative collection; thus, only skeletal elements were identified for these classes at the University of Massachusetts Boston. All diagnostic fish and reptile remains were set aside for identification using the Harvard collection. At Harvard, the author identified all mammal, bird, reptile and select fish specimens to at least family level. A portion of the remaining fish specimens were identified with the help of Peter Burns of the Harvard Zooarchaeology lab, while the rest are considered unidentified.

After cataloging all faunal specimens, I calculated biomass, NISP (number of identified specimens), and MNI (minimum number of individuals). Biomass was calculated for all vertebrate remains using formulae presented by Reitz (1987), while invertebrate biomass was calculated using formulae presented by Salwen (1970). Biomass is the estimated meat weight, or possible dietary contribution that skeletal specimens represent. Although this calculation is meaningful when analyzing remnants of

foodways, it is insignificant for analysis of skeletons from animals used for purposes other than consumption. Since the assemblage under study is most likely related to past Pequot foodways, as discussed throughout, biomass is a useful measure in this study.

Number of identified specimens (NISP) is the same as specimen count, or the number of specimens in a sample (Reitz and Wing 1999:155). This calculation is frequently used as a taxon-specific quantification, giving a maximum number of individuals present for each taxon in a sample.

Minimum number of individuals (MNI) is a much more complex interpretation than is NISP, and is the subject of many debates among faunal analysts (see Breitburg 1991; Casteel 1977; Horton 1984; Reitz and Wing 1999:194-199). As the name implies, this quantification is used to estimate the minimum number of individuals present for each taxon in a sample. "MNI estimates should not be interpreted as actual individuals; more actual individuals may have been used at the site, or only portions may have been used" (Reitz and Wing 1999:195). An MNI is estimated by examining data from all specimens from a specific taxon in a sample, taking particular note of symmetry and elemental portions of specimens.

Laboratory Findings

Throughout this chapter, faunal specimens are discussed in reference to three main quantifications: counts, faunal mass and estimated biomass. The assemblage is composed of 1,949 faunal specimens, weighing a total of 1,931.0 g, with an estimated biomass of 16.8 kg. Only 33 specimens, with a combined weight of 3.0 g, are considered unidentifiable to the taxonomic level of class using the methods employed in this study. In total, 74% of the assemblage, or 1,595 specimens, are identified to the class level only

(Table 4.1). Less than one percent of the collection (0.01%), or 21 specimens are identified to the family or genus level only, while 14% (300 specimens) are identified to the species level. Although the percentage identified to species level appears to be slightly higher than other sites in the Northeast, the numbers are slightly misleading. This is because all invertebrate remains recovered in test units were included in the faunal collection; this is not a common practice for zooarchaeologists due to the typically high frequencies of shellfish encountered at sites. Shellfish remains were included because they were recovered in relatively low frequencies, making it possible to catalogue each specimen individually.

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Level of Identification	Specimen Counts			
Unidentified	33	<1%		
Class	1595	74%		
Family/Genus	21	21%		
Species	300	<1%		
Total	1949			

Before discussing each faunal class in detail, I present a general inventory of class representation in the Eastern Pequot reservation faunal assemblage (Table 4.2). Mammal bones make up the majority of the specimens identified to at least a class level, representing 80.8% of the specimens counted, 92.7% of the faunal mass and 97.3% of the estimated biomass. Bivalve shells (Class Pelecypod) make up 13.7% of the specimens counted, 6.0 % of the faunal mass and 0.2% of the estimated biomass, while bird remains make up 1.6% of the specimens counted, 0.7% of the total faunal mass and 1.9% of the estimated biomass. Respectively, gastropod, fish and reptile remains represent 2.7%,

1.3% and 0.1% of the specimen counts, 0.3%, 0.2% and 0.1% of the faunal mass, and 0.0%, 0.4% and 0.2% of the estimated biomass.

Table 4.2 Class representation

Class	Specimen Count	Specimen Weight	Biomass		
Bird	1 55%	0.71%	1 85%		
Fish	1.30%	0.19%	0.42%		
Gastropod	2.72%	0.32%	0%		
Mammal	80.84%	92.66%	97.32%		
Pelecypod	13.71%	6%	0.18%		
Reptile	0.32%	0.13%	0.24%		

Mammals

The assemblage is comprised mainly of mammal bones, which are ubiquitous across all test units excavated. Mammal bones in the collection represent an estimated biomass of 16.3 kg and come from eight different taxonomic families. Of the 1,721 mammal specimens, weighing a total of 1.8 kg, 1,388 specimens, weighing a total of 334.8 g are not identified past the taxonomic level of class. Also, 212 specimens, weighing a total of 429.6 g are only identified to a size class. Large mammals are the size of a large pig or bigger, medium mammals are between the size of a large rabbit and an average-sized pig, and small mammals are smaller than a large rabbit. A mustelid specimen, weighing less than 1 g, is the only mammal remnant that is identifiable only to the family level, while six specimens, weighing a total of 5.1 g are identifiable only to the genus level. Specimens identified to the species level represent 7% of the counted mammal specimens and 57% of the mammalian mass with 114 specimens weighing 1.0 kg.

Cattle (*Bos taurus*), pigs (*Sus scrofa*), sheep/goats (caprines) and whitetail deer (*Odocoileus virginianus*) are the largest species represented in the assemblage; each falls under either large or medium mammal size categories. These species belong to three different taxonomic families: Bovidae (*Bos taurus*; caprine), Suidae (*Sus scrofa*) and Cervidae (*Odocoileus virginianus*). *Bos taurus* and *Sus scrofa* remains are the most abundant specimens of all mammal remains identified to a family level or higher. In total, 44 *Bos taurus* specimens, weighing a total of 661.5 g were identified (Table 4.3). Based on recovery of second phalanges, *Bos taurus* has an MNI of two at the site. The second phalanx came from an adult individual and a juvenile individual. Based on MNI and NISP, the actual number of *Bos taurus* represented in the assemblage is between 2 and 44. For biomass, *Bos taurus* remains represent approximately 7.0 kg of meat.

In total, 59 specimens of *Sus scrofa* were identified, weighing a total of 329.7 g. Based on the presence of a juvenile radius, a dentary with third molar erupting, a dentary with third molar fully erupted and in wear, and two loose lower third molars, *Sus scrofa* has an MNI of four. This indicates that the actual number of *Sus scrofa* represented in the assemblage is between 4 and 59. Biomass calculations indicate that the *Sus scrofa* remains from the site represent 3.8 kg of meat.

Small mammals identified in the assemblage belong to five taxonomic families: Felidae (domestic cat), Sciuridae (woodchuck), Muridae (meadow vole and rat), Mustelidae (unidentified mustelid), and Leporidae (wild rabbit). Wild rabbit (Sylvilagus

Taxon	Common Name	Class	MNI	NISP	Weight(g)	Biomass(kg)
Anas sp.	Unidentified waterfowl	В	1	1	0.4	0.01
Anserinae	Goose	В	1	1	1.0	0.02
Gallus gallus	Chicken	В	2	4	4.9	0.07
Meleagrididae gallopavo	9 Wild Turkey	В	1	1	1.6	0.03
Phasianidae sp.	Unidentified game bird	В	1	2	2.0	0.03
NID Bird	Unidentified bird	В		24	3.7	0.05
Esox niger	Chain pickerel	F	1	1	0.2	0.01
Perca flavescens	Yellow perch	F	1	2	0.3	0.01
Sparidae	Porgy	F	1	1	0.9	0.01
NID Fish	Unidentified fish	F		18	2.2	0.04
NID Gastropod	Unidentified univalve	G		58	6.1	0.00
Bos taurus	Cattle	Μ	2	44	661.5	7.02
Caprine	Goat/Sheep	М	2	6	17.6	0.27
Caprine/Cervid	Goat/Sheep/Deer	М		1	1.0	0.02
Felis familiaris	Domestic cat	М	1	1	0.5	0.01
Marmota monax	Woodchuck	М	1	1	0.2	0.00
Microtus pennsylvanicus	Meadow vole	М	1	1	0.1	0.00
Mustelidae	Unidentified mustelid	Μ	1	1	0.1	0.00
Odocoileus virginianus	Whitetail deer	М	1	1	6.2	0.10
Rattus sp.	Unidentified rat	М	1	2	0.7	0.01
Sus scrofa	Pig	М	4	59	329.7	3.75
Sylvilagus sp.	Wild rabbit	М	1	4	4.4	0.08
LARGE	Unidentified mammal	М		121	316.2	3.61
MEDIUM	Unidentified mammal	Μ		88	112.9	1.43
SMALL	Unidentified mammal	М		3	0.5	0.01
NID Mammal	Unidentified mammal	М		1388	334.8	3.80
Crassostrea virginica	Oyster	Р	1	13	8.1	0.00
Geukensia demissa	Ribbed Mussel	Р	1	9	1.1	0.00
Mercenaria mercenaria	Quahog	Р	1	8	69.2	0.02
Mya arenaria	Soft shell clam	Р	1	155	29.3	0.01
NID Pelecypod	Unidentified bivalve	Р		107	8.0	0.00
Chelydridae	Snapping turtle	R	1	3	2.6	0.04

Table 4.3 Species representation

sp.) and rat (Rattus sp.) are the two most abundant genera represented in the assemblage with four and two specimens, weighing 4.4 and 0.7 g, respectively. For biomass, *Sylvilagus* and *Rattus* specimens represent 0.08 kg and 0.01 kg each. All *Rattus* remains were not distinguishable as either *Rattus norvegicus* (Norway rat) or *Rattus rattus* (black rat). *Felis familiaris* (domestic cat), *Marmota monax* (woodchuck), *Microtus pennsylvanicus* (meadow vole) and mustelid remains all weigh 0.5 g or less and represent 0.01 kg of biomass, respectively.

Specimens only identified as large mammals represent 316.2 g of faunal mass, with 121 specimens. The only identified large mammals in the assemblage are *Bos taurus*; thus, a majority of the specimens in the large unidentified mammal category could be cattle, although horse (*Equus*) might be present as well. Unidentified medium mammals, representing 112.9 g and 88 specimens in the assemblage, could be *Sus scrofa*, caprine, or *Odocoileus virginianus*, all of which are found in the collection. There are only three unidentified small mammal remains in the collection, weighing a total of 0.5 g, which could represent any of the small mammals identified in the assemblage.

Bos taurus, caprine, *Felis familiaris* and *Sus scrofa* all represent domestic animals that were first introduced to North America by Europeans during colonization, while *Marmota monax*, *Microtus pennsylvanicus*, mustelids, *Odocoilius virginianus*, and *Sylvilagus* are all native to North America. European domesticates make up the majority of the assemblage with 6% of all counted mammalian specimens, 56% of the total mammalian weight and 68% of mammalian biomass calculated from specimens identified to a genus level or higher. Wild species make up 0.1% of all counted

mammalian specimens, 1% of the total mammalian weight and 1% of the mammalian biomass calculated from specimens identified to a genus level or higher.

Elemental Representation

A basic comparison of elemental representation between the most abundant mammalian taxa from the site fleshes out an interesting pattern (Figures 4.1 a, b). There is a relatively low number of long bone remains in the collection and the remains that are present are mostly missing the shaft portions. This could be due to a number of taphonomic processes, either natural or cultural.

Some archaeologists conceptualize animal remains as low and high utility parts based on the meat yield of the body part that each skeletal element represents (Binford 1978:15-22; Klippel 2001:1193). According to this scheme, skulls, mandibles, hyoids, teeth, carpals, tarsals, sesamoids, metapodials and phalanges are low utility parts, while vertebrae, ribs, scapulae, pelves, humerii, radii, ulnae, femora, tibia, lateral malleoli and patellae are high utility parts (Klippel 2001:1193). By this definition, "utility" is only used to refer to meat yields; other possible uses of animals, such as sources of labor are overlooked (see Binford 1978:22-45). Despite this semantic inaccuracy, utility analysis as done by Klippel (2001) is useful when discussing animals as sources of meat.

Bos taurus and *Sus scrofa* are the only taxa represented in the assemblage with numbers high enough to warrant utility analyses. A normal bovid skeleton contains 190 skeletal elements, which are 41% high utility and 59% low utility. Out of 44 *Bos taurus* specimens in this collection, 16, or 36%, are high utility and 28, or 64%, are low utility (Figure 4.2). High utility *Bos taurus* specimens in the assemblage include vertebral elements (axis, cervical vertebrae, thoracic vertebrae, lumbar vertebrae), ribs, pelvic

elements and long bones (femur, radius, ulna). Low utility *Bos taurus* specimens in the assemblage include tarsal elements (astragalus, phalanges), carpal elements (carpals, phalanges), cranial elements (cranium, dentition, teeth, maxilla) and a metatarsal.

A normal suid skeleton is comprised of 260 elements, which are 31% high utility and 69% low utility. Out of 59 *Sus scrofa* specimens from the site, 12 or 22%, are high utility and 42 or 78%, are low utility. High utility *Sus scrofa* specimens in the assemblage include vertebral elements (thoracic vertebrae, lumbar vertebrae) and long bones (fibula, radius, tibia, ulna). Low utility *Sus scrofa* specimens in the assemblage include carpal elements (carpals, phalanges), cranial elements (cranium, dentition, teeth, maxilla) and a metacarpal.

Age Patterning

Epiphyseal fusion, tooth eruption, and tooth wear data are all used to estimate the age, and sometimes season, of death for animals. By combining these lines of evidence, a stronger interpretation is obtained than when using only one or two of these data sets. Landon (1993, 1996) also shows the benefits of using tooth cementum analysis for determining season of slaughter; however, that level of analysis is beyond the scope of this project. Epiphyseal fusion occurs in animals as they mature and their bones finish growing. At this point, bone ends, or epiphyses, and bone shafts, or diaphyses, fuse together. The epiphyses of each taxa fuse in different sequences and at different points in animals' lifetimes. By noting which bones in an archaeological assemblage are fused or unfused, ages of death can be estimated. Epiphyseal fusion analysis is only useful for interpreting animal bones to a certain age because it is based on the premise that bones fuse in a predictable sequence for all animals. Once all bones are fused in a skeleton,



Figure 4.1a Elemental representation for Bos taurus, blue portions represent portions present in assemblage (adapted from Helmer 1987)



Figure 4.1b Elemental representation for Sus scrofa, blue portions represent portions present in assemblage (adapted from Helmer 1987)



Figure 4.2 Bos taurus/Sus scrofa utility

fusion data can only yield a minimum age at which the animal was slaughtered. Also, since zooarchaeological assemblages sometimes lack less robust skeletal elements due to preservation issues and fusion analysis works on the premise that data from the entire skeleton is available, the interpretive weight of epiphyseal fusion analysis is significantly weakened. Nonetheless, fusion data is useful because it offers rough estimates of age of death from which stronger interpretations can be reached through use of additional lines of evidence. Epiphyseal fusion stages for the Eastern Pequot assemblage were noted during the cataloguing process. Based on analyses by Silver (1963) and Landon (1996:96-99), ages of death for different taxa are estimated.

The diagnostic elements for *Bos taurus* specimens in the assemblage were: a fused proximal femur with partial shaft and two second phalanx with fused distal epiphyses. In a *Bos taurus* skeleton, the distal femur fuses around 42 months, while the distal second phalange fuses around 18 months (Silver 1963). Based on the MNI for *Bos taurus* in the assemblage, the distal femur and perhaps the adult second phalange represents the one adult in the collection, while the juvenile second phalange represents the one juvenile in the collection.

Diagnostic *Sus scrofa* elements in the collection include two fused distal radii, two fused distal metacarpals, a fused distal fibula, an unfused distal tibia and a fused proximal first phalanx. Fusion stages of the metacarpals, tibia and first phalanx suggest an age of less than 24 months, while the fibula suggests an age of less than 30 months. The oldest age estimate comes from the radii fusion data, which suggests animals older than 42 months. These estimates fit with the MNI for *Sus scrofa*, which is three adults and one juvenile. The only diagnostic caprine element in the collection is a fused distal humerus, which suggests an age of more than ten months for one of the two animals accounted for in the MNI.

Similar to fusion data, tooth eruption data are only particularly useful for teeth from younger animals where tooth eruption was still in progress at the time of death. After tooth eruption has ceased in animals, tooth eruption data only offer a minimum estimate of age. However, since teeth are some of the most robust skeletal parts, tooth eruption data are not as skewed by preservation biases as fusion data can be. Tooth eruption data is available for *Bos taurus* and *Sus scrofa* specimens from the collection.

There are several examples of intact tooth rows for both of these taxa, along with many loose teeth.

Tooth eruption data from *Bos taurus* specimens are in agreement with the estimated ages of death presented above. A dentary with the second molar fully erupted and the third molar possibly erupted, but missing, suggests an age of more than 27-30 months for one of the *Bos taurus* specimens (Hillson 1986:206). It is possible that this specimen could come from an even older animal, since there is a third molar present in the assemblage. If this molar belonged to the same individual as the dentary, an age of more than 30 months is most likely. A deciduous lower third premolar could belong to the same animal that the juvenile second phalanx came from. This tooth erupts after 21 days of life in *Bos taurus* (Hillson 1986:206). The eruption stages of *Sus scrofa* dentaries in the collection suggest an age of 16-22 months for one individual and an age of greater than 16-22 months for another individual.

Finally, tooth wear data is used to estimate the ages of death for individuals whose bones are completely fused and teeth are completely erupted. This is because an animal's teeth are constantly being worn down throughout their lifetimes as they consume food. Hillson (1986), Grant (1982) and Payne (1973, 1986) present useful data on the sequencing of tooth wear for different animals. Wear stages were recorded for each appropriate specimen with an intact occlusal surface, or "chewing" surface. Tooth wear data are only recorded for premolars and molars, since these are the main teeth used for grinding food and thus wear at a relatively steady rate throughout an animal's lifetime. Again, tooth wear data are only available for *Bos taurus* and *Sus scrofa* specimens in the assemblage.

Bos taurus tooth wear data strengthens the MNI estimate of one adult and one juvenile. A loose lower first molar at wear stage "N" (after Grant 1982), most likely belonged to an animal older than three years at the time of death (Hillson 1986:206; Landon 1996:100). In contrast, a loose lower fourth premolar, at wear stage "c" (after Grant 1982), most likely belonged to an animal around six months in age (Hillson 1986:206; Landon 1996:100).

Sus scrofa teeth are worn as follows: 1) all first molars are worn to stages "d"-"j"; 2) all second molars are worn to stage "c"; 3) all third molars are worn to stages "b"-"c" (after Grant 1982). These data suggest that the teeth under study all belonged to adult animals, older than 16-22 months (Hillson 1986:208-209; Landon 1996:102-103).

I construct age profiles for each of the most prominent taxa by combining the above data sets with the MNI estimates (Figure 4.3). The *Bos taurus* age profile for the site has one adult, about 42 months old or older, and one juvenile between 6 months and 18 months old. It is very likely that, since this age range is so wide, there were two juvenile cows present at the site. The juvenile represented by the deciduous lower fourth premolar might have been around 6 months old, while the other, represented by the fused distal second phalanx might have been about 18 months old. However, since the MNI estimate is only two for *Bos taurus*, the age profile only accounts for one juvenile individual. The *Sus scrofa* age profile has one older individual, more than 42 months in age, two other adults, between 22-30 months old, and one young individual represented by a juvenile radius specimen. The minimal caprine age data available in the collection suggest at least two individuals, one of which is older than ten months.



Figure 4.3 Estimated age profiles for Bos taurus and Sus scrofa

Birds

The 33 bird specimens recovered at the Eastern Pequot reservation represent three families, with a combined weight of 13.6 g. A relatively high percentage of the bird remains are identified to the family level or better with nine, or 27% of the counted specimens, and 9.9 g, or 73% of the total bird mass. Specimens identified to the species level make up 15% of the recovered remains and 48% of the bird mass, while specimens identified to the family level make up 12% of the recovered remains and 25% of the bird mass.

Family Phasianidae includes game birds such as pheasant, quail and partridge and is the most abundant bird family recovered at the site (Peterson 1980:144). Chickens (*Gallus gallus*) make up the largest portion of identified bird remains, with 12% of the

counted bird specimens and 36% of the total bird mass. Two other Phasianidae specimens remain unidentified in terms of genus and species.

Two specimens from family Anatidae are present in the assemblage. This family includes waterfowl such as swans, geese and ducks (Peterson 1980:42). One of these specimens belongs to the goose sub-family Anserinae (Peterson 1980:42). Also, family Meleagrididae is represented in the assemblage by one specimen from a wild turkey (*Meleagris gallopavo*) (Peterson 1980:144).

The spatial distribution of bird remains shows a distinct pattern. The majority of bird specimens were excavated from two main areas, a pit feature outside of foundation 1 and several ambiguous features inside foundation 1. Bird specimens from the pit feature occurred in two 1-x-1 m test units (N793 E604; N794 E605) and one 1-x-0.5 meter test unit (N794 E604.55). Specimens recovered from the interior of foundation 1 occurred in four 1-x-1 m test units (N796 E607; N797 E605; N798 E604; N798 E605). Contrasting the test units in the pit feature, which are clearly associated, the relationship of materials recovered from different units inside foundation 1 is not clear at this time, thus warranting a more detailed discussion of the distribution of bird specimens within the interior portion of the foundation. Two test units inside the foundation (N797 E605; N798 E605) contained a majority of the bird specimens recovered from this portion of the site. Test unit N797 E605, with 18% of the counted bird specimens and 39% of the total bird mass, contained an abundance of fire-cracked rock associated with the recovered bird remains. Just one meter north, several ash deposits were uncovered in test unit N798 E605, which contained 39% of the counted bird specimens recovered, representing 34%

of the total bird mass. Also, several bird specimens are calcined, which is discussed later in the section on burned bone.

Fish

In total, 22 fish specimens, weighing a total of 2.6 g, were recovered from the site, representing three families. Fish specimens identified to a family level or higher make up 18% of the fish remains counted and 54% of the total fish mass. Specimens identified to a species level represent 14% of the counted remains and 19% of the total fish mass.

Only one specimen from the site is identified as part of the Sparidae family, found almost exclusively in coastal waters (Fillisky 1989:613). Two yellow perch specimens (*Perca flavescens*) represent the Percidae family; this species inhabits streams, lakes and ponds (Fillisky 1989:578). A chain pickerel (*Esox niger*) specimen, which inhabit lakes, ponds, swamps, reservoirs, pools and streams (Fillisky 1989:404), is the only example from the collection of family Esocidae. Of note, three unidentified specimens were compared against a majority of the likely freshwater species with unsuccessful results, suggesting that they could represent marine species. Overseers' records, the earliest of which dates to 1823, show that Eastern Pequot diets included "cod and other sea-fish" throughout the 19th century (Burgess et al. 1998), so the presence of such fish is not surprising.

Similar to the distribution of bird remains, the distribution of fish remains at the site display a distinct spatial pattern. Fish specimens were recovered from two main areas of the site, the pit feature adjacent to foundation 1, and the interior of foundation 1. Fish remains from the pit feature occurred in two 1-x-1 m test units (N793 E604; N794 E605) and one 1-x-0.5 m test unit (N794 E604.55), while all fish remains recovered from the

interior of foundation 1 came from one 1-x-1 m test unit (N798 E605). The pit feature contained 55% or the fish specimens counted and 64% of the total fish mass, while the interior of foundation 1 contained 45% of the fish specimens counted and 36% of the total fish mass. Interestingly, these are the only two areas of the site where test unit excavation yielded fish remains.

Reptiles

Reptile remains are few in the Eastern Pequot Reservation assemblage with only three turtle carapace fragments weighing 2.6 g total and representing 0.04 kg of biomass. All three specimens come from the same family, Chelydridae, and most likely, the same individual. Family Chelydridae (snapping turtles) are commonly found in the eastern half of the United States in rivers, lakes, canals and some brackish water areas (Sobolik 1996:25-27). There are two different genera in the Chelydridae family, alligator snapping turtles (*Macroclemys*) and loggerhead snapping turtles (*Chelydra*). Sobolik (1996:26) states that the only skeletal difference between these genera is size, as *Macroclemys* is significantly larger than *Chelydra*. Since the specimens recovered at the site are from a small turtle, they may represent *Chelydra* instead of *Macroclemys*. All turtle specimens, excavated from unit N798 E604-4 and N798 E605-7, appear to cross mend, thus, suggesting that they might have originally come from the same individual.

Invertebrates

Invertebrate remains from the site are composed of bivalve shells (Pelecypod) and univalve shells (gastropod). Pelecypods in the assemblage number 292, weigh 115.7 g total and represent 0.03 kg of biomass. In total, four taxonomic families are present in the Pelecypod assemblage: Myidae, Veneridae, Ostreidae and Mytilidae. A majority of

Pelecypod specimens are identified to the species level, with 63% of the count and 92% of the total Pelecypod mass.

Mya arenaria (soft-shell clam) of family Myidae and *Mercenaria mercenaria* (hard-shell clam) of family Veneridae are the most common shellfish species recovered from the site. Due to the fragile quality of the shells, *Mya arenaria* specimens are highly fragmented, making up 53% of the Pelecypod count, but only 25% of the total mass and 33.3% of the total biomass. *Mya arenaria* normally inhabit sand and mud in shallow to very deep waters (Rehder and Knopf 1988:811-812). In contrast, due to the robusticity of the shells, *Mercenaria mercenaria* specimens are the least fragmented shell remains with only 3% of the shell count, but 60% of the total shell weight and 66.6% of the total biomass. *Mercenaria mercenaria* normally inhabit sand or mud in bays or inlets in shallow to moderately deep waters (Rehder and Knopf 1988:806). Also, shells from this species have been used as raw material for the production of wampum by various groups in northeast North America, including the Pequot and the Dutch, for the last four centuries or so, and in the production of other shell jewelry for thousands of years before that (Ceci 1991; Pena 2001).

Crassostrea virginica (eastern oyster) of the Ostreidae family, and *Geukensia demissa* (ribbed mussel) of the Mytilidae family make up the remainder of identified specimens. *Crassostrea virginica* comprise 4% of the shell count and 7% of the total shell weight. This species normally inhabits hard or soft substrates in waters 10-40 feet deep (Rehder and Knopf 1988:699). *Geukensia demissa* represent only 3% of the shell count and 1% of the total shell mass. This species normally inhabits mud or peat in salt

marshes and bays (Rehder and Knopf 1988:687-688). Both species combined represent less than 1% of the total Pelecypod biomass.

Gastropod specimens also make up less than 1% of the total faunal biomass, with 2.7% of the total faunal count and 0.3% of the total faunal mass. None of the gastropod specimens are identified past the taxonomic level of class. This is because all specimens resemble terrestrial species and none appear to be worn or weathered, suggesting that they are most likely modern non-anthropogenic additions to the faunal collection.

Burning

A large proportion of the faunal materials recovered from the site are burned. In total, 858 specimens, or 40% of the entire assemblage count and approximately 14% of the total faunal mass exhibit evidence of burning. Mammal remains make up the majority of burned specimens with 808 bone fragments, or 94% of the total burned faunal count. Pelecypod remains account for 3% of the burned specimens recovered, while bird, fish and unidentified specimens count for approximately 1% each. All burned mammal, bird and fish remains are calcined. Calcination occurs when the organic component of bones is completely oxidized (Lyman 1994:384-388; Reitz and Wing 1999:133); this process requires a minimum temperature of 500 degrees Celsius (McBride 1991:73).

The burned mammalian assemblage is almost entirely unidentified, with 98% comprised of unidentified bone and 2% comprised of the large and medium size classes. Most burned mammal elements are also unidentified (98%), with only 2% identified as fragments of long bone, vertebrae, ribs, scapulae and a sesamoid. All burned bird remains are long bone fragments unidentified past the class level. All burned fish specimens are vertebrae fragments unidentified past the class level. Burned Pelecypods are 61%

unidentified, while 35% are *Mya arenaria* specimens and 4% are *Crassostrea virginica* specimens.

Spatial distributions of burned faunal materials were analyzed to identify possible patterns. These distributions and patterns between foundations 1 and 2 are discussed in the next chapter. Bird remains were distributed evenly across the interior and exterior foundation 1 contexts discussed earlier in the bird section. One bird specimen was recovered from the exterior of foundation 2. Interestingly, all burned bird remains occurred between excavation levels four and seven, approximately 15-35 cm below the surface. Burned fish remains only occurred in the interior foundation 1 context discussed earlier in the bird remains, fish remains all occurred between excavation levels six and seven, or approximately 25-35 cm below the surface. Nearly all of the burned pelecypod remains occurred in interior foundation 1 contexts, with the exception of one specimen found in feature 1. All pelecypod specimens were excavated from between levels 5 and 11, between 25-60 cm below the surface.

Weathering

Bones weather when exposed to the elements such as wind, water, sun, soil acidity, and others. Behrensmeyer (1978) and Behrensmeyer et al. (1979) use experimental archaeology to demonstrate the manner in which bones weather in different environmental settings through time. According to these sources, bones weather in five distinct stages, which correlate to specific environmental settings (Behrensmeyer 1978:150-151). I noted all bones weathered beyond stage two as presented in Behrensmeyer (1978) when cataloging the Eastern Pequot reservation faunal assemblage. Behrensmeyer describes stage two as when, "bone shows cracking, normally parallel to

the fiber structure. Articular surfaces may show mosaic cracking of covering tissue as well as in the bone itself" (1978:151). Behrensmyer (1978:157) reports that 3-4 years after an animal's death, most bone specimens exhibit weathering stages beyond stage two. This estimate is most likely too generous for animal remains in northeastern North America due to the highly acidic soil and poor preservation conditions there. The experiment discussed by Behrensmyer was conducted in southern Kenya, where soil tends to be alkaline and there are no freezing and thawing cycles like those in New England (1978:151). Despite these inconsistencies, differences in weathering on bones from the Eastern Pequot assemblage, if present, can still be used to assess taphonomic histories for specimens. While the preservation environment at the Eastern Pequot reservation is very different from that of southern Kenya, weathering stages on bones still advance with extended exposure to the elements. Thus, the longer a bone is exposed to the elements, the more weathered it will be (Behrensmeyer 1978; Behrensmeyer et al. 1979).

In the assemblage, only three bones, a *Bos taurus* second phalanx, a large mammal radius and an unidentified large mammal specimen, are weathered to stage two or higher. All specimens are at stage three, exhibiting "patches of rough, homogeneously weathered compact bone" (Behrensmeyer 1978:151). The lack of more heavily weathered bones suggests that "outside" contexts were rapidly filled over as trash was deposited on a regular basis. Similarly, bones from "inside" contexts were sheltered from weathering by the house structure.
Rodent and Carnivore Gnawing

Rodents and carnivores gnaw on bones to remove soft tissue and increase their calcium intakes (Reitz and Wing 1999:133). Rodent and carnivore gnawing can occur at any point in the taphonomic history of a bone. All rodent and carnivore gnawing marks discussed here do not appear to be fresh and, therefore, could date to the last human occupation of the sites discussed; however this is not definite. Rodent gnaw marks are characterized by closely spaced parallel linear grooves made by incisors, while carnivore marks are characterized by small round punctures or broad grooves made by canine teeth (Reitz and Wing 1999:134-135). Rodent marks are the most common type of gnaw marks found on bone (Reitz and Wing 1999:134). Rodents' incisors grow continuously throughout their lifetimes, making it necessary for them to gnaw on hard objects to keep their teeth aligned (Reitz and Wing 1999:134). There are 54 bones in the collection that exhibit evidence of rodent gnawing. Mammal specimens make up the majority of these bones with 51 specimens. Bird is the only other class with rodent-gnawed bones with three specimens.

Mammalian bones exhibiting rodent-gnaw marks are mostly identified as medium mammals; however, *Bos taurus*, *Sus scrofa*, caprine, *Marmota monax*, Sylvilagus sp., and large and small mammal bones from the collection also have rodent gnaw-marks. Heavy rodent gnawing is evident from marks left on six mammalian specimens. Bird bones exhibiting rodent-gnaw marks are identified as *Gallus gallus*, *Meleagrididae gallopavo* and Phasianidae. Carnivore-gnaw marks are present on only five bones, all of which are mammalian. One of these specimens is identified as a large mammal, while the others are unidentified. Two bones with carnivore gnawing also have rodent gnawing.

The spatial pattern of bones with gnaw marks is interesting, particularly the relation of rodent-gnawed bones to carnivore-gnawed bones. A majority of the bones with rodent-gnaw marks (85%) occurred in two test units (N797 E605; N798 E605) in the interior of foundation 1. Also, all six bones with heavy rodent gnawing-marks occurred in the same area. All bones with carnivore gnawing marks, except for one, occurred in three test units in feature 1, around the exterior of foundation 1. Thus, the patterns of bones with rodent and carnivore gnawing marks appear to be inversely related to the interior and exterior space of foundation 1. Furthermore, only one bone exhibiting rodent-gnaw marks was recovered in association with foundation 2.

Bone Breakage

People break bones apart for a variety of reasons, including marrow extraction and tool manufacture (Binford 1981:148-181; Brain 1981). There has been much debate in archaeology over how to recognize intentional bone breakage by humans in the archaeological record. The effects of natural processes, such as weathering and animal gnawing, and unintentional human acts, such as trampling, can produce breakage patterns on bone that resemble patterns of intentional human breakage (Binford 1981:148-181; Brain 1981). Thus, bones exhibiting possible signs of intentional human breakage must be examined closely.

Bones in the assemblage exhibiting possible traits of human modification were first classified to breakage type using Reitz and Wing (1999:157-159). Specimens were then compared to illustrations and descriptions of broken bones in Binford's (1981:87-183) ethnoarchaeological work of 20th-century Nunamiut animal butchery and processing



Figure 4.4 Bos taurus femur (right) and Sus scrofa tibia (left) broken for marrow extraction

practices and the condition of skeletal remains left over from such practices. Finally, specimens were compared to a goat femur, which I intentionally fractured with a small hatchet during an experiment, described in further detail in the butchery modifications section. The purpose of this portion of the analysis was not to produce a detailed understanding of bone breakage practices as presented by Binford's ethnoarchaeological observations (1980), but to understand several key phenomena, if possible. I sought to distinguish between cultural/non-cultural and intentional/unintentional breakage patterns on bones in the assemblage and to understand what materials were used in the breakage process such as axes or hammerstones.

In total, four bones from the assemblage exhibit evidence of cultural breakage, all of which were recovered from "inside" contexts of foundations 1 and 2. Two specimens have an unidentified breakage pattern, while two have breaks classified as oblique and irregular (Reitz and Wing 1999:158). The latter two specimens, a *Bos taurus* femur and a *Sus scrofa* tibia (Figure 4.4), match up with specimens discussed and presented by Binford (1981:159-162) and Fisher (1995), which were processed for marrow. Femur breakage as discussed by Binford (1981:159) involves striking the proximal end of the bone on a hand-held anvil stone. The proximal end is broken off, leaving a distinct impact mark on the femur. "Hints of slight depressed fracturing of the thin-walled bone are still visible at the upper end of the break" (Binford 1981:159). The femur specimen from the assemblage has an impact mark as presented by Binford (1981) and Fisher (1995), suggesting that it may have been processed with a form of percussion that did not involve chopping tools such as a hatchet or cleaver. The impact scar on the *Bos taurus* femur from the assemblage is very distinct from that on the *Capra hircus* femur, which I processed with a hatchet. The impact scar from the hatchet shows no evidence of fracturing of thin-walled bone, as the *Bos taurus* femur from the collection and Binford's (1981:159-160) examples exhibit. Instead, the hatchet mark is sheared off in a straight line where the blade struck the diaphysis (Figures 4.5a-d). There is an impact mark similar to the mark on the *Bos taurus* femur on the distal *Sus scrofa* tibia mentioned above, suggesting that it was processed in a similar fashion.

Breaks on two additional specimens, a distal caprine humerus and a *Bos taurus* radius, resemble intentional human fracture but bear no evidence of impact, as discussed above. These specimens were most likely broken through cultural processes, but the method and function of these processes remains unclear.

Butchery Modifications

Butchery modifications on bone are produced by a number of different tool types and are associated with an array of activities. Knives, axes, hatchets and saws of metal or stone are just a few examples of instruments that cause cuts, chops, shear and saw marks on faunal material. Primary butchery activities include the initial slaughter, carcass



Figure 4.5 Comparison of breakage types: a) axe chop: b) Sus scrofa tibia broken with percussion; c) Bos taurus femur broken with percussion; d) illustration of proximal femur broken for marrow extraction (from Binford 1981)

dressing and evisceration (Landon 1996:58-59). Secondary butchery involves the disarticulation of the carcass, and tertiary butchery involves final divisions of the body parts to consumption (Landon 1996:58-59). The locations and morphologies of cut marks on bone offer clues to the types of processes they might have been associated with. The primary objective of cut mark analyses of the Eastern Pequot reservation assemblage is to better understand animal processing on the reservation in the early 19th century. Four aspects were examined: 1) tool type used to make the mark; 2) location of cut marks on bones; 3) taxa exhibiting/lacking marks; 4) the spatial distributions of specimens with cut marks across the site.

Primary identification of tool types from analysis of cut mark morphologies was done using several sources (Binford 1981; Landon 1996:58-60; Reitz and Wing 1999; Walker and Long 1977) and the University of Massachusetts Boston faunal reference collection, which contains several specimens with cut and saw marks. All specimens were examined using low-powered microscopy. Metal knife cuts are identifiable by their characteristic thin "v" shaped grooves, which can be fairly deep (Landon 1996:59). Metal saw marks are identifiable by parallel striations in their sidewalls (Landon 1996:59; Reitz and Wing 1999:130). Chops and hacks made with axes or hatchets are evident from their non-symmetrical "v" shaped marks, where bone has sometimes been removed and which lack striations (Landon 1996:59). A shear mark occurs when a bone has been chopped through, leaving a straight edge (Landon 1996:59). All unidentified shear marks such as those of a cleaver, axe blow or saw mark subjected to weathering, were classified as "sheared". The remaining identifiable cut marks in the assemblage were set aside for comparison with other types of cut marks not available in the University of Massachusetts Boston reference collection. These marks resembled stone tool cut marks, which are characterized by their distinct "u" shaped cuts (Binford 1981:105-106; Reitz and Wing 1999:128-131; Walker and Long 1977). In order to further analyze these possible stone tool marks, I performed experimental butchery using mostly stone tools of my own manufacture (Figure 4.6).

For the experiment I used the upper potion of a *Capra hircus* hind leg, containing the entire femur and the proximal tibia and shaft and some crude cutting and scraping tools made of flint. The *Capra hircus* leg was butchered in the University of



Figure 4.6 Experimental butchery of goat leg

Massachusetts Boston Zooarchaeology Laboratory using mostly stone tools to cut and scrape all flesh from the bones. A small hatchet was used only once to create a chop mark that could be added to the comparative collection. This small chop caused most of the femur to spiral fracture, adding yet another interesting bone modification type to use for comparison with the Eastern Pequot reservation assemblage. After removing all excess flesh, the bones and bone fragments were boiled in a large colander for approximately eight hours, stopping halfway through to carefully remove fatty tissue and marrow that was beginning to separate from the bones.

Low-powered microscopy was used to compare cut marks on the *Capra hircus* bones with specimens from the assemblage bearing questionable stone tool marks. It was still unclear whether or not the marks were made with stone tools. The only way to truly distinguish between stone and metal cut marks is to view marks in cross-section (Walker

and Long 1977). To avoid actually cross-sectioning bone specimens, silicone casts of cut marks were made with the guidance of Dennis Piechota of the Fiske Center for Cultural and Environmental History. This experiment was modeled after that presented by Walker and Long (1977) and Greenfield (1999).

Only a few specimens were analyzed using this method due to time constraints. Three stone tool cut marks on two bones from the experimental butchery mentioned above were analyzed to provide a control with which to compare the archaeological samples and the findings from Walker and Long (1977) (Figures 4.7 a-g). In addition, eight unidentified cut marks from two *Sus scrofa* fibulae, a *Sus scrofa* dentary, a *Bos*



Figure 4.7 Analyzed cut marks: (a-e) unidentified cut marks from assemblage, and (f-g) experimental cut marks made with stone tools





Figure 4.8b Cut-mark profiles of experimental cut marks made with stone tools

taurus rib, and a *Bos taurus* dentary were chosen for analysis. These specimens were chosen randomly as representatives for all specimens in the collection with ambiguous cut marks. That is, the specimens analyzed have cut marks that resemble many other specimens in the collection that I originally categorized as possible stone tool marks.

Wax dikes were constructed around each cut mark to hold the silicone in place while drying. A combination of two GE silicones was used, room temperature vulcanizing II (RTV II) and room temperature vulcanizing 98-II (RTV98-II). The silicone was poured into the wax dikes and allowed to harden for approximately five hours. When fully hardened, the silicone molds were removed by peeling off the wax dikes and then popping the molds off of the bones. Each mold was then photographed using a digital camera at close range. Molds of smaller cut marks were bisected, while molds of longer cut marks were sectioned into multiple pieces. The object was to section the deepest part of each cut, as depth is a diagnostic trait of cut marks. Sections were photographed and then measured under low-powered microscopy for depth and width of each cut mark. Photographs of each section were then magnified and traced using Macromedia Freehand to create diagrams of all cut mark profiles (Figures 4.8 a, b). These methods allowed for close examination and measurement of the shape of each mark analyzed. The findings were then compared to those presented in Walker and Long (1977).

Data presented by Walker and Long (1977:612) suggest that ranges of cut mark widths are distinct between metal knife and stone tool marks while depths overlap to some extent. Marks made by a 35-mm steel blade range in width from 0.12-0.42 mm, while they range in depth from 0.025 to 0.162 mm. Also, the depth-to-width ratio of these marks ranges from 0.18-1.12 mm. Cut marks produced by a bifacially flaked stone tool, with an edge of 5.7 mm in length, range in width from 0.79-1.25 mm and 0.09-0.35 mm in depth. The range of depth-to-width ratios is 0.07-0.41 mm.

Ranges of depths and widths of stone tool cut marks examined from the experimental butchery are remarkably similar to those presented by Walker and Long (1977) for stone tool marks (Figures 4.9 a, b, c, d). The experimental stone tool marks have depth-to-width ratios between 0.22-0.33; that is a range of 0.11. The stone tool marks produced by Walker and Long (1977) have depth-to-width ratios between 0.07-0.41, also a range of 0.34. This suggests that stone tools produce cut marks that are

relatively similar in depth-to-width ratios despite differences in tool types and methods of cutting.



Figure 4.9a Dimensions of cut marks made with a steel knife (Walker and Long 1977)



Figure 4.9b Dimensions of cut marks made with stone tools (Walker and Long 1977)



Figure 4.9c Dimensions of unidentified cut marks from assemblage



Figure 4.9d Dimensions of experimental stone tool cut marks

Cut marks analyzed from the site are quite diverse in dimensions, ranging from 0.5-2 mm in width and 0.125-0.5 mm in depth. The depth-to-width ratios for these marks range from 0.13-0.38; that is a range of 0.25. These marks cluster into three dimension-categories as shown in Figures 4.9 c, which correlate with data presented by Walker and Long (1977:612). The first cluster correlates with dimensions of metal knife cut marks, with depths less than 0.15 mm and widths less than or equal to 0.5 mm. Only one of the cut marks, from a *Sus scrofa* fibula, analyzed from the collection is in this category. The second cluster correlates with dimensions of stone tool cut marks presented by Walker and Long (1977) and from the experimental project discussed above. In total, six marks make up this cluster, ranging in depth from 0.15-0.375 mm and in width, 0.5-1.375 mm. The only anomaly is a cut mark from a *Bos taurus* dentary, which is abnormally wide and deep.

Cut mark morphologies were examined using the profile diagrams made for each cut mark in the collection. These profiles were compared to profiles of stone tool cut marks from the experimental butchery and diagrams presented in Walker and Long (1977) and Greenfield (1999). Only one cut mark examined from the collection fails to resemble any of the published examples. This may be because it was labeled near the cut

mark and labeling solution might have gotten into the mark, distorting its morphology. Interestingly, this mark accounts for one of the sections discussed above as having the dimensions of a steel knife mark. The rest of the cut marks examined from the site resemble the morphology of stone tool cuts very closely. These marks all have a "u" shape with rounded sidewalls. These marks are on a *Sus scrofa* fibula, a *Sus scrofa* dentary, a *Bos taurus* dentary and a *Bos taurus* rib.



Figure 4.10 Bifacially worked gunflint recovered from foundation 1

It is definite that more than one type of tool was used for butchering animals at the Eastern Pequot reservation. Considering the quantitative and morphological evidence presented above, it is more than likely that non-metal tools made at least five of the marks examined through sectioning. Furthermore, since these marks were sampled from a larger group of marks in the collection, these are probably not the only non-metal cut marks in the collection. Worked lithic material and bottle glass are not uncommon on colonial sites in eastern North America (Cobb 2003; Hayes 2005; Wilkie 2000). A bifacially reworked gunflint (Figure 4.10), recovered from foundation 1, suggests that flintknapping was still practiced on the reservation at this time, although few other lithic materials were recovered. It is possible that the marks in question were made with a very dull metal knife; however, given the presence of multiple "normal" metal cut marks on bones from the assemblage and the recovery of a whetting stone from foundation 1, this is highly unlikely. Throughout the rest of this work, I shall refer to the marks discussed above as "non-metal" cut marks.

There are 116 specimens in the collection with evidence of butchery modifications, of which 114 are mammal remains. There is also a bird specimen and a Pelcypod specimen with butchery marks (Figures 4.11 a, b). These 116 specimens have a total of 181 recognizable butchery modifications: 60% cut marks, 30% shear marks, 7% saw marks, 3% chop marks. Out of the 109 cut marks, 49% are from metal tools, 36% are from non-metal tools, and 15% are unidentified. Of note, three specimens contain both metal and non-metal tool butchery marks.

Unidentified medium and large mammals represent 75% of the specimens with cut marks. The remaining specimens with cut marks are 12% *Sus scrofa*, 9% *Bos taurus*, 2% caprines, and less than 1% *Mercenaria mercenaria* and *Gallus gallus*. Approximately 95% of the specimens with cut marks come from foundation 1 contexts, with 54% from interior contexts and 41% from exterior contexts.



Figure 4.11a Cut mark on shell



Figure 4.11b Cut marks on bird bone



Figure 4.12a Locations of butchery modifications for Bos taurus remains (Helmer 1987)



Figure 4.12b Locations of butchery modifications for Sus scrofa remains (Helmer 1987)

Cut mark locations were recorded on standardized skeleton diagrams (Figures 4.12 a, b). Cut marks from all specimens of the same taxon and element were compiled on the same diagram. Identified elements with cut marks include *Bos taurus* dentaries, ribs, pelves, femora and cervical vertebra; *Sus scrofa* dentaries, radii, fibulae and thoracic vertebra; and caprine hyoids and humerii. Also, a singe *Mercenaria mercenaria* shell bears the only example from the collection of a cut mark on a non-mammalian specimen. This mark is located on the muscle attachment that would be subject to cutting during the shelling process.

The majority of modifications appear to be associated with secondary butchery practices or disarticulation of the skeletons. These marks are located around joints and major muscle attachments (Binford 1981:107-126; Landon 1996:65-95, 1997:59-60; Lyman 1994:306-315). They are present on dentaries, vertebrae, pelves, radii, ulnae, phalanx and femora for *Bos taurus* and *Sus scrofa* specimens in the collection. Caprine specimens have modification marks on a hyoid and a distal humerus, both of which are commonly associated with secondary butchery practices as well.

There are some possible tertiary butchery marks on specimens in the collection as well, but these are not as clearly associated with food preparation as the secondary marks in the assemblage are with disarticulation of the carcass. These marks are not located in places on the body that would be modified during primary or secondary butchery practices, and therefore could be associated with consumption practices. There are possible tertiary marks on *Bos taurus* dentaries, ribs and a distal metatarsal. *Sus scrofa* specimens in the collection have possible tertiary marks on dentaries, radii and fibulae. Of note, there are no classic filleting marks on any of the specimens in the entire

assemblage. These marks are usually longitudinal cuts found on long bone shafts (Binford 1981:126-134; Wake 1997:284). Based on the high fragmentation of bones at the site, and the high frequencies of unidentified mammal bones and mammal long bone shafts, the low occurrences of primary and tertiary butchery marks in the collection could be related to cultural practices that destroy the bones and bone portions that would normally bear such marks. An example of such a practice is stewing and/or intense processing of animal remains.

CHAPTER 5

COMPARATIVE ANALYSES

Introduction

In this chapter I use comparative analysis to detect the commonalities and/or disparities between the daily practices of the occupants of two households situated approximately 218 m away from each other on the reservation in the 19th century. By comparing these two households, issues of community can be addressed for Eastern Pequot peoples living on the reservation during this time period. This does not imply that the two households under study encompass all variability in lifeways found on the reservation in the 19th century. This analysis should be conceptualized as a starting point for understanding the rich and diverse Eastern Pequot community centered on the reservation in the 19th century. Before comparing the actual faunal assemblages, natural taphonomic processes are considered.

Taphonomic Conditions

Faunal assemblages are subject to a variety of taphonomic processes, both natural and cultural, in the past and in the present. Therefore, when comparing faunal assemblages, it is necessary to distinguish between natural and cultural taphonomic processes whenever possible. In other words, variations between faunal assemblages cannot be strictly linked with cultural activities without considering natural processes such as preservation environment and bioturbation. To control for these two factors, soil acidity and rodent and carnivore gnawing were examined from both contexts under study.

Soil acidity for each context was assessed through pH analysis of 24 samples. "The pH (hydrogen ion concentration) is a measure of the relative acidity or alkalinity of the sediment, a property which to a large extent governs the type of chemical processes that can take place within it" (Shackley 1975:65). Soil samples taken from the Eastern Pequot reservation in 2004 were sampled using stratified random sampling. First, all contexts were placed into sampling strata based on their bone content and their provenience. "High" bone frequency was arbitrarily defined as greater than or equal to 30 bone specimens per 0.05 cubic meters of excavated soil, while "low" bone frequency was defined as less than 30 bone fragments per 0.05 cubic meters of excavated soil. Thus, 4 strata were created: 1) "high" bone frequency foundation 1 contexts; 2) "low" bone frequency foundation 1 contexts; 3) "high" frequency foundation 2 contexts; 4) "low" frequency foundation 2 contexts. Each sample was then assigned an arbitrary number and a random numbers table was used to select samples for analysis. The "high" and "low" strata were used to insure a relatively equal sample among contexts with "high" and "low" bone contents from each foundation. This sampling strategy yielded 11 "high" frequency samples, 12 "low" frequency samples and one sample that had no faunal material. Only nine of these samples came from foundation 2 contexts because of the limited amount of soil sampled from there in 2004.

The methods used to measure the pH of each sample are based on those presented by Shackley (1975:65-67) and consultations with Dennis Piechota. Mixtures of four parts soil and three parts distilled water were placed in small glass dishes and allowed to sit for ten minutes. Two types of test paper were used for control purposes. The test papers were placed into the solutions for less than one second. Values indicated by each paper type

were then recorded; if there was a discrepancy between the two types of test paper, the

two values were averaged.

Sample	Ph1	Ph2	Avrg.	Bone	Context	Unit/Level
G20	5.0	5.5	5.25	Low	Ι	N794 E605-9
F11	5.0	5.5	5.25	High	Ι	N794 E604.55-4
F4	5.0	5.5	5.25	High	Ι	N793 E604-4F
F17	5.5	7.0	6.25	Low	Ι	N798 E605.5-2
G26	5.0	5.5	5.25	Low	Ι	N794 E606-4
G23	5.0	5.0	5.00	High	Ι	N611.5 E498-4
F10	5.0	5.5	5.25	High	Ι	N794 E604.55-3
G8	5.0	5.5	5.25	Low	Ι	N794 E605-3
F2	5.0	5.5	5.25	High	Ι	N794 E605-2F
F3	5.0	5.5	5.25	High	Ι	N794 E605-3F
G3	5.0	5.5	5.25	Low	Ι	N796 E607-3
G11	5.0	6.0	5.50	High	Ι	N798 E605-7
G9	4.5	5.5	5.00	Low	Ι	N794 E605-4
F12	5.0	6.0	5.50	High	Ι	N794 E604.55-5
F13	5.0	6.0	5.50	High	Ι	N794 E604.55-6
G28	5.0	5.5	5.25	High	II	N608 E497-3
G27	5.0	5.0	5.00	Low	II	N611.5 E498-6
G29	5.0	5.5	5.25	Low	II	N607 E495-4S
G24	5.0	5.5	5.25	Low	II	N611.5 E498-5
G30	5.0	5.5	5.25	Low	II	N607 E495-4N
F19	5.0	5.5	5.25	None	II	N611.5 E498-FT2
G32	5.0	5.5	5.25	Low	II	N608 E497-5
G17	4.5	5.5	5.00	High	II	N611.5 E498-3
G36	4.5	6.0	5.25	Low	II	N608 E497-6

Table 5.1 Ph levels

The pH scale ranges from zero, which is highly acidic to 14, which is highly alkaline. Most soils tend to range in pH values from five to nine (Shackley 1975:65). Hydrogen ion concentrations (pH) of soils sampled from the site all fall into the more acidic range of soil pH values, from 5-6.25 (Table 5.1). These findings support the Northeast's classic reputation amongst archaeologists as a poor preservation environment. However, the object of this analysis was to detect any possible anomalies in acidity between the two contexts in order to facilitate comparative analyses. Foundation 1 contexts, which average 5.33 on the pH scale, are slightly more alkaline than foundation 2 contexts, which average 5.19. The majority (60%) of samples analyzed from foundation 1 contexts measured 5.25 on the pH scale, followed by 5.5 (20%), 5 (13%) and 6.25 (7%). The majority (78%) of samples analyzed from foundation 2 contexts also measured 5.25 on the pH scale, followed by 5 (22%). Despite this slight difference in acidity between contexts, there appears to be no correlation between pH values and bone content in samples.

Of all samples that measured 5 on the pH scale, 50% contained "high" frequencies of bone and 50% contained "low" frequencies. Those samples that measured 5.25 on the pH scale were 37% "high" and 63% "low", while those that measured 5.5 or greater were 75% "high" and 25% "low". These findings suggest that soil acidity was not a major contributor to the variations found between faunal assemblages between the two contexts. In other words, there are no detectable anomalies in soil acidity between the two sites that would have significantly changed the faunal assemblages under study. The recovery of fragile skeletal elements such as hyoids from each household further testifies to comparable preservation conditions of both household areas. One exception to this is the sample that measured a 6.25 on the pH scale, which came from an ash deposit from the interior of foundation 1. Interestingly, there were only a few bone remnants present despite its favorable pH.

Although evidence of bioturbation in the archaeological record is at times intangible, there are other situations in which rodent and/or carnivore gnawing-marks speak to possible, although not definite bioturbation. These are some of the only traces left that attest to the modification of archaeological faunal materials by animals. As

mentioned above, archaeologists must pay attention to these subtle aspects in order to assure that the best possible interpretation will be reached.

Interestingly, 98% of specimens with either type of gnawing marks are associated with foundation 1 contexts. A single specimen with rodent gnaw-marks is the only evidence of bioturbation from foundation 2 contexts. This suggests that there was significantly less rodent- and carnivore-scavenging taking place around foundation 2 than there was around foundation 1. A number of factors could be responsible for this disparity. One possibility is that environmental conditions around foundation 2 were not favorable for rodents and carnivores, although this is unlikely. Another possibility is that the inhabitants of foundation 2 used different food waste disposal strategies or generated waste that was not as attractive to rodent- and/or carnivore-scavengers than did the inhabitants of foundation 1. A third possibility is that archaeological sampling of foundation 2 simply did not detect the main trash deposit that might have drawn all rodent and carnivore attention, leaving all other faunal remains around the foundation unscathed. Although it is difficult to determine why this discrepancy exists, its implications are important. It is most likely that faunal remains recovered from foundation 2 contexts have been subjected to considerably less attrition from non-humans and are therefore more intact than specimens observed from foundation 1 contexts.

Comparing Assemblages

Bone and shell densities per cubic meter of excavated soil are presented to facilitate comparison between contexts. These calculations further support the findings presented above. Excavators removed 5.03 cubic meters of soil from foundation 1 contexts and 1.68 cubic meters of soil from foundation 2 contexts. On average, there was

a density of 301.1 specimens of bone, weighing 272 g, per cubic meter of excavated foundation 1 matrix. Comparatively, there was a density of 178.5 specimens of bone, weighing 264.1 g, per cubic meter of excavated foundation 2 matrix. For shell, the foundation 1 matrix contained an average of 55.3 specimens, weighing 13.7 g, per cubic meter of soil, and the foundation 2 matrix contained approximately 8.4 specimens, weighing 5 g, per meter of excavated matrix. Interestingly, represented biomass of specimens from foundation 2 contexts (2.74 kg per cubic meter of excavated soil) is slightly higher than that of foundation 1 contexts (2.53 kg per cubic meter of excavated soil). Bone masses from each foundational context are relatively similar, while bone remains from foundation 1 contexts appear to be more fragmented than foundation 2 contexts, although shell specimens from foundation 2 appear to be less fragmentary.

For both contexts, mammalian remains are most common, followed by pelecypod and bird specimens; this is true for both specimen counts and specimen weights. Also, biomasses from both contexts are 98-99% mammalian remains. Most noticeable is the dearth of the fish and reptile classes and the relatively low frequency of bird specimens recovered from the foundation 2 assemblage.

Mammals

The most striking difference in mammalian representation is species diversity, which is most likely due to disparities in sample size between contexts. The foundation 1 assemblage contains ten species from eight taxonomic families, while the foundation 2 assemblage contains only three species from two taxonomic families (see Chapter 4). The

presence of small gnawing mammals (*Marmora monax*; *Microtus pennsylvanicus*; Rattus sp.) is exclusive to foundation 1 contexts.

In relation to taxonomic representation, both contexts are quite similar; large unidentified mammal, *Bos taurus* and *Sus scrofa* specimens are the most common taxa found in each. *Bos taurus* specimens represent 26.0% of the mammalian specimen weight recovered from foundation 1 contexts, and 70.9% of the mammalian specimen weight recovered from foundation 2 contexts. Sus scrofa specimens account for 23.5% of the mammalian specimen weight recovered from foundation 1 contexts and 3.1% of the foundation 2 mammalian specimen weight. When large and medium unidentified specimen weights are added to the *Bos taurus* and *Sus scrofa* figures presented above, *Bos taurus* and *Sus scrofa* specimen weights represent 54.7% and 31.9% of foundation 1 mammalian specimen weights and 83.9% and 3.1% of foundation 2 specimen weights.

Bos taurus specimens represent 31% of the total mammalian biomass excavated from foundation 1 contexts and 21.7% from foundation 2 contexts. *Sus scrofa* specimens represent 23.5% and 4.8% respectively. Adding large and medium unidentified specimen biomass estimates to *Bos taurus* and *Sus scrofa* biomass estimates presents similar percentages; *Bos taurus* and *Sus scrofa* biomass estimates represent 54.7% and 39.6% of foundation 1 biomass and 38.7% and 4.8% of foundation 2 biomass.

Elemental Representation

Bos taurus is the only represented taxon with quantities large enough in each assemblage to warrant a comparison of high and low utility parts, as presented in Chapter 4 (Klippel 2001). *Sus scrofa* and caprine specimens were recovered from both contexts but in limited numbers from foundation 2 contexts. For *Sus scrofa* remains, foundation 2

contexts contained six loose teeth, while the only caprine specimen was a hyoid bone fragment (Figures 5.1 a, b).

Foundation 1 contexts contain more *Bos taurus* limb, pelvic, and cranial/mandibular specimens than do foundation 2 contexts. This matches the pattern of *Sus scrofa* remains recovered from foundation 1 contexts with one exception. *Sus scrofa* carpal specimens are prominent in the assemblage, while there is only one *Bos taurus* carpal specimen. The high-to-low utility ratio, only counting specimens identified to the species level, is 48:52. When unidentified large mammal specimens are included in the ratio, it shifts to 69:31. As noted in chapter 3, a normal bovid skeleton has a ratio of 41:59 (Klippel 2001).

For *Bos taurus* remains, foundation 2 contexts contained mostly low utility carpal, tarsal and cranial specimens with the exception of one left proximal femur and one left innominate fragment. In comparison, foundation 1 contexts contained only one carpal and no tarsal specimens. The majority of foundation 2 *Bos taurus* remains are from the left side of the skeleton with the exception of two right phalanx. The high-to-low utility ratio, only counting specimens identified to the species level, is 13:87. When the unidentified large mammal remains are included in the *Bos taurus* ratio, it changes to 23:77.

This comparison of *Bos taurus* specimens in both assemblages shows that foundation 1 contexts contained relatively more high utility parts and less low utility parts than a normal bovid skeleton. In contrast, foundation 2 contexts contained relatively less high utility parts and more low utility parts than a normal bovid skeleton. This discrepancy between assemblages is most likely linked to differential part consumption

by members of each household. Those individuals that deposited the food waste examined from foundation 1 consumed relatively more high utility parts, while those individuals responsible for the foundation 2 assemblage consumed relatively more low utility parts. Most interesting is that there is virtually no overlap of the skeletal elements represented from both assemblages, a characteristic that suggests possible communal food sharing between households.

Age Patterning

Subdividing the entire faunal assemblage from the site into two household contexts produces slightly different age patterns than those discussed in Chapter 4. This is because treating each context as a separate faunal assemblage shifts MNI estimates. Similar to the patterns in Chapter 4, *Bos taurus* and *Sus scrofa* are the only taxa discussed here due to the small sample sizes of all other taxa. Age patterns for each context are constructed by combining epiphyseal fusion, tooth eruption, and tooth wear data, as discussed in Chapter 4 (Figure 5.2). *Bos taurus* specimens have an MNI of one in the foundation 1 assemblage; this individual was most likely between the ages of 27-30 months old. In the foundation 2 assemblage, there is an MNI of two for *Bos taurus* specimens: an adult greater than 42 months old and, a juvenile between 12-18 months old.

Sus scrofa remains from the foundation 1 assemblage represent a minimum of four individuals: two adults older than 24 months, an adult older than 42 months and, a juvenile of unknown age, represented by a radius. The only *Sus scrofa* specimens present



Figure 5.1a Elemental representation by context for Bos taurus (Helmer 1987)



Figure 5.1b Elemental representation by context for Sus scrofa (Helmer 1987)



Figure 5.2 Age profiles by context

in the foundation 2 assemblage are loose teeth, which suggest a minimum of one individual between the ages of 6-12 months old.

Birds, Fish, Reptiles and Invertebrates

Fish and reptiles are not present in the foundation 2 assemblage, while a single calcined long bone shaft represents the only bird specimen recovered. Although bird, fish and reptile remains are present in the foundation 1 assemblage, combined, they only represent 0.7 kg of biomass, or 2.5% of the combined assemblage's total biomass. Also, the discrete patterning of bird and fish remains in foundation 1 contexts, discussed in chapter 3, suggests that the early stages of foundation 2 excavations might be responsible for the virtual dearth of bird and fish remains.

Invertebrate remains are present in both assemblages, but in different proportions. The foundation 1 assemblage contains invertebrates from four taxonomic families; only two taxonomic families are represented in the foundation 2 assemblage. *Mya arenaria* and *Mercenaria mercenaria* are the two most abundant species in both assemblages. The foundation 1 assemblage contains four *Mercenaria mercenaria* specimens that represent 0.01 kg of biomass and 146 *Mya arenaria* specimens that also represent 0.01 kg of biomass. The foundation 2 assemblage contains four *Mercenaria mercenaria mercenaria* specimens, representing 0.01 kg of biomass. Fragmentation of *Mercenaria mercenaria* specimens is higher in the foundation 1 assemblage, while *Mya arenaria* specimens are more fragmented in the foundation 2 assemblage. Two species, *Geukensia demissa* and *Crassostrea virginica* are not present in the foundation 2 assemblage at all.

Taphonomy

Burned faunal specimens make up 37% of the entire foundation 1 assemblage and 52% of the entire foundation 2 assemblage. Furthermore, burning occurs differentially between mammalian and Pelecypod assemblages from each context. In the foundation 1 assemblage, evidence of burning is present on 45% of the mammalian specimens; in contrast, 54% of the mammalian specimens recovered from foundation 2 contexts are burned. Furthermore, 9% of pelecypod specimens are burned in the foundation 1 assemblage, while none are burned in the foundation 2 assemblage.

Only four bones are weathered at or beyond Behrensmyer's (1978) stage 2, one from foundation 1 and three from foundation 2. Three of these bones were recovered from exterior contexts and one was recovered from the interior of foundation 2. Since weathering is minimal in the assemblages, not much can be inferred from this pattern.

Similarly, only four bones show signs of intentional human fracture, three from foundation 1 and one from foundation 2.

Evidence of butchery modifications occurs on 6% of the foundation 1 assemblage and 2% of the foundation 2 assemblage. Out of all mammalian specimens from each assemblage, 8% show evidence of butchery in the foundation 1 assemblage, compared to 2% in the foundation 2 assemblage. In the foundation 1 assemblage, butchery marks occur as follows: 58% cut marks, 3% chop marks, 32% shear marks, and 7% saw marks. These marks occur on bird and mammalian specimens only. All modifications in the foundation 2 assemblage are cut marks that occur on mammalian specimens, with the exception of a cut mark on a Pelecypod specimen. Metal tools made the majority of cut marks in both assemblages; however, an unidentified non-metal tools made marks on 41% of the butchered specimens in the foundation 1 assemblage, and 1 specimen (33% of the butchered specimens) in the foundation 2 assemblage. Also, 3% of the butchered specimens from foundation 1 have both metal and unidentified tool cuts. For a more detailed discussion of the butchery modification analysis see Chapter 4.

This chapter fleshed out several key differences between the compared faunal assemblages. Analyses of pH and taphonomic factors failed to detect any major anomalies between the contexts; therefore, differences between the assemblages are most likely linked to differential cultural practices carried out at each household. These differences are elaborated on in the next chapter.

CHAPTER 6

INTERPRETATIONS AND CONCLUSIONS

Introduction

This chapter intertwines practice theory (Chapter 2), historical and contextual data (Chapter 3), and archaeological data (Chapters 4 and 5) to interpret foodways of two Eastern Pequot households in the early 19th century. Foodways are inextricably linked to everyday practices; I use this connection to discuss the habitus that Eastern Pequot peoples shared on the reservation, specifically those who resided in the households under study. As discussed in previous chapters, colonialism was a time of rapid change in which individuals and groups redefined traditional practices and imbued introduced practices with non-traditional meanings. Furthermore, in the 19th century, the people who lived in the households under study were enmeshed in the reservation system and surrounded by colonial change. The food remains they left behind serve as one starting point for discussing the synergistic qualities of colonialism and Eastern Pequot lifeways on the reservation. This should not be taken to mean that the faunal assemblages represent only foodways; non-food faunal remains are discussed as well.

Nineteenth-Century Foodways

Eastern Pequot menus were composed of meat from several taxonomic classes. Butchery marks associated with food preparation serve as direct evidence of the consumption of mammals, birds and shellfish on the reservation. Although the fish and turtle remains in the assemblage do not show any direct evidence of preparation for consumption, they also may have been eaten, particularly the fish. On par with data

presented from a Mohegan site dating to 1720-1750 (Salwen 1970) and several Mashantucket Pequot sites dating between 1750-1900 (McBride 1990, 1991), domestic animals make up the majority of the faunal assemblage under study. In addition to domestic animals, small amounts of indigenous mammal, bird, fish, turtle and shellfish are present in the assemblage.

Cattle (Bos taurus) and pig (Sus scrofa) remains are the most prominent domestic animal remains in the assemblage; however, small quantities of sheep/goat (caprine), chicken (Gallus gallus) and domestic cat (Felis familiaris) are also present. The age profiles of cattle and pig, suggest that they were slaughtered at varying ages. At minimum, the collection contains one old cow (older than 42 months), one fully-grown cow (6-18 months), one old pig (older than 42 months), two adult pigs (22-30 months), and one juvenile pig (<6 months). Based on Landon's (1996: 96-114, 1997:55-57) discussion of the relation between slaughter ages and primary and secondary uses of animals, these estimates most likely represent: 1) one cow allowed to live to an old age for secondary uses (milk, labor, reproduction); 2) one cow raised for meat; 3) one pig allowed to live to an old age for unknown reasons; 4) two pigs raised for meat; 4) one pig slaughtered as a juvenile for unknown reasons. Ox shoes recovered from both household contexts (Figure 6.1) suggest that the old cow may have been used as a draft animal. Since pigs have no apparent secondary uses, the old pig may have been allowed to live past the optimum slaughter age simply as a form of meat storage "on the bone". Cut marks on the juvenile pig remains suggest that it was consumed, although it is unclear why is was slaughtered at such an early age. McBride (1991:108) notes that the remains
of young sheep and pigs are common on Mashantucket Pequot sites dating to the 1750s and beyond, but offers no interpretations of why this is.



Figure 6.1 Ox shoes recovered from foundations 1 and 2

The virtual dearth of goat/sheep remains is unexpected, as these animals were common on reservation sites (McBride 1991:108). This near-absence might be linked to secondary uses of domesticated animals. Based on archaeological findings, cows played an important role as draft animals on the reservation, most likely used to plow the rocky reservation soils. Pigs were most likely used on the reservation because of their adaptive nature (Russell 1976:49); they do not require formal care such as feeding and penning, making them highly attractive to people looking to make use of a cheap meat-source. Sheep do not offer either of these advantages, which is one possible reason for their nearabsence in the assemblage.

Evidence suggests that cattle and pigs were raised on the reservation or purchased as live animals rather than being bought in parts from a butcher. While there is a noticeable lack of identifiable mammal long bone shafts in the collection, there is a high frequency of unidentified mammal long bone shaft fragments (71 fragments, 125.3 g) and general unidentified mammal fragments (1,375 fragments, 347.3 g) present. Furthermore, utility analyses of the entire collection suggest that both cattle and pig elements are approximately equal to the high-to-low ratios of complete bovid and suid skeletons. If animal parts were being bought from a butcher, the pattern would not match so closely with the ratio of complete skeletons. I suggest instead that the pattern of skeletal representation is a function of preparation practices. Contrary to the pattern gleaned from the entire collection, when treating each context as a discrete entity, utility analyses provide a slightly different picture, which is discussed later.

The faunal assemblage speaks also to processes of food preparation. A large portion of the faunal remains recovered from the Foundation 1 midden exhibit signs of burning at high temperatures (calcination), while almost none of the material culture, recovered from the same area, is burned. This and the presence of charcoal in the midden suggest that a cooking area, most likely located in the interior of Foundation 1 was being cleaned out and emptied into the midden. Thus, the faunal remains and charcoal were recovered in primary transposed or secondary depositional contexts, because they were first deposited in the cooking area during food preparation, and then subsequently deposited in the midden. The spatial patterns of mammal, bird and fish remains speak further to processes of food preparation. As presented in Chapter 4, bird and fish remains were concentrated in two areas in foundation 1, the midden and a 1-x-2 meter area in the interior of foundation 1. The presence of fire-cracked rocks and other burned materials in the interior suggest that this area represents a cooking and possible preparation area. After animals were prepared for cooking, animal bones were either thrown or spilled into the cooking area or cooked as part of the preparation process. Thus, bird and fish were processed and cooked inside of foundation 1 and later cleaned out and deposited in the

foundation 1 midden. Mammal remains do not adhere to these patterns, suggesting that secondary butchery processes for mammals took place outside of the house, while additional preparation and cooking took place inside the house. This makes sense due to the size of the mammals being consumed.

Meat sources were intensively processed in order to maximize the amount of food each source could offer. Historical sources confirm that the early 19th century was a time of impoverishment for those Eastern Pequot peoples living on the reservation, making it necessary to stretch food resources (see Chapter 3). Animal resources were obtained through animal husbandry, hunting, and possibly even trading based on the presence of marine fish and shellfish remains that could only have come from habitats 5-6 miles away from the reservation. Cut marks and marrow breaks on the remains of a very old cow serve as direct evidence of its consumption; older animals, particularly those once used as sources of labor tend to yield meat that is tough and considered undesirable. Despite this, the animal was eaten, its remains making up a high percentage of the meat represented in the faunal assemblage. Also, the locations of butchery modifications on bones suggest that marrow was often extracted. This, coupled with the high levels of long bone fragmentation and unnatural patterns of skeletal representation, suggests that body parts were processed in a way that stretched the nutritional yield from meat, bones, and marrow. Stewing animal remains is one approach for maximizing nutritional yields. Furthermore, cut marks on two caprine hyoids imply that even the tongues of animals were consumed.

The restrictions of reservation life and the ecological impacts of colonialism are evident in several qualities of the faunal assemblage. As noted in Chapter 3, reservation

life was drastically different from pre-colonial lifeways, restricting people from hunting and limiting the amount of fertile land available. This often culminated in the switch to European animal husbandry. Contrary to what Salwen (1970) and McBride (1990, 1991) found for Native groups in the 17th and first half of the 18th century, indigenous resources do not represent a large portion of the diet at the 19th-century Eastern Pequot sites. The dominance of domesticated animals in the diet suggests that wild food sources were not as accessible for use as main dietary staples. This is particularly evident in the near absence of deer remains in the assemblage. The ecological impacts of colonial landscape developments and/or the restrictive nature of reservation boundaries on Eastern Pequot hunting practices could be the causative factor here (Cronon 1983; Den Ouden 2005; McBride 1991). However, the presence of species from off-reservation habitats, such as remains from all shellfish species and one saltwater fish in the assemblage, suggests that Eastern Pequot peoples were leaving the reservation or trading with other groups. Since these species are present, the lack of deer in the diet is most likely related to ecological factors.

Eastern Pequot Habitus and Identity in the Colonial Era

An initial glance at the faunal assemblage under study would suggest a completely Europeanized subsistence strategy; this is what Salwen (1970) saw when analyzing the Mohegan assemblage. However, when one gets past its most prominent qualities, the subtle nuances of the assemblage speak to a group habitus and, in some cases, the expression of distinct Eastern Pequot identities that set the inhabitants of the households under study apart from colonizers and the colonial structures encompassing them. Some of these qualities could have been functions of food scarcity, but a few, I

argue, are undeniable evidence for the perpetuation of traditional Pequot lifeways, stemming from a common Eastern Pequot habitus and sometimes voiced as part of a distinct Eastern Pequot identity.

Although tied to the past, traditions are constant reconfigurations of the agents' views of the world in the present; recognizing this brings to question traditions that persist through rapid periods of cultural change, such as those associated with colonialism. Such persistence can be explored by considering the restraints and influences of new colonial power structures on indigenous lifeways and how they may have intersected with an Eastern Pequot habitus. Colonial scholars sometimes label the maintenance of traditional lifeways by indigenous peoples involved in colonial contexts as *resistance* to dominant powers (e.g. Scarry 2001). Viewing all shades of traditional lifeways that appear in colonial contexts as representing forms of resistance to colonization assumes a cultural hierarchy. While, in the contexts of colonialism, many researchers are quick to call the maintenance of traditional Native American practices "resistance" to European imperialism, few conceptualize the maintenance of European lifeways in the same manner. What is it that makes European lifeways the dominant and Native American lifeways the docile, to the point that all vestiges of pre-colonial Native American lifeways existing in the colonial era are labeled as forms of resistance? While Native Americans surely maintained certain traditions to resist European and Euroamerican encroachers, other traditions might have been perpetuated due to comfort or even convenience.

The presence, albeit a small one, of indigenous food sources in the collection is linked to Pequot fishing and hunting traditions. Despite the overwhelming dominance of

European animals in Pequot diets at this time, and the relatively small nutritional yield that fishing and hunting contributed, these traditions were perpetuated. Marks and scars in the assemblage suggest that metal knives, saws, hatchets and/or cleavers were used often for animal processing. Despite this, at least two bones from the collection were broken open for marrow using percussion. Furthermore, at least five, and most likely more, of the butchery modifications present in the assemblage were made with non-metal tools. These practices are linked to Eastern Pequot peoples' pasts, which are part of an Eastern Pequot shared habitus. As Eastern Pequot agents lived their lives, they drew on this habitus. The practices that resulted were acts of *residence* or *resistance*. A discussion of two case studies helps illustrate the significance of practices of residence and resistance.

For an example of residence I turn to the work of Stephen Silliman (2001); he incorporates Bourdieu's (1977:159-183) idea of *doxa* in conjunction with the concept of practical politics to interpret a colonial site in California. Doxa is best conceived as the unquestioned range of doing and knowing (Pauketat 2001:79). Thus, doxic practices are those that are assumed to have no alternatives. "If a practice is truly locked within a consensual doxa, it does not carry political connotations because there are no other alternatives to action" (Silliman 2001:194). When change brings alternatives to certain practices, previously doxic practices cease to be doxic and have the potential of becoming politically charged social negotiations (Silliman 2001:193-196; Pauketat 2001:79). Colonialism involves rapid change that surely fractured doxas for Europeans and Native Americans alike. By examining these changes, the politics of social position and identity can be fleshed out from the residues of daily practice (Silliman 2001:194). "A focus on

practical politics and lived experience renders acts of residence as analytically important as acts of resistance" (Silliman 2001:194). Here residence refers to individuals creating their own place within society, sometimes in the face of oppression, in ways that do not link to outright or even perceived resistance against the dominant group. Maintaining a distinct community that sets itself apart from the dominant social group is only sometimes resistance, but always residence.

The doxic practice that Silliman (2001:201-205) homes in on is lithic tool production. He argues that the doxic qualities of lithic tool manufacture were fractured by Spanish colonialism in 19th-century California and the introduction of metal tools into Native societies. The archaeological record shows that stone tool production continued throughout the first half of the 19th century by Native laborers living and working on a Mexican rancho. Furthermore, lithic sourcing and obsidian hydration analyses show that the raw materials used to make stone tools during this time were from somewhat distant locales, suggesting the maintenance of distant trade networks among California Indians despite the oppressive nature of colonialism in the area (Silliman 2005b). Silliman argues that the continuation of stone tool production and the maintenance of lithic trade networks throughout this period are an example of practical politics, where native agents actively negotiated and maintained distinctive identities, and in turn, strengthened the native community residing on the rancho. While stone tool production was once doxic, carrying little to no political weight in pre-colonial contexts, it was transformed by colonial endeavors to have weighty political implications in everyday life. Among the larger multiethnic colonial community of the rancho, this practice of stone tool production was heterodox, where those who dominated and select native individuals

chose to use metal tools. Among segments of the native population, however, this practice was orthodox, pushing "tradition" in to the forefront while pulling it from the past as individuals negotiated and created their distinct native identities in the face of colonial oppressions that they were subjected to on a daily basis.

For an example of resistance, I turn to the work of Brian Thomas (2001); he examines slave contexts in the antebellum South and links kinship systems within these communities to African-American maintenance of group identity, which strengthened community ties and allowed slaves to persist within the harsh conditions of plantation slavery. Despite the severed kinship ties that resulted from the slave trade and the European-style class structure imposed upon slave communities by separating them into "upper-class" house servants and "lower-class" field workers, African Americans living on plantations established new traditions of kinship that were based on traditional African kinship systems but were not determined by actual bloodlines (Thomas 2001:26-32). This kinship system crosscut the imposed European-style class structure, which is evident from slave marriages documented in historical accounts. Despite structural constraints imposed on African-American communities by slave owners, African kinship ties still persisted, but in a new ways, based on slightly different ideas of kinship than in the past. Furthermore, the maintenance of distinct ethnic identities based on African kinship tied the slave community together in order to persist in the face of oppression and domination. Kinship maintenance by African-American slaves can be thought of as resistance to colonial structures. Despite structural and systemic constraints imposed on African slaves, they went out of their ways to express their ethnic identity by maintaining a common link to their pasts.

The doxas of pre-colonial Native American subsistence strategies and lithic tool production and use were disrupted with European colonization (Silliman 2001). That is, semi-sedentary horticulturalist gatherer/fisher/hunter lifestyles were the only type of food procurement activities practiced in northeastern North America before colonization, just as lithic materials were the only media used to produce cutting tools. European colonization meant the introduction of European domesticated animals, animal husbandry, and metal tools; all three of these provided alternatives to the doxas mentioned above. Therefore, these traditional practices took on new political weight in colonial contexts. In the larger colonial society of the state of Connecticut, these "traditional" practices were heterodox, or different from those of the majority. Eastern Pequots who participated in "traditions" that were heterodox in Euroamerican society were pushing these practices back towards a state of doxa in their own community, intentionally or not. Each time an Eastern Pequot agent participated in a "tradition", the social structure of the reservation was slightly transformed.

In addition to the food value provided by both, fishing and hunting were also social activities and remain so to this day. Furthermore, remains from several off-reservation species in the collection suggest that the Eastern Pequot maintained ties to the outside world, either through trade networks or by leaving the reservation, perhaps in violation of colonial law. Den Ouden (2005:132-140) shows that, in the early 17th century, these traditions were highly politicized in colonial societies and forms of active resistance to Euroamerican lifeways, namely Christianization. Missionary efforts attempted to spread Christianity to Eastern Pequot peoples in the 17th, 18th and 19th

centuries; for instance, in 1733, a missionary is documented as converting approximately 60 Pequot individuals over the course of only one year (DeForest 1964:430-431).

Native women and men in early eighteenth-century southern New England undoubtedly understood that their hunting was perceived negatively by Anglos, and had been upheld as one of the markers of cultural distance between themselves and Native peoples. (Den Ouden 2005:139)

The persistence of fishing and hunting in the 19th century might have carried similar political implications; however, many Euroamericans fished and hunted as well.

In a slightly different light, processing food sources in traditional manners might not have been a form of resistance to the colonial structure, but rather a form of residence. Breaking a bone open with percussion or using a bifacially worked tool, either glass or stone, to butcher a carcass were manifestations of an Eastern Pequot habitus that were not forms of outright resistance. The image comes to mind of individuals drawing on the ways their elders taught them how to process animal remains or butcher a carcass. This speaks directly to Eastern Pequot habitus; the individuals who chose to put these traditional ways of life back into practice in the 19th century were drawing on their unique life experiences and histories as Eastern Pequot peoples. The availability and use of metal knives and saws is evidenced by metal cut and saw marks found on faunal materials and the recovery of four knives from foundation 1 and one knife from foundation 2. Despite these availabilities, some non-metal tools and percussion were still used to process animal bones in these contexts.

In addition to food remains, bone tool handles, buttons and several other bone artifacts that facilitate a discussion of Eastern Pequot habitus and identities are also present in the assemblage. Three calcined bone artifacts recovered from foundation 1 contexts appear to be unfinished, suggesting that they may have been worked on-site.

One of these items, a small fragment of mammal bone incised with a crisscross pattern also present on several knife handles recovered, has unmodified cancellous bone visible on the side opposite the incised design. If this fragment originated from a finished tool handle or button, the cancellous bone would most likely have been sanded away during production. Two additional mammal bone fragments have holes drilled in them, but it is unclear what function they may have served. The assemblage from foundation 1 also contains what could be a small awl-like tool (Figure 6.2) that might have been used for hide processing. This item is a fragment from an unidentified mammal long bone. It is broken in a very unnatural manner, the sides appear to be worn down, possibly from use, and it resembles other awl-like tools recovered from North American sites (Fowler 1991:118; Reitz and Wing 1999:158, referencing Sadek-Kooros 1975). Although not definite, it is possible that Eastern Pequot peoples made the few bone artifacts described above. This would make sense given the availability of bone, left over from food waste, for making tools and/or items of personal adornment. Bone and stone were some of the primary raw materials used to produce material culture for thousands of years before Europeans colonized North America; thus, the objects described above may be examples of traditional Eastern Pequot lifeways practiced on the 19th-century reservation. From the documentary record, we know that Eastern Pequot peoples began to specialize in "native" crafts, making brooms, baskets, chair bottoms and other crafts for exchange for food and other goods in the late 18th and early 19th centuries (Burgess 1998:35). In addition to these items, bone artifacts might have also been produced.



Figure 6.2 Awl-like tool recovered from foundation 1

The awl-like tool in particular could date back to a much earlier context; it and several other items recovered in association with foundation 1, including two fragments of a steatite vessel, an argillite projectile point and a groundstone celt, could date to the Late Archaic period. It is unclear how these items came to be associated with foundation 1. The people who built foundation 1 may have disturbed a Late Archaic site unintentionally; however, there is a chance that Eastern Pequot peoples intentionally held onto these items into the 19th century, perhaps as a link to their pasts. Excavators uncovered no evidence of a Late Archaic site underneath the foundation 1 context and, in most instances, the questioned artifacts were capped above and below by 19th century trash.

An Archaeology of Reservation Life

The archaeological record not only tells the story of 19th-century foodways and food processing, but also helps paint a picture of what everyday life was like on the reservation for Eastern Pequot peoples. Based on the observations discussed above, food was scarce at this time, necessitating intensive use of all possible food sources. In addition to food shortages, the animal bones offer clues into the presence of rodents at the site. The prominence of rodent-gnawed bones in the assemblage suggests that rodents were common on the reservation. This might also explain the presence of a domestic cat bone in the assemblage, which might have been from a cat kept to drive away pests.

As evident when comparing the two household assemblages, experiences of reservation life varied for the inhabitants of each household. There is only one specimen with rodent-gnaw marks in the foundation 2 assemblage, which might be a reflection of more rodent activity at foundation 1. If MNIs are recalculated, defining each household context as separate, each household contains the remains of an old cow, most likely a draft animal; foundation 2 also contains the remains of a cow slaughtered at its optimum meat-yielding age. When considering pig remains, each household also varies. Household 1 contained the remains of at least four individuals, while household 2 contained only one at minimum. This difference might be due to a number of factors, including personal preferences for meat types and variations in animal husbandry practices. As outlined in Chapter 5, there is also a possibility, due to the early stages of foundation 2 excavations, that a large faunal deposit lies undiscovered, which may contain additional pig remains. However, it is unlikely that pig remains would have been deposited separately from all other faunal waste.

The represented skeletal elements from each household do not overlap for any taxa. This is particularly surprising for cow and pig remains, but may be a function of communal food sharing, which is documented in the historical record (see Chapter 3). Perhaps the reservation community was made up of households that produced specialized food items that were shared between households. This system might have rendered the reservation community as largely self-sufficient in terms of food production, in contrast

to the Mashantucket Pequot Reservation at this time (McBride 1990, 1991). The maintenance of a self-sufficient reservation community might have been a form of community resistance to Euroamerican lifeways. This interpretation is only speculative, but future research can shed light on it. This point is bolstered significantly when considering utility analyses of each individual household context, mentioned above. As presented in Chapter 5, high-to-low utility ratios for cattle remains from each household are slightly off from what would be expected from a complete bovid skeleton. It is possible that this, also, is linked to inter-household food sharing mentioned in the documents. If cows were slaughtered and divided between the two households, high-to-low utility ratios for each individual context such as those highlighted in Chapter 5 would be expected. It would also be expected that the high-to-low ratio of the combined assemblages would be closer to that of a complete bovid skeleton, which, as mentioned above, was also observed (see also Chapter 4).

It is possible that the cattle remains recovered from the household contexts represent animals taken from Euroamericans as outright expressions of resistance to colonial encroachments. As highlighted in the historical record, Euroamericans often encroached on Eastern Pequot lands in search of pastureland for their grazing animals (see Chapter 3). Also, there is no mention of Eastern Pequot animal husbandry in the documents reviewed from the 19th century, and in the mid-to-late 18th century, "Indians were no longer allowed to keep stock" (DeForest 1964:432). Therefore, uninvited cattle that continually ruined Eastern Pequot gardens might have occasionally been taken by Eastern Pequot peoples and used as food. On the other hand, if colonial law still prohibited Eastern Pequot peoples from keeping stock in the 19th century and the cattle

remains recovered from foundations 1 and 2 are from animals raised by Eastern Pequot peoples, they also represent acts of resistance that violated colonial rules.

Conclusions

This project fleshes several important aspects of 19th-century Eastern Pequot lifeways and colonial negotiations. The archaeological record provides direct evidence of the hardships of reservation life; the faunal remnants from this time period speak to an impoverished group making use of every possible food source. The reasons for this impoverishment are seen in the drastic changes that the imposed reservation system represented for Eastern Pequot peoples who had subsisted with semi-sedentary horticulturalist fisher/gatherer/hunter lifestyles for hundreds of years before Europeans encroached on their lands.

Also, this analysis teases out subtle clues of Eastern Pequot habitus and identity in an assemblage dominated by the remains of European domestic animals. Essentialist approaches, which have been known to plague document-aided archaeologies, might have overlooked these small pentimentos (Silliman 2005a). These archaeological instances of Eastern Pequot habitus and identity are derived from past Pequot practices but imbued with new political weight in the contexts of colonialism. The persistence of a common Pequot habitus and identity in the face of 19th- century colonialism is important given the racist attacks many Pequot peoples have faced over the past 500 years. These findings stand in strict denial of the idea of the "vanishing Indian" or the "noble savage". In the 19th century, Eastern Pequot peoples were neither extinct nor "stuck" in "savage" mindsets, unable to change with the times. On the contrary, the inhabitants of the two households under study might have adopted new European-style animal husbandry

practices while still maintaining ties to their own unique pasts. The comparative portion of this study suggests the possibility of communal ties through foodways that might have made the reservation community somewhat self-sufficient, lessening the need to depend on Euroamerican oppressors for trade and food supplies.

In conclusion, this work points out the need for archaeologists to pay close attention to assemblages from colonial contexts, as icons of groups habitus and identity are sometimes present in subtle forms that could be easily overlooked. More importantly, this study demonstrates the vitality of Eastern Pequot peoples as a distinct group in the 19th-century; a vitality that still persists today in the 1,200 members of the Eastern Pequot Tribal Nation, several of whom I have had the privilege of working with, and learning from, over the last few years. Contrary to popular beliefs, Native American agency was not born with the political activism of the Equal Rights Movement of the 1960s nor the passing of NAGPRA in the 1990s. Each of these examples serves as undeniable evidence that Native Americans are active members of contemporary society, continually shaping the system they are part of, but this is nothing new. Native groups, such as the Eastern Pequot have been active agents of social change for as long as they have existed, from pre-colonial times through the hardships of the past 500 years. This study provides one small example of how Eastern Pequot agents actively negotiated their places within the political and social climate of 19th- century Connecticut.

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