Carolyn D. Dillian • Carolyn L. White *Editors*

Trade and Exchange

Archaeological Studies from History and Prehistory

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Part I
Introduction

Chapter 1
Introduction: Perspectives on Trade and Exchange

Carolyn D. Dillian and Carolyn L. White

1.1 Introduction

Today, in America, we are surrounded by objects from distant places: toys from China, cars from Japan, shoes from Mexico, wine from Argentina, and myriad goods from around the world. Workers in Naivasha, Kenya, harvest roses in the afternoon, and by the next morning they are for sale in the flower shops of London. High-speed, economical transportation links producers and consumers in an international marketplace; the average home in the western world contains goods transported by trains, container ships, and cargo jets. In the prehistoric and historic past, when transport was slower and costlier, the exchange networks that linked distant peoples were complex and productive. Nonlocal goods were transported, traded, and exchanged through a variety of means, over short and long distances, and it was often the case that the social dynamics that were part of this process were as meaningful as the objects themselves. Archaeological tools for identifying foreign objects, such as provenance studies, stylistic analyses, and economic documentary sources reveal nonlocal materials in prehistoric and historic assemblages. Yet trade and exchange encompass more than mere production and consumption. Exchange was a mechanism for introducing the exotic into daily life. Foreign objects were integrated into everyday practice long before the advent of a global economy.

In 1977 and then again in 1982, Timothy Earle and Jonathan Ericson published edited volumes on archaeological exchange that brought a strong focus to theoretical and methodological approaches (Earle and Ericson 1977; Ericson and Earle 1982). In the decades that have passed since those seminal publications, increasingly precise methodologies for tracing trade and exchange have been implemented widely, and there has been significant published work demonstrating the effectiveness of these

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methodological approaches (Fry 1980; Glascock 2002; Glascock et al. 2007; Glowacki and Neff 2001; Shackley 1998). Yet, methodological accuracy has overshadowed social context in the study of trade and exchange, and broader theoretical discussions of the subject by archaeologists have been largely lacking in global perspective (Baugh and Ericson 1994 is a notable exception). This volume is intended to talk about exchange within a broader context, using a variety of approaches, and to present case studies that cross prehistory and history on a worldwide scale.

Trade is a complex process. A close look at the exchange of goods reveals a dense set of mechanisms at work within larger systemic practices. Formal trade can take many shapes, occurring as remunerated transactions, barter, and direct or indirect interactions between groups and individuals; other forms of trade and exchange may be even more informal. Gifting, for example (Mauss 1950[1990]), serves to move objects between individuals and groups, and in fact, may move objects very long distances outside of formal exchange networks. Collecting souvenirs can result in the movement of objects, often from far distant lands. Heirlooms can even further expand the transport of objects through space, and even through time, as objects are passed between generations (see Scarlett, this volume).

From an archaeological perspective, it may be difficult to distinguish between formal and informal modes of exchange, although these differences were certainly significant. A souvenir, for example, is a memento of a faraway place, and is not necessarily intended to serve a utilitarian function. A gift carries a different set of meanings than a bartered item. A single object may be valued at a far lower or higher monetary value just 10 or 20 years after its production based on a set of market or social circumstances. So how do we, as archaeologists, identify trade and exchange? And, more importantly, can we do more than simply map points on a landscape?

In 2007, we organized a session at the Society for American Archaeology meetings in Austin, Texas, with the goal of revisiting exchange, specifically exchange of exotic items. We challenged our session participants to think about how their models of exchange have evolved beyond the ideas first articulated in the volumes of Earle and Ericson (Earle and Ericson 1977; Ericson and Earle 1982). We sought to present innovative approaches to a host of archaeological materials and to draw widely on archaeological theory and method. We also wanted to break down the artificial line between prehistoric and historical archaeology by including time periods, geographic regions, and subfields that blur this boundary. This volume is the outcome of that session, and it addresses exchange and interaction within contemporary theoretical frameworks.

The contributions to this volume span very broad geographic and temporal ranges. Material culture and sites from North America, Europe, Africa, South America, Mesoamerica, and the Pacific are represented in the pages that follow. The work in North America comes from the eastern and western seaboards, with objects from the Midwest and Plains represented as well.

The temporal span is also sizeable. Prehistoric materials recovered in Kenya dating to 6000–3500 B.P are the oldest objects analyzed here (Ndiema et al., this volume).

The most recent are ceramics excavated on a Japanese internment camp from World War II (Skiles and Clark, this volume). These contributions bookend prehistoric ones from the Woodland period in the eastern United States (Dillian et al., this volume), the Late Classic period of the Maya (Luke, this volume), the Terminal Archaic in the south-central Andes (Tripcevich, this volume), and Late Republican and Imperial Rome (McCallum, this volume) as well as historic period chapters from eighteenth-century New Hampshire (White, this volume), eighteenth- and nineteenth-century Hawai`i (Bayman, this volume), and nineteenth-century California (Williams, this volume) and Utah (Scarlett, this volume).

The authors employ a wide range of materials in their work, demonstrating the flexibility and broad applicability of trade and exchange as a means to understand the past. Marble vases, personal adornment, obsidian tools, ceramics, leucitic lava and Anician stone, and beads are examined to understand trade networks and their broader cultural meanings.

1.2 Defining Exchange in Prehistoric and Historic Contexts

The study of exchange in archaeology comes out of a prehistoric context and is broadly defined by two perspectives: a formalist approach and a substantivist approach (Earle 1982: 2). These two theoretically distinct approaches loosely encompass most, if not all, studies of prehistoric exchange, whereas the slant of historical archaeologists is somewhat different, as discussed below. Formalists and substantivists examine exchange through the context of the individual and the social group, respectively. Both approaches have their share of critics and also offer important broad insight into thematic trends addressed in exchange studies.

The formalist approach to exchange closely resembles methods used by the formalist school of economic anthropologists (Hodder 1982: 201). "Formalists seek to investigate the outcome of rational decision making with regard to the choices available to a population" (Earle 1982: 2). This technique illustrates modes of economy and efficiency through mathematical models and predicts the distribution of exchange items based on rational and efficient human behavior (Hodder 1982: 202). In sum, the formalist approach assumes that "sociopolitical institutions establish constraints in terms of the distribution and value of items. Then, individuals, acting within these institutional constraints, procure and distribute material in a cost-conscious manner" (Earle 1982: 2). This behavior, then, produces regular patterns visible archaeologically and suggests a predictive element for expected percentages of exotic items in archaeological assemblages (Hodder 1982: 202).

Substantivist approaches to the study of exchange focus instead on the social and political contexts of economic behavior (Earle 1982: 2), and substantivists such as Sahlins (1972) and Mauss (1950[1990]) argued that exchange and social relations are intertwined. Substantivists "are concerned with understanding exchange as a part of social process – functioning to provide essential resources, maintain alliances, or to establish prestige and status" (Hodder 1982: 200). Ethnographic data

are often used to create social models of exchange, which are then applied to the archaeological record. Exchange, in the substantivist view, is controlled by moral and social obligations.

An array of approaches exist within the substantivist paradigm that incorporate aspects of symbolism, information flow, and social change in examining trade and exchange (Earle 1982: 3). Symbolic and ideological dimensions of exchange (Hodder 1982: 199), the role of social differentiation and political and economic systems (Brumfiel 1992; Hantman and Plog 1982: 241), and exchange as a catalyst for the emergence of complex societies and social ranking among hunter-gatherer populations (Arnold 1991: 953, 1992) are but a few of the modes of analysis that incorporate a substantivist approach.

The substantivist paradigm encompasses most of historical archaeology's approaches to exchange, though means of analysis are more loosely framed in the subfield. Trade, exchange, and an understanding of the relationship between people and objects obtained over long distances are in some ways at the heart of the creation of the historical archaeology. The study "of the spread of European culture throughout the world…and its impact on indigenous people" (Deetz 1977: 5) catalyzed the development of the field, and the study of these early settlements focuses on objects and people transported over long distances. One legacy of this history is the lack of explicit focus on the mechanisms of trade and exchange by scholars studying colonial contexts.

While historical archaeologists have neither built predictive models of exchange, nor attributed large-scale social movements to trade and exchange singularly or overtly, they have examined trade and exchange and the presence of the exotic in widely ranging ways. The vast amounts of studies of consumerism in historical archaeology, in fact, are largely about the choices that people make in selecting the goods available through trade networks (Carson et al. 1994; Martin 1996; Miller 1987). The immense body of work within historical archaeology, overlapping research conducted by historians and material culture scholars in art historical contexts, has examined the role of commodities in the expression of social class, consumer preference, and the implications of choice for behavior and cultural communication.

More recently, the approach of archaeologists to understand material culture through an object biography approach has refocused archaeologists on precise histories of individual objects (Gosden and Marshall 1999). This approach places material culture at the center of analysis, intensifying attention on the contextual interpretation of these objects through the entire life of the object. The effect of the contextual and biographical approach to the material record has resulted in renewed attention to material culture, and on the conditions and processes that connect humans to objects. Significantly, one of these mechanisms is the allure of the exotic.

Despite the different trajectories and paradigms that have been developed in prehistoric and historic contexts, the questions asked and perspectives brought to the study of trade and exchange in this volume demonstrate the value of sharing methodical and theoretical ideas across subdisciplinary boundaries. While most of

these studies may be considered "substantivist," they also demonstrate the value of effective use of rigorous scientific methodologies.

Exchange occurred as internal trade, between individuals *within* a social or a geographic unit, or as external trade, which was exchange between individuals of different social or geographic units (Renfrew 1984: 86). Within the context of material exchange, social ties were reinforced and created, information was shared, and positions of status were established and maintained. Exchange served both economic and social roles within and between prehistoric societies. Exchange provided a buffer against resource fluctuations (Arnold 1992; Cohen 1981); redistributed food, raw materials, and finished products (Torrence, 1986); provided access to prestige goods (Appadurai 1986; Bennyhoff and Hughes 1987: 161; Hughes 1978: 53; Munn 1986); created pathways for information sharing; and served as a connecting force between disparate groups (Sahlins 1972: 186). There are echoes of these themes in both the prehistoric and the historic studies in this volume.

1.3 Seeing Exchange

Archaeologically, exchange is made visible by identifying artifacts and connecting them to their place of origin, noting spatial distributions and stylistic patterns. New scientific methods for identifying exchange have been perfected that use chemical characterization techniques such as X-ray fluorescence (XRF), proton-induced X-ray emission/proton-induced gamma ray emission (PIXE-PIGME), laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS), and neutron activation analysis (NAA). All these techniques are commonly used to characterize and source stone tool materials, building stone, prehistoric and historic ceramics, metals, and other materials (Deutchman 1980: 128–130; Ericson 1981; Glascock 2002; Glascock et al. 2007; Lattanzi 2007; McCallum 2005; Shackley 1998; Summerhayes et al. 1998: 146–155; Tykot 1998: 76–79). Through sourcing, it is possible to determine the geologic point of origin of materials such as obsidian, basalt, marble, ceramic clays and tempers, and copper and iron.

X-ray fluorescence is a chemical characterization technique used to identify the sources of exchanged objects in this volume. It is a potent tool for obsidian artifacts, as it can be used to determine the geologic provenance of these lithic materials with a high degree of accuracy. Very long-distance exchange has been identified by Dillian et al. (this volume), and the results of their work using XRF suggest the presence of goods in the eastern United States that could only originate in the western United States. Such amazing distances are surprising and cause a re-evaluation of the relationships of Eastern Woodlands peoples to the rest of the population of North America.

Ndiema et al. (this volume) use X-ray fluorescence to study the transition in subsistence from hunting-fishing-gathering to pastoralism by populations in northern Kenya. This obsidian study allows them to understand the roles of longstanding

exchange networks, perhaps based on kin groups. In this example, X-ray fluorescence is used to identify the obsidian sources represented in the archaeological assemblage, but is also indicative of the social, cultural, and political changes that were occurring as part of a subsistence shift in the region.

Yet another contribution uses instrumental neutron activation analysis (INAA) in an interpretation of goods that did not travel very far at all to their final destination. Scarlett (this volume) describes the social significance of locally produced pottery and the value of the commodity in a land where most goods came from more far-flung locales. This kind of materials science offers an ability to identify with precision and accuracy the people who produced the wares recovered on Mormon sites in Utah. Perhaps more importantly it has allowed Scarlett to begin to trace the complex connections of producers to consumers, and to deepen an understanding of the role of ceramics in social and religious identity.

1.4 Why Exchange?

Why did exchange occur, particularly when equivalent local goods were available? From a very pragmatic perspective, in regions of patchy resources or where territorial circumscription limited travel to desired resources, exchange served to bring resources to the consumer. In this manner, exchange functioned as a form of redistribution by moving goods throughout a region, as local variation in resource availability created a desire to obtain materials from neighboring areas, ultimately resulting in exchange (Renfrew 1984: 91). For example, the Channel Island Chumash of Central California were involved in extensive exchange networks with Chumash tribes on the mainland. Terrestrial foods were an important exchange item, particularly high carbohydrate foods such as acorns (Arnold 1992: 77; Hudson and Blackburn 1982), which were not available on the islands. This kind of behavior may eventually lead to the creation of central places such as markets or trade fairs for the purpose of exchange (Renfrew, 1984).

Exchange as resource redistribution took on a more literal slant in the form of chiefly redistribution in some complex societies, such as sedentary hunter-gatherers of the Northwest Coast. Redistribution in this context remained a form of exchange, however, in that it served to transport goods from one place to another and from one person to another. Sahlins referred to this type of economic relationship as "pooling" or "redistribution" (1972: 188). He stated that redistribution as a form of exchange "is an organization of reciprocities, a system of reciprocities" (1972: 188). Redistribution, or chiefly redistribution as discussed here, served as a means of pooling and sharing resources within a group (Ames 1995: 159; Polanyi 1957), which is a form of exchange within the confines of a kin or social group (Sahlins 1972: 188). Sharing among hunter-gatherers can also be viewed as redistribution. For example, every member of the group may have received a portion of meat from a successful hunter (Kelly 1995: 164–168).

Exchange was also an important method for mitigating resource fluctuations through time. Food resources, during years of abundance, were exchanged for more durable goods, which retained a culturally recognized value. During periods of resource stress, these valuables were, in effect, "cashed-in" for food resources from individuals or groups experiencing relative abundance (O'Shea 1981: 173).

In this volume, the resources approached by the contributors are primarily "exotic" goods that are easily recognized in archaeological contexts as prestige items; the reasons for this are summarized below. Tripcevich's work (this volume) in the Andes illustrates the blurry character of exotic items that had mundane uses. In this case people transported obsidian via llama caravans that moved goods within and outside the Andes. The access to goods carried by llama caravans, including obsidian, may have been a marker of status. However, despite the meaning it may have held, obsidian was also a more mundane lithic material. In other words, obsidian in this context had a pragmatic use as a toolstone, but obsidian-tipped projectiles would have demonstrated an individual's link to the llama caravan network, and thus suggested family status.

1.5 The Allure of the Exotic

1.5.1 The Visibility of Objects of Trade

Most studies of economics and prehistoric exchange have emphasized the trade of prestige items, rather than subsistence goods and this bias is reflected in this volume. The reason for this is twofold. First, food items can be difficult to trace archaeologically due to preservation conditions and recovery and analysis challenges. Prestige items, on the other hand, can be highly visible archaeologically, as exemplified by obsidian and shell beads in California (Arnold 1991, 1992; Bennyhoff and Hughes 1987; Hughes 1978) and ceramics in the Southwest (Deutchman 1980: 119–135; Toll et al. 1980: 95–118). Second, prestige items generally were transported longer distances through more elaborate networks than subsistence goods (Renfrew 1984: 128). Therefore they serve to illuminate extensive interaction spheres, and provide archaeologists with clues regarding cultures in contact and information flow. Additionally, prestige item exchange has been the topic of many ethnographic studies, particularly in the South Pacific (Malinowski 1920, 1922: 97–105; Munn 1986; Thomas 1991) and in California (Davis 1961; Kroeber 1905: 690, 695, 1957: 404-411). This information provides useful analogs for prehistoric social contexts.

Valuable objects are also more visible in the documentary record, an important source for historical archaeology. The presence of the written record dramatically changes what we know and *can* know about the material record, and has allowed historical archaeologists to examine trade and exchange with an arsenal of contextual information. One significant aspect of the presence of texts is the ability to tie

the goods to economies. The presence of inscriptions, histories, journals, diaries, account books, trade records, receipts, advertisements, newspapers, shipping records, and probate inventories and wills creates a backdrop of direct evidence of how much things cost and where they came from as well as what the objects meant to those people who made, shipped, purchased, used, and discarded them. The more value imbued in an object, the more likely they were to be recorded in these materials.

In exploring the long-distance trade of clothing and personal adornment in 18th century Portsmouth, New Hampshire, White (this volume) identifies objects brought to the New World from the Old and exposes the dependence on these materials in the context of daily life. Prestige items in the form of clothing and adornment offer insight into a rejection of nationalistic identity in favor of other identity forms. In this case, the relationship between the documentary record and the archaeological evidence provides important information about the embedded meanings of exotic items on a day-to-day basis.

A sophisticated reading of the documentary record paired with survey and excavation allows Williams (this volume) to differentiate disparate meanings that were ascribed simultaneously to Chinese-styled luxury objects and the objects and aesthetics of the Chinese residents of the Point Alones village, in Monterey Bay, California. In this case, the tension between xenophobia and xenophilia around a community festival and the intensely different meanings carried by seemingly similar objects is possible through the use of newspaper accounts, films, and other documentary sources.

1.5.2 Why Prestige Items Matter

Archaeologists argue that since a large amount of labor and effort was involved in procuring exotic objects, their value must be high. As a result, a strong correlation is assumed between distance to source and value (Hughes, 1978; Renfrew, 1984). According to Marx, the value of an object is directly proportionate to the amount of labor invested in it, and this value is objectified through exchange (1867[1977]). Furthermore, objects also retain a use-value, which can be independent of the exchange value, and this use-value becomes apparent during use or consumption of an object. This may appear most applicable to studies of the production and consumption of commodities, although prehistoric artifacts such as obsidian tools or ceramics, which can be traced geochemically over extensive distances, may have been high-value objects through the incorporation of labor in both production and transport.

For example, in Dillian's work on the Glass Mountain obsidian quarry in northeastern California, the production of obsidian bifaces created value (Dillian 2002). Obsidian bifaces were very labor-intensive objects, particularly when transportation costs were taken into consideration. Highly skilled flintknappers traveled to the obsidian source to obtain raw material and then, at least in the case of Glass

Mountain, remained at the quarry long enough to produce finished bifaces, which were either carried directly to the consumer, or exchanged through multiple middlemen to the California coast. It has been argued that obsidian objects made from sources at greater distances were more highly valued than those at closer proximity to the consumer, based solely on transportation costs as a form of labor (Hughes 1978). In this way, objects gained an exotic status through exchange.

It is interesting to contrast, then, the ideas of Scarlett (this volume) and Skiles and Clark (this volume) to those presented by Hughes (1978) and Renfrew (1984). In these contributions, the authors turn on their heads the ideas of the desirability of the foreign and the exotic character of the nonlocal. Scarlett examines the rejection of foreign ceramics and the preference of locally produced wares as part of religious identity in Mormon Utah. Skiles and Clark look at the meanings of foreign ceramics to Japanese residents of Amache internment camp and elucidate the ways in which these goods were *not* considered exotic, but rather were familiar to their users.

Exchange and use of foreign, and sometimes not so foreign, objects were invoked to create and maintain positions of status, as well as individual identity. For example, Bayman (this volume) contrasts the material culture of John Young, a British sailor who arrived in Hawai`i in 1790 and lived out his life on the island, with that of King Kamehameha III (Kauikeaouli), the powerful ruler. Young obtained both Hawaiian and western materials to create and maintain his identity as a high-status western individual integrated into the Hawai`ian political system. For King Kamehameha III the archaeological record demonstrates a use of imported goods from the east and west along with local materials that reinforced his position as a traditional king, while affirming his modern, worldly identity.

The tastes and preferences of past peoples imbued objects with special status, catalyzing the movement of some materials over long distances and favoring the exotic over the local. McCallum (this volume) demonstrates that Roman tastes dictated that millstones from Santa Trinità were transported great distances to mill grain, often at great expense. Though the Romans developed transportation networks that provided a lower-cost method of moving these large, heavy stones, these systems appear to have been motivated by Roman preferences for flour of the highest quality, obtainable only by grinding grain with Santa Trinità stone.

Other symbolic referents demonstrated through exchange include those portrayed on Ulua marble vases traded within Mesoamerica by the Maya (Luke, this volume). Important concepts and ideas about landscape and the surrounding world were displayed on these valuable portable objects. When traded, the objects worked not only as valuable items, but were also charged with the transfer of knowledge and meaning, particularly in respect to sacred places and landscapes.

What many authors make clear here is that it is not *simply* a matter of distance and labor that causes one set of goods to gain currency as desirable objects. The symbolic character of objects had important significance for both prehistoric peoples and those in historic cultural contexts. Objects were important in their contributions to the constructions of identity along various lines. In this volume, the work represented by a number of contributors underscores the importance of nuanced culture dynamics in privileging the value of one object over another.

1.6 Conclusions

As this book goes to press we anticipate that the pursuit of trade and exchange as a subject of study in archaeology will continue to change dramatically with the development of new scientific methods and as new theoretical paradigms overturn the ones used here. We have been inspired by previous work to ask questions that are far different than those posed thirty years ago, and our questions have evolved to incorporate discussions of status, power, identity, and meaning. This represents a significant shift from early scholarship that simply linked producers and consumers. Instead, we are now addressing broader anthropological issues in the past through the exchange of material culture. By presenting case studies from a range of temporal and geographic regions, this volume demonstrates the range of new scholarship directed toward trade and exchange.

As the concluding chapter in this volume, Timothy Earle discusses changes in trade and exchange studies since the publication of *Exchange Systems in Prehistory* (Earle and Ericson 1977) and *Contexts for Prehistoric Exchange* (Ericson and Earle 1982). He suggests that commodity chain analysis provides one future direction for archaeological investigations of exchange because it emphasizes the interconnectedness of exchange networks with political and social systems. Many of the chapters in this volume examine trade and exchange within similar kinds of social contexts, and we hope they will serve as a model for future studies.

Though modern-day trade and exchange are enacted on a larger scale than trade and exchange networks of the past, we do see similar patterns of human behavior today. For example, political decisions shape the networks that move objects between nations, such as the North American Free Trade Agreement or America's trade embargo of Cuba. Economic decisions affect the production and transport of raw materials and finished goods, such as the outsourcing of manufacturing to countries with lower labor costs, resulting in large shipments of products sent halfway around the globe. Cultural and social perceptions of value and meaning are visible in modern-day exchange, as higher prices for German engineering or French comestibles may be based more on cultural ideals than any measurable concrete value. The factors that drove trade and exchange in the past are mirrored in many ways in the present.

As time moves forward and archaeologists turn their attention to previously unexamined areas of the world and neglected time periods, we look forward to associated new approaches to the study of the past. Undoubtedly, novel analytical tools, scientific methods, and theoretical approaches will also be used to re-examine many of the ideas we present in this volume. Not only do we hope to reinvigorate efforts to make sense of trade, exchange, and the function of foreign objects, but we also hope to demonstrate the fruitful results of working across the chasm between prehistoric and historical archaeology.

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Part II
Prehistoric Exchange

Chapter 2
Long-Distance Exchange of Obsidian in the mid-Atlantic United States

Carolyn D. Dillian, Charles A. Bello, and M. Steven Shackley

2.1 Introduction

In 2002, *American Antiquity* published a report of an obsidian scraper found at the Mississippian Period Spiro Mounds site in Oklahoma that was geochemically sourced to the Pachuca obsidian source in Hidalgo, Mexico, located approximately 1,100 miles away from Spiro Mounds (Barker et al. 2002). The scraper's archaeological provenience was well documented, having been collected from the Craig Mound at Spiro by J.G. Braecklein in 1935 and entered into the Smithsonian's collections in 1937 (Barker et al. 2002: 104). The authors of the report observed that they were aware of no other Mesoamerican artifacts found in Mississippian sites (Barker et al. 2002: 107), yet clearly the obsidian scraper from Spiro suggests an extended connection between the two regions through some form of long-distance trade and exchange in prehistory.

Exchange, and even very long-distance exchange, was a relatively common occurrence in prehistory. Finished objects and raw materials, including lithics (Glascock et al. 2007; Stevenson et al. 2008; Stoltman and Hughes 2004), ceramics (Hodge and Minc 1990; Stahl et al. 2008; Stoner et al. 2008), copper (Lattanzi 2007), shell (Bayman 1996; Seymour 1988), foodstuffs (Bradburd 1996; Creel 1991; Wesson 1999), and other products were traded on local, regional, and perhaps even continental scales. Exchange occurred in a variety of forms, including informal person-to-person exchanges, through down-the-line networks, and in formal marketplaces. Yet ultimately, it served to move objects across the landscape from

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producers to consumers, and was part of an object's cycle of production, transport, use, and discard.

Long-distance exchange of obsidian has been demonstrated through a number of examples in Mississippian and Hopewellian contexts in the middle United States, predominantly involving Rocky Mountain or American Southwest obsidian sources (Anderson et al. 1986; Barker et al. 2002; Baugh and Nelson 1987; DeBoer 2004; Gramly 2003; Griffin 1965; Griffin et al. 1969; Hatch et al. 1990; Hughes 1992, 1995; Hughes and Fortier 1997; Lepper et al. 1998; Stoltman and Hughes 2004; Vehick and Baugh 1994). Furthermore, exchange from the middle United States, including Adena (1000–200 BC), Hopewell (200 BC–AD 400), and Mississippian (AD 1000–1500), objects and styles, to points further east has also been documented. Specifically, lithic materials from the midwestern U.S; copper, marine shell, and fireclay pipes from Ohio have all been attributed to Adena period exchange from midwestern points of origin into the mid-Atlantic region, including the Delmarva Peninsula on its eastern margin (Stewart 1994: 83). During the Hopewell (the Middle Woodland period in the mid-Atlantic), mid-Atlantic populations were closely tied with areas of the Hopewell heartland and the distribution of trade goods between both regions appears to have continued even beyond the decline of the Hopewell, suggesting informal but persistent trade networks during this time (Stewart 1994: 87). During the Mississippian period (the Late Woodland period in the mid-Atlantic), soapstone pipes, carvings, and ornaments were exchanged between the middle United States and mid-Atlantic region (Stewart 1994: 88).

If material culture from the American west, such as obsidian, was exchanged as far east as the Hopewellian and Mississippian population centers of the middle United States, and material culture from these Hopewell and Mississippian centers has also been found in eastern United States contexts, perhaps objects from the far western fringes of these trade and exchange networks could also reach to far eastern boundaries, effectively traversing the continent. Raw materials from the eastern United States have, in fact, been found in Hopewellian and Mississippian heartland areas of the Ohio River and Mississippi River drainages, including objects made from mica, copper, shell, and other raw and finished materials (Stewart 1994). It is possible that such goods could travel through known population centers and trade nodes; however, formal exchange networks might not be required in more casual instances of trade and exchange. Instead, mechanisms of casual exchange, such as person-to-person informal trade, gifting, or even petty theft, could operate to transport objects across continental distances over long periods of time. Obsidian is one example of a widely traded lithic material, and its unique geochemistry offers accurate identification of geologic provenance ideal for tracking trade and exchange in prehistory. In this chapter, we propose that trade and exchange, perhaps through casual mechanisms, did occur on a continental scale, as evidenced by the presence of obsidian artifacts of western United States geologic provenance recovered in eastern United States archaeological contexts.

2.2 Geologic Characteristics of Obsidian

Obsidian commonly forms during rapid cooling of high silica, rhyolitic lavas (Blatt and Tracy 1996: 29). These rhyolitic lavas contain concentrations of silica (SiO2) as high as 70–75% and aluminum (Al2O3) concentrations between 10% and 15% (Glascock et al. 1998: 18). Rhyolitic lava is extremely viscous, and as a result, obsidian flows generally appear as steep-sided domes, sometimes visible from many miles distant on the landscape. Other types of volcanic glass, which can form during rapid cooling of lower-silica basalt or andesite lavas, are generally not of tool quality or workable size.

Natural glass decomposes into perlite within a few million years, so only relatively recent obsidian flows usually contain glassy nodules large enough for tool manufacture. As a result, ancient eastern United States volcanism, even if rhyolitic in composition, is too old to contain any remnant obsidian. None of the obsidian artifacts found in eastern United States archaeological assemblages could have originated locally. In the United States, obsidian is readily available throughout a large portion of the west, including Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming (Skinner 2009). No obsidian sources have been found in the eastern U.S., nor will they, since this region lacks recent volcanism.

Obsidian is a glass with the physical properties of a liquid in all respects except for the ability to flow easily (Cann 1983: 227). As a result, obsidian fractures conchoidally, making it an ideal material for stone tool manufacture. Most obsidian, however, is not of tool quality. Many flows contain phenocrysts, inclusions, or vesicles, which hinder conchoidal fracture. Tool-quality obsidian was extensively utilized prehistorically and historically for the manufacture of flaked-stone tools. In areas where high-quality obsidian was available, it was often the preferred prehistoric toolstone for its glassy texture and predictable flaking properties. In addition to local use, obsidian was so highly desired that in locales where it was not a naturally occurring material, it was sometimes traded over hundreds of miles (DeBoer 2004; Griffin 1965; Griffin et al. 1969; Hatch et al. 1990; Hughes 1992, 1995; Hughes and Fortier 1997; Vehick and Baugh 1994).

Obsidian forms in a variety of different colors, including black, red, gray, green, and brown. Translucency may vary from clear to opaque, and banded or "mossy" color arrangements are common. Differences in obsidian appearance can be attributed to diverse factors such as microlites, gas bubbles, chemical variation, oxidation, or incorporation of foreign material into still liquid lava. Color, in some cases, was an important factor in the selection and use of particular obsidian sources in prehistory (for an example, see Hughes 1978), yet color, translucency, and sheen are unreliable markers of geologic provenance, and reliable source assignments are generally only possible through geochemical techniques.

2.3 Identifying Obsidian Provenance Using X-ray Fluorescence (XRF)

Though a variety of chemical characterization techniques have been used to analyze obsidian, including X-ray fluorescence (Shackley 1998: 3, 2005: 3), Instrumental Neutron Activation Analysis (Glascock et al. 1998, 2007), Inductively Coupled Plasma Mass Spectrometry (Tykot 1998), and PIXE-PIGME (Summerhayes et al. 1998), the study outlined in this chapter was conducted using X-ray fluorescence (XRF).

The utility of chemical characterization studies in sourcing archaeological obsidian samples has been proven many times over, and submitting obsidian artifacts for X-ray fluorescence analyses has become standard practice among archaeologists in the western United States. Yet there is an underlying prerequisite for adequate geologic fingerprinting to occur prior to and concurrently with archaeological sourcing studies. Research investigating the chemical homogeneity of obsidian sources has revealed that individual flows within rhyolite domes sometimes possess trace element chemical differentiations vast enough to warrant false assignment to distant sources (Shackley 1998: 1–4; Tykot 1998: 67–82; Hughes 1994; Hughes and Smith 1993: 79–91). As a result, when attempting to assign obsidian artifacts to source, researchers typically first examine sources located within close proximity of where the artifact was found. However, in this study, when *all* obsidian sources are located far from where the artifacts were recovered, the potential universe of obsidian sources is exceptionally large. This means that a very wide range of potential sources must be examined for accurate results.

X-ray fluorescence is one of the most commonly employed chemical characterization methods used for the analysis of obsidian artifacts. It is largely effective because of the unique nature of obsidian's composition, in that trace element proportions tend to vary between sources, yet remain relatively homogenous within single flow events (Glascock et al. 1998: 19; Shackley 1998: 1–4; Tykot 1998: 67–82; Hughes 1994; Hughes and Smith 1993: 79–91). Trace elements are those elements present in concentrations of less than 1%. Thorough sampling is necessary to determine the homogeneity of specific geologic obsidian sources prior to definitive source assignments of archaeological specimens.

X-ray fluorescence provides the added benefit of accurate chemical characterization assessments without requiring extensive sample preparation. Objects can be placed whole inside the sample chamber, providing they are small enough to fit within the closed chamber. In addition, irregularly shaped artifacts can be analyzed with accurate results (Davis et al. 1998). Finally, X-ray fluorescence is a nondestructive technique, which is ideal for archaeological specimens, and analysis can be completed in mere minutes.

In X-ray fluorescence, samples are placed inside a sealed vacuum chamber and irradiated with a beam of X-rays. This irradiation displaces electrons from the inner orbitals, creating vacant holes, which are filled by electrons from the outer orbitals. When electrons from the outer orbitals move into the inner levels, energy is emitted

in the form of a secondary X-ray photon. The fluorescence caused by the emitted photon is distinctive for each element, creating an energy spectrum that reveals the elemental composition of the obsidian sample.

Samples in this study were analyzed at the Archaeological X-ray Fluorescence Laboratory at the University of California, Berkeley, using a Spectrace/Thermo™ *QuanX* energy dispersive X-ray fluorescence spectrometer. Results were obtained for elements titanium (Ti), manganese (Mn), iron (as Fe^T), thorium (Th), rubidium (Rb), strontium (Sr), yttrium (Y), zirconium (Zr), and niobium (Nb). Weight percent iron ($Fe_2O_3^T$) can be derived by multiplying ppm estimates by $1.4297^{(10-4)}$. Trace element intensities were converted to concentration estimates by employing a least-squares calibration line established for each element from the analysis of international rock standards certified by the National Institute of Standards and Technology (NIST), the U.S. Geological Survey (USGS), Canadian Centre for Mineral and Energy Technology, Japan Geological Survey, and the Centre de Recherches Pétrographiques et Géochimiques in France (Govindaraju 1994). Further details concerning the petrological choice of these elements in obsidian is available in Shackley 1995, 2005 (also Mahood and Stimac 1990; Hughes and Smith 1993). In addition to the reported values here, Nickel (Ni), Copper (Cu), Zinc (Zn), and Gallium (Ga) were measured, but these are rarely useful in discriminating glass sources and are not generally reported.

The data from the WinTrace software were translated directly into Excel for Windows software for manipulation and into SPSS for Windows for statistical analyses. In order to evaluate these quantitative determinations, machine data were compared to measurements of known standards during each run. RGM-1 is a standard sample analyzed during each sample run for obsidian artifacts to check machine calibration.

2.4 Obsidian Artifacts from the Eastern United States

Beginning in 2005, the authors of this chapter started an informal inquiry into obsidian specimens recovered from eastern United States archaeological sites. Specifically, our original interests focused on obsidian found in New Jersey, spurred by publications of local finds of obsidian artifacts (Bello 1997; Bello and Cresson 1998; Dumont et al. 1974). We thought it interesting that obsidian, which could not have originated locally, could be found in archaeological sites in New Jersey. But, following the thought processes of many archaeologists that modern cultural practices are more likely to have transported obsidian from the western United States (Boulanger et al. 2007), we too assumed that it was the result of modern transport of archaeological specimens by collectors. However, we soon discovered that there were many more alleged occurrences of obsidian artifacts from archaeological sites in the middle Atlantic region, including New Jersey, Pennsylvania, New York, Connecticut, and Massachusetts (Dillian et al. 2007), some of which have secure archaeological provenience.

A total of nineteen obsidian artifacts were analyzed for this study. One of the specimens – a flake recovered from Fort Drum, New York (#13, see Table 1) – is modern, based on the lack of any hydration band visible during obsidian hydration analysis of the artifact. Another of the specimens – a triangular projectile point found in Livingston County, New York (#18, see Table 1) – is most likely modern, based on its provenance. This projectile point was made from Buck Mountain obsidian, a source located in the Warner Mountains of northeastern California that is used extensively by rockhounds to supply rock and curio shops around the country. We were unable to obtain permission to sample this specimen for obsidian hydration analysis to confirm our suspected modern origin for this piece (Table 1).

The results of X-ray fluorescence analysis yielded source assignments for all but two of the analyzed specimens, though because the universe of potential sources is exceptionally large, some of these source assignments were tentative (see notations in Table 1). Interestingly, no apparent patterning was visible in the provenance of these obsidian artifacts. A complete list of the artifacts, trace element compositions, and source assignments is presented in Table 1. The artifacts originated from a range of geologic obsidian sources including Blue Spring, California; Black Rock, Utah; Topaz Mountain, Utah; Reas Pass, Idaho (part of the Yellowstone source group); Malad, Idaho; Glass Buttes, Oregon; Casa Diablo, California; Bodie Hills, California; El Rechuelos, New Mexico; Hager Mountain (or possibly Spodue Mountain), Oregon; Valles rhyolite, New Mexico; and Wild Horse Canyon, Utah. These source localities are shown in Fig. 6. We were unable to assign two of the specimens to a geologic source.

Two of the sources of obsidian identified during this study were traded across long distances during prehistory (Hester 2000; Stewart 1994), suggesting that they could indeed represent prehistoric, continental-scale transport of lithic materials. First, Reas Pass obsidian, located in Idaho and part of the Yellowstone obsidian source group, was commonly used during Hopewell times and was traded extensively into the middle United States (Stewart 1994). It could be that this object was further exchanged into the eastern United States, given that exchange between Hopewell population centers and the eastern United States has been documented for other materials (Stewart 1994). The obsidian artifact (#6, see Table 1) with a Reas Pass, Idaho provenance therefore fits with existing patterns of lithic material transport.

Second, Malad obsidian, located near Malad City in southern Idaho, was the source for an obsidian retouched blade found in New York State (#7, see Table 1, Fig. 2). Malad obsidian was extensively traded during prehistory and has been documented in sites as far south as Texas (Hester 2000), though no other apparent finds of Malad obsidian have been recorded for the eastern United States. The long-distance exchange of Malad obsidian also suggests that it could have been transported farther east as well and may fit with a model of long-distance exchange of lithic material.

This connection between the Ohio and Mississippi River Valleys in the midwestern United States and the Rocky Mountains has been well documented in the archaeological literature (e.g., see DeBoer 2004). Furthermore, occurrences of

Table 1 Trace element data (presented in parts-per-million) and provenience information for samples discussed in the text

Sample #	Findspot	Ti	Mn	Fe	Zn	Ga	Rb	Sr	Y	Zr	Nb	Th	Ba	Source	Provenience notes
1	Gloucester Co., NJ	1220	602	8796	56	19	110	34	30	189	20	6	–	Blue Spring, CA	Found during monitoring of house construction
2	Hunterdon Co., NJ	861	468	7818	36	21	260	12	61	102	35	39	–	Black Rock, UT	Found by CRM archaeologist, surface contexts
3	Hunterdon Co., NJ	801	467	8040	47	21	267	8	59	101	23	34	–	Black Rock, UT	Found by CRM archaeologist, surface contexts
4	Monmouth Co., NJ	1014	477	8219	66	22	453	12	50	140	63	81	–	Topaz Mtn, UT	Historical society collection - allegedly found locally
5	Monmouth Co., NJ	959	461	7709	41	20	424	13	49	133	64	88	–	Topaz Mtn, UT	Historical society collection - allegedly found locally
6	Paterson, NJ	1005	214	9370	–	–	174	12	40	239	15	–	–	Reas Pass, ID (Yellowstone)	Found by Bryn Mawr faculty geologist. Point provenienced
7	Schoharie Co., NY	1266	361	10214	–	–	82	101	23	122	9	–	1209	Malad, ID	Point provenienced for NY State Museum by amateur archaeologist
8	Easton, PA	775	396	7065	–	–	87	28	49	92	14	–	–	Glass Buttes, OR	In collection donated to Penn Museum 100 years ago
9	Connecticut	1135	302	10289	60	17	147	94	26	180	11	18	–	Casa Diablo, CA?	In collection donated to AMNH 80 years ago
10	Connecticut	975	627	6667	55	15	159	22	15	117	34	6	–	Unknown	In collection donated to AMNH 80 years ago
11	Massachusetts	1083	441	6585	–	–	173	105	11	99	10	25	–	Bodie Hills, CA?	Robbins Museum, no provenience data
12	Massachusetts	1048	454	5734	–	–	146	10	21	66	44	8	–	El Rechuelos, NM?	Robbins Museum, no provenience data
13	Ft. Drum, NY	1399	300	–	44	–	143	66	46	282	16	–	–	Newberry Volcano, OR	Modern (obsidian hydration)

(continued)

Table 1 (continued)

Sample #	Findspot	Ti	Mn	Fe	Zn	Ga	Rb	Sr	Y	Zr	Nb	Th	Ba	Source	Provenience notes
14	Salem Co., NJ	916	655	10231	59	–	104	53	32	125	8	–	–	Hager Mtn. or Spodue Mtn, OR?	Found during fieldwalking by avocational archaeologist
15	Trenton, NJ	1232	300	10862	46	–	136	33	28	190	12	–	–	Blue Spring, CA?	Point provenienced by UPenn museum archaeologist in 1896
16	Trenton, NJ	1012	454	8883	61	–	141	9	35	160	61	–	–	Valles Rhyolite, NM?	Point provenienced by UPenn museum archaeologist in 1896
17	Sheffield, NJ	1089	397	6980	36	19	184	46	24	112	30	22	-	Wild Horse Canyon, UT	Collected by professional archaeologist, Sheffield Playground site
18	Livingston Co., NY	1081	393	7574	29	15	103	71	16	99	8	–	–	Buck Mtn, CA (modern)	Unlikely to be prehistoric artifact based on provenance
19	Maryland	1355	84	3721	14	17	3	74	4	22	5	–	–	Not obsidian	Not obsidian
20	Somerset Co., PA	1068	861	12658	124	27	234	6	74	203	117	–	–	Unknown	Surface find at 36So112 in 1975
RGM1-H1	RGM1-H1	1500	306	13274	34	18	154	113	27	223	8	14	–	Source standard	

Table 2 X-ray fluorescence concentrations for selected trace elements for RGM-1 (n = 11 runs, February 2005). ± values represent first standard deviation computations for the group of measurements. All values are in parts per million (ppm) as reported in Govindaraju (1994) and this study. RGM-1 is a U.S. Geological rhyolite standard. Fe^T can be converted to $Fe_2O_3^T$ with a multiplier of 1.4297(10-4) (see also Glascock 1991)

Sample	Ti	Mn	Fe	Rb	Sr	Y	Zr	Nb
RGM-1(Govindaraju 1994)	1,600	279	12,998	149	108	25	219	8.9
RGM-1(this study; n = 11)	1,573 ± 67	313 ± 20	13,299 ± 82	148 ± 1	110 ± 2	22 ± 3	218 ± 4	6 ± 3

Fig. 1 Obsidian biface collected near Paterson, New Jersey, by Professor Harold Arndt, Department of Geology, Bryn Mawr College, in 1976

copper, likely from the Great Lakes region, mica, unusual cherts, and other exotics found on archaeological sites in the mid-Atlantic region provide evidence of trade and exchange networks that link the mid-Atlantic to larger western connections (Stewart 1994).

Other obsidian sources that have been found in the midwestern United States include specimens from Black Rock, Utah; and the Jemez Mountains in New Mexico (Barker et al. 2002: 108, Baugh and Nelson 1987; Vehick and Baugh 1994). If western sources of obsidian, including Rocky Mountain, Great Basin, and

Fig. 2 Obsidian biface (specimen #7, Table 1) collected from Schoharie County, New York, found on the west bank of the Schoharis Creek. New York site number #9499, published in the New York State Museum Schoharie County Survey, compiled in 2000 (on file at the New York State Museum)

Southwest obsidian sources were being used by mid-Atlantic consumers, as is suggested here, then perhaps trade and exchange was more complex than has been previously considered. More extensive systems of trade and exchange were necessary to move objects across continental-scale distances.

2.5 Archaeological Provenience of Obsidian Artifacts

Because the obsidian artifacts discussed here were found in excess of 1,000 miles from any potential obsidian source, archaeological provenience must be viewed with caution. As noted above, two of the specimens appear to be modern (#13 and #18). Of the remaining seventeen obsidian artifacts, archaeological provenience varies from good to poor. Avocational archaeologists collected some of the specimens and they did not necessarily point-provenience the artifacts (see note in

Table 1). Others were surface finds, though in some cases found within recorded archaeological sites. Still others have been housed in museum collections for long periods of time, and provenience records have been lost or were never properly recorded. Yet some of the specimens have excellent archaeological provenience, including excavated contexts by professional archaeologists. Table 1 summarizes the provenience of each specimen.

Most notably, two of the artifacts presented here (#15 and #16 in Table 1, Figs. 3 and 4) represent collections made by Dr. Charles Conrad Abbott, a curator at the University of Pennsylvania Museum of Archaeology and Anthropology and a well-known archaeologist in the late nineteenth and early twentieth century. Dr. Abbott found two obsidian specimens on his farm, which is now part of the Abbott Farm National Historic Landmark and a notable prehistoric archaeological district. Abbott clearly stated that he discovered obsidian arrowheads, flakes, and scrapers in New Jersey that either came from Utah or Oregon, though he did not discuss how he arrived at this alleged geologic provenance (Abbott 1907: 57, 1908: 72–74, 1912: 28). Abbott's personal correspondence with Frederic Ward Putnam documented the recovery of obsidian specimens from archaeological contexts in New Jersey (letters on file Peabody Museum, Harvard University).

Fig. 3 A retouched obsidian piece recovered near Trenton, New Jersey (specimen #15, Table 1). One of two obsidian artifacts recovered from the Abbott Farm National Historic Landmark by Dr. Charles Conrad Abbott in the late nineteenth and early twentieth century

Fig. 4 An obsidian scraper recovered near Trenton, New Jersey (specimen #16, Table 1). This is the second of two obsidian artifacts recovered from the Abbott Farm National Historic Landmark by Dr. Charles Conrad Abbott in the late nineteenth and early twentieth century

Abbott was aware of the rarity of obsidian in eastern United States contexts. He wrote extensively of his work and collections to Putnam, who was Curator of Harvard University's Peabody Museum. In his correspondence with Putnam, dated April 11, 1886, Abbott wrote: "Now don't go on wild. I found an obsidian flake or piece of one, yesterday. The spot has a curious history, which I'll tell you if you stop over" (letters on file Peabody Museum, Harvard University). Unfortunately, Abbott did not record the "curious history" of the site in his correspondence or personal diaries (diaries on file Firestone Library, Princeton University). On May 6, 1886, Abbott further elaborated on his obsidian find in a letter accompanying a shipment of artifacts to the Peabody Museum. He wrote that "I have also the pleasure of announcing the 'surface find' of a fragment of obsidian, found on the brow of the plateau upon which my house stands and about 200 yards east of it. I believe it is the first incidence of this mineral being found in New Jersey" (letters on file Peabody Museum, Harvard University). Abbott's house was located in Hamilton Township, Mercer County, New Jersey.

Abbott, later writing in 1908, stated that obsidian artifacts found in the mid-Atlantic are from the far west and represent long-distance commerce, saying, "It is something more than barter. It is distinctly a feature of fixed conditions and that have been long-fixed and are generally known" (Abbott 1908: 73). He went on to state

> "That obsidian, that is not found east of the Mississippi, should find its way to the middle country, and from there occasionally to the Atlantic coast, is not an unthinkable proposition, however, improbable it may seem at first. The fact, however, remains that these foreign productions do occur here and that the Indian brought them. They have been found under circumstances that set aside all possibility of their presence being attributed to even the earliest European travelers …" (Abbott 1908: 75).

Interestingly, Abbott was also aware of the danger of unprovenienced obsidian specimens being incorrectly attributed to eastern United States archaeological sites. He stated in his correspondence that he received obsidian specimens from other collectors, but that they had little research value. He wrote to Putnam on February 10, 1887, "By the way, Berthoud has sent me some exquisite obsidian points, etc. (one mounted and poisoned) etc. etc. Do you want them, my dear boy? Or shall they be turned into scarf-pins, etc." (letters on file Peabody Museum, Harvard University).

More recently, other mid-Atlantic archaeologists have also published accounts of archaeological obsidian in the region. Though not part of this study, Dumont et al. (1974) reported an obsidian biface in an Archaic context from the Rockelein I site, in Sussex County, New Jersey. Also outside the scope of this study, Kraft and Cavallo (1974) reported five temporally nondiagnostic obsidian points discovered by avocational fossil hunters sifting stream sediments near Colts Neck, Monmouth County, New Jersey, and also noted the occurrence of other obsidian artifacts from the same county.

The current study did include previously published artifacts. Lenik (1985: 86–91) published an obsidian fluted biface found at the Sheffield Playground site in Passaic County, New Jersey (#17 in Table 1, Fig. 5). This point, small and apparently unfinished, was found eroding out of the east bank of the Pompton River in Wayne, Passaic County. In discussing this specimen, Lenik (1985: 90) also mentioned the recovery of an obsidian core from a farm in Middlesex County, New Jersey. Other previously published artifacts in this study included specimen #1 (Table 1) published by Bello and Cresson (1998), and specimen #6 published by Bello (1997) (Table 1, Fig. 1).

2.6 Placing Obsidian into a Context of Exchange

In 1965, Griffin proposed that all obsidian present in Hopewell sites, and therefore obsidian that might have made its way into archaeological assemblages further east, originated through a single obsidian collecting trip from a Hopewell homeland to obsidian sources in the Rocky Mountains, most notably to Obsidian Cliff in

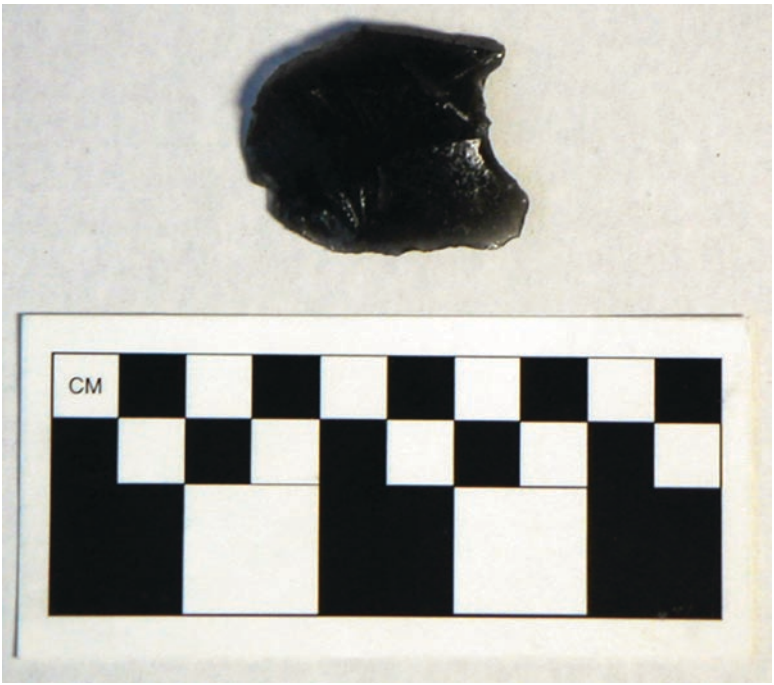

Fig. 5 Obsidian piece recovered from the Sheffield Playground site in Sheffield, New Jersey by Edward Lenik, a professional CRM archaeologist (specimen #17, Table 1)

Yellowstone. This implies that *all* the archaeological obsidian that has been found in Hopewell sites and that could have been traded or exchanged further east would have been cycled through procurement, exchange, production, use, and discard within a relatively short period of time, perhaps as little as 25–50 years (Griffin 1965: 146–147). This does not appear to be the case.

Hatch et al. conducted obsidian hydration analyses of many of the Hopewell obsidian artifacts to determine whether or not they could have all originated from a single, large-scale obsidian collecting trip to the Rocky Mountains. They found that the obsidian artifacts dated to between the first century BC to the fourth century AD (Hatch et al. 1990: 478). In fact, a single burst of obsidian procurement would be unlikely given that multiple sources of western United States obsidian have now been found in Hopewellian archaeological sites (DeBoer 2004; Hughes 1992). As a result, other mechanisms of exchange, likely down-the-line networks, may have been operating to move objects from western United States sources to the middle United States, and later to middle Atlantic consumers in prehistory.

For the middle Atlantic region, two models have been proposed to explain exchange. Broad-based systems, which are hand-to-hand, down-the-line systems of networked relationships, are typical of the informal exchange networks that operate between individuals, communities, and regions. These systems rarely

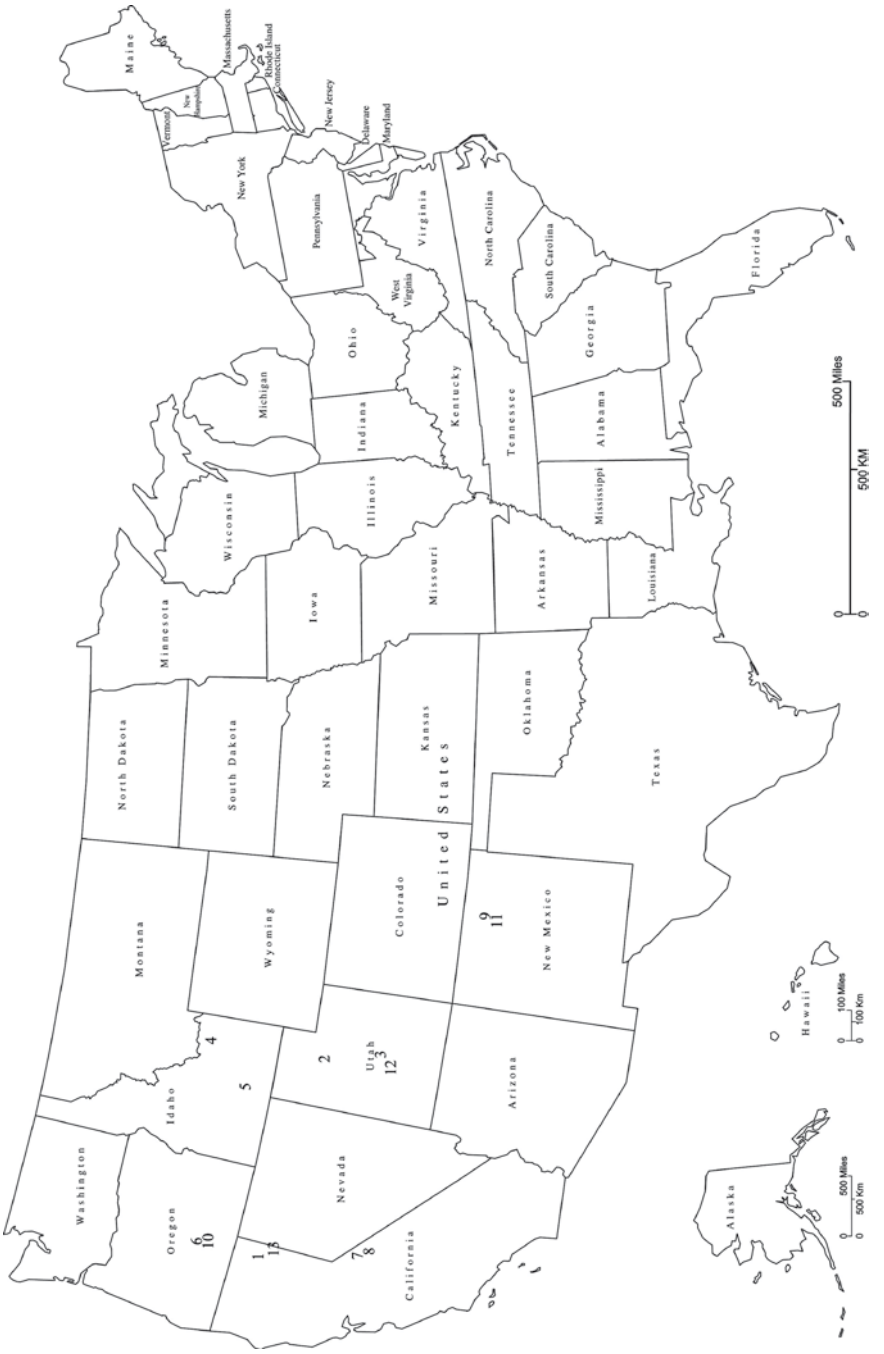

Fig. 6 Map of obsidian source locations (numbers) for artifacts discussed in the text. 1 – Blue Spring, CA; 2 – Black Rock, UT; 3 – Topaz Mountain, UT; 4 – Reas Pass, ID; 5 – Malad, ID; 6 – Glass Buttes, OR; 7 – Casa Diablo, CA; 8 – Bodie Hills, CA; 9 – El Rechuelos, NM; 10 – Newberry, OR; 11 – Valles Rhyolite, NM; 12 – Wild Horse Canyon, UT; 13 – Buck Mountain, CA

include specific production of items for exchange and can include trade of raw materials as well as finished goods (Stewart 1989, 1994, 2004). Focused networks frequently include the exchange of exotic items and imply the movement of mid-Atlantic peoples on long-distance, sporadic trading missions to the sources of these exotic goods. Focused networks, by definition, do not entail the personal contact and face-to-face interaction that is essential to a broad-based system (Stewart 1989, 1994, 2004). However, obsidian exchange is not easily explained by either of these systems.

The exchange networks implied by obsidian movement in the middle Atlantic do not fit precisely with either broad-based or focused systems. As exotic items, obsidian artifacts should fall within a focused system, yet their movement across such a large geographic distance is not logically explainable by direct trading missions to their source, as would be suggested in a focused system. In this study, we are not proposing a systematic effort by northeast U.S. inhabitants to obtain obsidian. Instead, we propose exchange of obsidian as a much more informal process – a negotiation between individuals acting on personal impulse. Realistically, many people in the northeast may not have ever even seen obsidian, which suggests that a fixed definition of worth and exchange was unlikely. Though the utility of such objects and the pragmatic use-value of such high-quality raw material would have been apparent to any flintknapper, this would have been an unlikely motivator for such long-distance exchange, since its rarity suggests that most people in the region might have never worked with obsidian.

The lack of consistency in represented geological sources for eastern United States obsidian suggests that systematic exchange routes linking mid-Atlantic consumers to western sources were not in existence. Instead, periodic down-the-line exchange was likely the dominant mechanism for transporting obsidian material during prehistory. As a result, we propose a system of casual exchange, in which objects were passed between individuals as gifts, unstructured trades, heirlooms, or even through petty theft. These kinds of interactions, however, imply face-to-face contact between the owner and recipient of the object. An obsidian artifact, in this case, may have passed between many owners and recipients in its journey across continental scales of distance. Such casual exchange interactions may result in very slow movement of obsidian or other exotics that may not be directional. In fact, objects may move into and out of communities in a relatively random pattern. Over time, however, this could result in the movement of objects across very long distances, including those of continental scale. Yet the time frame for such movement could be hundreds of years and multiple generations, implying little, if any, contact between the original procurer of an obsidian object and the ultimate loss or discard of the object in an archaeological context.

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Natural History; and the Massachusetts Archaeological Society for providing samples for analysis. Any errors are, of course, our own.

Note

Secure archaeological provenience for many of the specimens discussed in this paper is imperfect at best. Because of the extremely rare occurrences of obsidian in eastern United States archaeological assemblages, the authors of this study were resigned to accept any obsidian artifacts with alleged local provenience. Almost all the artifacts analyzed as part of this investigation were obtained from museum collections with catalogue data indicating a mid-Atlantic findspot; however, it is important to note that museum catalogues do occasionally contain incorrect information. Therefore, the quality of the archaeological provenience, to our best assessment, is presented in the text. We fully recognize that there may be errors, but hope that as our sample of obsidian artifacts from these mid-Atlantic contexts increases, our argument for super-long-distance exchange gains increased authority.

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Chapter 3
Ulua Marble Vases Abroad: Contextualizing Social Networks Between the Maya World and Lower Central America

Christina Luke

3.1 Valuing the Exotic in Place

How do we know if something is indeed foreign? It looks different. Yet often things that look *different* can also look *familiar*, particularly if their makers and users share a common worldview. The social value of objects resides in their context. Objects classed as "exotic" fall into the category of foreign, different, and interesting. For example, luxury goods from Late Classic (AD 600–800) Mesoamerica exchanged to foreign places may have been seen as exotic, yet also familiar. My focus here is perception upon reception, specifically the divergence of the intended meaning of a local place translated into two different areas. From an archaeological perspective, how do we make sense of what objects meant to their producers and users? The meanings of things represent specific moments in time, dictated by those who produce, use, see, and experience material culture. Goods used by the upper echelon of society, the elite, often play strategic roles in social networking, forming political alliances and building economic partners. In this way, objects are dialectic: they represent actors with agency that informs the present, whenever that present may be.

Exotic objects used by the elite and exchanged in antiquity represent an interesting phenomenon for understanding the meanings conferred to these objects upon transfer and why specific types of objects were exchanged at all. If we are to understand the royal gaze of the elite through exotics, considerations of where elites derive their prerogatives of prestige must be considered (Houston 2006: 150). In this way broad considerations of community values widen our lens for understanding the meanings assigned to and reflected by specific foreign goods.

Locally, aesthetic choices represented by objects often reflect community traditions and values, create social realities, and confer membership (Barth 1969, 1987; Hodder 1991; Morris 1995; Wiessner 1983, 1989, 1990; Wobst 1977). The type of

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material used to produce the object, the level of skill executed during production, and the distribution of luxury goods reflect the producers and their status (Clark and Parry 1990; Costin 1991) as well as social boundaries across time and space (Conkey 1989; Wright 1993). "Boundaries are *relational*, rather than absolute" (Cohen 1984: 58); thus, communities form and maintain social boundaries that are meaningful to them during specific periods. For elite communities, luxury goods enable moral valuation and shape perceived identity and common interests, which help solidify social groups and boundaries (Dietler and Herbich 1998: 234; Goodby 1998: 161). In this way the use of objects in specific events and settings is conditional on social processes. Human agency influences the structure of social exchange (Bourdieu 1977, 1980; Giddens 1984).

Analyses of foreign objects have tended to focus on contextual and iconographic similarities and differences at a moment in time – yet objects are produced and used over multiple generations and may have been exchanged for far greater periods. Objects have life histories of their own (Gosden 1999, 2006), beyond those initially created for them. "Material culture is vital to the notion of embodied or distributed intelligence…[it] educate[s] people's senses, and thus shape[s] and determine[s] sequences of actions in making, using and exchanging things…" (Gosden 2006: 440). Studies focused on the materiality of the exotic must consider the object as a participant in a process of knowledge transfer.

The life histories of luxury objects, particularly objects that are exchanged to distant locations, tell us more about the life histories of places. Over the last decade the field of landscape archaeology has grown considerably with researchers building on Cosgrove's seminal 1984 study (Cosgrove 1984). The perceived meaning of places is culturally constructed in time and space, particularly within conceptual landscapes (Bradley 2000; Fisher and Thurston 1999; Lawrence and Low 1990; Thomas 1993). The sociality of landscapes is informed by histories of action and agency, where landscapes are dynamic spaces full of meanings and symbolism (Bender 1993; Gosden 1989; Tilley 1994: 23). "*Lived spaces* are developed through infusing experience in one place, the evocation of events in other places" (Rodman 1992: 644), and activities in specific spaces enable, as well as constrain, future events (Pred 1984: 287, 288). These "life histories of place" (Ashmore 2002) form a mosaic of layered meanings and memories about landscapes, and the moral valuation of a community is dictated by how it perceives and experiences places in the landscape (Ashmore and Knapp 1999: 1). Where do objects fit into this analysis?

Materiality is "a recursive relationship between people and things; a spiraling series of continual reflection, opposition, affirmation, similarity and difference between the way people make things and the ways things make people" (Lazzari 2005: 127). Building on the research of Ingold (2000: 193–194, 347), Lazzari (2005: 128) argues, "artifacts, like houses and landscapes, incorporate in their bodily form the rhythms of the practices that gave rise to them." The exchange of objects builds a social landscape where things circulate and in doing so they offer a glimpse of other "places and people that are not immediately present in everyday life, thus concretizing in material form the presence of other people and places"

(Lazzari 2005: 131). This bundling of ideas between people and things is the nexus around which Meskell (2005) explores the power of the object in social life.

Conceptual ideas of landscapes engage the spheres of production, use, and reception of objects in foreign places. Just as places and landscapes form a critical part of social and moral valuation, the objects used in these spaces become part of the lived experience and of the memories. The relationship between the portable (i.e., the object) and the conceptual landscape, then, is dialectic. Places and their surrounding landscapes, and the meanings attached to both at any given time, are integral to the construction of history. The material culture produced, used, and *received* in these locales becomes part of the biographies of the places and objects.

3.2 Placing Ulua Marble Vases

Ulua marble vases were produced in the Lower Ulua Valley during the Late Classic period (ca. 600–800 AD), now contemporary western Honduras (Figs. 1 and 2). The Ulua sits along the Maya boundary, a cultural area that includes a specific set

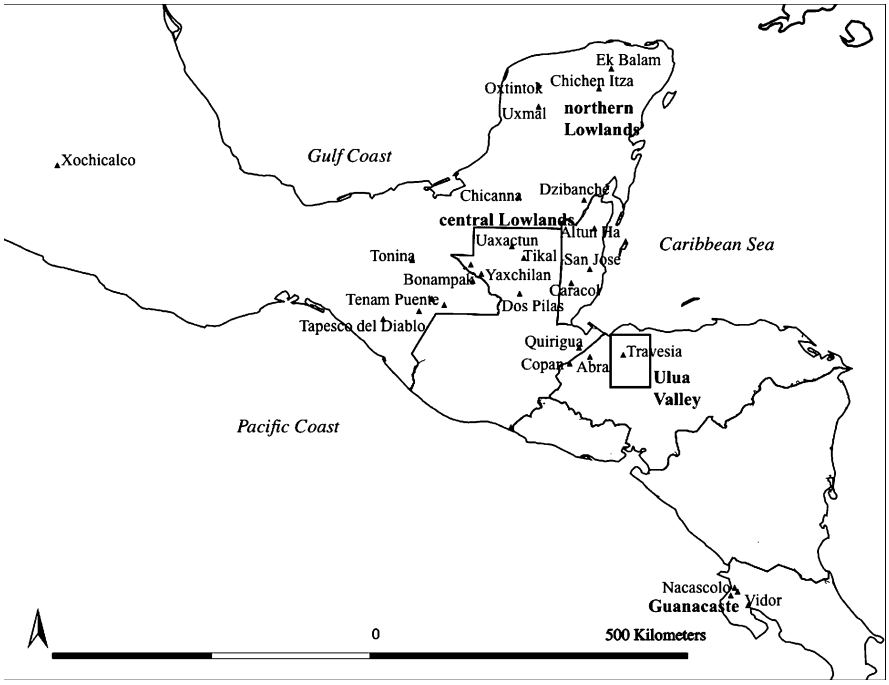

Fig. 1 Mesoamerica showing regions and sites mentioned in text

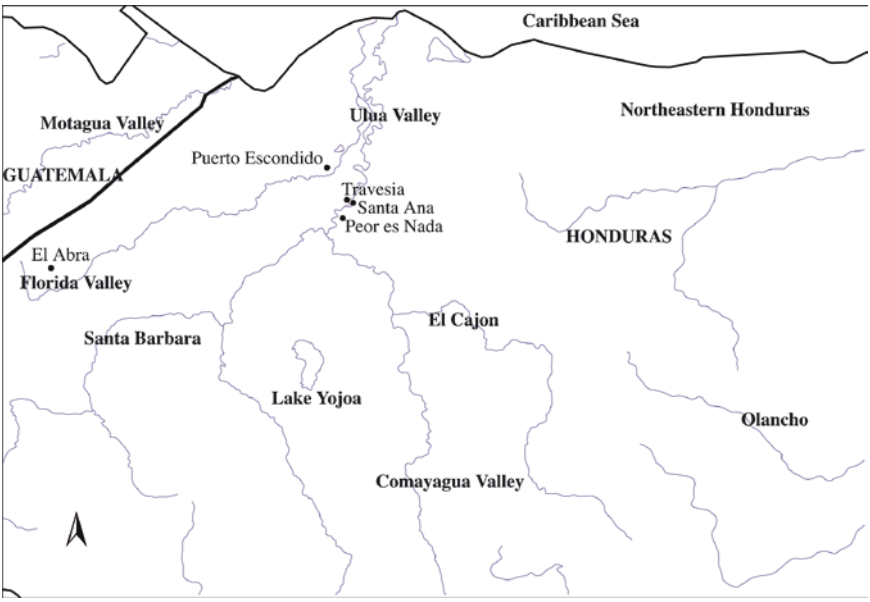

Fig. 2 Honduras showing regions and sites mentioned in text

of traits believed to be diagnostic of broad Maya culture (Henderson 1992, 1997; Joyce 1986, 1991).

The Ulua region is part of the wider Maya sphere that includes southern Mexico, Guatemala, Belize, western Honduras, and northern El Salvador, yet with distinctive local traditions (Henderson 1992, 1997; Joyce 1986, 1991). One of these local traditions was the production of Ulua marble vases. The vases circulated to the areas of the central Maya Lowlands (northern Guatemala and the Peten, southern Yucatan and Belize), and to areas of lower Central America, including eastern and central Honduras southward to Guanacaste (Pacific Nicaragua and northern Costa Rica). Through the lens of conceptual landscapes local Uluan meanings of the iconography on Ulua marble vases become clear (Luke n.d.; Luke and Tykot 2007). Exploring the contexts of Ulua marble vases as well as linkages to other forms of material culture in Guanacaste and the central Maya lowlands, specifically any linkages to the Ulua, provides insights into the different ways that communities in these two different regions may have viewed Ulua vases, specifically conceptual landscapes encoded in iconography.

Produced between AD 600 and AD 800, Ulua marble vases are the hallmark luxury good of the Lower Ulua Valley of western Honduras. They are believed to be markers of a small, yet prominent, Uluan community at the site of Travesia (Fig. 2). Made from white marble, the quintessential characteristics of the vases are a relief program carved on the exterior of the vases (Figs. 3 and 4). The imagery is a series of scrolls that often form zoomorphic heads. The program is framed on either side of the vessel by two anthropomorphic lug handles. Production of the

Fig. 3 Ulua marble vase with two feline handles, Santa Ana, Courtesy of the Middle American Research Institute, Tulane University

vases corresponds to rising social and political complexity in the valley and research suggests that the vases may in fact represent an important key in our understanding of Travesia's place in the valley during the Late Classic period (Luke 2002, n.d.).

The Lower Ulua Valley sits on what is commonly referred to as the Mesoamerica frontier, an area that maintained rich local traditions as well as functioned as a nexus between the celebrated Maya and the lesser known spheres of Lower Central America (Henderson 1992, 1997; Joyce 1986, 1993, 1996). Ulua marble vases are found in all these distant areas, making them an ideal test case for how an exotic good was valued at home as well as in two different geographic and cultural regions. Research has explored the production of these vases, particularly potential procurement zones (Luke and Tykot 2007; Luke et al. 2006). Data point to a central production hub at the site of Travesia with a reliance on one main marble source at Santa Rita, situated on the southeastern edge of the valley. Procurement location remained constant over the entire period of production, even when stylistic canons shifted (Luke and Tykot 2007; Luke et al. 2006).

The imagery on the vases follows a pattern of portraying the built environment on portable objects (Luke 2005, n.d.). The Maya focused intensely on the natural environment and the cosmos in their construction of places, particularly monumental plaza and temple areas (Ashmore 1991, 2002; Benson 1985; Brady 1997; Brady and Ashmore 1999; Brady and Prufer 2005; Vogt 1964, 1969, 1981). Entire temple

Fig. 4 Ulua marble vase with two monkey handles, Santa Ana, Courtesy of the Middle American Research Institute, Tulane University

complexes often replicated, and/or were oriented toward, the mountainous or subterranean world, such as the layout at Dos Pilas, where the placement of the main complex took into great consideration the opening of an underground chasm (Brady and Ashmore 1999). Throughout the Maya world rich stucco facades covered key doorways, particularly those linked to entrances into sacred realms, and imagery found on carved stone monuments throughout the Maya world was often linked to some variant of the *witz,* or hill (Houston 1998; Schele 1998). Temples and plazas embodied the natural world, symbolically representing mountains and caves (Benson 1985; Schele 1998; Schele and Miller 1986: 45–46; Schele and Friedel 1991: 239: 470; Vogt 1964), and the placement of sites and the symbolic referents also illustrate the emphasis on the multisensory experiences of places and landscapes (Bruchez 2007). *Witz* heads represent the visual appearance of the Creation and/or Flower Mountain, while scrolls associated with these forms give breath and soul (Houston et al. 2006; Taube 2004). Landscape architectural metaphors in Mesoamerica emphasize the integral part of ancestral embodiment in the built environment (McAnany 1998).

The Ulua artisans used marble objects to carve imagery traditionally reserved for stone monuments and temple facades in the central and northern Maya Lowlands. In doing so they embedded imagery of the *witz* in white stone (Luke n.d.). The early production of white stone vases in the Ulua Valley during the

Formative period (Luke et al. 2003), and the subsequent development of the tradition by one community at Travesia suggest that the Ulua Valley played a strategic role in establishing a pan-Mesoamerican tradition of creating portable white stone vases linked to the sacred cave or mountain locations and hence access to the ancestral or wild spheres. In this way, the initial decision to carve *witz* imagery on the exterior of white stone vases, which was the tradition ultimately established in the Ulua region, suggests a deliberate decision on the part of Travesia to celebrate this sacred realm on a portable object (Luke n.d.).

Examination of Travesia as a production center explains why imagery on the vases became formalized. Ulua marble vases are found in the valley in the highest frequency at Travesia. All indications are that Travesia did not control the region, at least not politically (Joyce 1991). Research by Lopiparo suggests that Travesia held a central, sacred, geometrical position in the valley (Lopiparo 2003). The orientations of different centers in the valley converge on the most imposing mountain in the region – Santa Barbara (Lopiparo 2003: 260–276). At Travesia proper, the north–south axis intersects with Montaña Santa Barbara, while the east–west axis corresponds to the highest peaks in these directions, marking the sunrise and sunset on the winter solstice. Travesia was the pivotal point in this system and "effectively centered the entire cosmos" of the valley (Lopiparo 2003: 262). This mountain is the focal point that rises above the surrounding area and serves as a key for understanding the entire experiential landscape of the region. This experiential landscape includes the blanketing of the mountains in clouds, the coming of rains, and the swelling of rivers, including the increased volume of water over the impressive waterfall of Pulhapanzaak (Joyce et al. in press).

Travesia appears to have controlled access to the circulation of Ulua marble vases. In the valley proper, vases have been found only at subsidiary sites, not at the other social centers, indicating distinct social networks. The distribution pattern suggests also some sort of control by a Travesian elite, who used access to knowledge and foreign groups to celebrate their social position in the valley (Luke and Tykot 2007). In the immediate vicinity, Travesia had a tight network of smaller hamlets, marked through the distribution of marble vases. At Santa Ana, a subsidiary sector of Travesia, two Ulua marble vases were found with an exquisite jade hand and a gold figure typical of lower Central America or Columbia (Figs. 3–5; Stone 1972: 138). The entire cache served as a visual presentation of the true nexus of this vibrant site (Fig. 5).

A similar mixing of exotics with Ulua marble vases is from Peor es Nada (Stone 1938: 39, 55–56; 1972: 141), where two Ulua marble vases were found with jades reflective of a local Ulua tradition, carved with profile heads, as well as with jades more characteristic of the geographically distant areas of Guancaste and the central Maya lowlands (Fig. 6). These exotic cosmopolitan assemblages point to a celebration of foreign places to the south and north. Furthermore, social networking by Travesian elite is most clearly demonstrated by finds of Ulua marble vases in Guanacaste and the central Maya lowlands. In this way, the transfer of Ulua marble vases to foreign lands displays a vital aspect of Travesia's position as a center with connections to those communities of lower Central America, specifically from the

Fig. 5 Jade hand and gold figure associated with Ulua marble vases. Objects photographed in the base of Ulua vase (Fig. 3). Courtesy of the Middle American Research Institute, Tulane University

Fig. 6 Jades from Peor es Nada associated with Ulua marble vases, Courtesy of the Middle American Research Institute, Tulane University

Comayagua region of central Honduras to the northern region of Guanacaste and the central Maya lowlands.

3.3 Transferring Ulua Marble Vases

Based on archaeological excavations and stylistic analyses, Ulua style vases first circulated south to Guanacaste (Pacific Nicaragua and northern Costa Rica) in lower Central America, and later to the central Maya lowlands (Joyce 1986; Luke 2002, 2005; Luke and Tykot 2007). It is tempting to see these vases as gifts to other elites, perhaps to groups that had no direct knowledge of the Ulua region. The exchange of royal gifts is often taken as a manifestation of long-distance exchange networks where the participants do not necessarily know each other. Alternatively, they represent established networks between noble envoys, the objects sent with leaders of a merchant group for a specific ruler or community. Yet, this type of relationship argues for contact with the upper echelons only.

3.3.1 Guanacaste

Communities in Guanacaste emulated the Ulua material record in various ways, notably on certain types of polychrome pottery (Joyce 1993). Artisans in Guanacaste drew inspiration from Ulua polychromes for a subset of local Galo Polychromes, specifically the imagery found on Black stage Ulua polychrome cylinders (Joyce 1993: 90). Many of these local wares have lug-head forms, usually with a monkey head, reminiscent of dual lug-head handled ceramic varieties in the Ulua Valley as well as the dual lug-head handles on Ulua marble vases. This generalized influence on polychromes appears to postdate the initial circulation of Ulua marble vases to the region. Thus, the initial contact period must have introduced these two regions to each other, perhaps promoting the exchange of physical artifacts and other resources, and setting the stage for the exchange of knowledge.

The association of Galo Polychromes with multiple Ulua marble vases at Nacascolo links these two material correlates and points to recognition by Guanacastan communities of Uluan things (Stone 1977: 58–59). Ulua marble vases in other contexts at Guanacaste, and notably at Vidor (Lange, personal communication, 2003), point to caches of multiple vases. Unlike marble vases, however, Galo Polychromes were locally produced, and artisans opted for variations on regional themes. The transfer of ideas and styles clearly demonstrates an attraction to a specific form and imagery, yet the imagery was recontextualized in local canons (Joyce 1993). It also demonstrates access to the suite of Ulua polychrome imagery and potters' deliberate choices about what to incorporate into local repertoires. Hence, ceramic production represents a shared suite of values. The mutual knowledge of how to portray certain types of imagery indicates not only shared social

constructs, but also similar moral foundations of how the world was perceived and expressed on material goods. Here, then, exchange was knowledge, not the mere gifting of fancy goods that demonstrated linkages to foreign lands.

The physical movement of Ulua marble vases does seem to point to the exchange of a specific exotic, a good that could not be replicated locally, either because material was not available and/or knowledge of the iconography was not sufficiently understood enough to replicate it. The latter is the most likely reason. Vases from Guanacaste made from stone with dual lug heads (clearly following the general Ulua marble forms) are known, yet without the delicate craftsmanship and fine carving detail. The circulation of marble vases to Guanacaste may indicate direct connections with Travesia, or connections to Comayagua, the region just south of the Ulua Valley, where Ulua marble vases did circulate and connections to Guanacaste are documented in the esthetic sharing of polychrome designs (Joyce 1996). Whether through direct or indirect connections, Ulua marble vases functioned as physical ambassadors of western Honduras to lower Central American communities. The apparent decision to circulate only specific luxury goods, rather than other wares (i.e., polychromes), may point to specific linkages among the upper echelons and gives Ulua marble vases a status not afforded to other object groups. The reception of Ulua marble vases in Guanacaste celebrated a specific foreign contact, while the transfer of ideas for polychrome production not only celebrated, but inspired local producers.

Why were these two regions so tightly connected? One possibility is that communities in Guanacaste received cacao from the Ulua Valley. The Ulua Valley provided ideal conditions for cacao cultivation and by the Formative period, appears to have grown and produced cacao in great quantities for beverage consumption (Joyce and Henderson 2007; Henderson and Joyce 2006; Henderson et al. 2007). The two-handled Late Classic Ulua polychrome forms that were replicated in Guanacaste, the Galo Polychromes, and the circulation of marble vases, most often with dual lug handles, suggests a preference for forms favorable for the consumption of beverages, specifically during public events. The two handles would have allowed the participants to hold and present the vessel. Thus, one could imagine cacao from the Ulua Valley served in Ulua marble vases for consumption by prominent community leaders, with others using locally produced polychrome wares that would have symbolically linked both types of material culture to the Ulua region. Perhaps jades or gold figurines, found only in limited qualities, were gifted to Uluan nobles. The discovery of lower Central American jades and gold objects with the Ulua marble vase in contexts from Santa Ana and Peor es Nada speaks of the types of exotics that may have visually marked Guanacaste in the Uluan Valley. Furthermore, the linkage with a specific Uluan object group – marble vases – in Guanacaste suggests a sphere of participation.

Did people in Guanacaste share the knowledge or understanding of the imagery on Ulua marble vases, specifically the sacred landscape of mountainous, paradisal realms? While lacking the highly developed hieroglyphic inscriptions of the large Maya city-states, a suite of objects and imagery found in the Ulua Valley demonstrates participation within and understanding of a universal Maya worldview

(Henderson 1997; Joyce 2004). Sites follow the general Mesoamerican tradition of temples, open plazas, and ballcourts (Joyce 1991; Joyce et al. in press). This site template is not found in Guanacaste, which would suggest a different type of reception of the vase imagery by the Guanacastan community than by a local Uluan or neighboring community that shared fundamental concepts of site relationships to sacred landscapes. The meaning of Ulua marble vases to Guanacaste communities is a point for future research, particularly in the context of the types of information communicated through the specific choices of Galo polychrome production. Based on the research presented here, communities in Guanacaste certainly would have found meaning in Ulua marble vases, yet that meaning may have differed considerably from its meaning at home in the Ulua Valley.

3.3.2 Central Maya Lowlands

The styles of Ulua marble vases known from the central Maya lowlands include a more fully developed iconographic program than Ulua marble vases found in Guanacaste. Furthermore, the circulation of Ulua marble vases to the central Maya lowlands is chronologically later than those found in lower Central America, paralleling chronological shifts in regional communication routes (Joyce 1986, 1996). Based on the stylistic features of the fragments from the lowlands (no whole vases are known), it is likely that these vases had a front-facing zoomorphic head, which certainly is the case on the Uaxactun vase illustrated in Fig. 7 (Luke n.d; Luke and Tykot 2007). The changes in style and form

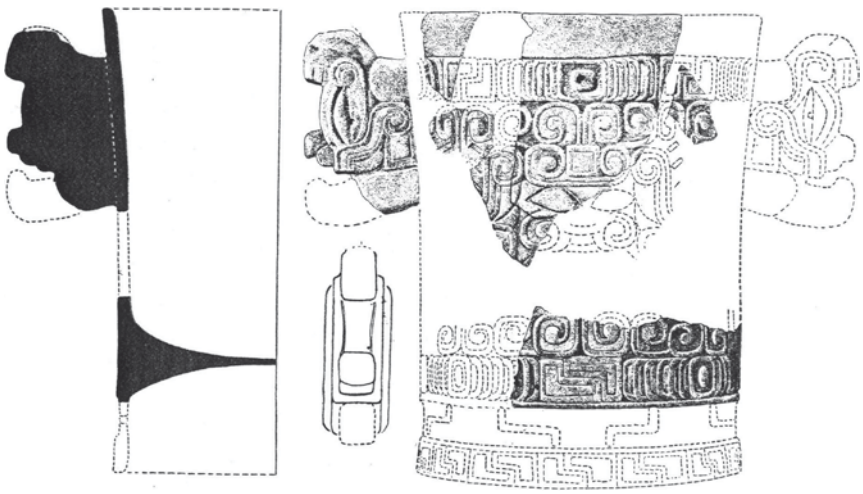

Fig. 7 Ulua marble vase from Uaxactun, Carnegie Institution, Washington, DC (adapted from Kidder, 1947, Fig. 2)

are reflective of the development of the style over time, rather than stylistic preferences in a single workshop for specific regions. White stone vases in the Ulua style from Uaxacatun, San Jose, Altun Ha, and Chac Balam represent vases produced during the later tradition, specifically incorporation of a frontal zoomorphic head between geometric borders.

Certainly one must consider that the style became more refined over time. Vases from the central Maya lowlands are stylistically more refined than those vases from Guanacaste. Yet, while the shift in imagery was subtle, the fundamental scrollwork execution remained the same. The form changed from wide cylinders to tall cylinders. The taller form allowed for more surface room to place the front-facing zoomorphic image. The imagery on contemporary and earlier polychromes suggests that the artists took into consideration the importance of landscape. Stepped terrace cut-outs on ring bases, portal openings, and other imagery related to mountains and places of origin, such as birds, can all be found on Ulua polychromes, including those that predate Ulua marble vases as well as those contemporary with marble vase production (Luke n.d.). Thus, the decision to refine the imagery on Ulua marble vases may have been a result of foreign influences. While local Uluan artisans always saw the white marble vases linked to paradisal realms of mountainous landscapes, they refined this association to fit more closely within the context of foreign ties, notably increasingly close ties with the central and northern lowlands.

Ulua marble vases that circulated to the central Maya lowlands were received by communities where buildings such as temples and associated spaces or plazas were constructed with an eye toward sacred landscapes. Alignment with natural features or replication of sacred mountains represents a template for Maya architects. The main temples functioned as mountains, often aligned with celestial events. The temples embodied the mountain forms, complete with a deep internal cave that was the resting place of prominent social and political leaders (Benson 1985; Brady and Prufer 2005; Vogt 1964). This cave-like grotto was outfitted with key objects, perhaps reflective of ceremonial banquets during the burial process that sought to outfit the deceased not only with goods for the afterlife, but goods that allowed for a recreation of the sacred mountain/cave context.

In many of the most impressive temple-tomb complexes in the Maya world, white stone vases in styles other than the Ulua style are found, carved in local traditions. These white stone vases, the Maya and Yucatan traditions (Luke 2008), differ considerably from the Ulua tradition. The Yucatan style is a delicate, thin, vase with a plain, highly polished exterior, often with a ring-base. The Maya style is also delicate, thin, yet with detailed imagery finely carved on the exterior, often representations of royal personages or scenes from the Underworld. The Maya and Yucatan styles are carved from white stone sources, usually alabaster or travertine, or perhaps white speleothems from caves. The tell-tale striations or mosaic-like patterns on the exterior of the stone point to these natural formations. There is evidence that supports working speleothems into portable goods as well as worked speleothems found in cave settings and transported to sites (Brady et al. 1997; Griffith and Jack 2005; Peterson et al. 2005; Stone 2005). Thus, carving a vase from a speleothem embedded the essence of the cave in the stone. Redepositing the vase in a tomb,

itself a recreation of the cave, reflected the *replacement* of the speleothem into a cave context.

The brilliance achieved from polishing white stones (travertine, alabaster, marble, or proper speleothems) provides a visual cue to the ancestral realm (Hill 1992; Hill 1976; Saunders 2003). White stone vases in the central and northern Maya lowlands reflect an elite-specific exotic that played a crucial role in prestigious contexts that embodied the sacred landscape. Furthermore, the imagery on the exterior of white stone vases celebrated the sacred spheres of the underworld (Luke 2008: 307).

If royal burials were effigies of sacred cave contexts, particularly those found within temple complexes, then one would expect the recreation of this cave-like environment to include symbolic representations of speleothems. While certainly not found in all royal burial temple contexts, white stone vases are found among the most impressive: the interment of Shield Jaguar at Yaxchilan (Garcia Moll 1996: 39; Miller and Martin 2004: 113), burial 196 at Tikal (Hellmuth 1967, Fig. 80, 03a, 83b), Ukit Kan Le'k Tok's burial at Ek Balam (Luke 2003; Vargas de la Pena and Castillo 2001a: 55–56, 2001b: 144–150), and the royal burial in the Grand Pyramid at Uxmal (Luke 2003), among others. The association of white stone vases in cave assemblages provides further evidence of the close link between these portable goods and their symbolic link to sacred landscapes: the caves of Ocozocoautla, Tapesco del Diablo, Chiapas (Linares 1997: 468, 470), and the subterranean chamber of the High Priest's Grave at Chichen Itza (Thompson 1938: 27, 31, 34, 52, 57, Fig. 24), Chill Hill at Aguateca (Ishihara 2007: 268, 306, Fig. 7.55), and the sacred cenote of Chichen Itza (Moholy-Nagy and Ladd 1992).

Furthermore, if sacred landscapes are to be linked to specific sites and sites locate themselves in terms of conceptual landscapes, specifically a mountain or cave (Brady and Ashmore 1999; Joyce et al. in press; Looper 2003), then the embodiment of the sacred realm through portable white stones would seem of specific import. Thus, white stone vase fragments with emblem glyphs on them perhaps speak to the perceived need to have artisans crafting in materials reflective of the sacred landscapes and specific linkages to sites and royalty. A white stone vase from El Abra includes the emblem glyph for Copan (Fash 1991: 166), and a fragment from Aguateca has that site's glyph (Inomata et al. 2001: 292). The key importance of the vases is reflected in the exclusive high-status contexts and iconography, as well as the appearance of a site or ruler named on the vases.

Outside of cave or burial contexts, white stone vase fragments are known from a number of high-status plaza and cache contexts (Luke 2008: 306). Perhaps one of the most impressive cache contexts is from the centrally located Governor's Palace at Uxmal. Among the most prominent features of this elaborate building is its layout. "The transit measurements on the perpendicular form the doorway of the Governor's Palace indicate that it points not only to the principal pyramid of Nohpat but also exactly to the position on the eastern horizon where Venus would have risen at the time of its maximum southerly eight-year excursion…when the palace was erected" (Aveni 1980: 275). This transit crosses the axis of the jaguar

throne in the plaza area. Under this throne and small pyramid structure was located an impressive cache of hundreds of jades, obsidian and flint knives, finely worked shell, and six white stone vases (Ruz Lhuillier 1954: 63). One vase has a relief panel showing two dignitaries with corresponding hieroglyphic titles (Lacadena, personal communication, 2004). In sum, royalty in the central and northern Maya lowlands included white-stone vases in the most impressive of contexts.

3.4 Discussion

How does understanding the use and production of white stone vases in the Maya and Yucatan styles help our interpretation of Ulua-style marble vases found in the central and eastern Maya lowlands? First, these data convey that white stone vases are characteristic of the Late Classic über-elite assemblage that may have included a variety of different prestige items: fancy polychromes, jades, shell, pearls, and obsidian eccentrics. White stone vases were part of a ritual economy that embedded both the landscape and the built environment in a portable good. In doing so, these exotic goods were not meant merely to please or to mark royal alliances; they conveyed a far deeper understanding of how participants informed each other of the integral relationship between the created and natural spheres.

The contexts of Ulua-style marble vases from Uaxatun, San Jose, and Altun Ha are all high status, confirming the importance of these vases to the recipients. At Altun Ha one vase fragment is from a residential group just outside of the central precinct area. The midden deposit is homogenous and the entire assemblage points to an affluent household (Platform 1 of Str. E-51) (Pendergast 1990: 233, 236, 237, Fig. 91/1, 238). The other known Altun Ha Ulua marble vase (Pendergast 1982: 114–15, Fig.71e) comes from the central precinct at Altun Ha, specifically the surface of Structure B-4, The Temple of The Masonry Arts, among the most prominent temples at the site. It is the focal point of Group B and housed one of Altun Ha's rulers, his burial impressively lavish (Graham 2002). Among the finds from this temple is the largest known carved jade object from Mesoamerica: a14.9-cm high by 4.42-kg head of Kinich Ahau, the Maya sun god.

From San Jose, a number of white stone vase fragments are known from Groups C and D. The contexts indicate a Late to Terminal Classic period date. Group C is particularly impressive with the palace-type structure and associated ballcourt (Thompson 1939: 8). The white stone vase fragments from this area are most likely from Maya or Yucatan-style white stone vases (Luke 2008), attesting to the use of various different white stone vase traditions at this one site. From the floors of plaza rooms, these vases perhaps mark remains of royal residences, as is the case from Aguateca (Inomata 2001; Inomata et al. 2001), Bonampak (Ahumada and Velazquez de Leon Collins 1999), and Yaxchilan (Miller and Martin 2004; Garcia Moll 1996).

Group D at San Jose contained a fragment in the Ulua marble style: a base with the tell-tale voussure (half-moon) interlocking key border (Thompson 1939: 9).

Like the outlying residential area at Altun Ha, Group D at San Jose appears to have been an outlying area connected with the central palace. Its raised plaza and associated mounds confirm its relative status, and the Ulua marble sherd points to a community that presumably had external connections and/or participated in social networks that included access to foreign exotics.

At Uaxactun, fragments of an Ulua marble vase were also found within palace confines, and, in keeping with finds elsewhere (El Abra, Honduras; and San Jose, Belize), fragments of an alabaster bowl are associated with the same area (Kidder 1947: 36–37). Both are from the East Court (Fig. 7). On the Ulua marble cylinder is a front-facing zoomorphic head with a forehead element, perhaps a local Uluan landscape referent to the Flower Mountain (Luke n.d.), framed by two opposing profile zoomorphic heads. One handle has been preserved. Interlocking-key voussure (half-moon) and circular (perhaps mirror) motifs make up the upper and the lower geometric borders. This vase marks the final phase of Ulua marble vase production, and its place at Uaxactun is in keeping chronologically with known Terminal Classic networks linking the Ulua Valley and central Maya lowlands (Joyce 1986). In addition, the iconography suggests that this style of vase, rather than the earlier styles, was preferred for distribution from the Ulua Valley. The voussure motifs on the Altun Ha and San Jose Ulua vase fragments, as well as the feline handle fragment from Chac Balam on Ambergris Cay, point to late stages of production.

The presence of an Ulua marble vase at Uaxactun is particularly interesting, specifically a vase with a frontal image complete with a forehead motif. Uaxactun is, perhaps, most famous for its Early Classic E-Group, an architectural cosmogram (Aveni 1980; Coggins 1980). Uaxactun continued to play an important role in the social networks and political structure of the Late-Terminal Classic central lowlands. While it apparently did have close relationships with the major centers of Tikal or Calakmul, it also participated in connections linking Altun Ha, San Jose, and the Ulua Valley, which is most clearly shown in the sharing of foreign exotics. At all these sites, the concept of integrating the natural landscape, or recreating it in the built environment was not foreign. In fact, as Uaxactun's E-Group documents, attention to cosmological events has a long history in Maya architecture. The main facades, particularly those found on Structure H-Sub-3 at Uaxactun, point to Early Classic renderings of the Flower Mountain. The template created by the Uaxactun artisans influenced the Late Classic emphasis on this specific paradisal realm (Taube 2004). Ulua artisans most likely participated in this universal Mesoamerican convention of embedding mountainous realms in white stone, yet in the Ulua, on portable objects. Thus, the appearance of an Ulua marble vase with such a clear rendering of this universal image of the mountainous realm may not be mere coincidence.

While the large Maya centers embellished their temple facades with various forms of the *witz* (Schele 1998), we can't know for certain whether monumental Uluan areas followed this trend, but the limited data suggest that they did not (Stone 1941). The use of imagery found on architectural facades in the lowlands and expressed on portable goods, Ulua marble vases, suggests that knowledge of

conceptual landscapes influenced artisans in all areas of Mesoamerica. Uluan artisans sought to clarify their own practice of embedding the conceptual landscape on portable materials. Thus, the importation of these vases into the central Maya lowlands resonated on two fronts: the white stone vase tradition was clearly important to all regions and the contexts of these vases pointed to linkages with the sacred, ancestral spheres, and the iconography on Ulua marble vases confirmed a shared universal template of sacred landscapes. While the underlying theme of Montaña Santa Barbara as the main georeferencing point in the Ulua Valley as expressed on the Ulua marble vases may not have been understood at Uaxactun, it would have been recontextualized in its local context. This localized context shared the multilayered meaning of imagery and conceptual landscapes.

A linkage between these sites is clear in their material assemblages. Within the networks that made up the social fabric of the central Maya lowlands, these sites, specifically San Jose and Altun Ha, had strong connections (Pendergast 1982, 1990; Thompson 1939). Furthermore, connections between Altun Ha and western Honduras are also clear, as demonstrated by the famed quetzal vase from Copan and the hunchback jades from El Cajon (Joyce 1996). Direct links are also clear from polychromes. At Curruste, Belize-style polychromes point to ties with southern Belize (Sheptak 1987), and Black stage Ulua polychromes show shared esthetic choices with producers at Altun Ha (Joyce 1993). Thus, the exchange of Ulua marble vases to these specific sites exemplifies the mosaic of relationships apparent in this larger network.

Like the relationships between the Ulua Valley and Guanacaste, networks between the Ulua Valley and the Maya lowlands included the sharing of knowledge, particularly how to decorate specific types of objects (jades, pots, etc.). Furthermore, the physical transfer of objects such as Ulua marble vases points to direct contacts. Yet, the receivers of Ulua marble vases in the central Maya lowlands most likely identified more closely with the carved imagery than their counterparts in Guanacaste. The vases represented the celebration of a sacred Uluan landscape. Building on long traditions of crafting stone vases from white and green stone (Luke et al. 2003), the Ulua marble carvers at Travesia embedded the sacred realm of Montaña Santa Barbara in white stone. A celebration of sacred landscapes, specifically referencing a prominent mountain or cave, is in keeping with architectural traditions in the central and northern lowlands.

The tradition of carving Ulua vases from white stone, certainly in full practice by A.D. 650, corresponds to the uptick in the traditions followed in the central and northern Maya worlds, and these, too, seem to be linked into the sphere of sacred landscapes. Thus, the transfer of Ulua-style vases to the central Maya lowlands points to not only a restrictive elite network that transferred physical goods, but also a community that understood the deeper meaning behind the imagery on the Ulua vases. This is in contrast to Ulua vases circulated to Guanacaste. These communities celebrate a different type of interaction, one that reflects anthropomorphism. In this way, the lure of the exotic is multifaceted and not straightforward for the local or foreign communities participating in procurement, production, circulation, and use.

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Chapter 4
Exotic Goods, Chivay Obsidian, and Sociopolitical Change in the South-Central Andes

Nicholas Tripcevich

4.1 Introduction

Exchange of exotic goods generates interest among archaeologists because it is a theme that effectively links local phenomena with regional events, and human behavior with material evidence. This study concerns the role of exotic goods in contexts of changing sociopolitical complexity where procurement distance is frequently used to infer value, and differential access to goods is linked to status. The assumption that nonlocal goods are automatically status conferring goods connected to social competition can be problematic, as it depends upon a relationship between distance and scarcity, as well as the social and political consequences of these goods. This perspective often underestimates the importance of "ordinary" household goods both in terms of the circulation distance and the social information conveyed by such goods. Long-distance exchange in the highland Andes, described ethnohistorically (Murra 1980: 139–152), is also evident in the prehispanic distribution of sourceable materials, such as obsidian artifacts (Burger et al. 2000). Archaeological studies in the south-central Andes suggest that regional exchange expanded in quantity and frequency during and after the onset of an economy focused on agropastoralism. This study presents data from research at an obsidian source of regional importance, and examines the link between the circulation of goods like obsidian and the development of regular, seasonal exchange that included transport using llama caravan networks.

This study connects household-level long-distance exchange of ordinary goods with research into the emergence of complex societies at high altitudes in the south-central Andes. The domestication of South American camelids, the llama and the alpaca, opened a broad niche for a pastoral economy based in the high-altitude grasslands crowning the narrow Andean cordillera (Fig. 1). The highland region subsequently prospered from social and economic relations maintained with

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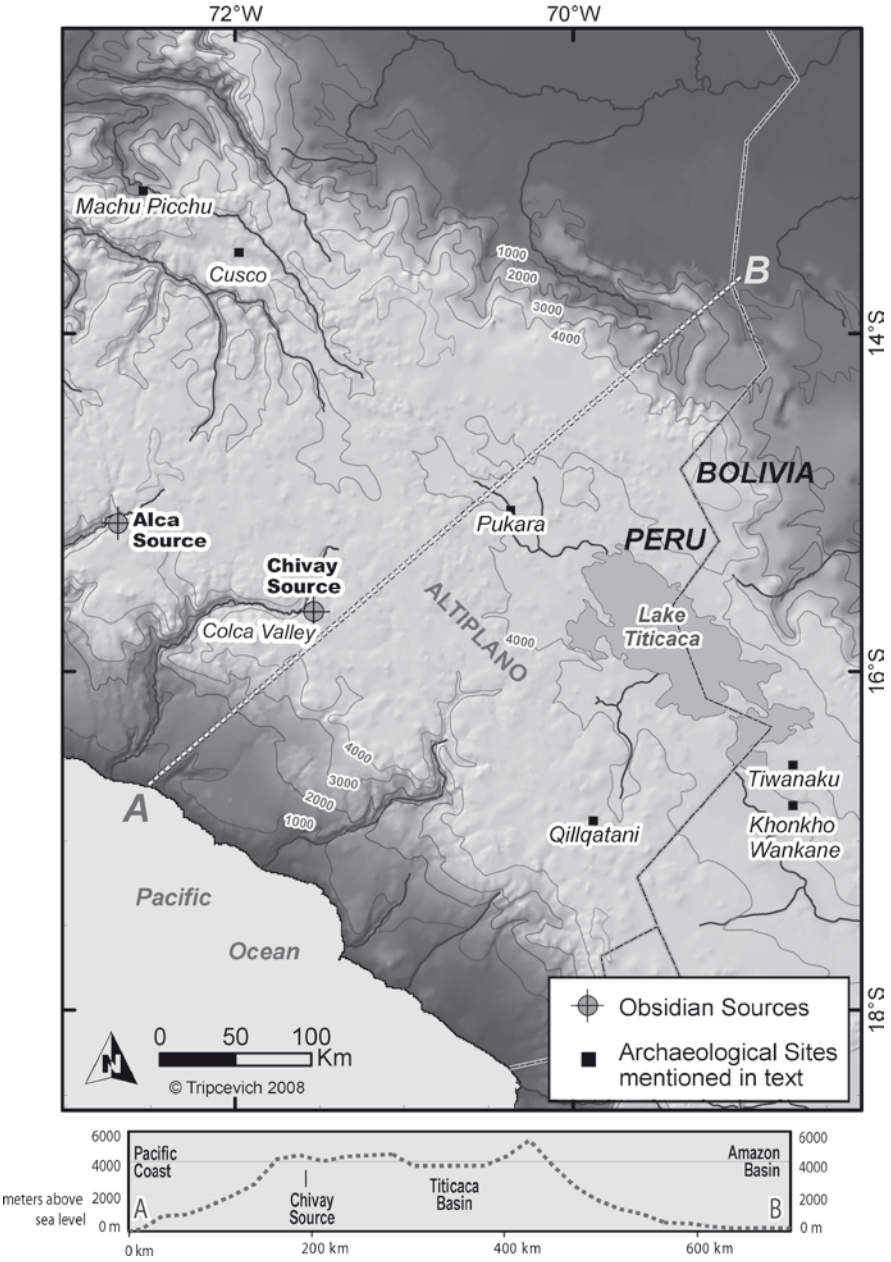

Fig. 1 (**a**). Map of the South-central Andes showing Chivay and Alca obsidian sources, the Lake Titicaca Basin, and sites mentioned in the text. (**b**). Cross section of the Andes from the Pacific Ocean to the Amazon basin illustrates the steep flanks of the Andes and the relatively level Altiplano

communities on either side of the cordillera. The development of sustained regional interaction through the regular movement of llama caravans appears linked to an increase in the circulation of goods. This dynamic would have changed through

time in terms of the costs of transport, and, it is inferred, in the social significance of specific exotic materials.

Archaeologists looking at exchange with respect to changes in sociopolitical complexity have argued that exotic goods are often linked to status, and are indicative of the long-distance trade connections and alliances of the individual or family in possession of these goods. Portable high-status goods that are carried greater distances are often categorized dichotomously against "staple products." For example, Earle differentiates wealth finance from staple finance, where wealth items are used for display and exchange, and the primary function is to represent status (Earle 1994: 427). Hayden defines items that have been carried for more than two days as "prestige technology" in contrast to "practical technology" (Hayden 1998: 44). In dual-processual theory, Blanton et al. (1996) present long-distance exchange as a principal element in "network strategies" linking elites across distance. These classifications are used in a general sense and focus on exchange as one of the strategies employed by emerging elites that contribute to explaining social evolutionary processes.

In an argument for the importance of exchange of "ordinary goods," Smith (1999) takes the position that the development and the long-term viability of trade networks in many regions were likely based on the demand for relatively commonplace items that were unavailable locally. She argues that these items often served important roles in household activities that were laden with social and functional meaning, and formed a prominent part of group identity. Applying the sociosemiotics of Gottdiener (1995), Smith argues that the consumption of particular materials can have social significance and convey information in a variety of sociopolitical contexts. Thus, the capacity for kin-based reciprocal exchange networks to distribute household items over distance, or household-level trading ventures to circulate relatively mundane products, should not be underestimated. Her thesis appears to explain, in part, the pattern observed in obsidian consumption in the south-central Andes, of which new data are presented here, of low but consistent quantities of obsidian being produced and transported throughout the region by the end of the preceramic period.

Sustained regional transport of obsidian in the south-central Andes occurred during a 3,000-year period of gradual social change, a time that includes the emergence of powerful regional centers in the Lake Titicaca Basin by approximately 200 BC. The role of political lineages and ethnic communities in Formative polities in the Lake Titicaca Basin has been the subject of recent research (Hastorf 2008; Janusek 2004; Stanish 2003). In the circumstances where exotic items were circulated widely at a household level, recognizably foreign goods have the potential for conveying ethnic or factional associations in the broader consumption area. In dichotomizing status items from commonplace goods, archaeologists may neglect valuable information conveyed in the study of common goods circulated regionally. Obsidian, in particular, eludes these distinctions because it may be considered a status good in some archaeological contexts and relatively commonplace in others. In fact, Hayden (1998: 45) allows for cultural goods that defy easy categorization between prestige and practical technologies. Obsidian as a cultural good reflects the difficulty in acquiring source material in some areas due to cultural barriers,

geological availability, inference based on obsidian artifacts found in archaeological deposits, and other factors.

As I will describe in more detail, the broad time period considered in this chapter spans dramatic changes in the economy and in sociopolitical organization in the south-central Andes. Despite the great changes that occurred, studies at a regional scale indicate that obsidian was disseminated into the region relatively consistently from the Terminal Archaic (3300 cal BC) onward. This study focuses on exchange between social units as small as household-level interaction, and thus the framework borrowed from other studies focusing on status items and commonplace is of limited utility.

4.2 Region

The regional focus of this research is the south-central Andes where the narrow Andean cordillera widens slightly at the high-altitude Lake Titicaca Basin. A cross-section of the Andes (Fig. 1b, profile) reveals the dramatic environmental contrasts that make exchange relationships particularly valuable (Sandweiss and Richardson 2008; Troll 1968). In the span of 150 km one goes from the verdant Amazon basin on the east side of the Andes through high-altitude grasslands and glaciated peaks, to the steep western slopes and the Pacific littoral. Each region offers particular resources that complement the other zones.

Archaeologists working in the south-central Andean highlands have developed a temporal sequence for the prehispanic period upon which there is general agreement (Fig. 2). The first peopling occurred sometime after 12,000 BC, with human occupation appearing first in coastal contexts and soon after in the highlands. The processes that led to full plant and animal domestication began sometime after 4,000 BC. The beginnings of sociopolitical differentiation appeared in architecture and crafts production by around 1,000 BC, the Lake Titicaca Middle Formative. These societies had growing influence in the region, and the largest of these Middle and Late Formative polities are viewed as chiefdoms. The expansive Tiwanaku polity, the first state in the highland region, existed between AD 500 and AD 1,100 and was generally contemporary with the larger, but shorter-lived, Wari state to the north that defines the Middle Horizon in central Andean archaeology. During a subsequent period of internecine conflict, fortified settlements were built on hilltops, and finally the Inka Empire emerged out of Cusco in the mid-fifteenth century to control the length of the Andes, although they would reign for less than 100 years before the Spanish arrived.

In the Lake Titicaca Basin, one notable aspect of the emergence of the Tiwanaku state is that it occurred in a steppe-like environment at nearly 4,000 masl, making it the highest-altitude in situ development for state-level society anywhere in the world. Tiwanaku had colonies in rich agricultural lands on either side of the Andes, together with vast herds of camelids and raised field agriculture in the vicinity of the Tiwanaku core area (Goldstein 2005; Janusek 2008). It appears that Tiwanaku

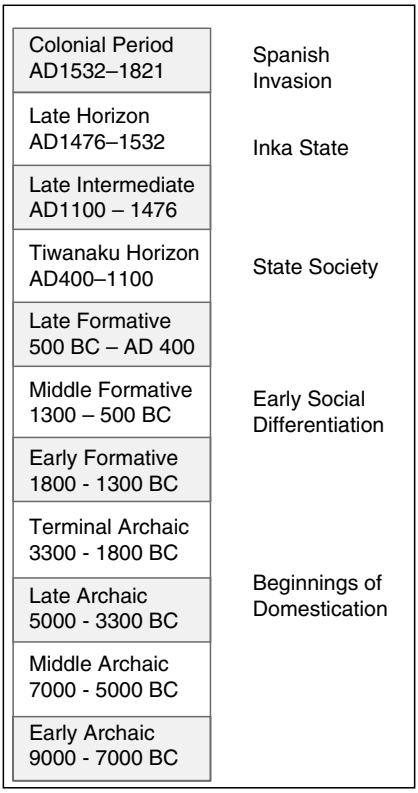

Fig. 2 Calibrated Titicaca Basin chronology used in the text with major sociopolitical developments indicated

supported an economy with craft specialists and an elaborate ritual hierarchy (Kolata 2003), but most Andeanists believe that a prehispanic market-based economy (with prices reflecting supply and demand) played a minor role, or was absent, in this part of the Andes (LaLone 1982: 300; Stanish 2003: 69). In lieu of a market-based system, the evidence suggests that the dominant mechanisms were reciprocity and redistribution, as well as a more regionally specific interaction. As in mountain regions worldwide, communities residing in different ecological zones in the Andes had long engaged in reciprocal exchange relationships based on mutualism. In a pattern that is more distinctively Andean, polities would attempt direct control rather than exchange to acquire resources from an archipelago of productive lands at different altitudes on the flanks of the Andes in a colonial strategy known as "vertical complementarity" (Murra 1972). The vertical complementary model has been the subject of much discussion in the Andes (Aldenderfer 1993; Masuda et al. 1985; Van Buren 1996), with related models proposed such as the "altiplano mode" of integration which proposes extensive networks based on trade in the

altiplano grasslands of the south-central Andes beginning in the Formative (Browman 1981, 1990). In support of Browman's "altiplano mode," regional distributions of Chivay obsidian appear to be confined to middle- and high-altitude sites throughout Andean prehistory (Burger et al. 2000; Craig et al. 2007; Frye et al. 1998; Giesso 2000; Tripcevich 2007: 183–191).

Recent studies suggest that domains within the Tiwanaku state, including those in the core area, were heterogeneous and included ethnically diverse communities (Janusek 2008). Tiwanaku prospered for centuries in a location that is productively limited due to altitude and seasonality, yet on a regional scale the place provides access to a variety of goods such as maize, from other regions through long-distance trade (Hastorf 2006). Ethnohistoric evidence shows that the mobile sector of the Andean economy provided a vital articulation between regions with productive ecological niches, such as valleys rich in complementary products (Browman 1981; Casaverde Rojas 1977; Diez de San Miguel 1964 [1567]). The organization of regional caravan exchange was variable through the prehispanic period, as evidence points to long-distance caravans being used by a wide range of social groups. Contemporary caravans are typically coordinated by individuals representing local households and the *ayllu,* or lineage group (Harris 1985; Nielsen 2001). Ethnohistoric texts describe some caravans as under the aegis of elite administration in chiefdoms and states (Murra 1965; Stanish 2003: 69).

Drawing upon the example provided by modern-day Andean caravans, archaeologists use both material evidence and inference to describe the types of goods that likely circulated in the past. While the long-distance trade of heavy staple foods by way of llama caravans would have been costly, relatively portable goods of limited geographical availability such as peppers, herbs, dried fruit, salt, and obsidian were conveyed in regular and perhaps seasonal schedules that likely interfaced with annual festivals and rituals (Browman 1990; Dillehay and Nuñez 1988; Nuñez and Dillehay 1995[1979]). Other items, including coca leaf and other ritual and medicinal herbs, may have been part of household exchange. But, it is also possible that these materials belong among another class of cultural goods that had a political dynamic different from ordinary household goods. Altiplano residents had some staple agriculture, primarily in seed-plants and tubers, yet their most abundant products, much in demand by lower-elevation peoples, were derived from their substantial herds of camelids, including meat, wool, and leather, as well as associated transport capabilities.

4.3 Regional Circulation

Nonlocal goods have been present in much of the Titicaca Basin subsistence economy throughout the prehispanic period – albeit often appearing in small quantities. These regional consumption patterns of nonlocal goods may reveal significant differences in spatial and temporal distributions. In particular, does evidence from an underlying subsistence economy persist despite larger political changes

during the Formative period preceding the emergence of Tiwanaku? Furthermore, is there reciprocal evidence of exchange occurring between regions, or were principal communities participating disproportionately in regional exchange?

Numerous regional centers dominated the Titicaca landscape in the Middle Formative, and it appears that by the Late Formative power was consolidated into a few large centers that lay on either end of Lake Titicaca along the north-west to south-east axis (Bandy 2005; Stanish 2003: 159). These prominent centers, including Pukara to the north-west and Tiwanaku and Khonkho Wankane on the south-east, would have had unfettered access to both sides of the Andes by virtue of their geographical position (Fig. 1). It follows that if the emergence of these powerful centers altered the economic landscape in their hinterlands, what do longstanding regional exchange relationships tell us about the communities that made up these larger emerging polities?

Ethnohistoric documents describe aspects of regional trade relationships during the early colonial period, presenting evidence on how emerging elites and commoners might have made use of long-distance interaction. Garci Diez's Titicaca Basin *visita*, a sixteenth century Spanish census document (Diez de San Miguel 1964 [1567]), relates how local elites in the Lake Titicaca Basin would have their constituents organize llama caravans for trading expeditions to adjacent, lower elevation regions where corn, fruits, and other products were sweeter, faster growing, and more abundant than in the Titicaca Basin.

Stanish uses such accounts to argue that administered trade benefited elites because they were able to appropriate this difference in value, and through feasting and other ceremonial functions, a portion of this wealth was redistributed to commoners (2003: 69). Diez describes how herders fulfilled their corvée labor obligations by participating in these elite-organized trading ventures, but that they also conducted private barter exchange on the side (Diez de San Miguel 1964 [1567]). Murra (1965: 201) writes, "those in Lupaca country [the south-western Titicaca Basin] 'who had their own cattle [*cargo llamas*]' (Diez de San Miguel 1964 [1567], f. 13v) went to the coast and to the lomas to barter on their own. …the maize growers on the irrigated coast were eager for the highlander's animals, their wool and meat." It appears that the herders were able to embed household economic transactions within their labor obligations by conducting barter activities on the side. Modern-day llama caravans bearing salt, animal products, and other goods from the altiplano to the adjacent lowlands (Browman 1990; Nielsen 2001) are a testament to the persistence of certain forms of exchange despite sweeping changes in the social and economic parameters that underpin these relationships.

4.4 Obsidian Exchange

As a resilient stone tool material that is visually distinct and can be geochemically linked to its geological source area, obsidian is exceptional for reconstructing the ancient movement of certain classes of artifacts (Shackley 2005). In the Andes,

there are relatively few nonperishable artifacts that circulated in the region consistently over long time periods that can provide a gauge of changes in exchange patterns. Obsidian was conveyed in the highland Andes throughout the prehispanic period despite a range of functional alternatives, such as high-quality chert. Over 90% of the obsidian in the Titicaca Basin came from a single source, called Chivay, that lay 175 km to the northwest of the Lake Titicaca (Fig. 1) above the Colca Valley in Arequipa, Peru (Burger et al. 1998; Burger et al. 2000). In the south-central Andes, obsidian was predominantly used for biface production, with projectile points representing the vast majority of obsidian artifacts. More specialized obsidian industries, such as prismatic blade production, have not been encountered in this area. Visually, Chivay obsidian is a light gray and sometimes banded glass that has a translucent appearance.

Despite the persistent diffusion of Chivay obsidian into the Titicaca Basin over a 3,000-year period, little evidence for the reciprocal movement of Titicaca Basin goods has been found in the Chivay area (Brooks et al. 1997, Burger et al. 2000: 340–342). In recent survey work, pottery sherds were found in Titicaca Basin styles known as Colla (Late Intermediate Period) and Chucuito (Late Horizon), dating to the last 400 years before the Spanish invasion (Tripcevich 2007: 259–263: 782–783).

Materials from the Titicaca Basin are recognized in the Colca area using stylistic attributes like pottery manufacture and iconographic elements rather than geochemical evidence. Geochemical and stylistic data sets, together with biological evidence, can be complementary and provide compelling multiple lines of evidence for understanding past geographical relationships (Burger et al. 2000: 268; Lazzari 2005). On the other hand, the contexts of transfer for stylistic attributes are largely cultural, so it may often be the case that stylistic distributions are not directly commensurate with geochemical evidence, and therefore such comparisons must be approached with caution. The geographical structure of single-source geological resources is a centrifugal network configuration distinctive from other phenomena because the goods are diffusing into the region (Haggett 1966; Tripcevich 2007: 67–68). These may be considered in terms of three patterns: (1) A network based on emanation from a sole source such as an obsidian source, (2) exchange of other subsistence products that will often be reciprocal and go both directions, and (3) stylistic attributes that can be conveyed through a variety of mechanisms including cultural and historical relationships.

Distinctive goods from Titicaca Basin polities dating to the Late Formative Period (400 BC–AD 500) and Tiwanaku Period (AD 500–AD 1100) have been encountered in distant lowland sites on both sides of the Andes. These goods consist principally of pottery, textiles, and Tiwanaku wooden snuff tablets (Blom et al. 1998; García Márquez and Bustamante Montoro 1990; Goldstein, 2000; Rivera 1991). Yet, interestingly, with the exception of one decorated Pukara sherd in the Colca valley (Wernke 2003: 137–138), these goods are not found at the Chivay obsidian source, the origin point of the predominant obsidian type found in Titicaca Late Formative and Tiwanaku sites. Given the presence of the Wari state immediately to the north and west, Colca residents may have operated within a frontier

situation where raw materials were exported toward the Titicaca Basin but stylistic affiliation was not well defined. During the subsequent Late Intermediate Period (AD 1100–1472), following the decline of the Tiwanaku state, strong stylistic similarities in burial practices, architecture, pottery, as well as the Aymara language, linked the upper Colca with the Titicaca Basin (Tripcevich 2007: 264).

Evidence for regional interaction is strong during later time periods and for certain groups, such as Pukara, with distinctive stylistic attributes that are recognizable throughout the larger region. In contrast, geochemical evidence is not similarly confined by the availability of diagnostic styles and therefore provides evidence of interaction across a wider range of contexts. Evidence from obsidian exchange is one of emanation from the geological source, providing evidence for exchange over a 10,000-year time period. This reveals long-term relationships between Chivay and the Titicaca Basin, including exchange that may predate both the emergence of diagnostic regional styles and the onset of social complexity in the Andean highlands.

4.5 The Chivay Obsidian Source

The area of the Chivay obsidian source and adjacent high-altitude lands (4,000–5,000 masl) were the subject of a survey and testing program in 2003 using a mobile GIS-based recording strategy (Tripcevich 2004, 2007). One of the patterns that emerged from this study is that intensified obsidian production appears to correlate spatially with pastoralist areas. The research documented a quarry area, a workshop, and a narrow unsurfaced road leading away from the quarry area. Research into deposits at the workshop suggest that intensified production at the source was occurring by around cal 1800 BC, which is substantially earlier than expected, based on known regional distribution of obsidian.

The spatial arrangement of the quarry, the workshop, and the location of the road also strongly suggest that camelids were involved in transport and that a priority was placed on their well being. That is, these facilities were positioned adjacent to the best water and grazing lands in an arid volcanic landscape largely devoid of suitable grasses. It is not surprising that people with llama caravans would have been responsible for obsidian production and circulation. After all, at 5,000 masl the high-altitude obsidian source falls clearly in the pastoralist domain, and caravans would have provided the cargo animals to help move the stone, as well as other products such as herbs, dried fruits, or maize found in the adjacent agricultural lands below.

The regional demand for obsidian is more intriguing. It seems obvious that herders would circulate obsidian; pastoralists work with hides, meat, and wool, and there is scarcely a better sharp-edged cutting tool for most tasks than obsidian. In fact, research at the pastoralist rock shelter of Qillqatani, 200 km away has found concentrations of Chivay-type obsidian contemporaneous with the early dates encountered at the Chivay source reported here, including obsidian fragments up to five cm in length that were

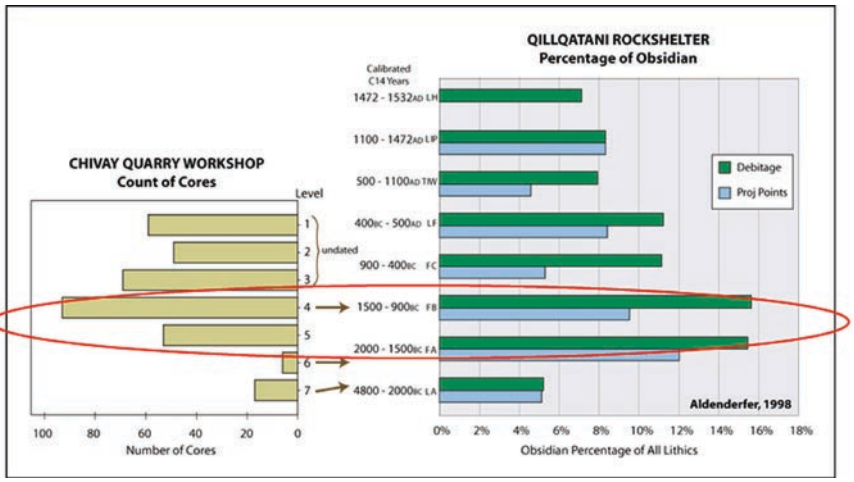

Fig. 3 Graph showing obsidian by excavation level at the Chivay source workshop and the Qillqatani rockshelter that lies 200 km to the south-east. Of the obsidian samples analyzed from Qillqatani, 29 out of 36 (81%) were from the Chivay source

being discarded during the Early Formative (Aldenderfer 2005: 20; Tripcevich 2007: 190–197). Steady quantities were available in all levels in a manner that suggests consistent supply, not merely sporadic down-the-line availability, from 3300 cal BC onward (Fig. 3). Small quantities of obsidian are found in varied archaeological contexts in the region through to the Middle Horizon, particularly in areas frequented by herders but also in ritual contexts such as burials and ceremonial mounds (Burger et al. 2000; Couture 2003; Craig and Aldenderfer in press). Subsequently, while obsidian was still largely circulated by herders, current evidence suggests that obsidian procurement declined during the subsequent Late Intermediate and Inka periods even though the herds of camelids were reportedly very large (Murra 1968: 120). The apparent functional need for obsidian by pastoralists should have increased with these large herds, but archaeological evidence for obsidian circulation was relatively limited. This suggests that other motivators, besides a need among pastoralists for sharp stone, prompted regional demand for this material.

4.6 Interpreting Obsidian Use in the Highland Andes

These patterns of obsidian transport can be interpreted beyond the functional aspects of this unusual stone in terms of two major types of obsidian circulation. The first mode of circulation relies on the political competition in the highlands during the earlier periods. The earliest intensification on the Chivay source, during the Terminal Archaic and Early Formative, follows upon early archaeological evidence for social differentiation and political competition in the highland archaeo-

logical record (Aldenderfer 1998: 243–261). The possession and maintenance of large herds of camelids, a visible marker of surplus wealth, may have served as a costly signal and an early status marker (Aldenderfer 2006). Prior to this time, obsidian was present but not common throughout the region. After approximately 3000 BC obsidian occurred in burials, along with the earliest gold pendants, lapis, and other nonlocal items (Craig 2005: 570; Craig and Aldenderfer in press). In addition, Chivay obsidian was found on Lake Titicaca's Island of the Sun, requiring boat travel (Stanish et al. 2002), and it was used in much greater proportions in the production of small, triangular projectile points diagnostic to this period (Klink and Aldenderfer 2005).

The second mode of circulation, as a marker of ethnicity or affiliation with the western margins of the Titicaca Basin, occurs later in the Formative period around AD 0. During this period obsidian distribution is much more widespread in the Titicaca Basin. Obsidian seems to have become more available in the Basin through regional interaction, arguably through direct procurement by caravans or through fewer down-the-line intermediaries. Over centuries of regular acquisition at the Chivay source, and by the Late Formative, political power became consolidated in the region (Bandy 2005; Janusek 2006; Stanish 2003). One possible explanation is that status markers from earlier millennia, such as obsidian, had become routinely available in the northern and western Titicaca Basin and these items had perhaps lost some of the exclusivity of earlier times. However, obsidian persisted in some demand at a household level in a pattern that is perhaps best compared to product like salt – one that is widely transported because the natural distribution is not ubiquitous.

Households continued the maintenance of relationships, probably through caravans, with social groups affiliated to western lands. Those in the volcanic Arequipa highlands would have had consistently greater access to the translucent obsidian from Chivay. With further archaeological research and geochemical sourcing from domestic contexts in the Titicaca Basin, these patterns in use of exotics may become more apparent.

Finally, one may make further inferences about the importance of the geological origin of stone in the Andes. The ritual significance of stone is a persistent theme in the region. The significance of the origin place of stone in the Andes is documented in the Late Horizon, where, for example, the Inka transported massive andesite blocks over 1,600 km from their capital in Cusco to lands in Ecuador (Ogburn 2004). The furthest conveyance of Chivay obsidian in the prehispanic Andes, 291 linear kilometers, was material in the form of unmodified pebbles left at the gateway to Machu Picchu (Burger et al. 2000: 347) – as if the stone alone, and not the artifacts that could be made from it, were the essence of the offering.

Similar patterns were evident in the Titicaca Basin Formative. For example, stone monoliths were transported between sites at opposite ends of Lake Titicaca (Chávez and Mohr Chavez 1975). Provenance analysis of obsidian samples from Mollo Kontu, a ceremonial mound at Tiwanaku (Couture 2003; Giesso 2003), showed that the variability in obsidian types was much greater in samples collected from mound fill than in tool use as a whole. This material seems to have been

deliberately placed fill, as if an artificial mountain was being made from stone contributed by various distinct social groups with links to the furthest reaches of Tiwanaku's domain of influence.

4.7 Conclusions

It appears that an emphasis on differentiating status goods from ordinary goods is overly influencing our interpretations of regional circulation, examined here through nonlocal stone. While a focus on status items highlights the sociopolitical role of exotic goods and the emergence of early leaders in the region, evidence of circulation of more common items provides insights about communities and geographical affiliation that may otherwise go undetected. Obsidian in the Titicaca Basin Formative was both a relatively mundane good in common use, and simultaneously a conveyor of geographical and perhaps ethnic or factional information about those who had access to obsidian from the volcanic region, directly or indirectly, to the west of the Lake Titicaca Basin. Exotic goods represented an opportunity for displaying distant linkages for ambitious political actors when the circumstances warranted, and are valuable to evolutionary models in that respect. However, the underlying persistence of these goods in a range of contexts from household middens to burials and ritual mounds – despite large scale sociopolitical changes – indicates that some exotic goods also had a more ordinary role but with historical and cultural significance. Although differentiating direct llama caravan interaction from down-the-line trade with portable goods like small obsidian artifacts is a difficult issue, the sustained presence of a material in stratified excavations over thousands of years as demonstrated at the Qillqatani rockshelter suggests a regular flow of goods and a relatively direct access to these products.

How does this contribute to our understanding of the development of political power in the Titicaca basin? From the perspective of dual-processual theory, there is little evidence of the use of exotic obsidian as part of a network strategy of differentiation; however, it could be argued that evidence from obsidian at Tiwanaku points to a corporate strategy in particular cases. For example, flakes of obsidian were contributed from six different nonlocal obsidian sources that lie to the northwest and to the south of Tiwanaku (the furthest lying 700 km away), in the construction of the ceremonial mound of Mollo Kontu (Couture 2003: 215; Giesso 2003). In the multiethnic patchwork that some have argued comprised the Tiwanaku state and perhaps the Late Formative polities that preceded it, this use of an exotic material demonstrates access to nonlocal stone that was more available to particular segments of the population participating in caravan trade on the western margins of the basin.

Perhaps this collective use of nonlocal, but available, obsidian in mound construction is the geological equivalent of demonstrating long-distance links through consumption of goods. Communities might demonstrate nonlocal knowledge through food preparation, a particular hat design, or a regional style of singing, in that

it expressed a horizontal type of affiliation between social groups. This contrasts with attributes that linked elites from different areas in an exclusionary, network model. Furthermore, as obsidian was used predominantly for projectile point production, this social signal was also perhaps an important, highly visible indicator of alliance in conflict or for protecting cargo-laden caravans. Viewed over the long term, obsidian had become an exotic that was not exclusive, but continued to have meaning beyond the functional cutting properties of sharp stone.

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Chapter 5
The Supply of Stone to the City of Rome: A Case Study of the Transport of Anician Building Stone and Millstone from the Santa Trinità Quarry (Orvieto)

Myles McCallum

5.1 Introduction

For archaeologists the study of the exotic is a difficult task, as "exotic" is a cultural construct difficult to discern in the archaeological record. Exotic items are those that in some way possess characteristics deemed unusual, rare, or unique, and thereby are often highly desirable. Complicating this, goods that might appear quite mundane to the excavator can reveal themselves to be exotic within a particular cultural context. For studies of the ancient Romans, a more thorough understanding of the exotic is revealed through examination of artifact distribution in the archaeological record combined with a close reading of various Roman and Greek texts to reveal Roman tastes and preferences. These distribution patterns can also be analyzed within their cultural context according to the precepts of formalist economic theory in an attempt to understand the degree to which Roman trade and exchange networks correspond to either a formalist or a substantivist model of economic behavior.

What follows is an attempt to put this method into practice. The focus of this study is two types of stone: the first used for the milling of grain and the second for construction. Both stones were considered to be of high quality and consequently desirable to Roman millers and builders, respectively. One of these stones was considered so desirable by Romans in the imperial capital that its distribution and use spread to sites quite distant from where it was extracted; the other was considered remarkable for its unusual properties and quality but nonetheless not sufficiently desirable to use outside the immediate source area. Consequently, a careful examination of the distribution of these two materials in the archaeological record of west central Italy suggests a number of possibilities for understanding the regional trade and exchange network of the Late Republican (second to first century BCE) and Imperial Periods (late first century BCE to fifth century CE).

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The differential distribution of these two stones reflects a rational approach by ancient Romans to the exploitation and use of natural resources based on a consideration of labor and transport costs. Still, as is often the case, strictly formalist models such as these cannot explain entirely or adequately the differential distribution of these two types of stone. Consequently, it is important to examine the cultural milieu wherein these stones were utilized during the Imperial Period.

5.2 Leucitic Lava Millstones from Santa Trinità

Leucitic lava was used in the milling of grain in Roman Italy and the western Mediterranean from the second century BCE throughout the Roman period, which comes to an end in 476 CE. This stone was quarried at Santa Trinità, near the modern Italian city of Orvieto (Figs. 1 and 2). Its exploitation was linked to technological, economic, and commercial developments in the Italian peninsula from the mid-second century BCE through the first century CE.

During the late first century BCE, there was an increase in the public milling of grain and the development of milling and baking facilities in towns throughout peninsular Italy (Curtis 2001: 343–348). Prior to this period, both the archaeological and the textual evidence suggest that much of the milling was performed within the household using small rotary hand querns (Curtis 2001: 340–345; Pliny the Elder *Natural History*, 18.107–108). Starting in the first century CE, large millhouses attached to bakeries were built at urban sites throughout central Italy, including Rome, Ostia, and Pompeii (Fig. 1); and the use of a new, larger type of rotary millstone that utilized animal power, the catillus/meta millstone, or "hourglass millstone" associated with these millhouses spread accordingly (Fig. 3) (Curtis 2001: 343–345; Mayeske 1988: 149–150; Peacock 1989: 213).

Although it is generally asserted that the hourglass millstones were originally developed in the third or fourth century BCE, there is no evidence that these millstones were produced before the first century CE (White 1963: 204–206). Similar, but smaller, rotary millstones were used in Sicily since the third century BCE at both Morgantina and Motya (Curtis 2001: 342–345; White 1963: 204–205; Williams-Thorpe 1988: 261). These Sicilian millstones, however, bear only a marginal resemblance to the rotary hourglass millstones found at Pompeii and Ostia during the Imperial Period. Consequently, throughout this study, a distinction is made between the larger, hourglass millstones and the smaller, conical Sicilian millstones.

The hourglass millstones were used in the Early and Middle Imperial Periods, by millers and bakers who ground grain and baked bread (*pistores*; singular, *pistor*; Bakker and Meijlink 1999: 4; Sirks 1991: 307–309). Consequently, millstones are found in commercial milling establishments, known as *pistrina*, structures that contained both millstones and ovens (Mayeske 1988: 149).

The remains of milling sites where hourglass millstones were employed reveal that demand for these stones was clearly substantial. The largest number of hour-

Fig. 1 General map of Western Mediterranean showing sites mentioned in text

glass millstones recovered in Italy comes from first century CE *pistrina* at Pompeii and second through fourth century CE *pistrina* at Ostia, Rome's port city on the Tyrrhenian coast (Fig. 1) (Bakker 1999b: 110–112; Mayeske 1988: 150). At Pompeii, at least 21 *pistrina* with between 2 and 5 hourglass millstones existed at the time of the town's destruction in CE 79 (Bakker and Meijlink 1999: 11; Mayeske 1988: 150). At Ostia, 10 such bakeries have been excavated with between 8 and 15 hourglass millstones per establishment (Bakker 1999b: 110–112).

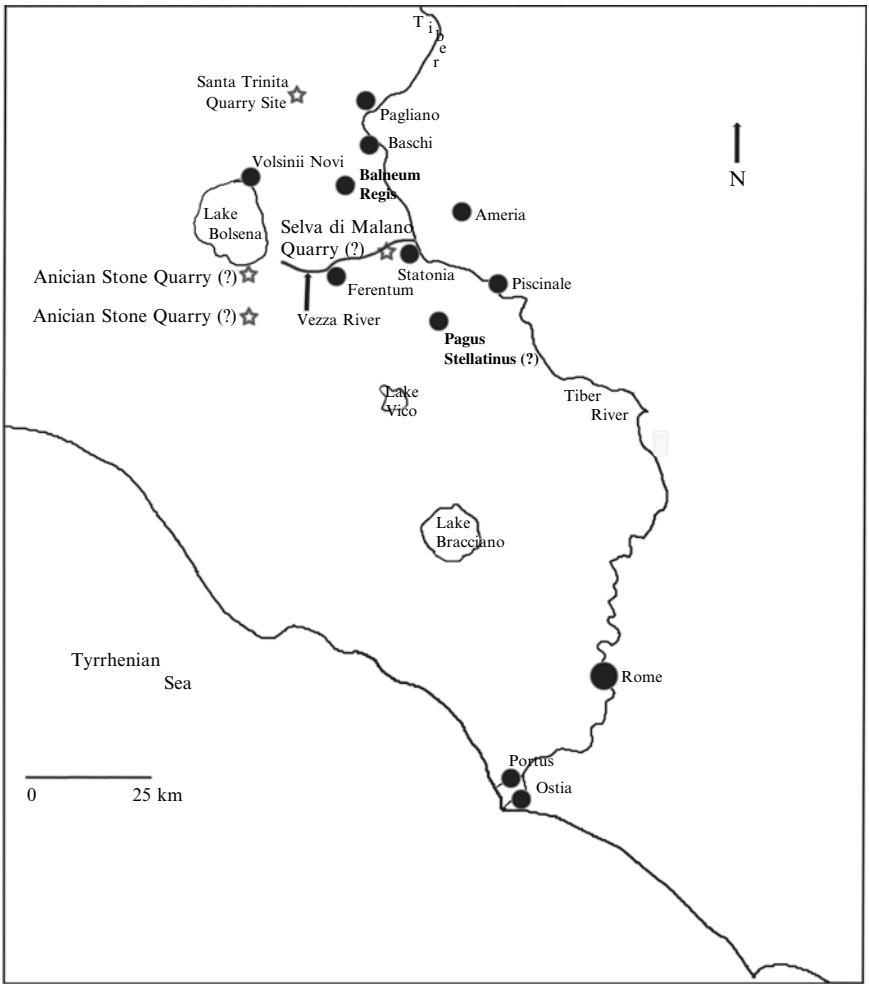

Fig. 2 Detail map of the Tiber Valley showing sites mentioned in text (adapted from McCallum 2005)

Pistrina similar to those at both Pompeii and Ostia also existed at Rome throughout the Imperial Period, according to documentary records, although no physical evidence has been discovered to date. The regionary catalogs of the fourth century CE identify between 250 and 275 such establishments within the central districts of the city (Bakker and Meijlink 1999: 13). This number probably fluctuated according to demand throughout the Imperial Period, but it is clear that thousands of millstones were in use at Rome.

The hourglass millstones used at Pompeii and Ostia have been the object of archaeometric study over the past two decades. At Pompeii, two types of rock were used in their manufacture. The smaller ones were made from a local leucite basaltic

Fig. 3 An example of an hourglass millstone at Pompeii (Bakery of Popidius Priscus, VII.2.22) made from stone quarried at Santa Trinità

trachyandesite that could have been quarried within the town's walls (Buffone et al. 2003: 210–211; Peacock 1989: 206–209). Larger millstones were made from a very rare type of vesiculated leucitic lava known as leucitic phonolyte, also referred to as leucitophyre, from a volcanic outcrop identified as Santa Trinità, a 5-km long ridge of basalt running from Canonica to Buonviaggio approximately 3.5 km to the west of Orvieto, Umbria; approximately 300 km north and west of Pompeii; and 120 km north of Rome within the Tiber drainage basin (Figs. 1 and 2); (Buffone et al. 2003: 207–210; Peacock 1980: 44–45, 1986: 45–41, 1989: 210–211). The leucitic lava outcrop here, identified as l^1 on the *Carta Geologica d'Italia* 1:25,000 (1969, foglio 130), is exposed along a natural scarp and so the stone was easily procured; no tunneling was required and no overburden had to be removed to expose the stone. Approximately 38% of the hourglass millstones at Pompeii subjected to archaeometric analysis were made from local leucite basaltic trachyandesite, while approximately 62% were made from the Santa Trinità leucitophyre (Buffone et al. 2003: 206–210). The former group of leucite basaltic trachandesite millstones will not be discussed further but the latter group, those millstones made of leucitophyre quarried at Santa Trinità, is one of the two foci of this chapter.

Hourglass leucitophyre millstones from Santa Trinità are found not only at Pompeii. They were in use at Roman imperial sites in the Tiber Valley, including Rome; along the Tyrrhenian coast of Italy, including Ostia; in Sicily; in North

Africa; and as far afield as northern Spain (Antonelli et al. 2001: 183; Buffone et al. 2003: 213–214; Peacock 1980: 50–52; Williams 1999: 410–411). While other sources of similar volcanic stone could have been exploited by Romans throughout central Italy, they obviously preferred the leucitic lava millstones from the Santa Trinità quarries near Lake Bolsena.

There can be little doubt that these millstones are the same as those mentioned by the first century CE Roman encyclopediast Pliny the Elder in his *Natural History* (36.135–136). Pliny noted rotary millstones and suggested that they were either invented or commonly found at Volsinii Novi, a Roman town approximately 10 km distant from the Santa Trinità quarry. He also observed that the millstones sometimes moved of their own accord, and while unlikely, this statement certainly marks these millstones as exotic. Pliny reported that the overall quality of Italian millstones, which must include those quarried at Santa Trinità, was superior to all others available to Roman millers. Based on the abundance of stone and its supply from Santa Trinità throughout Italy, one wonders if perhaps this assessment of the quality of Italian millstones was actually an assessment of millstones quarried at Santa Trinità.

Ownership of quarries was often linked to modes of extraction and production. Prior to 23 BCE, the quarries were owned by one or more individuals who presumably exploited them as part of agricultural estates in the territory of Volsinii Novi. Such an arrangement was not unusual. Property owners throughout west-central Italy often took care to maximize the productive potential of their estates during the late Republican Period (last quarter of the second century BCE to 23 BCE) by combining agricultural activities with the extraction of natural resources and the production of various craft goods (DeLaine 1995: 561; McCallum 2005: 194–196; Quilici 1974: 73–77).

Ownership of these quarries is less clear during the Imperial Period. They may have remained in the hands of one or more private individuals or they may have been taken over by the imperial administration at Rome. The imperial takeover may have been part of the Roman government's annual provision of state subsidized grain to a select group of Rome's residents, or *annona*, which averaged approximately 250,000 people during the Imperial Period (23 BCE until 476 CE) (Mattingly and Aldrete 2000: 146; Rickman 1996: 188–191).

The milling of grain for the *annona* was an important activity and *pistores* at Rome were a vital part of this system (Sirks 1991: 307–311). At some point during the late first or second century CE, the central government at Rome, in the person of the *princeps*, may have purchased or otherwise acquired the land on which these quarries were located. In this scenario, the importance assigned to the public provision of grain and flour at Rome resulted in the transfer of the Santa Trinità quarries from private citizens to the imperial *fisc*, and the provisioning of Rome's *pistrina* with millstones came to be a concern of the imperial administration as a demonstration of the emperor's concern for his subjects at Rome. The transfer of property within the Tiber Valley from private owners to the imperial *fiscus* or "imperial treasury" was a common practice in the first and second centuries CE (Champlin 1983: 259; McCallum 2005: 123–125; Monacchi 1999: 37). Alternatively, if the quarries

remained in private hands, then private owners may have been motivated by loyalty to the imperial regime to make leucitic lava millstones available at some discount to *pistores* at Rome and Ostia, where *annonal* grain was ground into flour.

5.3 Anician Stone

In contrast, a type of stone used in construction and quarried in the Tiber basin, less than 30 km from the millstones from Santa Trinità, indicates an opposite pattern of trade and exchange. Building stone is discussed at some length by the first century CE Roman architect Vitruvius (*On Architecture* 2.7.3.3) and Pliny the Elder 1947 (*Natural History* 36.168–169). Pliny refers to this stone as white *silex*, or "Anician stone." He notes that this stone is used for relief sculpture on monuments and is highly resistant to fire. Vitruvius states that Anician stone is resistant to frost, fire, and weathering, that it is particularly suitable for relief carving, and that monuments made from this stone are to be found at the Roman town of Ferentum. Finally, he observes that if Anician stone were found closer to Rome, then it would be used widely throughout the city in place of similar, lower-quality stone from the Saxa Rubra and Palla quarries located within 12 km of Rome.

The stone was apparently extracted at quarries referred to by both authors as *lapidicinae Anicianae,* or Anician quarries, located in the territories of the Roman town of Tarquinii (modern Tarquinia), which includes territory near or around Lake Bolsena; and the prefecture of Statonia, whose territory included land in the Tiber and Vezza River Valleys (Fig. 2) (Stanco 1994). These sites are situated within a 25-km radius of each other and approximately 75–80 km northwest of Rome. It is quite likely that these quarries were called Anician because they were located on land that once belonged to a particular Roman family, the *gens Anicia*, according to local practice (Helen 1975: 82–83; McCallum 2005: 120–123, 196; Munzi 1995: 285–287).

Based on the careful examination of architectural remains at Roman sites near where Vitruvius locates these quarries – Ferentum, Volsinii Novi, Tarquinii, and Statonia – and the study of modern quarry sites in this same region, Anician stone was likely a species of well consolidated, dense (approximately 2,500–2,700 kg m^{-3}) volcanic tuff referred to locally as peperino grigio or peperino tipico (Bianchetti et al. 1994: 85–95). This material was used extensively in the monuments of the *fora* at Ferentum and Volsinii Novi, where it was often elaborately decorated with relief carving and fluting (Fig. 4).

Geologists define peperino petrographically as an ignimbrite, and the peperino grigio present in the territories identified by Vitrivius and Pliny belongs to the Monte Cimino volcanic complex to the immediate south and east of Viterbo in the region of Lazio, roughly 65 km northwest of Rome (Peccerillo 2005: 71–85). More specifically, this tuff is a quartzolatitic ignimbrite with rhyolite and trachyte variations deposited during the upper Pliocene, bedded below melotrachitic lava of

Fig. 4 An example of an architectural element from Ferentum carved from Anician stone

the lower Pleistocene and quartzolatitic lava of the upper Pliocene (*Carta Geologica d'Italia* 1970, Folio 143, identifies this deposit as "lq^{w}"). These ignimbrites are relatively dense and demonstrate excellent resistance to weathering (Fratini et al. 1994: 134–140).

There are extensive modern peperino grigio quarries throughout the Vezza River Valley and in the foothills of the Monti Cimini (Frantini et al. 1994: 131–140), many of which lay within the territories of the Roman sites of Statonia, Tarquinii, Ferentum, and possibly also Volsinii Novi. Those outcrops exposed by the erosive action of the Vezza River would have been particularly easy to exploit during the Roman period; tunneling was not necessary nor was overburden removal.

Evidence for the precise location of quartzolatitic ignimbrite quarries during the Roman period is rather ephemeral. Wetter, in his study of the territory of the Etruscan site of Acquarossa, which would eventually be absorbed by the Roman town of Ferentum, noted evidence for Roman quarrying activity within the Selva di Malano, a small wooded area within the Vezza River Valley approximately 4 km to the west of the Tiber River and 3 km to the west of the Roman prefecture of Statonia (Wetter 1969: 132–134). The Selva di Malano borders a long, exposed outcrop of quartzolatitic ignimbrite from the Cimini complex. Unfortunately, Wetter did not present this evidence systematically, simply referring to roughed-out architectural elements in peperino grigio that were found within the Selva di Malano during the 1960's, many of which appeared to be Roman (Wetter 1969).

The organization of extraction at the Anician quarries provides clues to the distribution of Anician stone in the archaeological record of west central Italy and the degree to which it can be considered exotic. While the exploitation of these quarries

would have been compatible with the region's villa estate system and similar to the system of ownership and land exploitation posited for the Santa Trinità quarries, there is no direct archaeological or epigraphic evidence from sites in the region to support this hypothesis (Barbieri 2000: 115–125; McCallum 2005: 99–125; Monacchi 1990: 10–18; Wetter 1969: 120–128, 134–136). There is, however, evidence elsewhere in west central Italy during the first century CE for the organization of quarrying as part of the productive activity of privately owned Roman villa estates (De Rita and Giampaola 2006: 127–131; DeLaine 1995: 561; Quilici 1974: 73–77).

Since these quarries were likely part of private villa estates, the extraction and production of Anician stone was similar to the extraction and/or production of other commodities or resources commonly exploited by villa estate owners. The standard arrangement during the Late Republican and early Imperial Periods was for landowners to exploit such resources either through the agency of freedmen and slaves who managed and worked the property, or through the agency of *locatio-conductio* or leasehold contracts, whereby the owner or his/her estate manager leased productive land to others outside his/her *familia,* who organized the labor necessary to carry out the productive activities (Kehoe 1997: 137–180; Steinby 1993: 140).

Archaeological evidence for workshops associated with Anician stone remains elusive, but textual data provide evidence for the distribution of this building stone. Both Vitruvius and Pliny the Elder described a localized supply system well positioned to supply Anician stone to builders at Ferentum, Volsinii Novi, Tarquinii, and Statonia. In particular, the *officinae* identified in the immediate environs of Lake Bolsena were likely situated no more than 30 km from Tarquinii, the most distant urban center apparently serviced by these workshops. It is also possible that other workshops may have existed either immediately next to the quarry sites or on site at Tarquinii, Volsinii Novi, Ferentum, or Statonia. The Anician stone quarries and their associated workshops functioned to make this particular building material common locally, but interestingly, did not also supply the Roman market with this highly desirable building material.

5.4 Distribution of Anician Stone and Leucitic Lava Millstones

Only one of these two desirable stones was used at sites beyond the immediate vicinity of the quarries from which it was extracted. Leucitic lava millstones from the Santa Trinità quarries have been found at Rome and coastal sites throughout west central Italy, including Ostia and Pompeii, while Anician building stone is found only within 30 km of its quarry sites, despite the desirable qualities attributed to this stone by Vitruvius and Pliny the Elder.

Rotary, hourglass millstones made of leucitic lava quarried at Santa Trinità were used in *pistrina* at Pompeii in the first century CE, approximately 290 km distant from the point of extraction. Indeed, examples of these millstones have been found as far afield as the shores of North Africa, almost 900 km from the Santa Trinità

quarry. To date, millstones made of this leucitic lava have been recovered at Rome, Ostia, Pompeii, Carthage, Djemila, and throughout the Tiber Valley between Orvieto and Rome at sites including Statonia and the Roman villa at Poggio Gramignano (Figs. 1, 2 and 5) (Bell 1994: 83; McCallum 2005: 201–202; Peacock 1980: 44–46, 1986: 45–51; Williams 1999: 410–411). In short, these millstones were traded widely throughout the western Mediterranean.

Leucitic lava from Santa Trinità was exploited for millstones for centuries. The hourglass millstones appear in archaeological contexts at Pompeii starting in the first century CE and continued to be used throughout the Roman Imperial Period, until possibly the fifth century CE (Peacock 1989: 213; Williams-Thorpe 1988: 261–262). Indeed, even after the arrival of water mills at Rome, which did not use hourglass-style millstones, leucitic lava from the Santa Trinità quarry was adopted for use in water mills (Bell 1994: 82–84; Wilson 2000: 219–227).

5.5 Transport of Leucitic Lava Millstones and Anician Stone

One of the primary reasons for the widespread distribution of and/or trade in these leucitic lava millstones is the advantageous location of the Santa Trinità quarries within the Tiber drainage basin. Peacock suggests that leucitic lava millstones were transported from their point of extraction at the Santa Trinità quarry to the west of Orvieto, over the anti-Apennines, and down to the Tyrhennian coast, possibly to the Roman port at Cosa (Peacock 1980: 46), a distance of 75 km in a straight line, but much greater if one were to travel between these two points using the regional

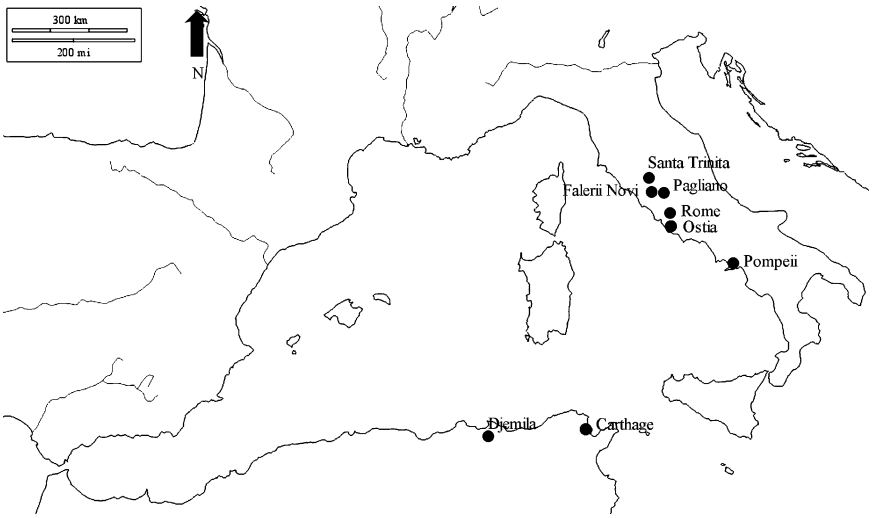

Fig. 5 General distribution of leucitic lava millstones quarried at Santa Trinità during the Roman imperial period

network of Roman roads. While Peacock proposed that they were then put aboard ships and transported to Ostia, Pompeii, and North Africa, this proposition seems untenable as it involved overland transport on secondary roads, or *diverticula*, which would have been an expensive and onerous task. Based on the distribution of these stones at Roman imperial sites in the Tiber Valley, it is more likely that they were carried overland to the confluence of the Paglia and Tiber Rivers where they were bulked for transport on barges or other river-going vessels, and then shipped to Rome or other ports and markets in between via the Tiber. From Rome, some of these stones were then channeled into the maritime transport network that supplied the city, tying together production sites and urban centers throughout western Italy and the western Mediterranean.

Moving these stones on the Tiber made economic sense as it involved minimal overland transport, which would likely have been at least 5–7 times more cost efficient (Duncan-Jones 1982: 368). The economics of millstone transportation were discussed by Cato the Elder in the second century BCE, who suggested that the transport of a single millstone perhaps 10–20 km could cost up to 40% of the purchase price, and that transport of a millstone up to 100 km could cost 70% of the purchase price (*On Agriculture*, 22.3–4). Moreover, Cato referred to smaller millstones used for grinding grapes as part of wine production, rather than large hourglass millstones used in the milling of grain (Curtis 2001: 342), and so we may presume that his figures would underestimate the cost of transporting the larger Santa Trinità hourglass millstones. Cato's figures suggest that the regular and profitable transport of hourglass millstones quarried at Santa Trinità in the manner described by Peacock may have been cost prohibitive.

An alternative idea to Peacock's is that the millstones were transported to Rome on the waters of the Tiber River, facilitated by extant transport infrastructure. Evidence for such riverine transport of leucitic lava millstones comes from excavations of the Roman river port at Pagliano, where the Paglia joins the Tiber River, occupied from the middle of the first century BCE to the fifth century CE (McCallum 2005: 268–269; Morelli 1957: 49). The site, which was excavated in the 1890s, is an important findspot for millstones and was a node within the regional transport network (McCallum 2005: 271–274). Early modern sources note the presence of a Roman-era bridge over the Paglia roughly 300 m to the north and west of the port site, and there is good evidence for a roughly east-west running Roman road parallel to the Tiber's north bank between Seripola, near modern Bomarzo, and the Roman town of Tuder that passes within 10 km of Pagliano (Morelli 1957: 5–6). Pagliano likely served as the primary river port for Volsinii Novi and the nearby Roman town of Balneum Regis, and it was well integrated into the regional road network (McCallum 2005: 268; Morelli 1957: 6–8).

Excavation uncovered an area of approximately 8,000 m^2, and it is estimated that the entire complex covered an area of up to 20,000 m^2 (Morelli 1957: 11). A small range of rooms lining the Paglia River within the port complex contained the remains of at least ten, and possibly as many as sixteen, leucitic lava millstones (Morelli 1957: 17: 23–24). The millstones were not found in situ, and may have

been moved about by the flood waters of the Tiber prior to the site being covered by a thick layer of alluvium during the post-Roman period.

While Morelli argues that the rooms wherein the millstones were found functioned as a milling center that supplied flour to the Roman market, it seems more likely that the millstones themselves were the objects of trade. Milling flour over 100 km upriver from its point of consumption, followed by a long trip downriver on a barge or boat, would have resulted in a high rate of spoilage. Based on comparison to river port facilities at Rome and elsewhere in Roman Italy and Gaul (Caretta 1986: 185–186; Colini 1986: 157–176; de Lucia Brolli 1991: 76–80; Perina 1986: 184–185), the rooms containing millstones represent some sort of warehouse facility in which the stones were bulked for transport down the Tiber. The presence of transport amphorae alongside these millstones adds weight to this assertion, and the rather conspicuous trail of millstone remains at sites lining both banks of the Tiber Valley is further testament to this. The millstones from the Santa Trinità quarries were shipped down the Tiber to sites in the Tiber Valley, including Rome, and points beyond, a practice that would keep costs down and prices low.

Transport of Anician stone was quite different. As Vitruvius noted, it was used widely throughout the Tiber Basin in the territories near where it was quarried. If we accept the identification of this stone as quartzolatitic ignimbrite from the lq^{w} deposit in the Ciminian complex, the evidence suggests that this stone was employed in the construction and decoration of Roman buildings of the Imperial Period no further than 30 km from the point of extraction. Indeed, the Roman period ignimbrite quarries posited in the Selva di Malano are approximately 3 km distant from Statonia, and the terrain between the two sites is relatively level (Fig. 2). The site of Ferentum, where Vitruvius noted this stone was used abundantly, is likewise located immediately adjacent to outcrops of this particular ignimbrite from the Cimini complex in the Vezza River Valley.

There is no evidence for the use of this particular quartzolatitic ignimbrite as a construction material beyond the immediate environs of its quarry sites in the territories of Tarquinii, Statonia, and Volsinii Novi. Despite the superior quality of Anician stone as compared to similar materials available in the environs of Rome, in particular its resistance to fire – a significant problem at Rome throughout the Imperial Period – and the recognition of this by Vitruvius, someone who was directly involved in the building industry at Rome, it was never used in construction within the imperial capital (Heiken et al. 2005: 39). This was not because the Romans did not recognize the utility of this stone; peperino grigio from other sources in west central Italy was a common building material at Rome throughout the Roman period (Bianchetti et al. 1994: 85–86; Grissom 1994: 7–8).

Based simply on geography, the differential distribution of these two high-quality stones in the archaeological record of central Italy, including the city of Rome, may appear odd. The Santa Trinità quarry is more distant from Rome than are the quarry sites of Anician stone, particularly those located in the territory of Statonia. The Tiber facilitated the distribution of leucitic lava millstones, and

there is no reason that the Tiber could not have played the same role in the distribution of Anician stone. In particular, Roman period quartzolatitic ignimbrite quarries in the territory of Statonia at Selva di Malano were much closer to the Tiber and its ports than the leucitic lava quarry at Santa Trinità (McCallum 2005: 194–196). Also, Anician stone was used primarily for architectural elements such as columns, plinths, and lintels, all of which would have been more easily and efficiently stacked on flat-bottomed river boats or barges than hourglass-shaped millstones.

5.6 Analysis of the Distribution of Leucitic Lava Millstone

Given these characteristics and circumstances, then, why were leucitic lava millstones from Santa Trinità an important commodity within the Tiber basin and at sites along the Tyrrhenian coast while Anician stone was used only locally? Based on the rather limited evidence presented, there are four possible explanations. First, it may be that the trade and exchange of these two central Italian stones can be understood entirely as the result of formalist market mechanisms. Second, it is possible that the widespread trade and exchange of leucitic lava millstones from Santa Trinità were governed or influenced by mechanisms related to the state supply of *annonal* grain to the city of Rome. Third, the preference for, and wide distribution of, leucitic lava millstones may be a result of the history of milling technology in west central Italy. Fourth, Roman tastes in flour may have made leucitic lava millstones an essential commodity at Rome, while no such factors influenced the distribution of Anician stone.

5.6.1 The Formalist Explanation

Within the precepts of formalist market economics, the mechanisms governing the movement and distribution of commodities are related to cost structure as determined by transport distance, tariff barriers, and market value. If a particular commodity's value or selling price in a distant market cannot cover the costs of transport, then it will not be transported to that market for sale, or will be done so at a loss. Since transporting materials at a loss is considered irrational, it is to be avoided unless there is some other peripheral economic benefit to justify or compensate for the loss.

In the formalist economic conceptualization of the market, the cost structure is also related to issues of transport technology and terrain, particularly with respect to large or bulky commodities such as building stone or millstone. The more unwieldy a material, the shorter the distance over which it will be transported as the

labor or energy inputs required to move such items are cost prohibitive; in preindustrial economies the existence of maritime or riverine transport ameliorates this somewhat. Similarly, the more perishable a commodity, the shorter the distance over which it will be transported.

Conversely, the greater the need or desire for a particular commodity, correlative with a commodity's rarity, the greater the distance it will be transported as the market value of such commodities may be high and can cover the cost of transportation. Such commodities have a high level of value attached to them and are frequently the focus of long-distance trade. These items are often considered to be exotic.

The distribution of leucitic lava millstones across central Italy, particularly the Tiber Valley, the Tyrrhenian coast, and to sites outside of Peninsular Italy, suggests that they were particularly desirable to Roman *pistores*, and so we may presume that their market price was relatively high with respect to other potential millstones and many categories of building stone. Bakker notes that the leucitic lava employed in hourglass millstones at Pompeii and Ostia is suitably rough to grind grain to flour and remains rough even after abrasion. In other words, it is not quickly worn smooth and rendered useless after a short period of operation (Bakker and Meijlink 1999: 5). Of course, the same is true of other, similar lavas available throughout the volcanic zones of west central Italy, and many of these were exploited as millstones during the Middle Ages (Antonelli et al. 2001: 169–172; Peacock 1986: 211; Williams-Thorpe 1988: 262–272). Presumably, however, the experience of Roman *pistores* was such that the Santa Trinità millstones were considered physically superior to other locally available options, and so their market value was correlatively high.

Their presence at sites some distance from the Santa Trinità quarries (Rome: 130 km; Ostia: 145 km; Pompeii: 390 km; Carthage: 670 km; Djemila: 870 km) suggests that the final market price covered the cost of transport, at least if the movement of these millstones was governed by formalist economic considerations. Moreover, the Santa Trinità quarries are well positioned to take advantage of the Tiber River, which would have reduced transport costs relative to overland transport.

Formalist economic theory, however, may not fully explain why the leucitic lava millstones from the Santa Trinità quarries were exchanged on market at Rome. There were other lava outcrops in the territories of both Rome and Pompeii, some only a few kilometers from these urban centers, from which suitable and similar millstones could be and were quarried during the Roman period, but the vast majority of hourglass millstones used at Rome, Ostia, and Pompeii from the first to fifth century CE came from the Santa Trinità quarries (DeLaine 1995: 556–558; Peacock 1989: 211; Williams-Thorpe 1988: 261). The precepts of formalist economic theory suggest, however, that it would have been more economical for millers active at Rome, Ostia, or Pompeii to equip their facilities with millstones quarried locally, even if the final market price for these millstones on the Roman market covered the cost of transportation. Also, as noted earlier, the geological evidence suggests that while the Santa Trinità leucitic lava makes excellent millstones, the performance

difference with other, similar lavas in west central Italy would likely have been barely perceptible to Roman *pistores*.

5.6.2 State Supply

It is also possible that the distribution of leucitic lava millstones from the Santa Trinità quarries is an example of state supply, at least with respect to the markets at Rome and Ostia where many were used in the milling of *annona* grain, although this model is highly speculative and based on no direct evidence. As noted earlier, it is possible that the Santa Trinità quarry came into the possession of the imperial *fiscus* sometime during the late first or second century CE. Based on legal sources, it is clear that starting with the emperor Trajan (r. CE 98–117) there is a more concerted effort on the part of the emperor to control and regulate the *annona* associated *pistores* (Sirks 1991: 311–322). Perhaps acquisition of the Santa Trinità quarry, clearly the most important supplier of millstones in west central Italy, was part of this imperial control and regulation.

If this was true, it is possible to reconstruct the imperial supply of these millstones to Rome. Generally, business agents of the imperial *fisc* managed imperial estates in the Tiber Basin north of Rome and were involved in the transport of commodities to market at Rome (Le Gall 1953: 261–262; McCallum 2005: 265). A single bronze plaque probably attached to the exterior of a river vessel and datable to the reign of Trajan, 98–117 CE recovered from the mud at the bottom of the Tiber likely refers to this very phenomenon (*CIL* VI.37763; Vaglieri 1910: 141, Le Gall 1953: 261). The text suggests that the products of imperial estates located at Fidenae, Saxa Rubra, and Ad Gallinas Albas, all within the Tiber Basin to the north of Rome, were transported by imperial freedmen who were former slaves of the imperial household acting as *procuratores* (business/estate managers), presumably to market at Rome (Le Gall 1953: 261–262; McCallum 2005: 264). Similar bronze plaques used to identify household and fiscal merchandise were attached to wagons and carts traveling into Rome during the fourth century CE (Palmer 1980: 218–222).

If the imperial *fisc* came to possess the quarries at Santa Trinità that produced the leucitic lava millstones used to grind the *annonal* grain into flour, then one may imagine that the provision of these millstones to *pistrina* at Rome was closely related to insuring the supply of *annonal* grain, most frequently consumed as bread. Without the constant supply of new hourglass millstones to replace those worn smooth through milling, the production of bread would be severely constrained. It is possible to imagine a scenario in which imperial estates at Santa Trinità functioned to supply these millstones to large *pistrina* at Ostia and Rome as part of the emperor's largesse, and thus at a substantial discount. The characteristics of these stones would render them more valuable so as to contravene expected formalist economic considerations.

It may also be that the development of large *pistrina* during the late first century BCE and early first century CE was closely related to, or even stimulated by, the invention of hourglass millstones made of leucitic lava from the Santa Trinità quarries. Further, the provisioning of free public grain for a segment of the population at Rome by the imperial administration may have been an incentive for the private owners of these quarries to make this stone available to the Roman market, or for the imperial administration to take possession of this land in order to insure the regular supply of leucitic lava millstones at Rome and Ostia. Once these stones reached Rome and Ostia in substantial numbers, there likely developed an export market to sites such as Pompeii and other towns on the Tyrrhenian coast of Italy, Sicily, and even North Africa. This may explain why over 60% of hourglass millstones at Pompeii in the first century CE are made of leucitic lava from Santa Trinità, even though other nearby sources of similar stone were available and had been exploited since at least the second century BCE (Cato, *On Agriculture*, 22.3–4).

5.6.3 Roman Tastes

There may, however, have been other forces not accounted for by formalist theories of economic behavior (Storey 2004: 109–110) at work in the trade and exchange of hourglass millstones from the Santa Trinità quarries. One factor may have to do with culturally defined tastes, a phenomenon that is extremely difficult to discern in the archaeological record. Romans had a well-defined palate that privileged certain foods, tastes, and food technologies. Pliny the Elder's first century CE treatment of Roman wines is quite detailed, describing which regions, grapes, and vintages were preferred by Roman residents in central Italy (*Natural History* 14.14 ff). Romans appear to have had a strong preference for both *triticum* and *siligo* over other varieties of grain (Bakker and Meijlink 1999: 6; Spurr 1986: 10–17). Roman tastes also demanded that the flour produced from these grains be treated in a very specific manner to produce a desirable product (Cato the Elder *On Agriculture*, 84–87). Romans in general, and Roman millers especially, may have felt that flour tasted best when produced using a specific millstone in a proscribed manner, and that grain might make the best flour if ground using a particular type of millstone. Perhaps leucitic lava millstones from Santa Trinità were believed to impart some desirable characteristic to the flour they produced, and so Roman millers preferred to use them as opposed to other similar volcanic stones available in west central Italy.

5.6.4 Historical Model

Another important factor in the distribution of the leucitic lava millstones from Santa Trinità was the history of the hourglass millstone, which may have been

invented near or at the Santa Trinità quarries. While it is difficult to trace the history of this type of millstone outside Ostia and Pompeii, there is some evidence that this stone was first developed in the Tiber Valley north of the city and that its use spread rapidly to other centers in west central Italy and throughout the western Mediterranean during the late republic and early empire (Peacock 1989: 212–213).

Based on the archaeological evidence, these quarries were exploited starting in the first century BCE, just before the introduction of the hourglass millstones at Pompeii and other urban centers in central Italy (Peacock 1980: 50, 1989: 50). It is most likely that hourglass millstones were quarried and produced at Santa Trinità first and that their use spread to other parts of Italy and the western Mediterranean. It seems less probable that this technology developed elsewhere and that later the Santa Trinità quarries became the primary supplier of millstones to millers throughout west central Italy, particularly at a site such as Pompeii which was hundreds of kilometers distant.

Pliny describes millstones from Santa Trinità as exotic items; most literate/educated Romans would have found a millstone that could move of its own accord an oddity. However, Santa Trinità millstones themselves were not likely an exotic material at Rome in the middle of the first century CE. Within Rome, a substantial milling complex dating to the Late Imperial Period has recently been excavated on the Janiculum Hill (Bell 1994: 73–89; Wilson 2000: 219–246). At Ostia, Rome's maritime port city, many large milling complexes, some of which served the Roman market, have been excavated and studied (Bakker 1999a). At all these sites, only Santa Trinità millstones were used. The inference is that this material was commonplace at Rome. Bread was a staple; and since most urban Romans bought their bread at milling sites, we can be certain that urban residents throughout central Italy were familiar with Santa Trinità millstones.

5.7 Analysis of the Distribution of Anician Stone

In contrast to leucitic lava from Santa Trinità, the distribution of Anician stone in west central Italy during the Roman period was markedly different and can be explained entirely by formalist economic considerations. It may be that its market price at Rome or other, similarly distant urban markets could not cover the transportation costs much beyond the quarry area, despite the stone's natural advantages to similar stones in use in imperial Rome. Similar gray tuffs were extracted on the Janiculum, at Grotta Rossa, and at Palla (DeLaine 1997: 559–561; Heiken et al. 2005: 38–46; Vitruvius 1970 *On Architecture*, 2.7.4–5). Even cost-effective shipping via the Tiber was not enough to make this ignimbrite a material used by Roman contractors.

The reason for this, according to Vitruvius, is that these quarries were too distant from the city (*On Architecture*, 2.7.4–5). Consequently, Roman builders and merchants were acting within the precepts of formalist economic theory. Both Roman

contractors and their suppliers knew that for each good or commodity there was a cost threshold beyond which it was no longer economically feasible to import. At Rome, the most commonly used building stones were extracted within a radius of approximately 15 km (DeLaine 1995: 559–561; Heiken et al. 2005: 38–46, 118); Anician stone was quarried at a location beyond this economic threshold. As Rome's immediate hinterland comprised almost entirely of tuffs, quarrying and transporting similar stone in quantity from a quarry over 130 km distant must have struck Roman contractors of the early first century CE as frivolous, even if that stone was notably superior to those locally available. As a result, no Anician ignimbrite was used in construction in imperial Rome.

5.8 Conclusions

The exploitation of the mineral resources of west central Italy during the Roman period was conditioned by a number of factors that can be identified in both the archaeological and the textual records. There are clear patterns of what may be described as economic rationalism, as defined in formalist economic theory. Nevertheless, two stones extracted from quarry sites within 30 km of each other near the Tiber River show a very different distribution pattern in the archaeological record. While the scarcity of the Anician stone in Rome and its resistance to fire and weathering might make it an exotic in one sense, it was not deemed to have properties desirable enough to contravene the formalist laws of supply and transport costs, unlike the leucitic lava millstones from Santa Trinità. The distribution pattern of Santa Trinità millstones alternatively demonstrates that cultural perceptions could make a seemingly ordinary material "exotic" enough to overcome rational economic principles.

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Chapter 6
Interaction and Exchange Across the Transition to Pastoralism, Lake Turkana, Kenya

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6.1 Introduction

Material culture offers a lens through which we can examine populations in contact. Archaeologically, trade and exchange is visible through the spatial distribution of artifacts and stylistic patterns. More specifically, chemical characterization techniques such as X-ray fluorescence (XRF), proton-induced X-ray emission/proton-induced gamma ray emission (PIXE-PIGME), laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS), and neutron activation analysis (NAA) have been used to characterize and source lithic materials and ceramics (Deutchman 1980: 128–130; Ericson 1981; Tykot 1998: 76–79; Summerhayes et al. 1998: 146–155). Through chemical characterization, it is possible to determine the geologic point of origin of materials such as obsidian, basalt, and ceramic tempers, and therefore try to reconstruct trade/exchange, population movements, and cultures in contact. Yet these methods and their results must also be placed within a larger cultural context.

Exchange facilitated the distribution of materials between people and groups (Earle 1982: 2). However, exchange also reinforced and created social ties, promoted information sharing, and established and maintained positions of status. It commanded both economic and social roles within and between prehistoric societies. Exchange was a form of resource redistribution (Torrence 1986), provided a buffer against resource fluctuations (Arnold 1993: 77; Cohen 1981: 290), introduced and circulated prestige items (Appadurai 1986; Bennyhoff and Hughes 1987: 161; Hughes 1978: 53; Munn 1986; Torrence 2005), created communication and information networks, and served as a social tie between spatially and culturally

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distant peoples (Sahlins 1972: 186). By recording patterns of the spatial distribution of archaeologically visible exchange objects, models have been developed to reconstruct prehistoric exchange networks. These models propose ways in which prehistoric people and societies interacted in the past. However, purely economic models are insufficient to fully comprehend exchange. According to Hodder, many models are "inadequate because they fail to incorporate the symbolism of the artifacts exchanged" (Hodder 1982: 199). As a result, alternative approaches that consider the social and cultural causes and effects of exchange provide additional insight into the many aspects of exchange in the past.

For populations in transition, such as the hunter-fisher-gatherers of eastern Lake Turkana, exchange networks may have been tied to pre-existing cultural connections. Between approximately 6,000–3,500 B.P. these populations were undergoing a subsistence shift from hunting-fishing-gathering to pastoralism. Two competing hypotheses exist to explain the manner by which this subsistence shift occurred: first, that hunter-fisher-gatherer populations adopted pastoralist strategies in situ, by obtaining domesticated stock and perhaps at least initially incorporating that resource into traditional foodways. Or second, that existing hunter-fisher-gatherer populations were gradually replaced by pastoralist peoples bringing domesticated stock and its associated material culture. Exchange may have offered advantages for either scenario. Specifically, if groups modified their subsistence strategies to include domesticated stock, existing exchange networks may have provided a buffer against failure. Alternatively, if new populations migrated into unknown lands, exchange networks with a prior homeland may have provided both a social link and also a source of familiar resources for those in an unfamiliar landscape. The archaeological signature for each hypothesis may be different, and obsidian artifacts provide a means for tracking these prehistoric networks. By looking at changes in obsidian trade and exchange through time in the Lake Turkana basin, we hope to provide an additional line of evidence toward understanding the transition from hunting-fishing-gathering to pastoralism.

6.2 The Geography of Eastern Lake Turkana

Lake Turkana is located in the eastern Rift Valley, northern Kenya, and stretches from about 2°30′ to 4°30′ N (Fig. 1). The lake is 260 km long and has a maximum width of 50 km (Ricketts and Anderson 1998). Most of the water comes from the Omo River to the north, which drains the Ethiopian Highlands. Because of the equatorial location of Lake Turkana, major changes in climate are related to rainfall and are evidenced through changes in lake water chemistry and diatoms (Owen 1981; Owen et al. 1982). Rainfall patterns in East Africa show remarkable spatial and interannual variability (Black et al. 2003), but are extremely relevant to both modern (Black et al. 2003; Black 2005) and ancient Holocene populations. Long-term climatic variability during the Holocene has produced lake level fluctuations up to +80 m above the modern level of ~375 masl. The introduction of pastoralism

in Lake Turkana area is thought to have occurred when the lake level stood at 55 m above the current level, approximately 4,000 years ago. Hunter-fisher-gatherer occupations predating the arrival of pastoralism are generally associated with high lake level stands up to 80 m above the modern levels. Evidence for this is found within the Galana Boi Formation.

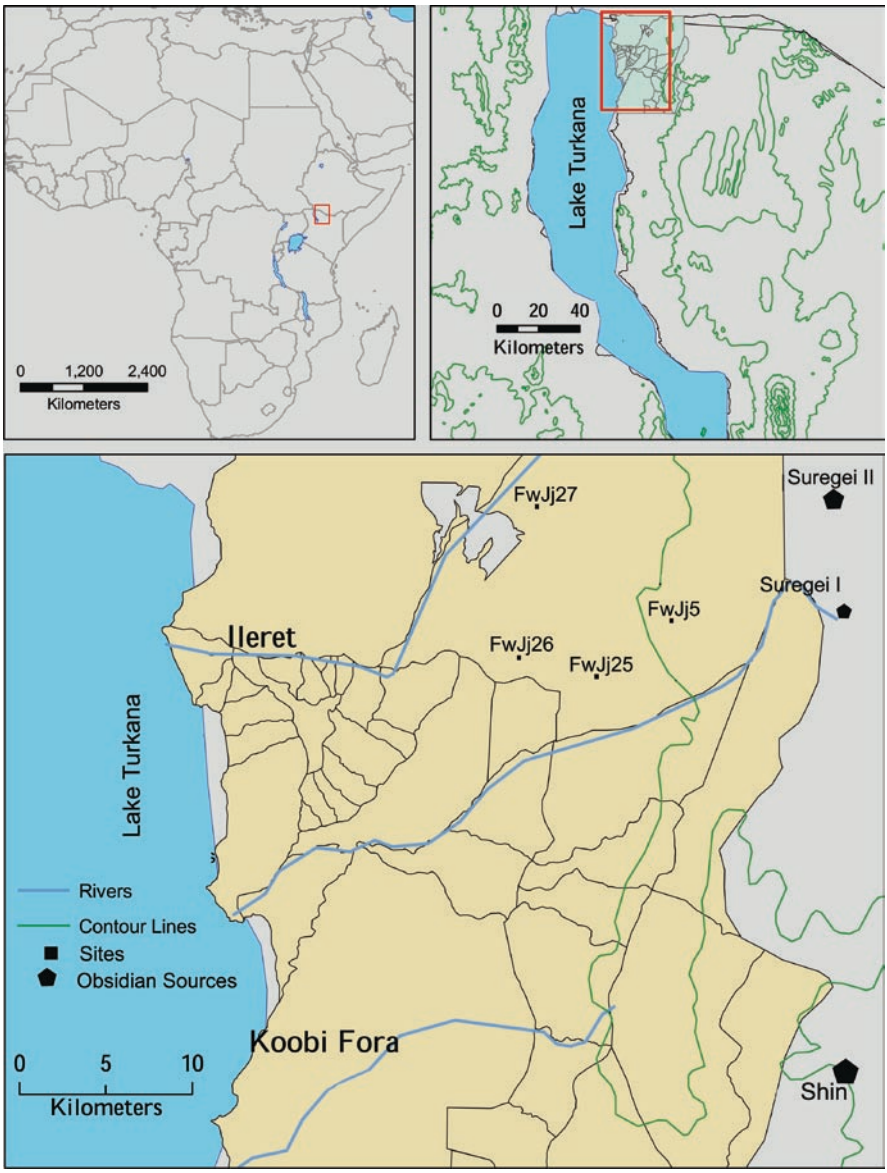

Fig. 1 Location map of project area

The Holocene Galana Boi Formation (Owen et al. 1982) unconformably overlies Plio-Pleistocene sediments (Koobi Fora Formation, ~0.6 Ma in age) and is distributed over a wide area (~2000 km^2) fringing the lake. The Galana Boi Formation is composed of lacustrine and marginal lacustrine deposits that accumulated during a series of Holocene climate-induced lake level fluctuations (Barthelme 1981, 1985; Frostick and Reid 1986; Owen and Renaut 1986). The deposits range in thickness from 50 m to10 m. Sediments occur only to 80 m above modern lake level (375 m above sea level) as this is the low point on the basin margin and the elevation of spillover to the north from Lake Turkana into the Nile drainage.

6.3 Archaeology of the Koobi Fora Region

The Lake Turkana basin has been and continues to be an active arena for sustained archaeological and paleontological investigations in the history of human evolution (Bower 1991; Braun 2006; Harris 1978; Kiura 2005; Phillipson 1985). Despite many years of continued research in Lake Turkana, the Holocene archaeological record remains poorly understood. The earliest evidence of pastoralism in East Africa comes from Galana Boi Formation deposits of Lake Turkana (Barthelme 1981; Gifford-Gonzalez et al. 1999; Phillipson 1977b, 1984; Robbins 1972). Systematic studies on the Holocene were conducted at the fishing settlement sites of Lothagam (Robbins 1974) and Lowasera (Phillipson 1977b). Studies by Barthelme (1981, 1985) investigated human subsistence, settlement patterns, economies, and adaptations at Koobi Fora during the Holocene. He concluded that three distinct subsistence strategies existed during the Holocene: hunting-gathering, fishing, and pastoralism.

Barthelme found early to middle Holocene sites (9,500 years ago) correlated with high lake levels (75–80 m above the 1976 lake level). Evidence from these sites consisted largely of aquatic and terrestrial fauna. Barthelme (1985) interpreted these pre-6,500 B.P. sites, which contained barbed bone harpoons, decorated and undecorated pottery, crescents, curved backed blades, and unstandardized scrapers, as fishing camps. Sites with barbed bone harpoons are widespread Holocene phenomena occurring throughout northern (Sudan), central (Democratic Republic of Congo), and eastern Africa (Ethiopia and northern Kenya) (Yellen 1998). However, by ~4,000 B.P., archaeological sites associated with lake level fluctuations at 55 m above present day indicate a shift to a pastoralist subsistence economy, suggested by the presence of domesticated fauna in direct association with pottery and stone bowls (Barthelme 1985; Marshall 1986; Marshall et al. 1984). These sites are situated adjacent to the lake shoreline and along margins of rivers, indicating a reliance on fresh water. In addition, there are abundant fish bones, indicating that these populations incorporated fish in their diet. Based on the absence of harpoon points, Barthelme (1985) suggested that the inhabitants of these sites may have used different methods such as nets to acquire fish.

The herding economy of Holocene East Africa focused largely on ovicaprines and cattle, each of which was domesticated prior to its arrival in East Africa.

Sheep and goats were first domesticated in west and central Asia around 10,000 years ago (Henry 1989; Marshall and Hildebrand 2002). The origin of pastoralism in Africa south of the Sahara remains a major research question. One hypothesis favors the origin of pastoralism in the Middle East and pastoralists coming over the Saudi Arabian peninsula into the horn of Africa and then moving south to populate Eastern and Southern Africa (Hanotte et al. 2002). Others have suggested that pastoralists came from North Africa with domesticated stock or alternatively Aurochs (*Bos primigenus*) that were first domesticated in North Africa (Ambrose 1984; Barthelme 1985; Clutton-Brock 1999; Marshall 1990; Phillipson 1977a; Smith 1992). Pastoralists moved south through Chad and the Sudan with the first pastoralists entering East Africa between 6,000–3,500 B.P. arriving with distinctive artifacts such as stone bowls and ceramics at around 4,500 B.P. from the increasingly arid Sudan and Nile valleys (Keding 2000; Smith 1992).

It has been suggested that archaeological sites created by hunter-gatherers can be differentiated from those created by pastoralists on the basis of faunal remains and material culture (Marshall 1990; Marshall et al. 1984; Robertshaw and Collett 1983). These studies indicate that hunter-gatherer sites yielded an abundance of small bovid remains, formally flaked lithics, small ostrich eggshell beads, and very few ceramics. In contrast, pastoralist sites comprise domestic fauna, rare formal lithics, large ostrich eggshell beads, and numerous ceramics. It should be noted, however, that the mere presence of domesticates in an assemblage is ambiguous evidence that the inhabitants were herders. Ethnographic studies have shown that hunter-gatherers incorporate the bones of domesticated animals into the material remains of their assemblages through rustling, exchange, or other behaviors (Barnard 1992; Cronk 1989).

The purpose of this study is to offer new strategies for understanding the manner by which pastoralism arrived in the Koobi Fora region, using patterns of transport and exchange of obsidian materials as a proxy for human interaction. Specifically, did hunter-fisher-gatherer populations adopt pastoralist strategies in situ, by obtaining domesticated stock and perhaps at least initially incorporating that resource into traditional foodways? Or were hunter-fisher-gatherer populations gradually replaced by pastoralist peoples who brought domesticated stock and its associated material culture? For these new pastoralists, exchange offered a means for buffering short-term resource shortages, maintaining connections with homeland and kin groups, and providing access to raw materials that were not locally available. Patterns of obsidian use are expected to differ depending on the mechanism through which pastoralism arrived.

6.4 Obsidian at Koobi Fora

Obsidian is extremely rare in the Turkana basin and geologic sources that could have been used for stone tool production contain nodules that range in size from 5 to 10 cm in diameter. These represent chill zones at the edges of pyroclastic centers on the margins of the eastern Turkana basin which are often covered by many

meters of poorly welded ash. Very few sourcing studies have been conducted on obsidian in the Lake Turkana region (Merrick and Brown 1984a; Merrick et al. 1994; Watkins 1981; Weaver 1973, 1976–77). The most comprehensive to date was a preliminary study of obsidian sources in Kenya and Tanzania conducted by Merrick and Brown (1984a) using X-ray fluorescence to identify sources of archaeological obsidian and investigate long-distance movement of raw material. Merrick and Brown's relatively small sample of archaeological obsidian specimens from sites along the northeastern shore of Lake Turkana revealed a primary reliance on Suregei obsidian, located approximately 60 km to the east of the Lake (Merrick and Brown 1984a). The other known obsidian source nearby is the Shin volcano, located to the southeast. It is expected that multiple, undocumented obsidian sources also exist to the east of Lake Turkana, and to the north in Ethiopia.

Though few comprehensive studies have been completed to date on obsidian in the Lake Turkana basin, other repositories of information were used to try to identify previously unknown sources. Specifically, we examined geological survey reports (Ministry of Environment and Natural Resources, Department of Mines and Geology, survey reports numbers 97, 104 and 105); published references (Merrick and Brown 1984a, 1984b; Merrick et al. 1994; Watkins 1981); and high-resolution satellite imagery such as Ikonos and Landsat Enhanced Thematic Mapper Plus (ETM+). Although the aforementioned geological reports did not identify sources at Lake Turkana they were nevertheless useful in identifying volcanic centers that are more siliceous (trachytes and rhyolites) that are often associated with obsidian. Efforts were also made to harness the knowledge of local informants resident in this area. In addition, some sources have been characterized from central Ethiopia (Negash et al., 2007, 2006; Negash and Shackley, 2006), but southern Ethiopia has not been systematically surveyed and is a likely source area for Turkana Basin assemblages.

Modern and archaeological specimens were analyzed using nondestructive ED-XRF and minimally destructive LA- ICP-MS analytical techniques. Coupling these methods allowed for a complete characterization of the obsidian specimens. Specifically, elements such as iron, strontium, yttrium, and zirconium were expected to be most diagnostic for obsidian characterization. These elements are the most sensitive indicators for discriminating obsidian sources as they are unique to each lava flow and can therefore be used as source identifiers with enough accuracy and sensitivity to allow confident provenance conclusions (Bugoi et al. 2004; Carter et al. 2006; Shackley 2005). Artifacts included retouched tools, large debitage, and microdebitage.

6.5 Archaeological Investigations

Archaeological excavations and surface sampling yielded obsidian from four sites: FwJj25, FwJj26, FwJj5, and FwJj27. Two localities at FwJj25 were excavated: FwJj25 and FwJj25W. Excavations were conducted under the auspices of the Koobi Fora Field School (KFFS) sponsored by Rutgers University and the National

Museums of Kenya (NMK). Finds such as pottery, fauna, lithics, ostrich eggshell beads, and features from all the sites were carefully mapped in three-dimensional (3D) coordinates, bagged, labeled, and brought back to the NMK laboratory in Nairobi. The 3D plotting enabled us to plot finds in real-world coordinates and perform sophisticated geospatial analysis. Obsidian samples discussed in this study were collected from excavations at site FwJj25 (and FwJj25W), FwJj26, FwJj5, and FwJj27. However, the largest number of obsidian artifacts was collected from FwJj25 and FwJj25W.

A total of more than 600 pieces of lithic material were recovered during excavations of these four sites. The distribution and composition of these artifacts is listed in Table 1. No correlation between raw material type and artifact type was noted, except for production explained by raw material nodule size. For example, larger flakes, fragments, and cores could only originate from larger nodules. Preliminary dating using optically stimulated luminescence (OSL) suggests that all sites date to approximately 4,000 B.P., and all appear to contain artifact assemblages that indicate pastoralist occupation.

In addition to archaeological excavation, preliminary survey was conducted of potential obsidian sources in the vicinity, though this survey is by no means complete. The survey was guided by published references (Merrick and Brown 1984a; Watkins 1981) and harnessed the knowledge of local inhabitants. Two potential sources of obsidian were identified, namely Shin and Suregei (localities I and II), which were located along the edges of the basin margin where volcanic rocks dominate. These sources are so small that at distances of 20 m away from the outcrop secondary cobbles are very infrequent. At distances of 1 km or more obsidian is completely absent from modern-day drainages. This suggests that if these samples were used by prehistoric peoples, they were procured directly from the outcrop and not obtained from secondary, fluvial, or alluvial deposits. Hand sample selections show that these sources are extremely friable and have numerous impurities suggesting they were unattractive to toolmakers concerned with producing standardized tool forms.

Laboratory analyses were first conducted on obsidian samples from FwJj25 (Fig. 2). Obsidian from FwJj25 and FwJj25W was analyzed using X-ray fluorescence to determine whether or not multiple sources of obsidian were present in the archaeological assemblage. The presence of multiple sources of obsidian could indicate trade and exchange networks across the transition to pastoralism. ED-XRF analysis of samples was conducted nondestructively at the Institute of Nuclear Science, University of Nairobi using a Cd-109 radioisotope source with a Canberra

Table 1 Lithic artifacts by site and raw material type (excavated contexts only).

Site	Basalt	Chert	Obsidian	Quartz	Other	Total
FwJj5	6	25	2	3	0	36
FwJj25	73	287	51	18	2	431
FwJj26	16	71	5	5	2	99
FwJj27	2	33	2	4	1	42

Fig. 2 Obsidian artifacts from site FwJj25

2020 multichannel analyzer across a Be window with Si/Li detector. Elements that were selected for analysis include high-field strength elements (Zn, Rb, Sr, Zr, Y, Nb) because they are easily captured with the nondestructive method and they are useful for isolating obsidian sources (e.g., Negash et al. 2007; Shackley 1998).

The analysis of these archaeological samples was completed at the Institute of Nuclear Science, University of Nairobi using ED-XRF, but further analysis of some of these samples at the Archaeological X-ray Fluorescence Laboratory at the University of California, Berkeley, suggested that the high ppm quantities of Zirconium were not adequately detected by the University of Nairobi machine. This may be the result of calibration of the ED-XRF machine for samples with lower Zirconium concentrations. Therefore, additional archaeological specimens from excavations at FwJj25 and FwJj25W, as well as six artifacts from FwJj5 (Fig. 3), collected during the summer of 2007 and 2008 were analyzed in the Berkeley laboratory. Permission was obtained from the National Museums of Kenya to bring the obsidian artifacts to the United States. Trace element analyses were performed in

Fig. 3 Obsidian artifacts from site FwJj5

the Archaeological XRF Laboratory, Department of Earth and Planetary Sciences, University of California, Berkeley, using a Spectrace/Thermo™ *QuanX* energy dispersive X-ray fluorescence spectrometer that had been calibrated to detect higher Zirconium contents.

Geochemical data suggest that there are at least three distinct obsidian sources being used by prehistoric people at the transition to pastoralism that are present in the assemblage (Figs. 4 and 5). Furthermore, the presence of several outliers may indicate additional sources which were only rarely incorporated into the toolkit of these early pastoralists. Because a comprehensive survey of obsidian sources in the region has not yet been completed, it is impossible to assign archaeological samples to source with a high degree of confidence. However, we can assess patterns of obsidian use and posit trade and exchange systems that may have operated during this time.

When trace element data from the archaeological specimens are plotted, three main groups are discernable. Two groups of the three groupings of archaeological specimens have some similarity to the known obsidian sources in the vicinity, specifically the Shin and Suregei sources. Yet as we complete additional geologic sampling, these source assignments may change. It is also feasible that some of the sources used were extrabasinal and may have derived from Ethiopian volcanoes. In addition, the sources identified through trace element analysis do not correspond to visual types, suggesting that there may be considerable variability in the visual characteristics of these unknown sources.

Interestingly, comparing obsidian data from each of the sites does suggest changing patterns of use. Specifically, when the obsidian assemblages from the two localities at FwJj25 (FwJj25 and FwJj25W) are compared, there is no statistical difference between the two. Yet, when the six obsidian specimens from FwJj5 are compared to the two localities at FwJj25, there *does* appear to be a statistical difference ($p < 0.05$) in the types of obsidian represented in the assemblages, though the sample size at FwJj5 is relatively small ($n = 6$). The result implies that the pastoralists at FwJj5 were using different exchange networks in order to obtain raw materials.

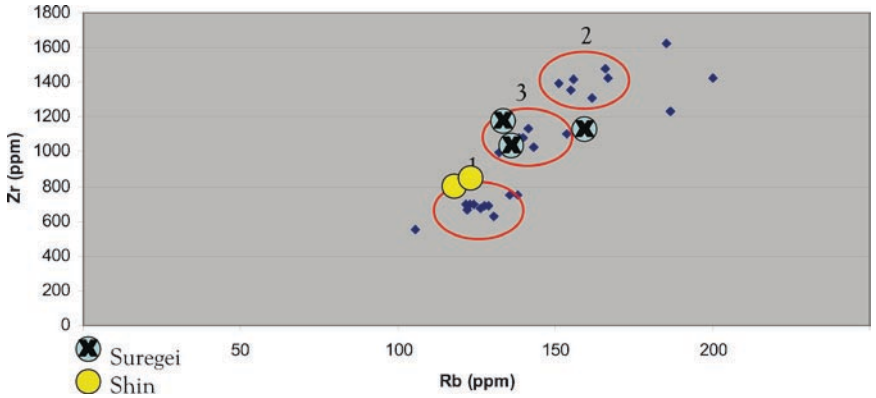

Fig. 4 Plot of Zr/Rb in parts per million for obsidian from site FwJj25. Circles illustrate probable source groupings

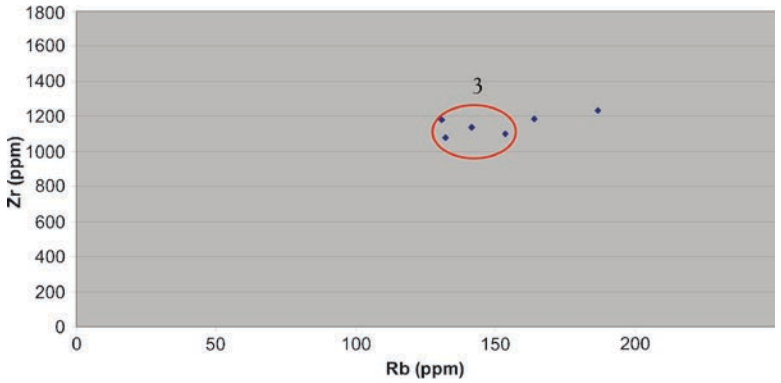

Fig. 5 Plot of Zr/Rb in parts per million for obsidian from site FwJj5. Circle illustrates probable source grouping

The larger purpose of this study was to examine the manner by which pastoralism arrived in the Koobi Fora region. We propose two hypotheses: that new people moved into the area bringing pastoralism with them, or that pastoralism arrived as an in situ shift facilitated through exchange. We expected two possible outcomes to this study: either, in the case of migration, we would see a peak in the use of northern (i.e., Ethiopian) sources of obsidian at the transition to pastoralism, or if an in situ shift occurred, there would be a continued use of familiar sources, possibly with some changes in the variability of sources through time. If the transition to pastoralism in the Koobi Fora region was the result of new populations moving in from the north, then we would expect to see a continued reliance on northern (i.e., Ethiopian) sources at least in the early years. As pastoralist groups moved into the Lake Turkana region, they likely brought not only their stone tools and technology,

but also their knowledge of obsidian source locations on the landscape. It has been demonstrated elsewhere that migrants continue to use familiar obsidian sources, despite greater distance (Silliman 2000), until they become more aware of locally available resources. The appearance of more distant obsidian sources in the archaeological assemblage may represent an influx of migrants to the Lake Turkana area. Existing data on Ethiopian sources (Negash and Shackley 2006) may be useful in identifying a northern origin for pastoralist peoples. Alternatively, in the case of an in situ shift in subsistence, differing patterns in the variety of obsidian sources may be represented in sites through time. As subsistence strategies change, so do people's movements across the landscape. Pastoralists may travel greater or lesser distances with their herds than would hunter-fisher-gatherer populations enabling changes in lithic material procurement.

6.6 Nonobsidian Archaeological Assemblage

In addition to obsidian, our findings indicate that significant amounts of nonlocal raw materials were present at our study area, indicating local and long-distance networking that operated to mitigate nutritional stress that may have been occurring in tandem with a transition to pastoralism. The associated lithic assemblage is dominated by typical late stone age (LSA) tool types including thumb nail scrapers, end scrapers, and *outils ecailles* (core reduced pieces). The assemblage is also characterized by low frequency of backed microliths.

FwJj25 and FwJj26 reflect high-intensity occupation including evidence of on-site manufacture of ostrich eggshell beads. Ostrich eggshell beads at various stages of production were present at both sites, comprising 18% of the total assemblage, suggesting that production of ostrich eggshell beads took place at these sites. Such evidence for sedentism coincided with shifting climatic conditions and biotic reorganizations that called for adaptations in subsistence.

The sediments at both FwJj25 and FwJj26 consist of dark brown coarse sands that were poorly sorted, and angular gravel. All levels at both sites contained pottery of the pastoral savannah tradition, mainly Ileret ware ceramics, characterized by comb stamped herringbone motifs, and sherds of the Nderit ware ceramic tradition that were characterized by impressed decorations on an inturned milled rim (Barthelme 1985; Wandibba 1980). As a result of similarities in the artifact assemblage, it appears that both FwJj25 and FwJj26 represent roughly contemporaneous sites at the transition to pastoralism. The faunal assemblage was very fragmentary and not identifiable to taxon. However, at FwJj26 a significant number of the fauna were characterized by midshaft fragments, some of which had surface modifications resembling tooth bites or gnaw marks.

FwJj26 had low densities of lithic artifacts compared to FwJj25, and only one obsidian specimen was recovered, making conclusions about obsidian use difficult. This lack of lithic material could be a result of low-intensity occupation mediated by climatic changes. Low artifact and faunal densities and lack of

sufficient samples that can be reliably dated make it difficult for us to formulate sound claims about the cultural affinities of the population at FwJ26. However the ceramic traditions indicate that the inhabitants of FwJj26 were contemporaries with those at FwJj25.

6.7 Discussion

Long-distance exchange of obsidian raw material was an adaptive mechanism that was instrumental in establishing social networks across a vast landscape. Social networks of some kind were needed to access distant raw materials such as obsidian and other goods. For example, two of the excavated sites, FwJj25 and FwJj26, contained 24 modified and unmodified ostrich eggshell beads. Whereas ostrich eggshell beads can be viewed as elements of esthetic appeal, they also represent cultural institutions that are socially embedded for risk minimization. Gift exchanges were acts of social solidarity that served to strengthen social networks so as to enhance survival in marginal environments. Fostering of long-distance exchange in different directions characterizes hunter-gatherers societies as they are subject to unstable resource base. Ethnographic studies document similar kinds of exchange among modern-day hunter-gatherers (Fig. 6). This kind of social reciprocity may have permitted new migrant pastoralist populations to peacefully coexist with indigenous populations.

What our obsidian study means for the understanding of exchange across the transition to pastoralism is that early pastoralists are exploiting resources relatively close to home, though further distant sources may not yet be identified. This may indicate a familiarity with the landscape and with local exchange networks. Therefore it may either include an assimilation of local people or local knowledge by incoming pastoralists, or it could mean that local populations are merely adopting pastoralism as a new subsistence strategy.

Obsidian was a unique material for exchange. It is interesting that chalcedony, cherts, and quartz are locally available in river gravels, but that at some sites such as Dongodian, obsidian was the major raw material source that was used. It's not that hunter-gatherer and pastoralist people weren't aware of these other materials, as they too are part of the assemblage, but trading for obsidian or traveling great distances to get it may have been important. Possibly this was for the maintenance of trading ties for other reasons, such as the maintenance of kin networks as is done by modern populations.

Modern pastoralist populations in the region today use local resources but also include exchange with kin groups to the north along the Omo River. Distances as we think of them today may have to be re-evaluated and the exchange networks of modern pastoralists might provide good models. Furthermore, the use of animals, though for subsistence, is also part of a larger prestige system for the purchase of wives. As a part of this, obsidian is part of a cultural context that includes the circulation of people and animals across a large geographic area.

Fig. 6 Modern Dassanech pastoralists who live in the vicinity of the project area

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Part III
Historic Exchange

Chapter 7
"Beholden to Foreign Countries": Trade and Clothing in Portsmouth, New Hampshire

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7.1 Introduction

Clothing is a commodity like any other. It is an object that is produced in numerous levels of quality and expense, with associated attributes of style, fashion, and meanings traded and exchanged through local and long-distance networks. Eighteenth-century New Englanders, like people everywhere, communicated ideas about themselves as individuals and as members of various groups through the clothing they wore and the physical appearances they created (White 2005, 2008, n.d.). The objects they used to construct these appearances were imported from England, almost exclusively, through trans-Atlantic trade in the eighteenth century and into the nineteenth century. In the pages that follow I explore the close trading practices between New England and England in the eighteenth century in particular, as it was embedded in the trade in clothing and personal adornment suggested by archaeological evidence from Portsmouth, New Hampshire.

Two key characteristics of clothing make it difficult to study archaeologically. First, it is simply not something that was thrown away regularly, as garments were remade, reworn, and refitted for primary and secondary wearers, and worn clothing was briskly traded in used clothing markets where people of lesser means could purchase it (Styles 2007). Second, textiles are extremely fragile and degrade quickly in buried contexts, as do other components of personal adornment. Archaeologists, then, are left with two sorts of clothing items that persist in the archaeological record. The first group comprises things that were broken or lost easily, such as buttons, buckles, and fragments of fragile jewelry. The second group consists of remnants of clothing that are preserved in very unusual preservation environments (extremely arid or anaerobic conditions) or are some what stable in the ground, such as metal artifacts in particular.

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In this chapter, I focus on the role of trade and exchange of clothing and personal adornment in eighteenth-century America. This chapter examines the bond between America and its primary trade partner, England, and the way their relationship affected the supply and consumption of clothing. Portsmouth's residents relied heavily on British material goods in almost every aspect of their lives. Although there was local production of some goods (discussed below), the material world for most of the town's inhabitants largely comprised goods shipped from the mother country of England. Given this reliance on foreign objects, the experience of Portsmouth residents around the American Revolution has interesting potential for examining the significance of trade and what were desirable commodities in the British colonies before and after their transition to independence.

Clothing is a particularly powerful lens through which to view the consumption and desirability of foreign goods. Clothing became a political flashpoint during the American Revolution in the form of the homespun movement. As a nationalistic movement, it should leave an archaeological signature signaled by an abandonment of English goods and an adoption of locally made materials. By tracking the kinds of clothing and accessories worn by men and women, can we see a shift in clothing practices that reflects a new national identity? Do the kinds of artifacts preserved from the period of the American Revolution differ significantly from those of the earlier period? Does the artifactual evidence of clothing practices shift in the early nineteenth century, corresponding with the beginnings of a new national identity?

One of the pivotal moments in the trade relationship between England and America occurred in the transition from colony to nation in the late eighteenth century. As is the case in most colonial contexts, the relationship between England and her colonies was built on trade. Goods and profit drove the settlement of the Americas as small groups of people set out to find resources desired by the British. As settlements were established and supplies flowed regularly between the mother country and the colonies, populations expanded and the outposts became towns and the towns became cities. Such was the case in New England; Portsmouth, New Hampshire, offers an excellent locale from which to see this process.

7.2 Portsmouth, New Hampshire: A City Built on Trade

Portsmouth is a small New England city located near the mouth of the Piscataqua River, two miles from the Atlantic Ocean, on the short span of coastal New Hampshire. The Native American population that inhabited the Piscataqua region was reduced by an estimated 90% by a smallpox epidemic that struck between 1616–1619, just before European settlement. After the epidemic, the surviving people gathered in the Dover, New Hampshire, area where they were known as the Cocheco Indians (Goodby 1999).

The area that is now Portsmouth was appealing to early European settlers not only because of its defensible position at the mouth of a tidal inlet, but also because its natural features could be exploited for profit. It was adjacent to marshland that

could be hayed, near upland that could be cultivated, and had good proximity to timber, wildlife, and marine resources (Pendery 1978: 24). Noted initially by Martin Pring in 1603 (May 1926: 35), the area was not permanently settled by Europeans until the 1630s. Representatives of John Mason's and Sir Fernando Gorges's Laconia Company, a business enterprise organized to gather fish, furs, and lumber from northern New England, chose this area for their new settlement (Candee 1976: 78; Lord 1976: 25).

When John Mason died in 1635, the Laconia Company dissolved and the Massachusetts Bay Colony assumed jurisdiction over the settlement in Portsmouth (Candee 1976: 78, 79; Lord 1976: 25, 54). The new Puritan settlers were in conflict with Mason's descendants over land rights in the ensuing decades, delaying development of the town until the second half of the seventeenth century when the Puritan settlers' land claims succeeded (see Lord 1976: 120–157 for a detailed discussion of this time period). The land that would become Portsmouth was granted to two early leaders: Richard Cutt and John Cutt (Candee 1976: 98; Lord 1976).

As the initial grants were subdivided and sold by the Cutts between 1659 and 1675, the population of Portsmouth grew steadily (Candee 1976: 98). In 1680, Portsmouth's population reached an estimated 864 (Lord 1976: 283), and by the eighteenth century, the town became a small city with laid out streets, commercial centers, and a bustling shipping center based on the wharves and docks along the shoreline.

Portsmouth's location at the mouth of the Piscataqua River was largely responsible for its burgeoning eighteenth-century prosperity, with trade being the mechanism of success. Portsmouth was easily accessible to ocean vessels that traded imports from Europe into the New World and exports to England and the West Indies. Its placement at the mouth of the Piscataqua also allowed for secondary transportation of goods to and from the interior to Portsmouth (Candee 1992: 1).

Lumbering and fishing were the main sources of income for Portsmouth's merchants (see Clark 1970: 98–101 for a full discussion of the lumber industry). Portsmouth sent boards, staves, shingles, and fish to the West Indies and sometimes received sugar, molasses, cotton, wool, or rum in return; cash or credit was more often sent to England to pay for English cargoes brought to Portsmouth. Portsmouth merchants likewise sent fish to Spain and Portugal, sometimes in return for salt and wine, but principally for cash or credit for English cargoes (Clark 1970: 98). The economy also relied on coastal trade to Boston and other eastern seaboard towns, as well as on the shipbuilding trade. Portsmouth was the largest ship supplier in New England, with the exception of Boston (Clark 1970: 98).

Ships arrived in Portsmouth with cargoes that merchants advertised in the local newspaper. The *New Hampshire Gazette* was in place by 1756; several other newspapers followed in the late eighteenth century. Goods were either sold from the merchants' warehouses or to Portsmouth shopkeepers, who then advertised the goods once more. The Portsmouth shops supplied not only the town residents, but also residents of New Hampshire's interior who traveled to town to purchase manufactured goods. Stores rarely specialized in particular types of goods; clothing,

hardware, foodstuffs, and wine were all listed in the same advertisements, and account books from Portsmouth contained entries for all manner of goods.

During the last portion of the eighteenth century, the resources on which Portsmouth residents had relied began to deplete, and people attempted to turn attention toward developing new lines of revenue. The port was closed during the Revolutionary War, but privateering ensured Portsmouth's economic stability (Heffernan and Steckner 1986: 69). When the port reopened in 1783, the British West Indies, the destination for most of Portsmouth's exports, remained closed to Portsmouth ships, making it difficult for the merchants to reinitiate their trade. The 1785 tariff act taxed goods brought to American ports in foreign vessels, which further hurt Portsmouth. The imbalance in trade brought an economic depression to Portsmouth (Ingersoll 1971).

War in Europe in 1789 briefly reinvigorated demand for American shipping. The new activity on Portsmouth wharves galvanized Portsmouth's economy once again (Ingersoll 1971), and between 1790 and 1810 the population of Portsmouth increased by 50%. In 1800, Portsmouth had a population of 5,339 (1800 Federal Census Records).

Despite closing out the eighteenth century in an economic boom, the early nineteenth century was unkind to Portsmouth's economy. The 1807 Jefferson Embargo that attempted to cut off trade with the British and French in order to stimulate self-sufficiency in the new nation had devastating effects on the Portsmouth economy. Overseas trade to and from Portsmouth virtually disappeared as a result of the embargo. Other seaports overshadowed the city. And perhaps most significantly the goods upon which Portsmouth merchants had made their fortune – fish, masts, and other agrarian products – were exhausted by the first part of the nineteenth century (Candee 1992; Lord 1976). The city built on trade lacked key components of successful trade relationships: it had neither goods to sell nor cash to purchase the goods of others.

7.3 Portsmouth's Social Scene

Foreign trade not only influenced the size and strength of the growth of Portsmouth, it shaped the social dynamics at work in the city on multiple scales. The early division of Portsmouth land set up several families for future prosperity. For example, the Cutts and their descendants were able to parlay their landownership into political and economic power (Lord 1976: 312). These families were also merchants who amassed great wealth through the vibrant shipping industry.

Between 1700 and 1740 Portsmouth's population multiplied from fewer than 1,000 people to about 4,500 residents (Clark 1970: 97). This population expansion was created through immigration, and the regular transportation of goods from England to New Hampshire meant that people could move easily from western England to Portsmouth. The commercial success stemmed from new settlement in the interior of New Hampshire, which supplied produce to the town, timber, and

flax for export, and expanded the market for European goods imported through Portsmouth (Clark 1970: 97).

The booming economy of Portsmouth in the eighteenth century created a demand for all kinds of craftspeople affiliated with maritime trade, such as sailmakers, ropemakers, blockmakers, blacksmiths, shipwrights, and carpenters (Clark 1970: 104). Joiners and builders constructed houses for the wealthy merchant and middle classes (Garvin 1983). The resident elites, in turn, demanded and procured luxury goods that were both imported and locally produced. In the eighteenth century most of Portsmouth's residents were employed in crafts and services to the town's elite. The vibrancy of this secondary level of economic success hinged on the success of the international shipping trade and the revenues it produced. Craftspeople (goldsmiths, arms makers, staymakers, wigmakers, etc.) set up retail stores to appeal to Portsmouth's elite. Numerous silversmiths worked in Portsmouth, including three individuals in a row of adjoining shops (Parsons 1983). John Gaines and George Gaines produced furniture, along with a host of other cabinetmakers (Jobe 1993). Charles Treadwell was a hairdresser and his wife, Mary Treadwell, sold groceries, dry goods, hardware, and sundries from a shop in their house in the middle of Portsmouth (Clark 1970: 105). The wealth brought in through the shipping trade atomized into the city, creating business opportunities and prosperity directly and indirectly for its residents.

Of course, the merchant and elite classes developed alongside groups of lower socioeconomic status, composed of working people, indentured servants, and enslaved peoples. Between 1711 and 1716, Portsmouth built a public almshouse in which the poor were boarded, and the town selectmen arranged for and oversaw their employment (Brewster cited in Clark 1970: 105). Indentured servants were noted in the wills and inventories of Portsmouth residents (Lord 1976: 307). Estate inventories and wills show an increasing population of enslaved peoples, growing from 14 in 1701 to 150 in 1760 (Portsmouth Athenaeum 1727; Bridenbaugh 1950: 109–112). In 1767 African-American slaves comprised 4% of Portsmouth's population (Pierson 1988: 15). The disparity in income was certainly manifested on a material level in both portable and immovable property. Dress was one way that the differences in rank were apparent on a daily basis.

The urban layout of the city required that people crossed paths regularly regardless of gender, class, ethnic, religious, or political divisions. There was mixed use on the lots on which the residential structures were constructed. In Portsmouth, as in many eighteenth century towns, merchants had storehouses on the same property where they lived. Craftspeople had shops within the walls of their homes. Furthermore, although the organization of the neighborhoods reflected class demarcations, the houses of elites and nonelites were not very far from one another, separated by a few blocks at most.

The layout of the city, then, had important ramifications for the significance of clothing. The Portsmouth elite have been described as having a concern for status, family wealth, and power to a degree unmet by any other settlement north of Virginia (Clark 1970: 104). Although this assertion probably fails to credit the concern that other settlements had for status (cf. Goodwin 1999; Heyrman 1984),

there are many examples of fine Portsmouth architecture, furniture, and material culture to illustrate this claim.

The public arena was one in which people marked themselves both as individuals and as part of larger groups constructed along gender, class, ethnic, and religious lines of identity. Each time a person donned their clothing and went out of doors, their neighbors and other townspeople would see the signs of group affiliation and individuality that were manifest in clothing (Barthes 1983; Craik 1994; Crane 2000; Entwistle 2000; Lurie 1981; McCracken 1988; Rubinstein 1995). Assembling for religious gatherings was a formal environment in which residents could mingle together on regular occasions. There were also private social gatherings that allowed people to wear their finest clothes. Beyond these affairs, the meeting of community members occurred on an informal basis, on the streets, in the shops, and in the taverns (Garvin and Garvin 1988). Despite the material evidence of social differentiation in architecture and luxury possessions, Portsmouth elites did not have much occasion to gather separately from their nonelite brethren. The main opportunity for display of one's appearance would be in daily activities, and the power and meanings carried in visual appearance, then, took on great significance.

7.4 Before and After the War: Clothing in Portsmouth

I have detailed elsewhere the sorts of personal adornment that were used on a household level by Portsmouth's residents to express individual identity and group affiliation along gender, class, ethnicity, and race lines (White 2004, 2008). The close study of personal adornment at a household level reveals the extent to which Portsmouth's residents used clothing as a marker of status in conjunction with other prestige items. In the early to mid-eighteenth century, clothing items were imported almost entirely from England as were most of the desirable goods consumed in the city.

During the years preceding and following the Revolutionary War, Americans were encouraged to use locally manufactured goods in order to reduce the colonies' reliance on imported commodities. The pressure to abstain from imports, to avoid items that were elemental to the daily lives of the colonists, came in the form of legal strictures as well as popular movements, such as the homespun movement in which people were urged to wear clothes made from cloth woven at home. The degree to which the archaeological record reflects this practice in the late eighteenth century and the extent to which the allure of European trade items gave way to nationalism and patriotic ideology is reflected in the artifactual evidence of personal adornment.

A study of personal adornment recovered from seven sites in Portsmouth, New Hampshire, provides the artifactual evidence for this study. Nearly 200 personal adornment artifacts consisting of clothing fasteners, jewelry, hair accessories, and miscellaneous accessories were identified in the course of excavations that took place over the last 20 years. These excavations were undertaken by the archaeology

division of Strawbery Banke Museum. Three sites are on the grounds of Strawbery Banke Museum, and four are located elsewhere in Portsmouth. Among others, the sites consist of the Sherburne site, the Cotton House, the Richard Hart site, the Hart-Shortridge site, the Rider-Wood site, the Richard Shortridge site, and the Shapiro site.

7.4.1 Before the War: Clothing

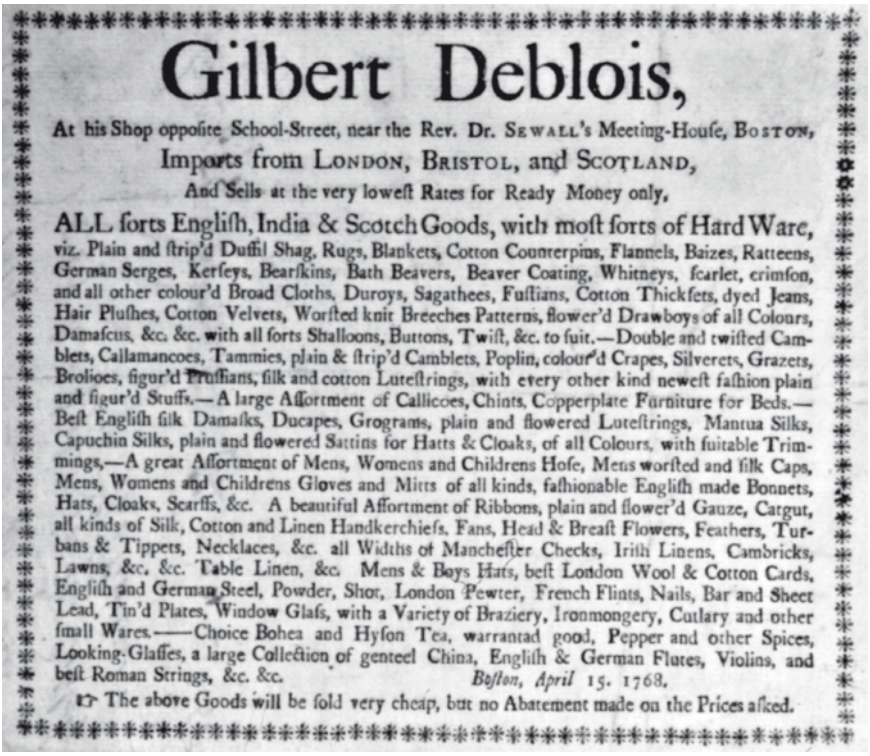
During the second half of the eighteenth century, American men wore a basic costume consisting of a coat, waistcoat, and breeches, which is worn in an altered form to this day. This basic costume for males was introduced by Charles II in 1666 and essentially endured until the late eighteenth century when a more dramatic shift in styles occurred (DeMarly 1990: 52). In the period preceding the Revolution, men's coats buttoned up the front, at the vents in the back, and at the pockets and sleeves. The coat fell to mid thigh and fit the body closely (Cunnington and Cunnington 1972: 183). Waistcoats were made of complementary or contrasting fabric and were adorned with smaller, though complementary buttons. In the last half of the eighteenth century, the waistcoat was hip-length and buttoned to below the waist, and in the 1780s and 1790s it was cut at the waist. The breeches were narrow and tight-fitting and fastened at the knee with buttons and buckles.

Women's clothing in the second half of the eighteenth century consisted of a gown and a petticoat. The gown comprised two garments: a bodice and a skirt. The skirt was split in the front to reveal the petticoat. Variation in women's dress through this time consisted of differences in textiles, trims, and accessories, as well as in the cut of the garments. Hair was also a focal point of fashion.

Clothes worn by the elite were made of expensive textiles in bright vibrant colors, were tailored to fit closely on the body, and were embellished with embroidery, ruffles, and lace. In contrast, working class garb was much looser and simpler and more functional in design (Copeland 1977). The textiles and embellishments of clothing were the arena in which stylistic shifts were readily manifest.

7.4.2 Before the War: Archaeological Evidence

Before the Revolution, residents of the colonies, and of Portsmouth in particular, followed fashion trends established in England. They did this by purchasing textiles and dress accessories that were imported to the colonies. These goods were advertised in local newspapers, and their origins in London, Liverpool, and other British sources were emphasized in the advertisements. For example, Gilbert Deblois advertised a variety of goods, "imports from London, Bristol, and Scotland" (Fig. 1). The goods included textiles, horn, mohair and metal buttons, combs, fans, wigs, and shoe buckles, among a long list of other wares.



Gilbert Deblois,

At his Shop oppoſite School-Street, near the Rev. Dr. SEWALL's Meeting-Houſe, BOSTON,
Imports from LONDON, BRISTOL, and SCOTLAND,
And Sells at the very loweſt Rates for Ready Money only,

ALL ſorts Engliſh, India & Scotch Goods, with moſt ſorts of Hard Ware, viz. Plain and ſtrip'd Duffil Shag, Rugs, Blankets, Cotton Counterpins, Flannels, Baizes, Ratteens, German Serges, Kerſeys, Bearſkins, Bath Beavers, Beaver Coating, Whitneys, ſcarlet, crimſon, and all other colour'd Broad Cloths, Duroys, Sagathees, Fuſtians, Cotton Thickſets, dyed Jeans, Hair Pluſhes, Cotton Velvets, Worſted knit Breeches Patterns, flower'd Drawboys of all Colours, Damaſcus, &c. &c. with all ſorts Shalloons, Buttons, Twiſt, &c. to ſuit.—Double and twiſted Camblets, Callamancoes, Tammies, plain & ſtrip'd Camblets, Poplin, colour'd Crapes, Silverets, Grazets, Brolioes, figur'd Pruſſians, ſilk and cotton Luteſtrings, with every other kind neweſt faſhion plain and figur'd Stuffs.—A large Aſſortment of Callicoes, Chints, Copperplate Furniture for Beds.—Beſt Engliſh ſilk Damaſks, Ducapes, Grograms, plain and flowered Luteſtrings, Mantua Silks, Capuchin Silks, plain and flowered Sattins for Hatts & Cloaks, of all Colours, with ſuitable Trimmings,—A great Aſſortment of Mens, Womens and Childrens Hoſe, Mens worſted and ſilk Caps, Mens, Womens and Childrens Gloves and Mitts of all kinds, faſhionable Engliſh made Bonnets, Hats, Cloaks, Scarfs, &c. A beautiful Affortment of Ribbons, plain and flower'd Gauze, Catgut, all kinds of Silk, Cotton and Linen Handkerchiefs, Fans, Head & Breaſt Flowers, Feathers, Turbans & Tippets, Necklaces, &c. all Widths of Manchester Checks, Irith Linens, Cambricks, Lawns, &c. &c. Table Linen, &c. Mens & Boys Hats, beſt London Wool & Cotton Cards, Engliſh and German Steel, Powder, Shot, London Pewter, French Flints, Nails, Bar and Sheet Lead, Tin'd Plates, Window Glaſs, with a Variety of Braziery, Ironmongery, Cutlary and other ſmall Wares.——Choice Bohea and Hyſon Tea, warrantad good, Pepper and other Spices, Looking-Glaſſes, a large Collection of genteel China, Engliſh & German Flutes, Violins, and beſt Roman Strings, &c. &c.

Boſton, April 15. 1768.

☞ The above Goods will be ſold very cheap, but no Abatement made on the Prices aſked.

Fig. 1 Advertisement by Gilbert Deblois, Boston, demonstrating range of goods imported from England. Courtesy: Winterthur Garden, and Library, Downs Collection

As expected, the archaeological record of Portsmouth from the pre-Revolutionary era reflects a consistency with fashions worn in Britain (White, n.d. approaches this topic from a different angle). In all facets of their lives, Portsmouth residents surrounded themselves with British material goods, so it is no surprise that British goods dominate the personal adornment assemblages. The artifacts from the pre-Revolutionary era were largely manufactured in England, and both expensive and inexpensive items were recovered in Portsmouth's pre-Revolutionary contexts. Clothing fasteners, hair accessories, jewelry, and miscellaneous accessories of British origin were excavated.

7.4.3 The Impact of the Revolution: Clothing

The threads of history that sparked the American Revolution are not the focus here, but to summarize extraordinarily briefly, the formation of an American identity was somewhat hastily gathered together as individuals formed groups to react against

what was viewed as unfair taxation practices within the colonies. Among other actions, in the 1760s, American colonists tried to force the repeal of parliamentary taxes by boycotting English goods (Ulrich 2001: 176).

One of the movements that developed is now described as the homespun movement, where people were encouraged to produce textiles at home. This period saw women gathering at each other's homes to spin and to proclaim that they would not purchase British manufactured items until the Stamp Act was repealed, and they would also resist any suitors who refused to oppose the act. Although the Stamp Act was rescinded, it was effectively replaced by the Townsend Duties, which placed tariffs on a variety of goods, including silk and other commodities. In 1774 the Provincial Congress of Massachusetts recommended use of domestic papier-mâché to reduce imports of British buttons (Dauterman 1940: 239, 241).

During this time, there were a variety of social movements with nationalistic impetus. New England newspapers reported numerous gatherings of women where they undertook spinning, which has been described by Ulrich as a way in which they "asserted their commitment to their country, to God, and to a new version of an old ethic of productivity" (Ulrich 2001: 176). These acts spurred people across New England, including members of the clergy, printers, politicians, and women of the upper class, to take an interest in household production of textiles, and, as illustrated later, textile production was linked in the press to ideas of morality and the general condition of the nation.

Patriotism and nationalism were connected in printed materials to concerns about vanity in dress, a common theme in etiquette manuals of the late eighteenth century. For example, *The New Hampshire Gazette* (September 7, 1764) printed two columns of "queries from the late worthy Bishop of Cloyne." The Bishop wondered:

> "How far the Vanity of our Ladies in dressing…contributed to the general Misery of the People?…Whether the Women may not sew, spin, weave, embroider, sufficiently for the Embellishment of the Persons, and even enough to raise Envy in each other without being beholden to foreign countries?"

Fig. 2 Wig curler and shoe buckle imported from England recovered at the Rider-Wood site and the Richard Hart site, respectively

The Bishop's musings are part of a general admonishment against importing goods to the colonies and an appeal to industry and self-sufficiency. The pleas reveal underlying ideas about common concerns of men and women in terms of fashion, dress, and ideas of beauty. The Bishop discussed the "fripperies of Dress" and applauded women who made cotton and worsted stockings, wove linen, and purchased shoes made in Newport over those made in London (*New Hampshire Gazette*, September 7, 1764).

> "Our newspaper proclamations, our private and public resolutions, respecting the good of our country, the use of home manufactures, the retrenchment of expenses, the necessity of industry and frugality, are all patriotic and economical…but it is to be lamented that so few, especially among the middling sort, and others below them, are disposed to follow the patriotic example" (Fiske 1801: 68).

Such pleadings echo other etiquette manuals that railed against excesses in dress and vanity, and indicate, along with the archaeological evidence, that appeals to patriotism and self-sufficiency were not successful in dissuading women and men from the attraction of foreign goods, particularly as they extended to dress.

7.4.4 The Impact of the War: The Archaeological Evidence

The archaeological record does not provide a clear distinction between the era before and the era after the Revolutionary War; there is little evidence that Americans took up the movement to reduce reliance on imported/British goods in terms of fashion and personal appearance in any significant way. The archaeological record does not display a dramatic increase in American-made goods. To the contrary, the artifacts show that people continued unabated to pay very close attention to trends in clothing and adornment, set and spread by British fashion and production.

The most sensitive evidence found in the archaeological record for trends in fashion and visual appearance is in buttons and buckles. These two classes of artifacts are the most plentiful sort of personal adornment generally found on eighteenth century domestic archaeological sites, because they were common, but very fashionable, elements of dress. Buttons and buckles were a focal point of elaboration on men's clothing, and they expressed subtle shifts in fashion.

For example, between 1760 and 1780, fashions in buckles and buttons experienced an expansion in size, a veritable bloating over these years that increased their dimensions remarkably. This fashion shift conveniently corresponds with the war era and offers an easy index to measure adherence to foreign fashion. By the 1760s shoe buckles were on average approximately 65 mm in diameter (Whitehead 1996: 103). By the 1770s the shoe buckle had increased to a size that *The Gentleman's and London Magazine* of June 1777 derisively described as "harness buckles." As focal points of dress, buckles and buttons became more elaborate, with different designs and styles manufactured. These trends are paralleled in Portsmouth's archaeological examples.

Fig. 3 Shoe buckle from the Warner House from 1760 context

Figure 3 shows a pre-Revolutionary War era shoe buckle from the Warner House. Recovered in a ca. 1760 context, it is moderate in size with scrolling designs, all typical elements of buckles from the period (White 2005: 41). The buckles from a decade or so later at this site are larger (Fig. 4), typical of the expansion in buckle size of the 1770s and 1780s (White 2005: 41). Buckles of similar dimensions, in different patterns, were recovered at other Portsmouth sites, all of which would have been manufactured in England by the vibrant buckle-making industry (Fig. 4, Mould 1979).

The button assemblage from Portsmouth increased in variety, design, and size in the period during and following the Revolution. A variety of materials were used to make buttons: silver, pewter, copper alloys, and shell (Fig. 5). The most fashionable of these found in Portsmouth – such as a large copper alloy coat button with a stamped design – matched the fashions in England at the time.

Buttons grew in size and elaboration at a similar pace as buckles. Large coat buttons were very fashionable in London, and archaeological examples from Portsmouth exhibit the same increase in size. There were a variety of technical developments in gilding and shank attachment developed in England, and examples, such as new shank attachments, are found in late eighteenth century contexts in Portsmouth. Shipping records in the years following the Revolution describe casks of buttons, gilded and plated in various ways (Anonymous 1708–1892). Bills and other economic records contain intriguing details about the fashionability of buttons; one recipient in Philadelphia received a shipment of buttons selected on account of their being “very prevailing” (Anonymous 1727–1927).

It is more difficult to trace women’s clothing through the archaeological record, as the elements of women’s clothing that indicate fashion and style are not preserved readily in the archaeological record. Advertisements in the years following

Fig. 4 Shoe buckles from the Warner House and Richard Hart site from post-1770 contexts

the Revolution continued to advertise British fashions, as in the case of one by Martin Lambert, a hair-dresser, in which he introduced himself specifically as having just arrived from London. He announced to Portsmouth's ladies that he

> "Tenders them the assurance of his abilities in his professional line, and challenges all the professors of the combing and Frizzing art in adjusting, with unrivaled taste, the gray locks of venerable old age – accommodating the youthful gay with neatness and elegance indescribable, and rendering to the auburn tresses of the beauteous fair, such transcendent fascinating charms, that will create admiration in the philosopher, draw the approving smile from the hoary sage, and excite the manly youth, with enchanted delight, to gain within the vortex of this circuitous blaze of unparalleled [sic] beauty."

Combs, wig curlers (Fig. 2), and hair ornaments recovered from the excavations reflect an attention to hairstyles, perhaps combed and frizzed by a Londoner.

What is most striking in the Portsmouth assemblage is just how few items appear to have been manufactured locally. There are bone buttons that were likely made in home production, and there are occasional artifacts that seem to have been made by local people developing new skills, but by and large, until the turn of the century, the accessories to dress were British imports.

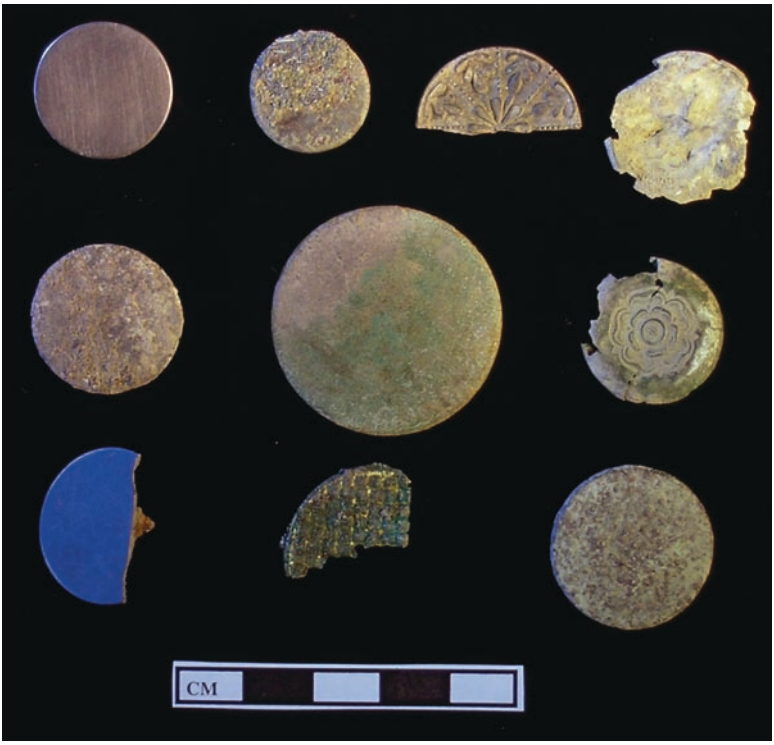


Fig. 5 Buttons from the Richard Hart site from post-1770 contexts

7.5 Conclusions

The shipping trade fostered the growth of Portsmouth from small outpost to seaport city in the eighteenth century. The vitality of this trade infused the city with goods and currency, while the residents furnished their homes and clothed their bodies with items obtained via long-distance trade with England. This close-knit relationship became politically toxic with the onset of the American Revolution; the relationship was viewed as unbalanced, with America being an overly dependent consumer of British goods. Interestingly, American consumption of British textiles and clothing items was decried publicly, and nationalistic ideology was activated through the homespun movement, which urged people to reduce reliance on traded goods and clothe themselves with locally made textiles.

What is surprising, given the public nature of the political outcry and the well-documented pervasiveness of the movement, is that the expected archaeological signature of this initiative is absent. The kinds of artifacts preserved in Portsmouth do not differ significantly before and after the American Revolution. The artifactual evidence of clothing does not seem to adhere to a new national identity in which the local was prized over the foreign. In fact, the foreign continued to be more

desirable than the local, at least in regard to clothing. Americans continued to dress according to European fashion, physically maintaining a link to the mother country through their physical appearance while politically separating themselves from foreign rule. It was not until the second decade of the nineteenth century that the archaeological record begins to reflect a particularly American source for most of the personal adornment artifacts recovered in Portsmouth.

In Portsmouth, as in the rest of the American colonies, the residents forged new identities, transforming themselves and their children from English colonists in outposts and then cities in the New World, and later, as citizens of the new United States. It is surprising to see such a lag in the adoption of locally produced goods at the time of a newly minted national identity. Local efforts to persuade people to abandon European goods failed in the realm of clothing and personal adornment; Portsmouth residents continued to import most of their clothing items from Europe before and after independence. The people in the city built on trade saw these foreign elements as intrinsic to their ideas of self-expression. The assemblage of personal adornment artifacts provides evidence of the allure of certain objects, in this case the kinds of clothing and personal adornment to which people were accustomed, even though these goods could only be acquired through long-distance trade. Interest in taking up patriotic ideology was selective – despite the political discontent of the colonies in relation to the mother country, and the creation of a new American identity, foreign items of dress were non-negotiable commodities.

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Chapter 8
The Precarious "Middle Ground": Exchange and the Reconfiguration of Social Identity in the Hawaiian Kingdom

James M. Bayman

8.1 Introduction

Exchange is a vital nexus for the dynamic construction of social identities that people materialize in portable and nonportable artifacts. Social identity and culture change are emergent phenomena and so their study is germane to historians, archaeologists, and other scholars who seek to understand the consequences of European and American colonialism before and during the nineteenth century (Stein 2005). Yet, most archaeological studies of contact and colonialism focus on changes in the technologies, economies, and identities of *groups* (e.g., communities, societies, and cultures), rather than on individuals, since macroeconomic processes are generally more accessible in the archaeological record (e.g., Bayman 2003, 2007; Carter 1990). While this macroscalar approach provides invaluable insights on the materialization of interaction and identity in colonial settings, complementary studies of *individuals* are also needed to understand exchange and domestic behavior during periods of culture contact (Flannery 1999, Lightfoot et al. 1998). This microscalar approach promises a more detailed perspective on exchange, personhood (sensu Howard 1990), and its relationship to the construction of social identity. In so doing, archaeology can develop a more refined theoretical perspective on the nature of culture change in postcontact settings.

Such theory, however, should advance the construction of a more balanced view of culture change. For several decades, anthropological studies of contact and culture change were largely focused on the adoption of Western materials, technologies, and worldviews by indigenous non-Western cultures. Such change was viewed as symptomatic of "acculturation" wherein members of a non-Western society were passive recipients of a "superior" Western technological system. Far less attention has been devoted to instances in which Westerners adopted indigenous technologies during such periods, although documentary and archaeological records are replete with such examples (see Rothchild 2006: 88–98 for a notable exception).

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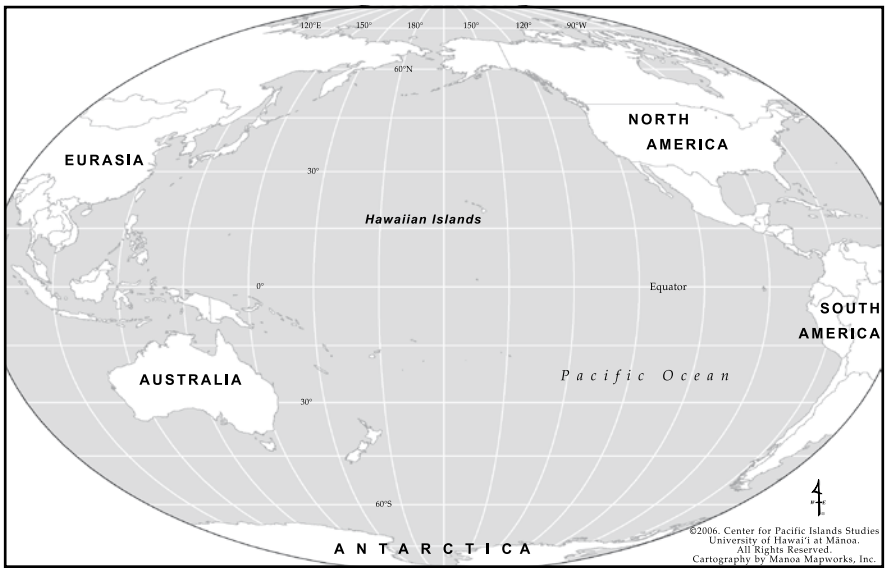

Fig. 1 Location of Hawaiian archipelago in the Pacific Ocean

In this study, I seek to rectify this imbalance in one area of the world (Fig. 1) by reviewing and comparing the archaeological and documentary records of two storied individuals in Hawaiian history: (1) John Young, a British sailor who was stranded in the islands in 1790 and lived there until his death in 1835, and (2) King Kamehameha III (Kauikeaouli), the Hawaiian kingdom's ruler between 1824 and 1854. The records for John Young confirm that, although he arrived in Hawai`i as a British sailor, he quickly acculturated to indigenous society and became a celebrated agent of Hawaiian royalty. In a stark and somewhat ironic contrast, King Kamehameha III, the last "god king" of Hawai`i, was born into traditional Hawaiian society and became a practicing Christian. Moreover, he presided over the conversion of the traditional Hawaiian land-tenure system into one that entailed the sale and private ownership of terrestrial property in the market economy of international capitalism. John Young and Kauikeaouli had very different ancestries and cultural heritage – one man was a working class European by birth and upbringing, and one man was Hawaiian royalty by birth and upbringing – but both men were eventually interred in the most exclusive cemetery in the archipelago: the Royal Mausoleum in Nu'uanu Valley on the island of O'ahu.

Understanding these individuals' trajectories, vis-à-vis exchange, contact, and colonialism requires some theoretical background on acculturation as twentieth century American anthropologists envisioned the process. I also summarize economic and political organization in contact (AD 1778) and postcontact Hawai`i to establish a baseline for gauging the degree of culture change that the archaeological record of exchange in the islands reflects.

8.2 Anthropological Perspectives on Culture Change, Exchange, and Identity

During the first half of the twentieth century, many anthropologists viewed contact-period social and technological change as indicative of acculturation (sensu Redfield et al. 1936). The concept of "acculturation" was used to refer to the social and economic consequences of sustained interaction between two or more ethnic groups, and it was often used synonymously with "assimilation." Anthropologists assumed that acculturation is a relative and unidirectional phenomenon that could be measured by tabulating the number of "culture traits" that one group adopted from another (e.g., Quimby and Spoehr 1951).

Given the colonial context of early anthropology as a discipline, it is not surprising that indigenous populations were frequently viewed as passive recipients of European technologies and ways of living (Rodriguez-Alegria 2008), and scholars commonly argued that such societies experienced the greatest amount of acculturation (Rogers 1993: 73). Scholars rarely identified the precise mechanisms through which less powerful societies adjusted to dominant western societies because they assumed that indigenous societies would inevitably adopt the materials, goods, and technologies of more developed European societies. The role of individual agency was also overlooked in many early and mid-twentieth century accounts of technological change in pre- and postcontact indigenous societies (Cusick 1998).

Although some anthropologists (e.g., contributors in Mead 1955; Sharp 1952; Spicer 1952) and historical archaeologists (e.g., Hammell 1983) advocated more nuanced views of indigenous culture change, the emphasis of many archaeologists on ecological and economic factors provided an overly facile explanation for the adoption of Western technologies by indigenous nonindustrial societies. Simply put, European and American goods and materials were deemed to be technically more productive and efficient.

In the past two decades, however, an increasing number of archaeologists have challenged this normative view, especially archaeologists who study contact and colonialism (e.g., contributors in Cobb 2003; Fitzpatrick et al. 2006; Rodriguez-Alegria 2008). Such scholars seek to privilege the social and ideological dimensions of preindustrial technologies (e.g., contributors in Chilton 1999; Dobres and Hoffman 1994; Frink et al. 2003; Lemonnier 1986; Torrence 1989). Accordingly, they begin by considering the broader cultural contexts within which technologies appear and develop (or are resisted) (Ehrhardt 2005: 5). This more recent approach to technological change by archaeologists has required more detailed analyses of social identity. Technology and social identity are directly linked, and archaeologists and other scholars must explore the connections between them more deeply to advance studies of contact and colonialism.

Interdisciplinary scholars of colonialism have noted that Western powers sought to represent cultural identity, which they equated with ethnicity, as fixed and unchanging so they could distinguish themselves from those they ruled (Cooper

2005: 49). By controlling the representation of their own identity, as well as the identity of those whom they colonized, colonial rulers naturalized their right to dominate others (Rowlands 1989). Doing so weakened resistance by colonized indigenous peoples. Postcolonial theorists like Benton and Muth (2000) argue, however, that indigenous people purposively manipulated their social identity to resist colonial oppression. The construction of "hybrid" (or "creole") identities, for example, confounded efforts of colonizers to distinguish themselves and thereby legitimize their rule over inferior "others" (Bhabha 1994; see also Kraidy 2005; Van Dommelen 2005; Young 1995).

In some instances of colonialism, for example, members of two different societies integrated into a "third" society or population which is neither purely native nor purely non-native (e.g., Malkin 2004; White 1991). Such societies achieve a "Middle Ground" (White 1991) which is mutually comprehensible and is often mediated through symbiotic trade relations. To cite one example, Algonquian natives and French fur traders in the Great Lakes region of Canada and the United States constructed an alliance that was based on mutual dependency (White 1991). In the nineteenth century, however, as native Algonquians lost their ability to compel American society into a mediated alliance, they were construed as "Others" and thus became true colonial subjects (Gosden 2004: 172). Once the delicate balance of such a "Middle Ground" scenario was altered, either intentionally or otherwise, the process of colonialism accelerated, as it did in Hawai`i only a few decades after European contact.

In this study, I integrate a social constructionist view of artifacts and their exchange with postcolonial concepts of "hybridity" as this relates to identity and culture change. Individuals and groups materialize certain dimensions of their social identities through artifacts that are often acquired through exchange (e.g., Lebo 1997). Historical archaeology offers a unique opportunity to document facets of hybridity that are peculiar to situations of "first" contact and emergent colonialism (e.g., Bayman 2009; Lawrence and Shepherd 2006: 71–75; Silliman 2005). Although scholars continue to debate conceptualizations of hybridity (e.g., Gosden and Knowles 2001: 5–6; Kamehiro 2007; Young Leslie and Addo 2007), most acknowledge this as a consequence of colonial engagement between western and nonwestern cultures (e.g., Chatan 2003; Gosden 2001; Papastergiades 1997; Young 1995), and between two or more nonwestern cultures (Rogers 2005; Stein 2005; van Dommelen 2005).

8.3 Exchange and Identity After European Contact

At European contact in AD 1778, Hawai`i had the most complex hierarchical organization and largest scale of economic production among traditional Polynesian societies (Kirch 1984: 2–7, 2000: 300). The islands' subsistence economy focused on agricultural production, arboriculture, aquaculture, fishing, and animal husbandry; the latter included pig, dog, and chicken. Hawaiian agriculture included

root and tuber crops such as taro, sweet potato, bananas, and sugar cane (Allen 1991; Ladefoged et al. 2003; Malo 1951: 204–206). Arboriculture emphasized coconut and breadfruit cultivation.

The eight major islands of the Hawaiian archipelago were divided into four major polities at European contact, which have since been described as complex chiefdoms (e.g., Cordy 1981; Earle 1977, 1987) or archaic states (e.g., Hommon 1986: 55; Kirch 2000: 300). The organization of early contact-period Hawaiian polities was highly stratified and centered on high chiefs and chiefesses (*kaukau ali'i*) and local administrators (*konohiki*) of territorial communities (*ahupua'a*) (Kamakau 1964: 4–9). Polities also included commoner subjects (*maka'āinana*). In many (but not all) cases *ahupua'a* paralleled river valleys that crosscut multiple ecological zones ranging from fringing reefs along the coastal lowlands, to the interior uplands and mountains (Ladefoged and Graves 2006: 259–262).

After contact in AD 1778, social and technological change accelerated in the Hawaiian archipelago, beginning with the indigenous adoption of metal adzes that eventually replaced adzes made of stone (Malo 1951: 51–52) and other nonlocal materials. Through acquiring and applying western weapons and military tactics, a powerful chief from Hawai`i island united the archipelago in 1812 and thenceforth assumed the title "King Kamehameha I" (Kuykendall 1938: 44–51). Accounts of Hawaiian history regularly note the role of British sailor John Young in aiding Kamehameha's ascent: he facilitated the king's access to weapons and tactical military strategy from Europe. From the inception of the Hawaiian Kingdom in 1812, a succession of indigenous kings and other elites (*ali'i*) and their commoner subjects (*maka'āinana*) were drawn into the rapidly expanding world system of economic interaction that was brought to the archipelago by foreign ships. The export of Hawaiian sandalwood to China was a centerpiece of international trade (Sahlins 1992: 57).

In 1819, Liholiho (Kamehameha II) and other royalty (e.g., Queen Kaʻahumanu) abolished the indigenous *kapu* (sumptuary restriction) that prevented Hawaiian women from eating pork, bananas, and other selected foods (Kuykendall 1938: 61). The elimination of this particular custom instigated the near-instantaneous dissolution of the indigenous Hawaiian religion, although some traditions still persisted. Shortly after the traditional *kapu* system was terminated by Hawaiian royalty, Christian missionaries arrived from the United States in pursuit of native converts. After 1830, the sandalwood trade with China was superseded by a new economy that centered on the production of food provisions (e.g., pork and yams) for the American whaling industry from 1830 to 1860 (Daws 2006: 119–120).

Ruling Hawaiians initially benefited from this international economy, but their power rapidly waned following the establishment of a constitutional (rather than traditional) monarchy and the *Māhele* land reform of 1848–1850, which legally sanctioned the sale of land that was once held in trust (Kuykendall 1938: 269–298). Chiefly debts mounted with a growing imbalance in international trade, and many ruling Hawaiians lost their land and political power as colonialism intensified. In 1893, the constitutional monarchy of the Hawaiian Kingdom was over-

thrown by residents with economic and political ties to the United States. Shortly thereafter, in 1900, the archipelago was annexed as a U.S. Territory (Daws 1968: 207–292).

8.4 John Young at Kawaihae, Hawai`i

8.4.1 Documentary Record

Because of his elevated political status in early postcontact Hawai`i, scholarly interpretations of John Young's life are relatively abundant (e.g., Cahill 1999; Campbell 1998: 43–46; Henriques 1916; Stokes 1938), and I rely on these sources in this documentary summary (Fig. 2). Young was a boatswain on an American trading ship, the *Eleanora*, when he was stranded on Hawai`i Island in 1790 at the age of 46. Shortly thereafter, Young was taken hostage by an exceptionally powerful Hawaiian chief, along with Isaac Davis, a Euro-American. Documentary accounts of Young indicate that although he initially attempted to escape the islands shortly after he was stranded, he ultimately decided to remain in Hawai`i. Three years after his capture in 1793, Young declined an opportunity to leave the islands with George Vancouver, a British captain who offered to escort him to England. According to Vancouver, Young and Davis concluded that their lives were better in Hawai`i than they would be in Europe or the United States.

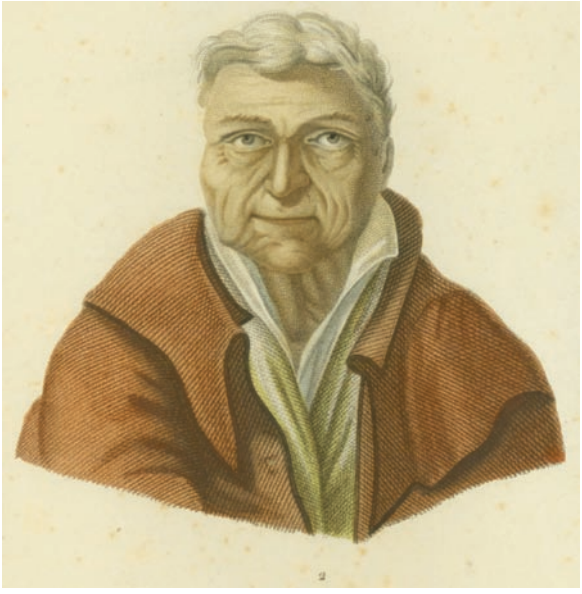

Fig. 2 Drawing of John Young in 1819 by D. Pellion (Courtesy of Bishop Museum)

With assistance from Young and Davis, the Hawaiian chief united the archipelago in 1795 and ruled it as King Kamehameha I. By then, Young and Davis had been awarded political power and material wealth; returning to their respective homelands would have left them at least initially destitute, a sacrifice they were apparently not willing to undergo. Much of Young's prestige was due to military advice that he provided Kamehameha and to his role in mediating international trade relationships. Five years after the archipelago was united, Young was appointed governor of Hawai`i Island where he worked in service to the king who had by then centralized all Hawaiian trade with foreigners.

International ships were required to land at Kawaihae Bay (Hawai`i Island) where Kamehameha and his retinue including John Young, resided (Fig. 3). From this locale they controlled the circulation of goods that were imported to, and exported from, the islands by European ships. In doing so, Kamehameha provided ships en route to China with sandalwood, agricultural products like taro, pigs, salt, water, firewood, and other goods in exchange for military weapons such as muskets and ammunition that he used to dominate the kingdom (Sahlins 1992: 38). Commoner (*maka'āinana*) Hawaiians were generally restricted by their ruling chiefs from trading with foreigners, although they did acquire modest amounts of domestic utensils (e.g., knives, scissors, nails, beads, and mirrors) through various strategies (Sahlins 1992: 38).

This new system of economic distribution was a sharp departure from traditional modes of Hawaiian exchange that were less centralized, such as household reciprocity. Some facets of traditional Hawaiian trade were highly centralized, such as the payment of tribute by commoners to royalty, but not all goods were heavily regulated by chiefly elites (Earle 1977, 1987). Many commodities like foodstuffs (e.g., fish, agricultural produce) and raw materials circulated among kin

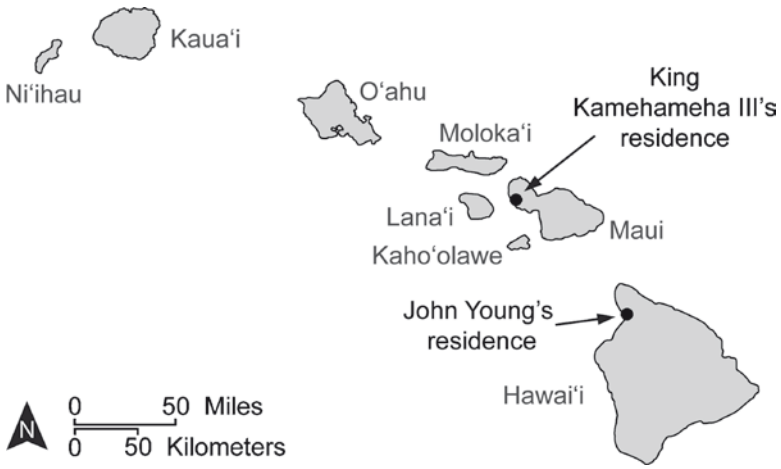

Fig. 3 Location of John Young's and King Kamehameha III's residences on the islands of Hawai`i and Maui

and nonkin individuals through reciprocal exchange. In the decades after contact, however, Hawaiian royalty demanded increasing amounts of tribute from lesser chiefs and commoners who resided in the traditional *ahupua'a* communities that dotted the islands.

During his life in Hawai`i, Young was twice married to indigenous Hawaiian women, each of whom produced children. His second wife, Kaoanaeha, was a niece of Kamehameha I and therefore relatively high in rank. Not surprisingly, some of their children assumed important roles in Hawaiian society: one son, John Young, Jr. (known as Keoni Ana) was at different times the governor of Kauaʻi and the governor of Maui (Cahill 1999: 144). Moreover, one granddaughter became Queen Emma, wife of King Kamehameha IV.

When Young died in December of 1835, he was buried with the sumptuary privileges of a high chief, even though his funeral was administrated by Hiram Bingham, a prominent member of the first Christian missionaries in Hawai'i. Young's Christian burial and his de facto membership in Hawaiian royalty was the capstone of a life that was inculcated with a novel identity. Young's hybrid identity is embodied in a variety of traded goods and materials that archaeologists recovered from his Kawaihae residence.

8.4.2 Archaeological Record

Archaeological investigations of Young's residence (i.e., Durst 2001; Rosendahl and Carter 1988) complement documentary accounts of his life, and confirm that he used a combination of indigenous and Western goods that were acquired through local and international exchange. Indigenous Hawaiian artifacts were vital for surviving in the islands since access to Western and Asian goods would have been constrained even for a powerful expatriate like Young who, with Kamehameha I, coadministrated international exchange.

Significant subsurface excavations have been undertaken at Young's residence on two occasions (i.e., Durst 2001; Rosendahl and Carter 1988). His residence included three Western-style structures (i.e., Structures 1, 2, and 3) and five Hawaiian-style features (i.e., F-1, F-2, F-3, F-4, and F-5). However, excavations focused only on the three Western-style buildings and Feature 4, an earth oven (*imu*) (Fig. 4). Approximately 15.01 sq. m of matrix were excavated from the three Western-style structures and the earth oven (*imu*). Together, the excavation of 1 x 1 m units on the two projects recovered approximately 2,485 artifacts, not including faunal and floral remains (e.g., coral, bone, shell, charcoal).

Although the number of indigenous artifacts recovered in the three Western-style buildings at his residence is not particularly high (N = 60), it includes basalt and volcanic glass debitage, cores, hammerstones, an anvil, an abrader, and an adze fragment (Durst 2001: 84, Table 14; Rosendahl and Carter 1988: 43, Table 71). Combined, these artifacts imply that at least some lithic core reduction was practiced at John Young's residence. Other traditional artifacts were also

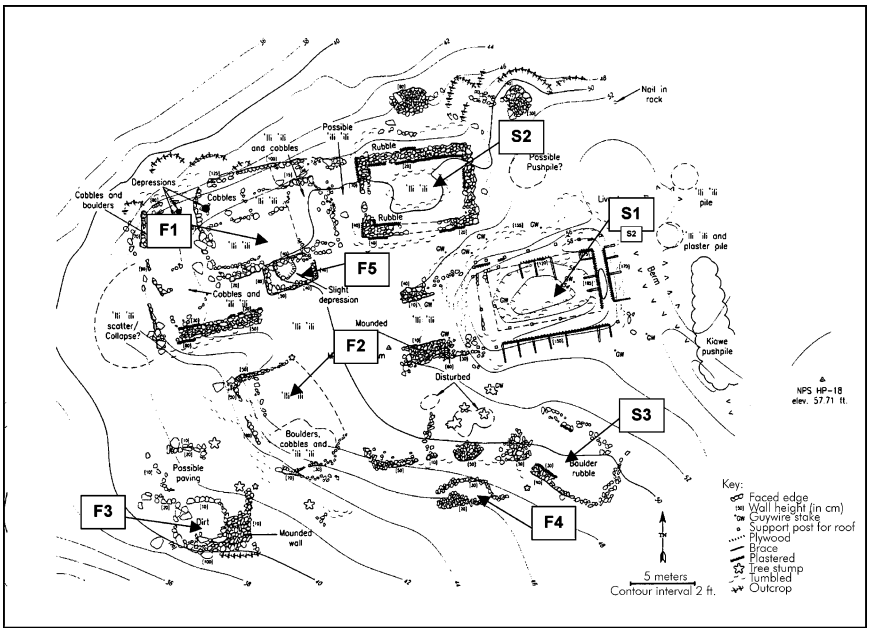

Fig. 4 Plan map of the upper portion of John Young's residence and its eight primary structural features (Durst 2001: 34, Fig. 7) (Courtesy of the National Park Service, and International Archaeological Research Institute, Inc.)

excavated including sea urchin spine abraders and bone awls. Such mundane tools were indispensable in the traditional Hawaiian subsistence economy. Volcanic glass flakes, for example, would have been used to process plant fiber for fishnets, gut and clean fish, and butcher chickens, pigs, and undomesticated birds (Barrera and Kirch 1973).

Although it cannot be known with certainty if any of the traditional artifacts were acquired through exchange, geological study of 27 volcanic glass flakes indicated that about 70% of them originated from a deposit located approximately 29 km from Kawaihae (Rosendahl and Carter 1988: 45). Although there are other sources of volcanic glass that are closer to the Kawaihae area, Young may have preferred the more distant materials. If so, it is possible that Young acquired these nonlocal lithic materials through trade with Hawaiians who desired Western goods like metal nails and domestic utensils.

A whale tooth pendant (*lei niho palaoa*) that was recovered in Structure 2 at Young's residence is especially notable. In traditional Hawaiian society, such pendants only adorned the necks of the highest ranking elites (*ali'i*). The discovery of this pendant in one of the buildings at Young's residence echoes documentary accounts of his high status in Hawaiian society despite his lack of Hawaiian ancestry. Although it is possible that this particular *lei niho palaoa* was actually worn by Young's second wife, Kaoanaeha, or one of their children, its presence signifies the close connection of their household with Hawaiian royalty.

Nonindigenous artifacts include objects made of metal (i.e., brass, bronze, copper, iron, and lead), glass (e.g., beads and broken bottles), earthenware ceramics (e.g., tableware and storage containers), and shell (Rosendahl and Carter 1988: 49). Objects made of metal included, but were not limited to, gun parts, nails and screws, needles, a key, a fishhook, and furniture fittings. The confirmation that nails were the most abundant metal artifact corroborates historic accounts that Europeans like Young used them for trade because Hawaiians highly valued metals. Although excavations reported by Durst (2001: 84, Table 14) yielded a total of 111 iron nails and nail fragments from two structures (i.e., Structures 1 and 3), it is notable that 94% of the nail assemblage was recovered from a single 1 x 1 m test unit in a Western-style building (Structure 1) that John Young apparently used as his primary residence. Although such a high concentration of nails in a single excavation unit arguably implies that they had been cached for eventual trade, it is also possible that they were primarily used for building the wood superstructure of his house. A total of 80 iron nails and nail fragments were recovered throughout the other Western-style structure (Structure 2) (Rosendahl and Carter 1988: 42, Table 6).

Ceramics from the Western-style structures at Young's residence included earthenware from England, porcelain from China (i.e., blue on white) and England (i.e., lusterware), and a small number of stoneware ceramics. The ceramics are roughly contemporaneous in age and overlap with John Young's life. Accordingly, the site's excavators argue that Young used European artifacts to maintain a connection with his English heritage (Rosendahl and Carter 1988: 75). It is worth noting, however, that many powerful Hawaiian elites and chiefs also acquired and used English artifacts in the postcontact period (e.g., Garland 1996). That Hawaiian royalty used European artifacts suggests their desire to signal their affiliation with European culture. In turn, selected architectural features of John Young's residence illustrate his apparent desire to convey his affiliation with indigenous Hawaiian society.

8.4.3 Western and Indigenous Architecture

At European contact, indigenous Hawaiian households often comprised a group of buildings that were collectively known as *kauhale*. In a normative *kauhale*, separate buildings were used for different activities and people. Ideally, there were separate eating houses for men and women, a cook house, a sleeping house, a canoe shed, and other structures (Handy and Pukui 1958). While a variety of imperatives governed the spatial organization of *kauhale*, the gendered segregation of activities such as eating was mandated by the strictures (*kapu*) of the Hawaiian religion (Malo 1951; Weisler and Kirch 1985; cf. Van Gilder 2001). Women did not eat in the presence of men and they were typically restricted from consuming foods such as pork and bananas, until the *kapu* was eliminated by Queen Ka`ahumanu and other royalty in 1819.

Young established his residence in 1793, well before the *kapu* system was eliminated, and before the arrival of Christian missionaries from the United States in

1821. There is intriguing evidence that Young's residence was at least partially structured as a *kauhale*, though he was not an indigenous Hawaiian. The three Western-style buildings at Young's residence were constructed with basalt stones that were set in a mud mortar and covered with coral lime plaster, whereas the five Hawaiian-style features consisted of dry-lain basalt masonry (Rosendahl and Carter 1988: 11). Three of the Hawaiian-style features probably functioned as residential terraces or platforms, whereas a stone mound is likely derived from an earth oven (*imu*) and one of the stone platforms may mark a burial.

Archaeological evidence that Young's residence was organized in a *kauhale* fashion corroborates an 1828 documentary account by Judd (1928: 36), who noted that Young's second wife, Kaoanaeha, lived in a separate "native" house that was made of "grass" (Rosendahl and Carter 1988: 23). In contrast, Young probably lived in one of the houses (Structure 1) that was a combination of Hawaiian and Western architectural characteristics. Unlike traditional Hawaiian houses with walls of *pili* grass thatching, Young's house was constructed of basalt stone that was stabilized with mud mortar and whitewashed with a plaster of burnt coral and sand. Although the mortared and whitewashed walls of Young's house were a Western introduction, the floor of his house comprised a traditional pavement of *ʻiliʻili* stones (rounded pebbles). However, several characteristics of the buildings at Young's residence are common to both Hawaiian and European traditions: their layout, the use of thatched roofs, and their focus on rectangular forms (Durst 2001: 109). Therefore, the interpretation that the buildings at Young's residence materialize his effort to assimilate into Hawaiian culture should not be overstated.

Nonetheless, the archaeology of Young's domestic life confirms his use of Hawaiian artifacts that were likely acquired through exchange, as well as his adoption of the *kauhale* household arrangement. Concurrently, however, many of Young's indigenous Hawaiian counterparts adopted selected Western technologies and cultural practices. The third king of the Kamehameha dynasty, Kauikeaouli, provides a striking example of this phenomenon (Fig. 5).

8.5 King Kamehameha III (Kauikeaouli) at Mokuʻula, Maui

8.5.1 Documentary Record

The third king in the Kamehameha dynasty, Kauikeaouli, ruled the Hawaiian kingdom for almost three decades from 1825 to 1854 (Kuykendall 1938). This period witnessed a great deal of change in Hawaiian society, including the proliferation of Christianity, a reorganization of international exchange relations, and the implementation of the *Māhele* land reform. Until the early 1840s, chiefly elites controlled international trade, and commoners in the countryside acquired only marginal amounts of traded goods through kin relations (Sahlins 1992: 112). However, a market-driven cash economy eventually reached the Hawaiian countryside in the

Fig. 5 Photograph of King Kamehameha III (Kauikeaouli) (Courtesy of Bishop Museum)

late 1840s (Sahlins 1992: 112–113), at a time when the kingdom's royalty suffered from an increasingly severe imbalance in international trade. The growing imbalance in international commerce led to steady increases in the debt load that many Hawaiian chiefs carried by the mid-nineteenth century.

Some Hawaiian royalty viewed the *Māhele* land reform of 1848–1850 as an opportunity to dispense with crushing debts they had accumulated since Hawai`i's economy shifted from the sandalwood trade with China to the provisioning of American whaling ships that plied Pacific waters between Japan and the U.S. Pacific Northwest (Sahlins 1992: 102). Since the *Māhele* sanctioned the sale and private ownership of land, it was a sharp departure from traditional land tenure wherein indigenous kings and chiefs held a majority of Hawai`i's land in trust for its residents.

Prior to the 1848–1850 *Māhele*, Kauikeaouli constructed and occupied multiple residences on the island of Maui and on the island of Oʻahu. Like many of his contemporaries, such as John Young, Kauikeaouli's houses embodied a mix of Hawaiian and non-Hawaiian influences in their materials, design, and contents. His residence at Mokuʻula, on the island of Maui, is relatively well documented

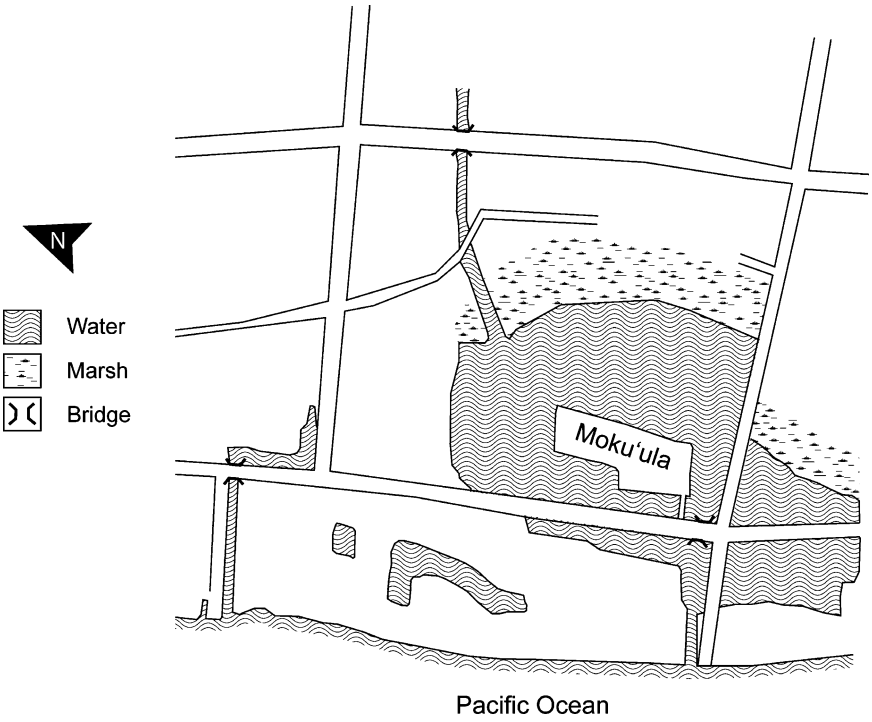

Fig. 6 Schematic map of the artificial one-acre island of Moku'ula within an inland fishpond (adapted from Klieger 1998: 62–63, Fig. 18)

by historic accounts (Fig. 3). Klieger's (1998) study of documents confirms that Kauikeaouli's residence at Moku'ula included a large palace, a smaller residence, a fort, and a royal tomb on an artificial one-acre island within a 11+ acre fishpond (Fig. 6). The palace was constructed of coral blocks and the smaller residence consisted of a traditional thatched *hale* (house) constructed with local plant materials. Although an early missionary account of the coral block palace in 1837 described it as "rather splendid," a later account less than a decade later describes it as being in a "somewhat dilapidated state" (Klieger 1998: 48–54). By then, Kauikeaouli was apparently residing in a thatched *hale* instead of the palace (Klieger 1998: 54). Together, these accounts confirm the economic pressures that weighed heavily on the Kamehameha dynasty, in response to the growing imbalance of international trade.

Archaeological data complement documentary descriptions of Kauikeaouli's life at Moku'ula. Notably, the archaeological record of his residence illustrates the role that exchange played in the dynamic construction of hybrid identities in post-contact Hawai`i.

8.5.2 Archaeological Record

Relatively limited archaeological excavation has been undertaken at Kauikeaouli's residence at Mokuʻula, even though the excavations were broader in their horizontal coverage in comparison to such work at John Young's residence at Kawaihae (i.e., Klieger 1995, 1998; Klieger and Lebo 1999). This disparity is due to the fact that archaeological excavations (25.75 sq. m), the extraction of sediment cores (N = 14), and an electromagnetic (EM) survey at Mokuʻula were concentrated on identifying the horizontal limits of the artificial one-acre island where his palace complex was constructed (Fig. 6). Thus, although it is not clear if materials recovered by the excavation units and sediment cores were directly derived from Kauikeaouli's residence, their acquisition from the island illustrates their link to his occupation at Mokuʻula.

In either case, the excavations and sediment cores on the island yielded an intriguing mix of indigenous and nonindigenous artifacts and materials. Although nonindigenous objects dominate the assemblage, a variety of excavated materials (like marine shell, coral, fishbone, and *kukui* nuts) suggests the continued use of traditional resources. Traditional artifacts of basalt (N = 12) at Mokuʻula included hammerstones, edged-altered flakes, unaltered flakes, and pieces of lithic shatter (Dixon 1995: 223, Table 9; Klieger 1998: 106). Eight volcanic glass artifacts were also recovered including flakes, shatter, and cores, and a piece of raw material (Dixon 1995: 222–232). In addition to these artifacts, indigenous artifacts included a marine shell fishhook fragment and a sea urchin spine abrader that was likely used for making marine shell fishhooks.

Nonindigenous artifacts at Mokuʻula that dated to Kauikeaouli's era were dominated by British earthenware ceramics, some Chinese and Japanese porcelain ceramics, and a few metal nails. The discovery of earthenware ceramics from Europe and Asia directly signals the tangible impact of international trade on domestic consumption by Kauikeaouli and other Hawaiian royalty. European and Asian goods surely had great value among Hawaiian royalty, since they expanded the metaphorical "body" of a chief (or chiefess) and his (or her) retinue (Sahlins 1992: 80).

In this vein, Klieger's (1998: 109) observation that none of the nonindigenous artifacts showed any signs of being redesigned for traditional purposes is perhaps particularly meaningful, in light of the fact that such behavior was relatively common among other indigenous populations elsewhere in the world (e.g., contributors in Cobb 2003). In Spanish colonial California, for example, Native populations made traditional tools with bottle and window glass (Silliman 2003: 148). Among Hawaiian royalty, altering such commodities would diminish their inherent ideological value as extensions of the royal body. This behavioral pattern is quite different from many early postcontact Hawaiian commoner sites with Western items (e.g., bottle glass, metal nails) that have been reworked for other traditional purposes. The manufacture of traditional fishhooks with Western nails is only one example of such behavior that is corroborated by the documentary record (Ii 1959:

87). Evidently, Hawaiian royalty were less inclined to use Western materials for traditional activities; instead, they used such goods for their intended functions, as did the Europeans who provided them through exchange.

Klieger (1998: 108–109) uses low frequencies of both indigenous and nonindigenous artifacts at Mokuʻula to suggest that Kauikeaouli still adhered to traditional Hawaiian customs that governed the careful disposal of royal refuse, through burning or secretive caching. In the indigenous religious ideology, such disposal was imperative since royal possessions, like their royal owners, were charged with powerful *mana*. That this custom may have been practiced more than 20 years after the introduction of Christianity is testimony to the persistence of traditional Hawaiian religion and to syncretism rather than the wholesale replacement of ancient beliefs. The archaeological record of Mokuʻula illustrates the complex nature of Kauikeaoulu's identity in midnineteenth century Hawai`i.

8.6 Discussion: A Comparative Perspective on Exchange and Social Identity in History and Archaeology

Scholars of contact and colonialism have long grappled with conflicting documentary accounts that speak to the sources and consequences of culture change. Archaeological studies of exchange and domestic behavior are uniquely informative because how people circulated and used material artifacts reflected their construction of social identity (e.g., Lightfoot et al. 1998). Comparing John Young and Kauikeaouli as case studies illustrates the bidirectional nature of culture change at the level of individual agents within a broader, international political economy. These two individuals had sharply contrasting life histories: one was a common British sailor, and the other was by birth and ancestry a member of indigenous Hawaiian royalty. In Hawaiian epistemology, their identity stems from a genealogical connection to the taro plant that grew from the still-born child of their progenitor gods.

Although John Young never became fully Hawaiian as traditionally defined, he and a few other non-Hawaiians were eventually buried in Mauna ʻAla, the royal mausoleum (Fig. 7) in Nuʻuanu Valley, Oʻahu (Chapman and Kaiheʻekai Maiʻoho 2004). Everyone else in the mausoleum was indigenous elite, and most were consanguineous or affinal kin of the Kamehameha dynasty or the Kalakaua family. Hawaiian commoners were excluded from the mausoleum. In some respects then, despite their divergent ethnic heritages, John Young and Kauikeaouli shared an overlapping identity. Both men were powerful members of a highly stratified, multicultural society and their elite status distinguished them sharply from Hawaiian commoners, as well as most Europeans and Americans in the islands. In the case of early postcontact Hawai'i, social class transcended ethnicity in some, but not all, respects.

It is important to note, for example, that neither Young nor any other non-Hawaiian (e.g., Charles Reed Bishop) was buried in the Kamehameha dynasty or

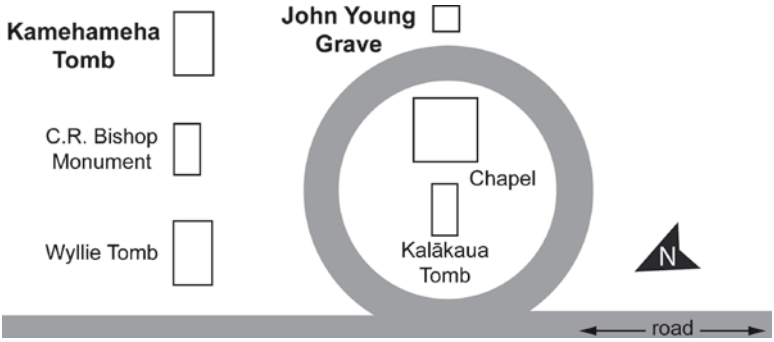

Fig. 7 Schematic plan of Mauna `Ala, the Royal Mausoleum, in Nu`uanu Valley, O`ahu (adapted from Chapman and Kaihe`ekai Mai'oho 2004: 72)

Kalakaua family crypts. Young's and Kauikeaouli's status and identity could not overlap completely since they were not genealogically conterminous in the traditional Hawaiian worldview. Although both men were Christians and the mausoleum was designed with the characteristics of a European church (Chapman and Kaihe`ekai Mai`oho 2004), their identities were still distinguished by Hawaiian traditions. Although the wholesale adoption of Christianity by Hawaiians ensured that they shared a religious ideology with European and American residents of the islands, it did not undermine their traditional emphasis on genealogy to establish ones indigenous ancestry and cultural identity.

8.7 Conclusions

Because European and American contact with the Hawaiian archipelago occurred relatively late (i.e., AD 1778) in the expansion of capitalism, a rich body of documentary accounts is available to scholars. The Hawaiian Islands were not contacted for more than two centuries after the New World was first visited, and later settled, by Europeans in AD 1492. Moreover, because modern economic development has accelerated in the islands over the past few decades, the archaeological record of early contact (i.e., the first century) in Hawai`i is poorly preserved. Fortunately, however, the archaeological record of key individuals in Hawaiian history like John Young and Kauikeaouli is relatively intact. Consequently, the Hawaiian Islands offer an exceptional opportunity to examine the role of exchange in the construction of changing social identity in a context of emergent colonialism.

In the first several decades of contact in the Hawaiian islands, a "Middle Ground" (sensu White 1991) was achieved between indigenous and nonindigenous elites, such as John Young, King Kamehameha I, and many other individuals. However, by the time of Kauikeaouli's rule in the midnineteenth century, the precarious balance of the "Middle Ground" was tipped toward increasing control of the

islands by Europeans and Americans. In any event, this study confirms that culture change in the context of contact and colonialism is a two-way street that is driven by the political economy of exchange (Cobb 2003: 11). Accordingly, anthropological models of exchange and identity that dominated the twentieth century must be refined to account for the bidirectional nature of culture change.

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Chapter 9
Foreign Objects With Domestic Meanings: The Feast of Lanterns and the Point Alones Village

Bryn Williams

9.1 Introduction

In the mid nineteenth century, a group of Chinese and Chinese-American families founded a small fishing village on the outskirts of the coastal resort town of Pacific Grove near Monterey, California (Fig. 1). This community takes its name from Point Alones, a series of rocks that jut out into the Pacific Ocean and, together with Point Almejas, shelters a small cove. Throughout its history, this village was a focal point for trade and exchange between the Chinese and the non-Chinese living in the Monterey area. This exchange took many forms – social, cultural, and economic. Through this direct exchange, the non-Chinese in the Monterey Bay area came face to face with people who had long been represented in Western society by exotic and desirable ceramics, knick-knacks, silks, and other luxury items. Analyzing the archaeology and history of the Point Alones village provides a glimpse into the ways that these face-to-face encounters and the exchange of goods, cultural forms, and aesthetics shaped the lived experiences of village residents and their neighbors.

This particular moment of culture contact illustrates what happens when regionally salient discourses encounter local situations that don't fit. In this case, the ability of Chinese-made and Chinese-looking objects to stand for exotic luxury was called into question by racial violence and tension between the residents of the Point Alones village and their non-Chinese neighbors. This chapter specifically focuses on how these tensions influenced the meanings given to foreign-looking objects and the ways in which they were displayed, celebrated, and condemned in a local context. Although Earle argues that "an important material correlate of meaning is style" (1982: 9), the relationship between meaning and style is not always clear or consistent. In this case, two categories of foreign-looking objects exist with similar styles but very different meanings. This chapter asks why such disparate meanings were

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Fig. 1 Monterey, California. Image courtesy Monica Sircar

simultaneously ascribed to Chinese-styled luxury objects and the objects and aesthetics of the Chinese residents of the Point Alones village.

9.2 The Feast of Lanterns

In the late nineteenth and early twentieth centuries, the city of Pacific Grove was at the center of the Chautauqua self-improvement movement. This movement began in 1872 as a Methodist Sunday School teacher-education program in upstate New York (Rieser 2003). It quickly expanded beyond its original mission of biblical education to include a wide range of adult edutainment programs such as lectures, presentations, and displays that aimed to improve both mind and spirit. Through the late nineteenth century, the movement rapidly spread across the country. By 1900 there were over two hundred different Chautauqua events in thirty-one states (Canning 2005). Chautauqua meetings were wildly popular, and these events became important parts of the nineteenth century social and political landscape.

Major political figures often built their careers around traveling the Chautauqua circuits petitioning audiences for support (Rieser 2003).

The Chautauqua movement received an especially warm welcome in the town of Pacific Grove. By 1879 the city was hosting the Pacific Coast branch of the movement. Visitors to the summer Chautauqua season at Pacific Grove would listen to lectures from local political figures, discuss pressing current events, and watch amateur dramatic productions. At the end of the season the organizers held a small celebration to commemorate the closing of Chautauqua. In 1905 this closing celebration was codified and expanded, creating a tradition that continues to the present day.

The Pacific Grove closing ceremony was modeled on the Fourth of July parade held at the original New York Chautauqua, but the material and cultural aesthetic of this ceremony was different from the one in New York (Bunter and Bunter 1980). The non-Chinese organizers of Pacific Grove's version decided to give the festival a strong Chinese theme. Although New York Chautauqua often leaned on Orientalist themes and aesthetics in its pageants and celebrations, it was a jumbled mix of non-Western cultural motifs.[1] Pacific Grove's celebration focused narrowly on the Chinese aesthetic. As Bunter and Bunter explain: "It was decided that the Pacific Grove festival should have as its theme the oriental legend commemorative of the search of the Mandarin for his daughter at the water's edge" (1980: 3). On July 22, 1905, a Saturday night, the roads and buildings of the city were decorated "in the Chinese Style" and the city of Pacific Grove celebrated the first formal Feast of Lanterns celebration.

The feast was a wild success. As the *Monterey New Era* (July 26, 1905) reported, "Thousands of people came from all around to see the site." The crowds were so strong that they overwhelmed the streetcar system, keeping many potential visitors away from the festival and forcing throngs of celebrants to walk back to the city of Monterey. At dusk, individuals gathered on the waterfront to watch boats glide across the waters of the Monterey Bay. These fishing boats sailed in "a constant movement" (ibid.) brightly illuminating the water "with charcoal baskets aglow" (ibid.). The Feast of Lanterns boats were accompanied by a "good display of fireworks and every now and again colored lights were burnt" (ibid.) creating an effect that was described by the newspaper reporter as "uncommonly pretty" (ibid.). In addition to the evening's festivities, stores and houses in Pacific Grove had been "gaily decked with paper lanterns." (ibid.) This regalia was hung thickly in public parks, along the waterfront by the bathing beach, and across Forest Avenue – the main thoroughfare leading from the city's center to the beach. The *Monterey New Era* (July 26, 1905) commented: "in every way [the festival] will long be remembered as one of the best entertainments ever given in the neighborhood."

Over the next few days the celebrants returned to their daily lives and Pacific Grove shed the material remains of the feast. Store merchants took down the

[1] See *Harpers Weekly* (Aug 21, 1880: 538) for a compelling first-hand description of the mixing of Orientalist themes at the New York Chautauqua.

lanterns and the public bathing beach was cleaned up, erasing the oriental aesthetic that had permeated city for a day.

9.3 The Point Alones Chinese Fishing Village

In following evenings, another set of lights appeared on the Monterey Bay. Lanterns at the bows of myriad small boats illuminated the water and lured squid to their welcoming glow. Nets and hands reached down as Chinese fishermen drew the squid into their boats. This activity was repeated for hours until the evening catch had been completed. Then the Chinese fishermen returned to their village nestled between Point Alones and Point Almejas. This village, on the border between Pacific Grove and Monterey, was known as China Point in Steinbeck's *Cannery Row*. During the day, the squid would be placed in the sun to dry and would eventually be packed up and shipped away.

This village was not the first Chinese settlement in the region. Indeed, Chinese men and women had been plying the waters of the Monterey peninsula, harvesting first abalone and then squid, since at least the early 1850s, when a small group of Chinese fishermen and women came to an area just south of Pacific Grove known as Point Lobos. By the late 1860s Chinese settlers moved to Point Alones where they built a large and prosperous village, supplying hundreds of tons of dried fish to distributors in San Francisco who would then ship the catch across California and overseas (Delkin 1946: 53). Economic life in the village was mediated by the complex social relationships between village residents and their neighbors. The primary products that residents of Point Alones gathered from the sea changed as economic conditions and pressure from non-Chinese fishing companies pushed the Chinese out of the increasingly lucrative abalone market (Lydon 1985). But the Chinese found a suitable replacement in squid, a product that non-Chinese fishermen considered worthless (Chiang 2002). To the Point Alones residents, the squid was far from worthless. It was used and sold as fertilizer or food. It was even rumored that village residents packaged the squid with excessive amounts of salt and shipped it to China as a way to evade the Qing government's high salt tax (*Chicago Daily Tribune* 1899: 12).

Although the fishing industry was clearly the dominant economic activity at Point Alones, the village also included general merchandise stores, religious structures, and a small seemingly permanent cemetery. The Point Alones village was the largest Chinese settlement in the area and it served as the social and cultural home base for many of the Chinese living in the Monterey (Lydon 1985).

The year after the first Feast of Lanterns, 1906, was a chaotic time for California. The Great Earthquake struck San Francisco causing social disarray and economic hardship throughout the state. Although the cities of Monterey and Pacific Grove were spared the wholesale physical destruction that faced San Francisco, buildings in both cities were damaged. Despite the quick repair of local hotels, hopes from the tourism industry that displaced wealthy San Franciscans would vacation in Pacific

Grove while their city was rebuilt never materialized. Refugees from San Francisco, however, did arrive. These included at least 40 Chinese individuals who fled the chaos and turmoil that followed the destruction of the Chinatown in San Francisco and the often racist actions of the soldiers and police officers who had license to kill on the spot any individual suspected of looting (Lydon 1985; Rieser 2003).

The arrival of these additional residents strained the already fractured relationship between the Chinese and non-Chinese in Pacific Grove and Monterey. A series of legal battles over fishing rights, the propriety of drying of squid near the village, the imagined lack of sanitation at Point Alones, and the effect of the village on property values stretched through the latter half of the nineteenth century and were all components of a more general racial tension that had long been simmering between the Chinese and their neighbors.[2] In 1905, the corporation that owned the land underneath the village, the Pacific Improvement Company, the property development arm of the Southern Pacific Railway, decided that the increasing complaints about the Chinese made their presence a liability and that the land underneath their village was worth too much money. The company revoked the Chinese residents' lease and began the long process of evicting them from the land that had been their home for generations. But in 1906 this eviction process was violently interrupted.

At 8:00 pm on May 16th, just one month after the San Francisco earthquake of 1906, a fire broke out in the Point Alones village. It quickly spread, jumping from one wood-framed building to another. As the village burned, scores of non-Chinese witnesses gathered near the railroad tracks above the village, watching the devastation. Some even cheered on the chaos and destruction wrought by the fire (Rieser 2003: 158). During that evening and the morning after, non-Chinese individuals were seen combing through the still-smoldering rubble of the Point Alones village. The ultimate cause of the fire is still debated. Was it arson or an accident? Cut fire hoses and firsthand accounts seemed to indicate the former (McLane 1975: 22), but some Pacific Grove residents resolutely claimed the latter. No matter the cause, the results were the same. The Chinese were driven out of Pacific Grove and the land under their former village was cleared for other development.

Despite the chaos that permeated the state and the Monterey area in 1906, the Chautauqua Literary and Scientific Circle of Pacific Grove again held their annual meeting in July. For the second year in a row, the organization closed their meeting with a town-wide celebration based on a Chinese aesthetic. The Feast of Lanterns had become a tradition. Like in 1905, city businesses and residents decorated their town in the "oriental" style. On the waters of the bay, boats with lanterns on their bows once again illuminated the night, celebrating the close of the summer retreat. Despite several missed years due to war, disinterest, and/or poor city finances, the Feast of Lanterns continues to the present day. Indeed, I attended the 2007 Feast of Lanterns with a village descendant. On that summer weekend the town was decorated in a Chinese style and we watched lantern-lit boats glide across the Monterey Bay.

[2] These laws, their origins, and the impacts on the Chinese fishing industry are comprehensively detailed in Chiang, 2002 and Lydon, 1985.

9.4 Race and Tension in Pacific Grove

When I first conducted historical research at local archives in Pacific Grove in preparation for archaeological excavations, I was struck by the sharp disconnect between the exuberant celebration of Chinese materiality in the Feast of Lanterns and the tension and violence between the Chinese and non-Chinese residents of Pacific Grove. These two practices share a common material index: China. But the Feast of Lanterns and the legal and extra-legal violence against the Chinese differ so strongly in their orientation to that index that their simultaneous existence seems almost absurd. It is hard to understand how the Chinese living at Point Alones must have felt as the civic leaders of Pacific Grove celebrated an ostensibly Chinese festival at the same time that some Pacific Grove residents were subjecting them to legal and physical assaults, in many cases calling their village a dirty, decaying, and dangerous nuisance (Chiang 2002: 120; Lydon 1985: 357). That the Feast of Lanterns would continue the next year, shortly after the Chinese village was burned to the ground in a suspicious fire and the Chinese residents of the city were forced to resettle outside of the Pacific Grove city limits is a particularly disturbing idea. How does it make sense that the people whose material culture was ostensibly being celebrated during the Feast were treated so poorly and with such strong xenophobia in the social and political realm of daily life?

The relationships between the Chinese community of the Monterey Peninsula and their non-Chinese neighbors were complex and multifaceted. On one hand there were clear and regular tensions between the Chinese and non-Chinese, tensions that mirrored the general nationwide anti-Chinese sentiment of the times (Pfaelzer 2007; Williams and Camp 2007). The burning of the village and the subsequent looting and eviction of residents followed decades of organized and vigilante attacks against the Chinese and countless attempts to restrict and eliminate Chinese fishing on the Monterey peninsula. For example, during the 1880s, non-Chinese fishermen regularly cut the Chinese fishermen's nets and lines. When the Chinese responded by suing the non-Chinese, their case was thrown out in court (Lydon 1985: 54). Citizens of Pacific Grove regularly organized petitions to local government to remove the Chinese (Chiang 2002). This anti-Chinese sentiment was extended across age groups and was often directed against U.S. born Chinese-American children. In 1894 the city of Pacific Grove drew "about $500 from the public school fund for thirty-three of [Point Alones village's] Chinese children, and [refused] to give them the benefit of a common school education" (Masters 1894: 383). When Chinese children tried to attend public school in Pacific Grove they were "stoned on their way to school" (ibid.).

But a simple chronicle of the very real anti-Chinese sentiment in Monterey and Pacific Grove does not tell the whole story. It is also clear that there were regular positive interactions between the Point Alones villagers and their neighbors. Christian groups conducted missionary work with the village residents and those missionaries often wrote favorably about the character of at least some of the

Chinese residents.[3] There were also local lawyers who advocated on behalf of the Chinese. In one instance, the Chinese residents of Point Alones hired two separate local advocates to pursue claims against the Pacific Improvement Company and contest their eviction. Although both the missionaries and the lawyers had ulterior motives, missionaries wanted to convert the Chinese and the lawyers were paid a fee, they regularly defended the presence of the Chinese in America generally and Pacific Grove specifically. They worked actively in their professional capacity to challenge dominant negative stereotypes of the Chinese, although usually by framing the Chinese in terms of other reductionary stereotypes (e.g., Knox 1911).

Perhaps more striking are instances where non-Chinese residents with no clear professional agenda publicly supported their Chinese neighbors. These include a charity baseball game organized by non-Chinese that raised $180 for the Chinese displaced by the fire, and also an offer from the Pacific House Hotel to temporarily house former village residents (Walton 2001: 179). Members of the media also occasionally offered sympathetic accounts of the situation such as when the *Los Angeles Times* (May 23, 1906) reported that the Pacific Improvement Company resorted to "high handed tactics" to "dispossess Pacific Grove Chinese of their land."

Although it would be simple to argue that these examples stem from two discrete racist and antiracist elements within nineteenth century California society, that reading paints too clear a picture of a muddied and contradictory history. The organizers and participants in the xenophilic Feast of Lanterns celebration consisted of both pro- and anti-Chinese groups and individuals. The role of the Pacific Improvement Company in the Feast of Lanterns and the anti-Chinese movement exemplifies this muddled history. The Pacific Improvement Company long had an ambiguous relationship with the Point Alones village. On one hand, the company rented their land to the villagers for decades. On the other hand, they assented to anti-Chinese sentiment when it was economically or politically expedient. For example, the decision to evict the Chinese was primarily couched in political and economic terms: the land would be more valuable without the Chinese village and the citizens of Monterey would no longer have reason to be angry with the company. But the company was not universally anti-Chinese. Indeed, the General Manager of the Pacific Improvement Company vainly tried to "relocate the Chinese to a spot where they could pursue their fishing operations without creating a nuisance" (Chiang 2002: 67).

During the 1906 Feast of Lanterns, the Pacific Improvement Company was a primary sponsor, providing money to decorate the town in support of the public festivities. This large donation was offered just a short time after they began legal proceedings to evict the Chinese from their land in Pacific Grove and spent a good amount of money hiring armed guards to keep them from returning to their burned-out village.

[3] There was extensive debate within California churches about the proper treatment of the Chinese. Masters (1894: 383), a missionary attempting to convert the Chinese, wrote that "Here in San Francisco our churches have no interest in our work. They are, with few — very few — exceptions, all anti-Chinese."

In the archival records of the Pacific Improvement Company, I found notes detailing this funding sandwiched in between correspondence related to the evictions. The relationship between the Pacific Improvement Company and the Feast of Lanterns continued for quite some time after the Chinese had been relocated away from Pacific Grove. J.P. Pryor, the officer in the Pacific Improvement Company who authorized the use of force in removing the Chinese, was a member of the Feast of Lanterns executive committee in 1913 (*Monterey American* June 25, 1913).

This kind of disjointed and contradictory relationship between the Chinese and Chinese-Americans in California and their non-Chinese neighbors was a common occurrence during this time period. For every statement that was made by a non-Chinese in an attempt to deny the Chinese their rights, there was another statement made in support of their presence (see Walton 2001: 179-180).[4] The tension between the welcoming and the excluding, the violent and the harmonious fostered a discursive landscape where the meanings associated with China and the Chinese were slippery and elusive. Were non-Chinese to think that, in the words of Massachusetts senator Charles Sumner, "if the Chinese come for labor only, we have the advantage of their wonderful and docile industry. If they come for citizenship, then do we offer the pledge of incorporation in our Republic. Filling it with increase" (*The Times* May 19, 1879: 11). Or was the average Chinese immigrant simply an "ordinary coolie immigrant" in the words of Francis Sterne Palmer, a New York Customs officer, "…polluted by too long and intimate and confined a relationship with his kind… like a sick puppy, made sickly by too much handling" and prone to "brutal assaults, disgusting exhibitions of vice, and cold-blooded murders" (Palmer 1898: 1177). In this world where stable meanings for Chinese people and Chinese objects were lacking and where discussions of race and citizenship were intersected by violence, why were some Chinese-looking objects and aesthetics, such as the themes and material culture associated with the Feast of Lanterns, desirable symbols of exotic luxury worthy of celebration, acquisition and consumption while others, such as the built landscape of the Point Alones village, were condemned as dangerous, disease-ridden, and contagious?

9.5 The Feast of Lanterns and Imperialist Nostalgia

At first glance, the form and function of the Feast of Lanterns may seem akin to imperialist nostalgia. Imperialist nostalgia occurs when agents of colonialism or imperialism display nostalgia for the colonized culture as it was traditionally (Rosaldo 1989: 107). This imperialist nostalgia "revolves around a paradox: a person kills somebody and then mourns his or her victim" (Rosaldo 1989: 108). Thus, the nostalgic process "uses a pose of 'innocent yearning' both to capture people's

[4] This debate was not confined to California. A parallel example of the arguments about the character of the Chinese was published in the April 18, 1876, edition of the *London Times*.

imaginations and to conceal its complicity with often brutal domination" (Rosaldo 1989: 108). This nostalgia is often manifested through the trade, exchange, and consumption of artifacts with aesthetic compositions that recall the colonized group. Examples abound, from the folk jewelry and hand-craft objects created by "authentic" natives for sale in mall stores across America (Kaplan 1995), to the creation of entire tourist villages like the Mayers Ranch in Nairobi where Maasai people make a living by "performing the 'noble savage' in a carefully and collaboratively constructed ethnographic present" (Bruner and Kirshenblatt-Gimblett 1994: 435). This nostalgia would explain why Chinese-looking artifacts remained desirable in Pacific Grove even as Chinese people in the city were being driven out, and a process similar to imperialist nostalgia was and remains clearly at work in the city of Pacific Grove.

But this analytic only partially clarifies the social processes that allowed competing discourses to exist in productive tension. The object of imperialist nostalgia is a cultural "other" that is thoroughly domesticated and that no longer threatens to destabilize normative regimes of power and domination. This was not the case at Pacific Grove, where continuing anti-Chinese agitation and the threat of violence and disorder hung in the air and mirrored a nation-wide debate about the perceived threat of the Chinese to the founding principles of democracy. Complex local genealogies of race and power in Pacific Grove preclude such a simple explanation of historical process. Questions that remain unresolved include: why did nostalgic longing in Pacific Grove manifest itself in such a distinctive form – the Feast of Lanterns? How and why were good and desirable Chinese objects and Chinese people, acquired and consumed through trade and exchange, distinguished from the bad Chinese people and objects who were avoided, persecuted, and subjected to violent intimidation?

At Pacific Grove, the decorations, themes, and motifs of the Feast of Lanterns are reminiscent of *Chinoiserie* – the term used to describe material culture and texts in the Chinese style that were designed largely for a European and non-Chinese North American audience. Items in this style such as bric-a-brac, ceramics, and cloth were introduced to Europe and the Americas beginning in the seventeenth century and were often sold as high-class or luxury goods. They established in material form an Orientalist reading of China as feminine, antiquated, exotically mysterious, and ornate, that had more to do with Euro American sensibilities and projections of otherness than with Chinese history, society, or aesthetics (Porter 2002; Williams 2008).

9.6 In the Chinese Style: The Blue Willow Pattern and the Story of the Mandarin

One day while walking on the beach in front of the Point Alones village site I came across a small piece of European-produced white improved earthenware buried in the sand. The ceramic was decorated with the blue willow transfer-print pattern,

a pattern made famous by Thomas Minton and the Spode manufacturing company in the late 1700s (Fig. 2). The standard pattern on this ceramic is "a cluster of pagodas or temples, a bridge with people on it, a distant kiosk or pavilion, a couple of boats, doves in the air, and an assortment of trees dominated by the willow" (Nöel Hume 2001: 247). This design was quite popular and was commonly imitated by other British potters. Over time, a story, the Blue Willow Legend developed around the motifs on the plate. Although references to this story appear as early as 1849 (Nöel Hume 2001), it remained popular through the turn of the century and was retold in many forms including a 1901 comic opera *The Willow Pattern* and a 1914 silent film *The Story of the Willow Pattern*. The core of the story revolves around a princess whose father prohibits her from marrying her young lover and instead betroths her to an ugly and elderly friend. The now-despondent princess cannot live with this and decides to drown herself. The king orders all his subjects to search the waters surrounding his castle. During the search, the princess's lover finds her dead body. As soon as he reaches for her, they both turn into doves and escape into the sky. This story became so widespread that "some people have believed that the legend inspired the pattern and not the other way around" (Nöel Hume 2001: 248).

The willow pattern story is mirrored in the mythological pageant of Pacific Grove's Feast of Lanterns. This pageant, the *Monterey New Era* (July 26, 1905) asserted, was "a revival of an ancient Chinese custom. It seems that ages ago the daughter of a mandarin was drowned and her body sought for in vain." In later

Fig. 2 Willow Pattern Ceramic. Image courtesy of Stacey Camp, Mark Warner, and Leah Evan-Jankes. Alfred W. Bowers Laboratory of Anthropology. University of Idaho

years, this story was elaborated upon and the link to the blue willow style ceramics was made explicit (*Monterey Peninsula Herald,* July 16, 1986).

9.7 Visiting the Village

The blue willow pattern ceramic and the *Chinoiserie* that it exemplified were goods that symbolized material wealth and proper domesticity (Wall 1994). With *Chinoiserie*, the material aesthetics linked to China were desirable qualities that European Americans were supposed to aspire toward. Collecting and displaying these sorts of goods was instrumental to becoming properly domestic middle-class subjects (Praetzellis and Praetzellis 2001). The idea of the exotic was an important element of visions of affluence in the late nineteenth century and few places were as exotically affluent as China (Mullins 2004: 101).

But the celebration of the exotic and foreign Chinese aesthetic marked by the Feast of Lanterns was not simply a matter of turning away from the *real* Chinese people living at Point Alones and toward an imagination of the Chinese that was wholly drawn from a Euro-American past. During Chinese festivals and celebrations, the Point Alones village temporarily took on an air of *Chinoiserie*. During these festivals, most notably Chinese New Year and the annual ring game, non-Chinese individuals would flock to Point Alones village. During the ring game, for example, the non-Chinese would watch parades with fantastic banners where the Chinese were "dressed in fine silks of every color of the rainbow" (Lydon 1985: 327). During New Year celebrations, non-Chinese visitors "could be seen winding through the narrow streets of the Chinese burg… many of them emerging from the quarter with handkerchiefs filled with candles, cakes and other oriental goody-goodies" (Lydon 1985: 345).

These festivals, lasting only a few days a year, were not representative of daily life in the Point Alones village. For the non-Chinese residents of Pacific Grove, the day-to-day lives of men and women who lived in the Point Alones village usually mapped into a very different discursive spot than the exotic difference symbolized by *Chinoiserie* and festivals like the ring game and the Feast of Lanterns. In fact, the primary descriptions of the Chinese in the popular press discussed issues such as the diseased and infectious conditions of the Chinese village (Chiang 2002), the bad smells that came from the village and its effect on property values (Lydon 1985), and the ugly, dirty, and improperly gendered bodies of women in the village (Williams 2007). In essence, imagined radical differences between the Chinese and normative standards of health, cleanliness, and desirability were highlighted.

Archaeological evidence recovered from excavations at the Point Alones village revealed that the Chinese residents who lived at Point Alones were not exceptionally isolated from their non-Chinese neighbors. All the archaeological units contained glass, ceramics, and small finds that were imported from China in addition to material most likely made on-site and artifacts of European, American, and local

non-Chinese origins. Whitewares were found next to decorated porcelains made in China, and American coins were found abutting Chinese ones.

Although the process of laboratory analysis is ongoing, our field observations of assemblage heterogeneity are being confirmed in the laboratory. For example, our most comprehensively analyzed excavation unit represents a Chinese-period trash pit (Unit N1054 E981). In the Chinese component of this unit, cataloged tableware represents a minimum of 40 individual artifacts (40 MNI). Of these, 10 (MNI) are clearly of European or North American manufacture, while 30 (MNI) are clearly of Chinese manufacture (Fig. 3). This archaeological assemblage makes it clear that while this community was tied into the trans-Pacific trade in goods and services, it was also dependent on goods and services from their non-Chinese neighbors. A significant portion of the archaeological assemblage has no connection to China. In their daily lives, the Point Alones residents did not build a carbon copy of a southern Chinese fishing village, but they also did not build a community that simply assimilated to non-Chinese ideals of proper domesticity. The real Point Alones village and the real day-to-day relationships that Point Alones villagers had with their non-Chinese neighbors were much more complex and multifaceted and much less

Fig. 3 Ceramics Recovered From Unit N1054 E981. Image by the author

sensationalistic than either the Chinese-as-desirable-exotic or the Chinese-as-dangerous discourse would allow.

With this in mind, it is no surprise that the liminal space created during festivals was where positive affective connections to Chinese objects and people were most strongly foregrounded. These festivals highlight moments where the Chinese are bathed in an aesthetic of extreme social and cultural difference from their non-Chinese neighbors, an extreme difference that was lacking in their day-to-day interactions. They allow *Chinoiserie* to retain its innocence by perpetuating the idea the Chinese could only exist as properly gendered and raced beings somewhere else, either in China or in the performative liminal space that temporarily, and only temporarily, transported China to California. The everyday bodies of men, women, and children at the Point Alones village, tainted by a separation from their proper place, could never measure up to the idealized bodies of this ritual space.

As the tension between the Chinese and their non-Chinese neighbors increased, the ability of Chinese-looking objects and aesthetics to unambiguously stand for positive qualities was called into question. The Feast of Lanterns is strongly foregrounded in the lives of the Pacific Grove residents at the very moment when looming violence and conflict with actual Chinese individuals threatened to shatter the possibility for an innocent reading of *Chinoiserie*. By bathing the entire town of Pacific Grove in a proper oriental aesthetic, the Feast of Lanterns served as a bulwark against the discursive encroachment of Chinese and more importantly, Chinese-American, individuals into the Chinese aesthetic.

9.8 Tension, Contradiction, and Conclusions

The tensions between the celebration of the Feast of Lanterns and the violence and political exclusion of daily life saturated Pacific Grove with an epistemic murk, the term Taussig (1987) is used to describe the confusions, conflations, and tensions that allow violence and terror to be imagined and made sense of. This murk creates a world where discourses of race, belonging, and the foreign contradict even as they constitute each other. In this world the fake Chinese princess is more authentically Chinese than the real Chinese-American individual, the "only Chinese to cast a vote in Monterey" (Pfaelzer 2007: 264), who was shot and lynched a few years earlier.

What we see in the Feast of Lanterns, then, is a forceful and radical resignifying of the Chinese style, away from the mundane face-to-face interactions and commerce between the Chinese and their neighbors and toward an aesthetic index mediated through a historical nostalgia that provides the illusion of stability within a nervous and ever-changing racialized political landscape of nineteenth century California. It is not surprising that this resignifying bubbles to the surface in such a spectacular and explosive fashion at the precise moment when the frenetic pace of racial tension was on the verge of its own explosion: the Point Alones fire and expulsion of the Chinese from the city of Pacific Grove.

In this case, xenophilia, an admiration for exotic objects and desire to consume foreign aesthetics, is not the love of a known or unknown other so much as it is a love of a foreign aesthetic that is declawed and domesticated. It signifies idle luxury, makes no claims for citizenship, and does not threaten European and American hegemony. In this particular case, exchange including the consumption and public display of foreign-looking objects and motifs is not a mechanism for introducing the foreign into daily life. In fact, it is just the opposite, it is a way for excluding the foreign from daily life. Boellstorff argues that "details can be global and structures local as much as the other way around" (2005: 4). My reading of the Feast of Lanterns and its juxtaposition with the violence that saturated everyday life in Monterey indicates that objects with the same global details, in this case a Chinese style, can be interpolated into cultural logics that operate at scales and contexts dramatically removed from the generative source of those details. Objects in the Chinese style do not speak for themselves in any meaningful way, nor do they speak for China or even from China. While the polysemic nature of artifacts, aesthetics, and styles is well understood by archaeologists, the ways that individuals and groups react to cultural exchanges and events that foreground this multiplicity and unsettle dominant meanings is less extensively explored. Unraveling these exchanges and their attendant cultural formations illuminates how social processes at multiple scales interact with and co-constitute one another. The history and archaeology surrounding the Feast of Lanterns is just one example of this process and serves as a cautionary tale against assigning foreign meanings to foreign-looking objects. Sometimes the only thing foreign about those objects is their look, and even that look can be deceiving.

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Chapter 10
What if the Local is Exotic and the Imported Mundane?

Measuring Ceramic Exchanges in Mormon Utah

Timothy James Scarlett

10.1 Introduction

Archaeologists make assumptions about pottery. The local is mundane; pottery made in distant locations must be acquired through complex exchange. Long-distance transport requires energy and therefore makes the foreign artifact expensive, rare, exotic, and alluring. Archaeologists assume that the allure for imported objects provides different potential for social action than locally made goods. I advocate adopting a critical perspective on these assumptions. The Latter-day Saint pottery makers working in the Utah Territory during the nineteenth century provide an illuminating case study where the *local* was exotic and the *imported* generally mundane. This example provides an exception, which should give pause to those who do not consider the exotic of the local.

Wealthy people own exotic material culture. Archaeologists may not like the implication, but we assume that common folk living in the work-a-day world want foreign things because they enviously seek to emulate the wealthy. We believe that the desire to consume luxury commodities is a general human trait connected to the universal, albeit complicated, nature of desire (Irvine 2006). Researchers therefore understand that exotic artifacts become both the objects of desire and the vectors of transmittal through which desire spreads, virus-like, through a community.

Locally made things can inspire such emotions in consumers if they are unique in some manner, such as prestige ceramics or art wares which require more time, energy, or vision of their makers. Consumers value prestige wares more highly than common pottery and ascribe foreign goods with a higher value because of the emotive response to the rarity or exotic uniqueness of these goods. The same object may be mundane and inexpensive in one locale, but exotic and highly valued in another.

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10.2 Trade and Exchange

> A history of anthropology and modern art needs to see in collecting both a form of Western subjectivity and changing set of powerful institutional practices. The history of collections (not limited to museums) is central to an understanding of how those social groups that invented anthropology and modern art have *appropriated* exotic things, facts, and meanings. . . . It is important to analyze how powerful discriminations made at particular moments constitute the general system of objects within which valued artifacts circulate and make sense. James Clifford, *The Predicament of Culture* (1988: 220-221).

In the 1920s, cultural anthropologists developed a keen interest in exchange, inspired most directly by Malinowski's (1922) empirical study of trade and exchange among the Trobriand Islanders and Marcell Mauss's *Essai sur le Don* (1923). These foundational works inspired scholars to create two subdisciplines: economic anthropology, in which economic interactions were understood to be imbedded within social institutions (Polanyi 1944, 1957); and the French style of structural anthropology, in which economic exchange was the material realization of social alliances created through kinship systems (Lévi-Strauss 1949, 1969). American interest in these approaches was amplified when Ian Cunnison published his English translation of Mauss's classic work as *The Gift* (1954).

Archaeologists again made exchange a central concern during the 1970s as scholars eagerly capitalized on newly developed tools for chemical, physical, and isotopic characterization of artifacts. Shepard (1948) pioneered thin section petrology as a tool to characterize the mineral constituents of ceramic artifacts. Sayre and Dodson (1957) later introduced Instrumental Neutron Activation Analysis (INAA) as a method to quantify the trace elements in pottery. INAA in particular was also applied to study obsidian in Southwest Asia (Renfrew et al. 1968) and North America (Griffin and Gordus 1967). During the 1970s, archaeologists and collaborating scientists applied at least eleven major techniques from the geological, nuclear, and materials sciences to archaeological problems. The techniques inspired a flurry of theoretical writing in which researchers attempted to resolve the importance of these new analyses and develop a subfield of economic archaeology, particularly significant among these were Wilmsen (1972), Hodder (1974), Renfrew (1975), Earl and Ericson (1977), and Ericson and Earle (1982).

Historical archaeologists have also maintained significant interest in trade and exchange. The discipline has largely been defined by an interest in the trade networks and plantation-based production systems that accompanied the growth of European colonialism after the fifteenth century. In the last 20 years, archaeologists focused these interests through the emerging practice of "thinking globally" while "digging locally" (Orser 1996). Building upon interest in economic networks (Adams 1977) and the social constructions of consumption (Beaudry et al. 1991; Cook et al. 1996; Miller 1980, 1991), historical archaeologists made globalization's stories and processes central to our discipline (Hardesty 1999a, 1999b). Historical archaeologists in the United States have been very slow to adopt tools from materials science for this purpose however.

10.2.1 A Little Critical Reflection

Many scholars hold that the romantic and exotic associations that people feel for foreign artifacts are fundamental truisms – rules of both the natural and the human environment. People desire exotic things and seek to acquire them. This belief in a universal desire underlies interpretations of the human experience, from the rise of complex societies to the collapse of Communist states at the end of the last century. These are compelling assertions, generally supported by tremendous evidence in the human experience. Disproving these assumptions would require an unrealistic effort to disprove the law of supply and demand, but archaeologists should critically consider how they use these ideas.

Consider the tacit epistemological underpinnings of this assumption. Twenty years ago in *The Predicament of Culture* (1988: 215–251), James Clifford wrote of the "art-culture system" in western thought. Building upon the growing critique of anthropology's place in colonial enterprise, Clifford argued that western academic thought had constructed an "art-culture system" that balanced schemas of free-willed agency in western cultures with passive sociocultural enculturation among others. Both capitalist consumer culture and anthropology were rooted in this system. His descriptive figure included axes that separated objects by degree of variation among several opposed dichotomies through which we sort things: masterpiece versus artifact, authored versus anonymous, singular versus reproducible, and authentic versus inauthentic. Clifford's chart is reproduced in Figure 1, upon which one can project later critiques like those by Price (1989), adding explicit divisions between White/Non-White and Modern/Primitive.

These mental constructs permitted us to make judgments measuring the artistic and economic value of objects. Clifford argued that the system guided the way western scholars sorted out things among different kinds of museums: historical, art, ethnographic, or industrial/technological. The art-culture system also explained the differences in current market values for a plate made by workers in a Chinese factory in 1609 (an artifact), a duplicate of that plate made in a modern Chinese factory in 2009 for sale to collectors (a replica) and tourists (a curio), and a current artwork by an internationally known modern Chinese artist who engages with the style of the plate (a masterpiece).

This system is an important starting point. Europeans, and then Americans, have long associated the foreign with exoticism and otherness. With the rise of mercantile capitalism and the growth of the middling sort in European societies, "otherness" and "exotic" went hand in hand with developing nationalism and racial taxonomies. Our social and intellectual histories reveal a strong association between geographic and racial remoteness and romantic exotic imagination (Asad 1973: 16; Fabian 1983: 10–11; Wolf' 1982: 11–23). Our thoughts about exotics are directly tied to the forces that Orser insightfully identified as archaeology's four haunts: colonialism, capitalism, Eurocentrism, and modernity (Orser 1996: 57–88).

Foreign and exotic objects are valuable because they are rare and unusual commodities in the marketplace. I do not assert that the allure of the exotic is unique to

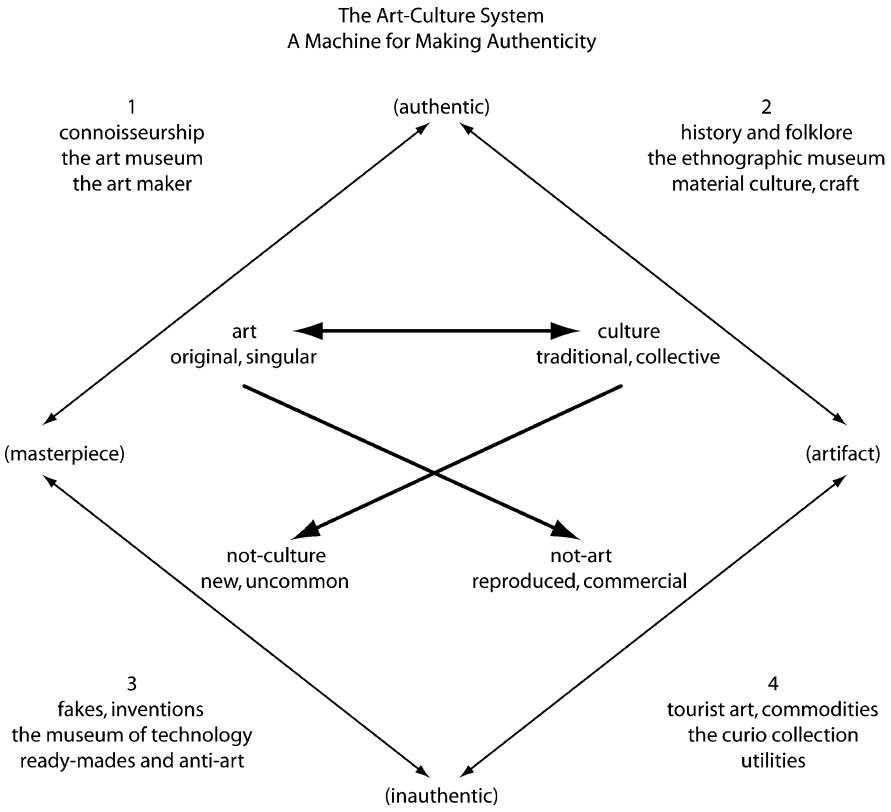

Fig. 1 Clifford's schematic diagram of the social machine, the "Art-Culture System" (1988: 224). The chart describes both the categories and the routes through which people move objects during the aesthetic evaluation (Used with permission, Harvard University Press)

western societies or market economies. As one example, Descantes et al. (2002: 229–249) demonstrated how residents of one Yapese household substituted a Chinese Dragon Jar acquired through long-distance exchange in an effort to maintain traditionally inherited prestige along with interisland trade relationships that had been disrupted by post-contact population declines.

Because of a belief in the links between the exotic and the other, American historical archaeologists eagerly contextualize Chinese porcelain by discussing it within world systems, globalization, the taste makers, and elites. In some ways, exchange brings the foreign into daily life and exotic commodities from distant lands inject romance into the local's otherwise humdrum existence. The flipside informs the locally made objects, where producers merely reacted to global market changes or broad shifts in aesthetic style. Local potters are driven by tradition and simply react to aesthetic, technological, and market changes. Archaeologists put local potters into Clifford's second category, the realm of history and folklore, craft and material culture, a kind of "inauthentic" art. A redware beanpot is normal and

unremarkable in nineteenth-century Boston, but a fragment of sixteenth-century Italian blue Faenza discovered at excavations in Quebec is certainly newsworthy.

Conventional archaeological and historical wisdom leads us to expect that patterns of consumption should fit a *linear drop-off model* in geographic space. Put simply, the closer one is to a producer, all things being equal, the more that producer should dominate the local market. From this assumption, our prehistoric colleagues using archaeometric tools constructed their *provenience postulate*, which asserted that if a type of pottery dominates the assemblages in an area, that type was probably a local product (Arnold et al. 1999: 61–62; Tite 1999: 202; Weigand et al. 1977: 16). This expectation is supported by more than just reasonable expectations of human social and economic interaction. One can find numerous supporting examples in ethnoarchaeology and decorative arts history (Rice 1987: 197–200).

10.3 The Mormon Potters of the Utah Territory

> It is our good fortune that all is not yet couched in terms of purchase and sale. Things have values which are emotional as well as material; indeed in some cases the values are entirely emotional. Our morality is not solely commercial. Marcel Mauss, *The Gift* (1954: 63).

Between 1848 and 1930, local Utah potters manufactured at least ten million objects and introduced them into regional economic networks. A few of these objects were artistic prestige wares and singularized objects of art. However, archaeologists would identify the vast majority of the artifacts as everyday, ordinary, humble items such as food storage jars, pans, and crocks. The objects were local and they were mundane. Through decades of analysis on this pottery in Utah, archaeologists cataloged these and described them as products of local manufacture. They stopped their analyses there and spent their valuable time studying more important artifact types that would yield data for chronological or socioeconomic analyses.

I question this conventional approach. Commodities should not simply be considered as items explicitly manufactured, grown, or extracted for exchange in terminal and individual market actions, generally involving cash, and where value is determined in the market. As Marx (1967: 71) famously concluded, commodities actually prove to be queer types of things. Scholars now find it more useful to consider a commodity as an identity that people can assume for, or ascribe to, a particular thing (Appadurai 1986; Kopytoff 1986). Any piece of material culture can become a commodity at one time, but people can also remove it into other social categories with distinctly anti- or noncommodity characteristics. To use current parlance, all objects — imported and local; exotic and mundane; sacred, secular, and profane — have the same potential for "thingyness" in social action (Fowler 2004: 58–59).

In Utah, immigrant potters made earthenware and stoneware objects for cash-based commodity exchange in local or distant markets, where interactions were

discrete, terminal, and perhaps relatively anonymous. They also traded wares within community systems of barter and neighboring, where local community members swapped lines of credit and debt, labor exchanges, and commodities in a cash-poor society (Arrington 1958). Those exchanges relied upon long-term expectations of continued social interaction and thus were neither terminal nor discrete. Potters also used their wares as gifts within familial systems of balanced or generalized reciprocity and as religious tithes to the Latter-day Saint's poverty relief network (a redistributive gift-giving apart from direct market exchange). I have elsewhere described how people could put identical objects, such as gallon storage jars from the same kiln load, into different commodity phases (Scarlett n.d.). To consumers, making a purchase at the local, Church-managed cooperative mercantile store was not the same as shopping at a gentile-owned (non-Latter-day Saint) store, ordering from a catalog, or buying directly from the producer.

The Utah Pottery Project has demonstrated that the application of materials science holds great promise for historic pottery analyses. Figure 2 maps the production and consumption sites brought into the analyses up to the date of this publication. We have been able to show the efficacy of Instrumental Neutron Activation Analysis (INAA) to distinguish the products of various production centers throughout the Mormon domain (Scarlett et al. 2007). We began building our database with wasters produced at kiln sites, side-stepping assumptions built into the provenience postulate in archaeometric analyses. We have now gone further to show that our growing database can be used to sort unidentified samples from consumption sites, linking producers with consumers as close as a few blocks or as distant as 300 or 500 miles (Merritt 2006). Glaze chemistry may prove to be an equally useful tool (Little et al. 2007). More significantly, our work proves that with future study we will be able to design research projects to measure the importance of different routes of exchange as people entered pots into different commodity phases (Scarlett and Merritt, n.d.; Scarlett, n.d.; Scarlett et al., n.d.).

For the Mormon faithful in Utah, purchasing locally made pottery could be much more than a mundane act. In the middle of the nineteenth century, as in the beginning of the twenty-first century, local social and political leaders often issued calls to "buy local" and "support home industry." These calls had sacred and moral echoes in the Utah Territory, since supporting home industry meant building up the Kingdom of God against the globalized forces of Babylon. Even "buy local" is a rather generic commandment, however, when considered in the context of the metaphoric importance of clay and pottery in Utah's communities during the middle of the nineteenth century.

Earthen- and stoneware crocks became important metaphoric devices for ecclesiastical leaders as they framed social debate, trying to shape collective identities and diffuse increasingly vocal dissent in Latter-day Saint community (Scarlett 2006). The potter Heber Kimball served as one of Brigham Young's close advisors and his use of the God The Potter metaphor spread among the Latter-day Saint's ecclesiastical leaders. As an example, Brigham Young referred to the metaphor when he responded to criticism that the constant influx of immigrants introduced moral corruption and fomented dissention in the community (Young 1856a: 191):

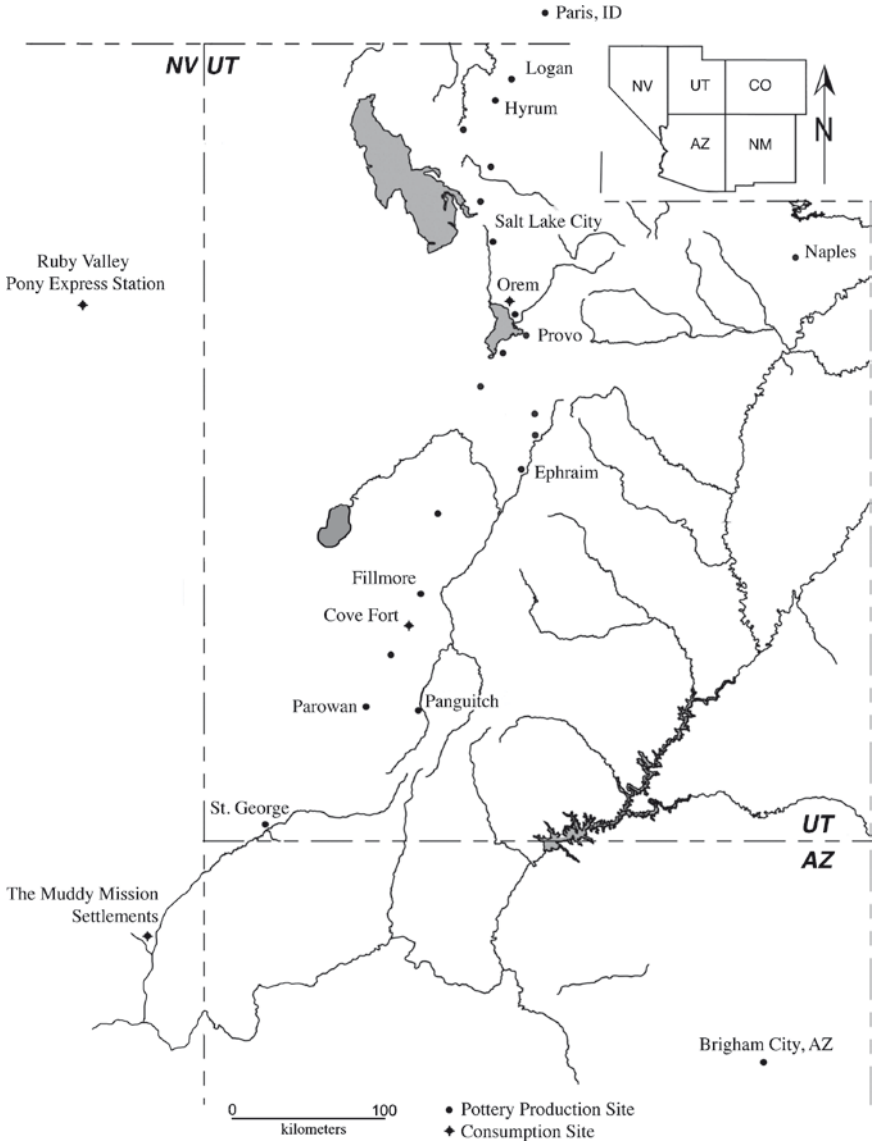

Fig. 2 A map of ceramic production and consumption sites studied by Utah Pottery Project members. Map by Jeff Speakman and Timothy Scarlett

> [every] year we must have another batch of clay thrown in the mill, as brother Kimball calls it, and this new supply spoils more or less of the clay that is already well tempered, and it is right that it should be so… if 10,000 Saints [were] to emigrate to this point yearly from England, or any other country, and though thousands of the wicked should gather with them, it would not prove, for one moment, that this congregation before me would be obliged to do wrong.

Young continued in another sermon later that same year (Young 1856b: 17, 20, 25):

> add the new clay, and work it over and over, and use the wire to draw from the lump any material that would obstruct the potter from preparing a vessel unto honor… though the new clay may be continually thrown into the mill, we will bring it to the same pliability as the old, much sooner than if it was ground alone; for the old clay soon mixes with the new and makes the whole lump passive.

In the context of these sermons, taking a seemingly mundane, nonexotic, locally made jar from the shelf must have been a significant act. The *local* then held tremendous significance for the performance of social actions in buying a jar, serving tea, or planting a flower. The *local* had exclusive moral associations that were absent in geographically exotic, imported white improved earthenware or porcelain. It is important to note, of course, that the opposite can be equally true. One could easily have used imported wares to reference a position in these debates.

Despite the fact that dozens of local potters worked in Utah over 70 years and made millions of objects, their products comprised only a fraction of the ceramics in the marketplace. Moreover, these pots were not necessarily available everywhere at any time. The leading historian of Utah's Latter-day Saint potters, Kirk Henrichsen has written, "Lucky was the town that had a potter" (1999: 15). We must understand local and exotic in terms of "glocalization," balancing microhistorical understandings of the local and the broader macroscopic perspective of the global (Robertson, 1995; Scarlett, 2006).

The life-history approach, well developed within archaeology and ceramic ecology, serves well to illustrate how the mundane and exotic can be blended in the local. The jar in Figure 3 may serve as an excellent example. Family history holds that it was made in Horace Robert's pottery shop in Provo, Utah.[1] Horace began operation in 1852 and ran the first successful pottery in the territory. Anna Chappele Young used the pot, perhaps she purchased it as a pure commodity, but since she was Horace Robert's daughter, it is possible that she bartered for it or received it as a gift. It is also possible that another product, such as pickles, were the intended present and that the contents of the vessel motivated its change of hands. Either way, Ms. Young used the pot for a time, but as glass jars came on the market, they displaced pottery, so as her earthenware jars broke, she replaced them with glass. Eventually this was her last jar and she used it only occasionally for preserves. She treasured it as a keepsake of her father, making it a uniquely singularized object.

Laura Young Foote, Anna's daughter, inherited the pot when her mother died in the 1920s. She turned the storage jar into a craft project. After muting the jar's shiny glaze with gesso, she glued her grandmother's image to the surface, affixed seeds and beads, and then painted the entire work bronze. She gave the new artwork, which now memorialized her grandfather and grandmother, to a pioneer museum in Provo formed by The Daughters of the Utah Pioneers (DUP). The DUP

[1] The genealogical and biographical information about the jar and bottle are compiled from the provenance details on the catalog card at the Provo Pioneer Museum and the Parowan Old Rock Church Museum, with additional family details added using Ancestry.com.

Fig. 3 A memorial pot from the Daughters of the Utah Pioneers Museum in Provo, Utah. Photograph by the author (Provo Pioneer Museum catalog #C10-bottom-869)

women formed a covenant before God to accept objects of pioneers' lives and swore an oath to preserve them forever in a building at the center of town. Generations of school children have visited this uniquely singularized, precious, noncommodity, authored-artistic as authored-artistic-masterpiece during nearly a century of educational field trips.

Ms. Foote's actions were not unique. Figure 4 shows a glass jar or bottle in the Parowan Daughters of the Utah Pioneers Museum, done as a crazy jar by Elizabeth Garr. Unlike Ms. Foote's jar that was only her creation, Ms. Garr affixed her jar with sentimental items "contributed by" her grandchildren, including someone's false teeth. These jars started life as commodities or containers for commodities, perhaps local and exotic ones like Horace Robert's jar or maybe as foreign and mundane as Elizabeth Garr's glass jar. Yet through association with their makers and owners over time, the objects shifted into uniquely singularized mementos of family history. The community could then enshrine them as precious and venerated artifacts.

It would be foolish for me to argue that Latter-day Saint settlers did not celebrate the exotic and rare commodities that had been imported over great distances. Beyond basic exoticism, I expect that such items provided immigrants with tangible connections to the places of their birth or locales where they served missions. Many of the sacred artifacts enshrined in museums by the DUP were fine and exotic things that museum labels record "came across the Plains" with an ancestor.

Fig. 4 Two views of a crazy jar from the Rock Church Museum in Parowan, Utah. Photographs by the author (Parowan Old Rock Church Museum catalog #320)

The local can be simultaneously exotic and mundane. The materials scientist in an archaeometry lab would not *assume* that local material was unusual, celebrated, or debated in society. He or she would not *assume* that mundane objects of everyday life could have been as symbolic in social interaction as they were in this case. Nor would one have *assumed* that these local and mundane items would likely become exotic and precious within their life histories. It is provocative, however, to consider the form taken by our analyses if we begin with the assumption that the local was exotic and the imported mundane.

During the summer of 2009, while this volume is going to press, my students and collaborators are in the field excavating at the site of Thomas and Sarah Davenport's pottery shop in Parowan, Utah. The Davenports were immigrants in 1852 and struggled for several years to set up the pottery shop in southern Utah. We expect to employ experimental archaeology and materials science to reconstruct the Davenport's process of technical and social learning over their lifetimes as they established the business and operated it until Thomas's death in 1888. We will try to understand how the Davenports participated in their community, building social connections through exchanges of their ware.

No one has yet studied household consumption patterns of the local ceramics of southern Utah. We do know that some of the Davenports' pottery traveled to sites as distant as the Muddy Mission settlements near modern Las Vegas, Nevada

(c. 150 miles), but we have only begun to try and distinguish between the different routes of exchange through which people traded ceramics. Future studies will hopefully allow us to isolate the patterns of direct sale, tithing, gift giving, and other exchanges as separate networks. Perhaps the patterns we find in different routes of distribution will eventually allow archaeologists to build models to measure different systems of exchange in antiquity.

Locally made pottery have had extraordinary "thingyness" in southern Utah during the nineteenth century. Making, buying, and using locally made pottery could not possibly have been mundane. While the Davenports were trying to figure out how to make pottery in Parowan, Iron County became the scene of terrible conflict between Latter-day Saints and non-Mormon migrants. Tensions between the Mormon and non-Mormon communities culminated in the Mountain Meadows Massacre of 1857, during which the Latter-day Saints executed a wagon train of about 120 adults and children headed to California. I do not wish to imply a simple causal relationship between pottery, theology, and murder. The massacre was a complex event and many scholars have tried to explain it (Bagley 2002; Brooks 1962; Leonard 2009; Novak 2008; Walker et al. 2008). Academic debates about the details of the event are not relevant to this discussion.

Latter-day Saint leaders had used pottery as a metaphor for discipline and social cohesion in their preaching throughout that decade, however, and the local residents read those sermons alongside inflammatory rumors printed in the newspapers. Frantic emotions grew in the Iron County communities and culminated in the killing. The aftershocks of the massacre had terrible effects on Parowan and Cedar City, as the residents of the town struggled with the event. Following the massacre, the population of the region declined and economic and exchange networks certainly changed.

How could a consumer possibly take a locally made crock down from the shelf, a "vessel unto honor," "well tempered," and tried in the kiln by fire, and not feel the powerful presence of that ceramic thing? Whether that consumer was a faithful and obedient member of one community, a dissenter in that community, or an outsider to the majority would not have mattered. How could the local possibly have been mundane?

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Chapter 11
When the Foreign is not Exotic: Ceramics at Colorado's WWII Japanese Internment Camp

Stephanie A. Skiles and Bonnie J. Clark

11.1 Introduction

Today Amache is a quiet and somber place. Driving east on Highway 50 in southeastern Colorado, through farm fields and the occasional small cluster of homes, a dirt road suddenly leads off to the right just before entering the town of Granada, Colorado. A wooden sign with an arrow pointing down the road reads "Amache - Japanese American Relocation Center, 1942-1945." It doesn't look like much, but upon driving into the site, cement foundations of what used to be barracks where multiple families lived become visible. The landscape is drab; it is very flat, with little vegetation that reaches more than three feet in height comprising sagebrush, small shrubs, and occasional prickly pear cacti. Withered elm trees planted in lines throughout the site are the result of the internees' attempts for some shade and attractive greenery during hot, windy, and dusty summers at the site in the 1940s.

There are no buildings left except for one small cement shed that was part of the co-op store, and a structure that houses a monument inside of the cemetery. It is hard to believe that this place was home to over ten thousand people during the three-year period that it was an internment camp (Harvey 2004). The lives of the people who lived through the internment, and their descendants, were forever altered by the experience. The majority of adults who lived there remember it negatively, as they understood the unjust nature of their internment, while others remember it as the cause of their families' financial downfall. Yet, some remember it fondly because it was the place they met their spouse, made close friends, and for the first time in their lives found themselves among people of the same cultural background. No matter how it is remembered, Amache represents many things, both positive and negative, to many people. Today, it remains a place of great historical, cultural, and emotional signifi-

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Fig. 1 National Park Service map of the 10 WRA internment camps. Note that Amache is designated by its official name, Granada. Image courtesy of the National Park Service

cance, a fact underscored by its recent recognition as a National Historic Landmark. Busloads of people pilgrimage to the site yearly in May to pay respect to the deceased in the cemetery, meet up with fellow Amache internees, or see families and friends from the other nine internment camps throughout the country.

Officially known as the Granada Relocation Center, Amache is one of ten relocation centers (Fig. 1) built during World War II specifically for housing Japanese Americans and immigrants deemed to be possible enemy insurgents due to their ancestral and cultural ties to Japan (Daniels 1993). Prior to World War II, Japanese and other Asians had long been targets of ire, especially in areas where they lived in large numbers. Scholars and some politicians acknowledge that the removal of Japanese during World War II was largely driven by racism and ethnocentrism against those whose physical and cultural traits made them stand out (U.S. Commission 1982). They were, in terms of the context of this volume, undesirable exotics.

11.2 Archaeology at Amache

Scholars have studied the internment era (1942–1945) from several different angles. Examples of such studies include: the psychological effects the internment had upon Japanese Americans during World War II (Tong 2004); the Japanese American experience from the first arrival to the U.S. in the late nineteenth century to the present day (Hosokawa 1998, 2002, 2005); and the general injustices of the World War II internment (Daniels 1993). Most archaeological research at internment

camps has been led by the National Park Service, which maintains control over two camps (Burton et al. 2002). Other studies have been conducted as Cultural Resource Management projects (e.g., Tamir et al. 1993). A few academic studies involving archaeology have also been conducted as elements of graduate level work (e.g., Branton 2000; Skiles 2008; Slaughter 2006).

Archaeological research at the Japanese internment camps helps us understand the daily negotiations of internees. Patterns in the material record at Amache are more compelling when coupled with the justifications for removal of these individuals, the majority of whom were American citizens, from the United States west coast. The Department of the Interior cited the participation by people of Japanese ancestry in Japanese language schools and cultural societies as one justification for relocation, as the maintenance of Japanese traditions was interpreted as a sign of kinship with and sympathy for Japan (Glick and Ferguson 1946). Thus, if one of the reasons for incarceration is their way of life, one might surmise that the people being incarcerated might want to suppress that way of life. But what we see from each internment camp that has been subject to archaeological investigation is evidence of a wide range of practices that follow Japanese tradition, including building koi ponds, making *mochi* (cakes of pounded rice), and growing tea (Burton et al. 2002). One of the most immediately visible bodies of data about these practices is Japanese ceramics, which have been reported at every recorded internment site. They have even been recovered from more temporary internment-related sites, like Kooskia, a camp of workers from Minidoka, the internment camp in Idaho (Wegars 2002). This chapter focuses on these ceramics and how they might help us rethink the allure of the exotic and the importance of exchanged goods.

11.2.1 Brief Background of the Research

In 2005, the University of Denver began a long-term archaeology and museum project at the Granada Relocation Center. Originally named after the adjacent town of Granada, the camp quickly came to be known as Amache, to avoid confusion at the local post office. Internees arrived in the summer of 1942, and like at other camps, they came with only as much as they could carry. In the three years of its occupation, over ten thousand internees lived for a time at the camp, although the maximum population at any one time never topped eight thousand.

The population of the camp made Amache the tenth largest city in Colorado almost overnight. It had an urban character, with buildings laid out in a street grid of military precision. Most of the camp comprised blocks of barracks. Built quickly and covered in tarpaper, the barracks were divided into living units, the maximum size of which was 20 x 24 ft. As one former Amache internee recalled, “It was one room per family and the living was cramped at best. Everything was made of flimsy clapboard that looked like it would collapse at any moment” (Lurie 1982: 38). Each barrack block also contained a combined laundry and bath house, as well as a mess hall. Only one of the buildings of this instant city is left standing today, but building foundations, trees and other landscaping, and middens of trash make it an incredibly legible archaeological landscape.

In the summer of 2006, Skiles led a systematic survey of four different areas of Amache for items linked to culinary practices there (Skiles 2008). A 50 x 50 m grid was placed in each area, within which crews surveyed between nine and eleven 10 m^2 units, for a total of 3,900 m^2. One grid was positioned in the official camp dump, one in an informal dump that may date to the abandonment of the site, and two others in barrack blocks that appeared to have relatively high integrity. Research at other internment camps has consisted of general surface survey (e.g., Burton et al. 2002; Tamir et al. 1993), so although Japanese ceramics are known to be present at internment camps, there is no way to ascertain just how common they are. Skiles's survey at Amache involved counting each ceramic sherd present in the gridded areas. Her fieldwork revealed that Japanese ceramics accounted for over 8% of the total sherds at Amache (Table 1). Although sherd counts can be problematic, the data recovered do suggest that as many as one in twelve of the ceramic vessels at Amache were imported from Japan. That figure is particularly impressive considering the possible ways the ceramics made their way to the site.

11.3 "Foreign" Goods and Exchange at Amache

That people could only bring what they could carry when they were sent to the camps has often been seen as symbol of political disregard for this population. Undoubtedly, the decision of what to bring and what to leave behind was quite traumatic for many of the internees (Uchida 1982). Photographs that depict families with their few worldly goods as they left their homes or waited for transport to the assembly centers were among those censored by the U.S. government (Gordon and Okihiro 2006). Oral histories suggest the contents of those packages and suitcases were often very pragmatic, with an emphasis on clothes and shoes. Many of the former internees from the Gila River camp, interviewed in conjunction with archaeological investigations there, did make room for cooking equipment, including dishes (Tamir et al. 1993). When asked what people were allowed to bring to Amache, former internee Joy Takeyama Hashimoto recalled, "People were buying pie pans and tin cups, and cheap tin or aluminum silverware. But my mother said, 'My family is not going to eat off this kind of a thing.' And she took her china and her silverware" (Foxhoven 1998).[1]

Table 1 Total ceramic counts from each surveyed area at Amache, 2006.

Grid Name	# Japanese Ceramics	# WRA Ceramics	# Other Ceramics	Total Ceramics
Main Dump	49	3	521	573
Block B9-G, Grid A	0	1	12	13
Block B9-G, Grid B	0	0	14	14
Block B9-L	0	0	0	0
Total	49	4	547	600
Percentage	~8%	~1%	~91%	~100%

[1] All quotations from Foxhoven were gathered from a series of videotaped oral histories.

Internees also had the option to have some of their goods shipped to them at the camps. Sometimes these shipments were made by friends, noninterned family members, or others in their communities. After an outcry about the loss of personal property suffered when internees were forced to leave their homes, the Federal government leased warehouses where internees could store their goods. The War Relocation Authority (WRA) paid for one shipment of goods per interned household, either to their internment camp or later to their post-war residence (War Relocation Authority 1946: 75). No agency kept track of exactly how many Amache internees received shipments of their household goods, but the *Granada Pioneer* (the Amache newspaper) noted that in November 1942, four railroad cars arrived with 50 tons of internee household goods. The article also provided information as to how other families could request their stored goods (*Granada Pioneer* 1942a).

An additional important source for goods for internees was cooperatives (co-ops), which were general stores at each camp that were owned, managed, and supported by internees. Yet another source was mail-order catalogs. Former internees recall that their parents ordered many items from Sears and Roebuck, including clothing allotments paid for by the WRA and shipped in the fall of their first year in camp (*Granada Pioneer* 1942b). Although many goods were available through these sources, it is very unlikely that any Japanese goods could be obtained through co-ops or catalogs. Moreover, the disruption of trade during the war made importation almost impossible. For example, soy sauce, often an imported item, was in short supply during the war. Indeed, the one known shipment of soy sauce to Amache, organized by the International Red Cross, was actually a gift from the Japanese emperor, an act that caused a tremendous amount of consternation. As Thomas Shigekuni, a former Amache internee, recalled, "It really bothered me at that moment when I saw the soy sauce; how President Roosevelt had treated us when [the] enemy, Emperor Hirohito, is sending us soy sauce" (Foxhoven 1998).

Bearing in mind the considerable difficulties surrounding the accessibility of Japanese goods during the war, it is likely that almost all the Japanese ceramics recovered from Amache were once part of the internees' household goods and were either brought with them or later shipped to the site. Maker's marks are also indicative of the journey these items made. Many of the surveyed sherds were marked in English, "Made in Japan," which indicates they were expressly manufactured for the American export market and were likely purchased in the U.S. after the year 1891 (White 2005: 6). Other makers' marks comprised Japanese characters, or *kanji*. These could not be commercially imported to the U.S., but likely were brought over at the time of immigration or were gifts from family or friends back in Japan. These items offer particular evidence of international webs of movement and social networks (Fig. 2). Due to the number of Japanese sherds present in the archaeological record at Amache, it is clear that the people there went to great lengths to possess Japanese ceramics. When the complexity of getting them to the camp is compounded with the fact that these items display an ancestry for which they were being actively persecuted, one is left with the obvious question, why? What was so important, so valuable, about these items?

Fig. 2 Maker's mark in kanji on porcelain vessel from Amache dump. Photographed by Stephanie Skiles

Fig. 3 Fragment of *tokkuri* or *sake* decanter from Amache dump. Photographed by Stephanie Skiles

At the most basic level, the vessel forms available in Japanese ceramics are not directly replicated in ceramics made by American and European manufacturers. The vessels recorded in the survey at Amache include tea bowls, rice bowls, and even two *tokkuri* (*sake* decanters; Fig. 3). Because of the abundance of American ceramic forms provided to the camps by the WRA, it seems very likely that they were sometimes pressed into service for Japanese foods. For example, there is a large pile of gravy boats on the surface of the camp dump, which we suspect may have been used to serve soy sauce in the mess halls and were discarded when the site was abandoned. Still, Japanese vessels would have been a critical element in the proper consumption of many foods, particularly those with ritual importance, such as tea and *sake*.

11.4 Consequences of the Mess Halls

A rather important and overlooked effect of the mess halls at Amache and elsewhere was the degradation of family bonds over meals. Quiet and intimate family dinners were replaced by cafeteria-style tables and benches, where children frequently chose to eat with their peers, and elderly family members were often isolated. According to Howard Ikimoto, "You lined up for your food and then sat down at these long tables. Everybody squeezed in where they could. It just broke apart the family because the kids were running around; there was no family dinner" (Silva and Nelson 2007).[2]

Adding to this loss of family intimacy was the fact that the food in the mess halls was prepared by strangers, who at Amache were internees hired as cooks (Foxhoven 1998; Silva and Nelson 2007). Rather than a close family member like a mother, a father, or a grandparent preparing the meals in their own private kitchen and serving it at a small table, the food was unceremoniously plopped onto dishes by a strange hand, while the recipient moved in a receiving line to the next server (Fig. 4). Jeanne Wukatsuke Houston, who was interned at Manzanar in California, remembered, "Somebody else was cooking your dinner. It wasn't your mother. That part of family life was just *institutionalized*" (Silva and Nelson 2007). To maintain some semblance of their homes before the internment, families often cooked more food within their barracks.

> "We were making rice in the rooms because we didn't get enough rice. You know what they fed us in the mess halls? They fed us this strange looking white thing. Mountains and mountains of it. And we're looking at it saying, 'What is *that*?' We'd never seen it before. It's cottage cheese! I love it now, but growing up our parents never got us cottage cheese. We must have thrown away tons of it because none of us would eat it."
> -Grace Kimoto (Yamaguchi) (Foxhoven 1998)

The significance, not only of what was served in the mess halls, but also how, is further emphasized by former internees. Tami Tomoye Takahashi, interned at Topaz Relocation Center in Utah, recalled, "Each person was given a tin pie plate that held our meals. Even now, 70 years later, if I look at a tin pie plate, it brings back memories" (Silva and Nelson 2007). Thus, the delicate Japanese porcelains at Amache

[2] Radio broadcast, National Public Radio.

Fig. 4 Historic photograph of Amache mess hall, labeled "Dinner Time." Namura Collection. Image courtesy of the Amache Preservation Society, Granada, Colorado

must have stood in stark contrast to the heavy and purely functional mess hall wares, providing a reassuring familiarity in a very unfamiliar place.

11.5 The Anthropological Significance of Cuisine

From a biological perspective, food is a necessary part of life for sustenance and nutrition, but from an anthropological perspective, it has deep social significance. Foods, their preparation methods, and their associated material objects, such as utensils and serving dishes, can represent and reflect elements of culture and thus can also represent group identity. Among groups of people, the act of eating is frequently a social event, as is the act of procuring the food and preparing it for consumption. Moreover, kitchens are often the center of the home; the atmosphere and aromas associated with kitchens and hearths where food is prepared are frequently regarded as soothing and comfortable (Whittier Treat 1995). In some cases, memorable aromas, flavors, and food practices can also *reinforce* a sense of home and self, when home is far away or inaccessible (Mintz and Du Bois 2002; Sutton 2001; White 1995).

Consequently, anthropological phenomena that food and culinary practices can represent, and which are relevant to this case study, include cultural traditions, expressions of identity, and a medium through which social bonds are formed (Beoku-Betts 2002; Counihan 2002; Ohnuki-Tierney 1994; Sutton 2001; Taggart

2002; White 1995). Such phenomena are especially important for groups of people in highly oppressive situations, as culture and camaraderie are ways that people survive through difficult periods, like the internment. The anthropological significance of tradition and identity in terms of food is very important, and the archaeology of food-related objects and culinary practices at Amache can aid the formation of a greater understanding of daily life for the internees at Amache.

11.5.1 Tradition and Identity

Just as corn has been a dietary staple of people in the Western hemisphere for centuries, rice has held a similar position in the diets of people with origins in the Eastern hemisphere (Imamura 1996). As a result, rice is often an important component of traditional Japanese foods and thus comprises a major portion of Japanese identity (Ohnuki-Tierney 1994). For many groups of people, food is an implement that helps identify what is "self" and differentiate from what is "other." As Ohnuki-Tierney suggests, there is a significant association between groups and their staple foods, in particular between bread-eating Europeans and Asians, who eat rice (1994: 4). This pattern holds for many Japanese Americans, for whom rice is a base for most meals (Ohnuki-Tierney 1994; Poe 2002; Silva and Nelson 2007). Howard Ikimoto made direct reference to this association in his discussion of food in the internment camps:

> "We were very unused to eating potatoes. It was not something part of our regular diet. My father and mother ate rice every day of their lives. Rice is certainly a Soul Food for Japanese Americans" (Silva and Nelson 2007).

"Soul food" originated as a description for African-American traditional foods in the southern United States, but now the term is widely used to represent traditional meals from any culture or subculture (Poe 2002: 92). As the internees at Amache were a mix of Japanese immigrants (*Issei*) and American citizens born of Japanese immigrants (*Nisei*), Japanese foods played an important role in their daily lives (Hosokawa 2005). Since traditional ingredients were not easy to obtain in the camps, new Japanese-American "soul foods" were created inside internment camps which often incorporated widely available prepared ingredients such as hot dogs, catsup, and SPAM. According to Akemi Tamaribuchi, whose grandparents and great-grandparents lived at the Tule Lake internment camp in California, foods such as "Weenie Royale," an entrée composed of stir-fried hot dogs, eggs, soy sauce, and onions, served over rice, became part of post-World War II Japanese-American cuisine for many families (Silva and Nelson 2007). SPAM *musubi* (a slice of SPAM atop salted rice, held together with a small strip of *nori*, or seaweed paper, that when assembled looks similar to sushi) also gained popularity over the course of the internment. Tayeko Namura, a former Amache internee who Skiles interviewed in 2007, remembered making many dishes that involved SPAM at Amache, and she still makes them today. In fact, she traditionally prepares SPAM *musubi* for the Amache pilgrimage held each year in Granada.

Although SPAM was eaten in America before WWII began, it became more widely consumed during the war because it was both inexpensive and could be stored without refrigeration. Already a popular food among Japanese and native Hawaiians before the war, it became a dietary staple inside internment camps. Using ingredients that were supplied inside the camps, internees like Joy Takeyama Hashimoto's mother (the woman who brought her china to camp), integrated foods like SPAM into traditional Japanese dishes. As they lived at the camps for an average of 2.5–3 years, these traditional foods made with nontraditional ingredients became regular fare in the barracks. As internees gained more control of the foods prepared in the mess halls, they also became common in the mess halls. SPAM, hot dogs, and rice are frequently mentioned by former internees and their descendants as dietary staples within internment camps. These foods ultimately became the foods of the internment, such that they were integrated into what some Japanese-Americans like Akemi Tamaribuchi today consider traditional family cooking. Howard Ikemoto, who was interned with his parents at Tule Lake, recalled eating "hot dogs for days" (Silva and Nelson 2007). Still other internees from Amache recall eating "lots of SPAM" while they lived there (Foxhoven 1998).

In addition to creating new dishes with the military diets that were provided by the WRA at Amache, teaching traditional cooking methods was important to some internees. Joy Takeyama Hashimoto's mother was known for teaching traditional Japanese cooking at the Amache high school. "My mother was unusual and innovative. She taught home [economics at the camp]… She thought they should learn a little bit about Japanese foods. And with what little material she could scrounge from the mess hall, she taught her girls how to make some of the Japanese foods and delicacies" (Foxhoven 1998). When a group of people are uprooted and placed in a foreign environment, they can maintain some traditional food practices with the right ingredients and dietary staples. These practices are a subtle form of resistance that provide a sense of comfort in an unknown place. "[Food] preparation, under pressure of dominant cultural practices… can promote resistance and strengthen cultural identity in marginalized cultural groups" (Beoku-Betts 2002: 277).

At Amache, it is clear that traditional food items and cooking methods helped the internees strengthen their identity while they were in a very restricted situation. In addition to preparing their own families' rice inside the barracks, *sake* brewing and drinking was another form of identity expression and tradition that was practiced at the camps (Slaughter 2006). According to Akemi Tamaribuchi, "They had dirt floors in the barracks [at Tule Lake]. My great grandmother would dig a hole and ferment her own rice wine, or *sake*, and store it buried in the dirt. That was a big secret; it was not allowed in the camps" (Silva and Nelson 2007).

Oral histories with Amache internees indicate that that *sake* was also brewed at Amache (see Slaughter 2006). Still, the situation was somewhat different for the internees at Amache, as the pharmacist in Granada helped smuggle *sake* into the camps. This fact is supported by myriad remains of *sake* jugs in the archaeological record (Skiles 2008; Slaughter 2006), and also verified by Bruce Newman, the son of the Granada pharmacist:

> "Dad had connections. He learned of a shipment of *sake* in San Francisco. By whatever means, he had it shipped to Granada, and filled the warehouse behind his drugstore. Each bottle had to have a government stamp, 'Department of the Treasury,' manually date-stamped. My job was to manually date it. [There wasn't] nearly enough. It sold rapidly" (Foxhoven 1998).

11.6 The Importance of Japanese Ceramics at Amache

Marcel Proust begins his *Remembrance of Things Past* with an elegiac description of the way a bite of pastry elicits vivid childhood memories. Many anthropologists have followed his lead by noting how culinary practices engage multiple senses in an evocation of past places, people, and events (Petridou 2001). Food is often used to recreate the sensory landscape of home, something both noted by ethnographers and inferred by archaeologists.

One can imagine that when those small barrack rooms at Amache were filled with the smell of rice, and a warm familiar bowl was in hand, the place would, for at least a time, feel more like home. In conjunction with Japanese culinary practices in the barracks, Japanese ceramics played a key role in making over, in the image of home, the dismal environment of the camp. The magnitude of this act is supported by the fact that such cooking in the barracks was exceptionally common despite it being against regulations. Indeed it appears that the regulation against cooking in the barracks may have been the camp's most widely ignored rule, with the brewing and smuggling of *sake* coming in a close second.

But ethnographies of people living away from their homes and homeland, especially those who were forced to leave, suggest an even more powerful emotional role for these items. In periods of intense upset, familiar objects are psychologically comforting. This is particularly important for displaced peoples, as objects provide tangible evidence of where one came from, and who one used to be. They are also the raw materials for, as one ethnographer calls it, the refurbishment of memory (Marcoux 2001). Ethnographic research among populations displaced by the Greek-Turkish War of the early 1920s indicates objects from the homeland often serve as anchors for memories, stories, and family histories. If those memories are too painful or the identity for which they stand is repudiated, however, the objects are forgotten or discarded (Turan 2003). Such research suggests that those families at Amache who used Japanese ceramics were actively asserting their identity as Japanese.

11.7 Conclusions

The literature on trade and exchange in prehistoric archaeology has long been concerned with framing these practices within cultural formations (Earle and Ericson 1977; Ericson and Earle 1982). Historical archaeologists have also conceptualized

trade as an embedded social process (see for instance Adams 1976; Brooks 1997), but compared to prehistoric archaeology, the discussion has been less robust. This might be, ironically, because the wealth of mass-produced items found on many historic sites often includes items that are readily identified as imported goods. We can place site occupants within international trade networks without giving much thought to the social relationships involved.

There is no denying that the ceramics at Amache are evidence of the global trade networks of the first half of the twentieth century. But that focus obscures the more important social roles these objects played. These ceramics were certainly exotics, if the way we classify such goods is the great distances they have traveled from their place of origin. And it is certainly true that their presence on the site reflects a great deal of effort on the part of those who left them behind. However, at Amache these items were likely *not* considered exotic by the people who used them. The power of the Japanese ceramics was that they were familiar, even mundane. In fact, the imported Japanese goods at this site probably were some of the least "foreign" elements of the internee environment.

Amache is a place where the movement with which we should be most concerned as archaeologists is not that of objects but of people. The only reason why these "foreign" goods are here is because they were brought here by "foreign" people. The historic record makes that clear, as it also makes clear the extent to which Amache fits a pattern of massive population displacements over the last two centuries. Population displacement was not invented by historic peoples. As the studies in this volume highlight, in both prehistoric and historic contexts, when people move, they bring objects from home. In such a scenario, exotics are not so much evidence of trade relations, as stand-ins for the relations left behind, both to people and to places.

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Part IV
Discussion

Chapter 12
The Exotic in Daily Life: Trade and Exchange in Historical Archaeology

Diana DiPaolo Loren

12.1 Introduction

As of 2009, this nineteenth-century glass trade bead sample card is located in a climate-controlled object storage room within the Peabody Museum of Archaeology and Ethnology, Harvard University (Fig. 1). While these sample cards were once used around the globe to promote the manufacture and exchange of Venetian glass beads, now this object sits quietly in storage as an artifact of global trade. When we view this glass trade bead sample card in museum storage, we are reminded of this object's past life: to promote the exchange of an item from one place to be used and valued as an "exotic" in another place. While seemingly commonplace to us now, glass beads were just one category of items among millions that were valued as "exotic" in the past.

But where do we place our emphases when interpreting the exchange of glass beads and other "exotics"? Is it on the production and movement of an item? Political economy studies within anthropology emphasize the importance of production and exchange in shaping human society (Cobb 2000: 5). As Cobb (2000: 5) notes, classic political economy studies in anthropology include *Europe and the People Without History* (Wolf 1982) and *Sweetness and Power* (Mintz 1985). While political economic approaches are quite broad in nature, a theme underlying most of these studies is the nature of power relations in production, exchange, and consumption at different scalar levels (Brumfiel and Earle 1987; Cobb 2000; Stoler 1985). Particular emphasis has been placed on complexity, production, and specialization at prehistoric sites throughout the world, especially on the production, circulation, and ownership of prestige goods, some of which were "exotic" (e.g., Brumfiel and Earle 1987; Earle 1991).

Within historical archaeology, the concept of exchange has been explicit with studies that emphasize consumer preference related to the growth and impact of

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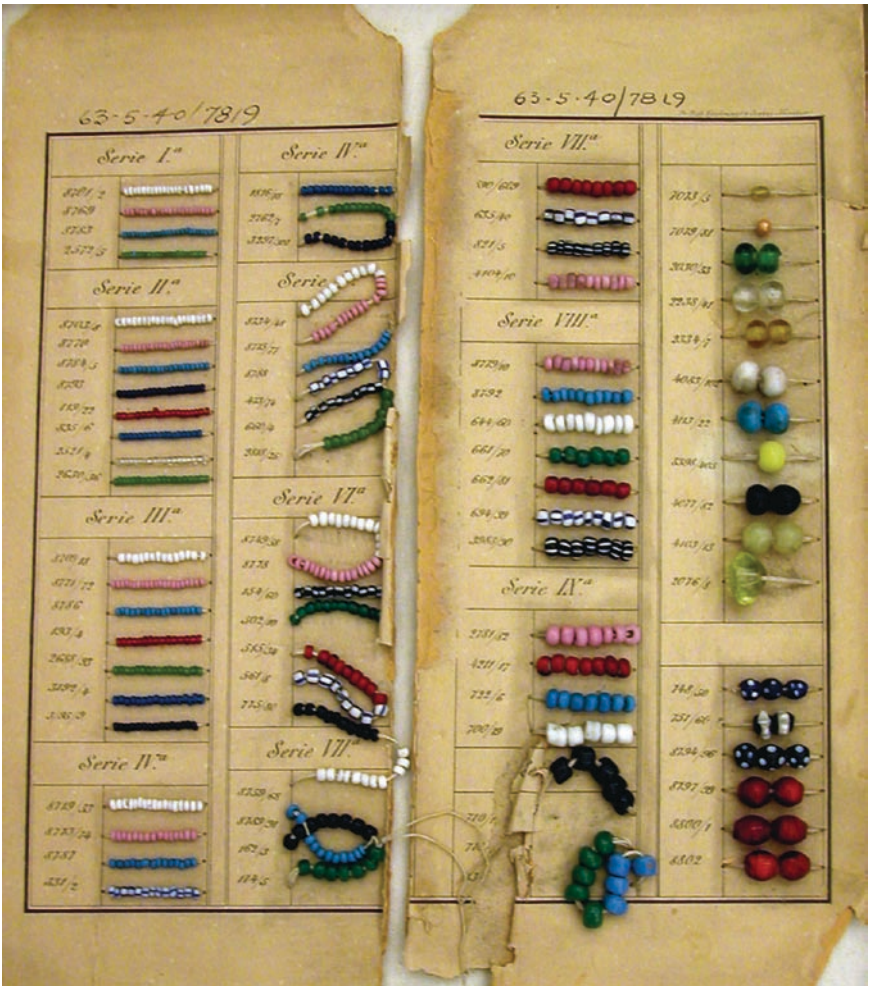

Fig. 1 Venetian glass trade bead card, nineteenth century, PM 63-5-40/7819. Image courtesy of the Peabody Museum of Archaeology and Ethnology, Harvard University

world capitalism (e.g., Deetz 1977; Johnson 1996; Orser 1996; Spencer-Wood 1987). These writings have been influenced by the work of Marx, not surprisingly, as a focus of Marxist literature is on labor, production, exchange, and the subsequent power imbalances emerging from the growth of capitalism (Leone and Potter 1999; Paynter and McGuire 1991; Wallerstein 1980). In these studies, the concept of the "exotic" is often married with notions of class or status as exotic or unique items, rare and from great distances, owned by the upper echelon (e.g., Delle et al. 2000). More recently, the concept of exchange within historical archaeology is encountered in discussions on the role of material culture in identity construction, with the scales of analysis in these studies located on the community, household, and individual (Johnson 2006: 320–321; Loren 2007; Loren and Beaudry 2006; Silliman 2001).

In this volume, the central theme linking the studies that discuss historical contexts is not the location of the exchange or the manner of the exchange, but rather how the exchange of material goods and the incorporation of distant things allowed for new constructions and understandings of social identity. In this chapter, I suggest that at no point can we understand the exchange of things without understanding the ways in which these things were used and became part of people's lives. I begin with a discussion of not only the exchange of goods in the early colonial period, but also corresponding issues of collection and exploitation and how patterns of interaction and exchange impacted the construction and negotiation of identity. By focusing on the processes of identity construction in relation to exchange we can seek to draw out how people negotiated and articulated cultural practices to form new ones. Archaeologists are in the unique position to capture the movements and location of exotic materials to sites where objects were used and identities were transformed; the intersection of social and material worlds.

12.2 Understanding Exchange in Colonial and Postcolonial Contexts

Martin Hall aptly characterizes the global movement of things beginning in the sixteenth century, stating that "European colonial expansion, essentially concerned with the acquisition of materials from the periphery of its world and the creation of places to disperse and sell its products, has resulted in the scatter of more debris across the face of the globe than any other phase in more than 2 million years of human history" (2000: 14). During the North American historical period – that is, the moment after which Europeans first placed their feet on the shores – the material exchange of goods drastically changed the definitions of what could be termed "exotic" or foreign for all peoples involved in exchanges of not just things material, but also religious, ideological, and corporeal. The global network of exchange in place by the seventeenth century tended to the demands and desires of objects and peoples, respectively, around the world. Like other contemporary historical archaeologists, when thinking about the historic period in North America, the term exotic conjures up for me not only the notion of allure — better expressed as xenophile — but also those of materiality, ideology, sensuality, romanticism, sexuality, emulation, and desire. Thus, as the authors in this volume have shown, the concept of "exchange" is best understood when writ broadly and creatively so as to capture such nuances as diplomacy, exploitation, identity negotiation; aspects of human interactions that are embedded in the exchange of objects over oceans and from hand to hand. In this section, I briefly discuss early colonial collection, the desire to capture and collect some aspects of the flow of goods around the world, beginning in the sixteenth century moving toward broader concepts of exchange and contemporary themes of identity and materiality.

The notion of desire in relation to global exchange can perhaps be best imagined in the "cabinets of curiosity" found in elite and royal houses in sixteenth- and seventeenth-century Europe. Feest (2002: 29) describes how objects of Native

American manufacture were removed from their original contexts and carried to Europe, where they were given new and different meanings when placed next to natural and cultural objects, or curiosities, from other cultures. These European collections spoke simultaneously to issues of appropriation of "the Other" through material culture and displays of wealth and knowledge of other worlds. Objects displayed in European cabinets of curiosity spoke of the interests and preoccupations of the owner, filtered through the interests and preoccupations of the collector. Objects were obtained from Native owners by colonial officials, traders, missionaries, soldiers, and naturalists who had their own reasons and opportunities to appropriate Native objects (Feest 2002: 34–35). Removed from their original contexts, objects were displayed alongside other items from disparate contexts. Although valued for their aesthetic appeal, items such as wampum belts lost their meaning, provenience, and provenance.

While these displays of objects best capture the notion of exchange in the early modern world by Europeans anxious to know that world, what of the individuals exchanging things almost daily in the New World? What was the nature of those exchanges and how are we to understand them now through the archaeological record? In many early colonial interactions, gifts were initially exchanged through acts of diplomacy and, soon after, the trade of European-manufactured and Native American-manufactured material started in earnest (Calloway 1997: 42–45). Items of European manufacture took on different lives in Native communities. European-manufactured objects were more than just commodities that were valued solely as an exotic, rather, unfamiliar material culture was folded into everyday practices.

But the story of global exchange was more than just about diplomacy and exchange. Quite soon after initial exchanges took place between Native Americans and Europeans, the story of exchange in North America is the story of exploitation. Early explorers and fisherman returned to Europe with stories of lush forests, brimming oceans, and mineral wealth (Calloway 1997: 10–11). As Kupperman notes, "Europeans saw America most immediately as a resource for the Old World" (1995: 1). European monarchs quickly developed appetites for New World exotics: chocolate, tobacco, gold, etc. and very soon after immense efforts were placed on exploring and exploiting the New World.

North American colonies were designed to provide European nations with most of their raw materials: beaver pelts, tobacco, minerals, and cotton (Gosden 2004: 8). In turn, Europe provided North American colonies with European-manufactured goods, such as cotton broadcloth (woven from cotton that was originally exported from southern colonies). Indentured servants as well as enslaved Native and African peoples made up the colonial workforce, with the majority of this labor force made up of enslaved Africans (Deagan and MacMahon 1995: 2; Singleton 2005). As Hauser and DeCorse note, the Atlantic slave trade "began as a means of replacing Native labor decimated by disease, and it became the foundation for the emerging plantation economies in the Americas" (2003: 67). At no point were Native Americans or Africans passive recipients of colonialism, change, violence, or assimilation. Innovation, negotiation, and creativity in response to colonialism were important parts of the colonial experience, particularly regarding the creation

of identities and material culture transformations (Loren 2007; Silliman 2005). To claim that the histories of Native and non-Native peoples became intertwined is not to say that cultural differences disappeared altogether (Nassaney 2005: 125). As White reminds us, "human populations construct their cultures in interaction with one another, not in isolation" (1991: 1). People throughout the colonial period actively and thoughtfully used material culture to constitute their identities and transform social relations and ideologies.

As large-scale industrialization in the eighteenth century transformed cities in both eastern North America and Europe, so too did it transform the means by which identities were shaped in the entanglement of people and things. In contexts such as Lowell, Massachusetts, the nature of production and exchange of the local and the distant is tied to specific ideologies of class and gender (Beaudry 1989; Beaudry and Mrozowski 2001). These ideologies were meant to fix one's taste to a certain pattern of material consumption and use; a taste that was understood as "respectable" (Yamin 2001). In studies that focus on the industrial age, while the role of exchange has taken an interpretive backseat to labor, gender, and ideology, these concerns are still part of analyses: how did industrial workers exchange things and what role did things local and global play in their constructions of respectable, and less-than-respectable, identities?

The preindustrial North American fur trade was just one example of exchange in which such negotiations of identity and material culture took place. As Richter notes, wherever beavers were found, the "vast explosion of material wealth profoundly reshaped patterns of social interaction and political authority" (2003: 51). Among Native communities, the preparation of pelts was added to women's normal duties and upset the sexual division of labor, while men were trapping for trade rather than food. Perhaps more profound were changes in marital patterns, as found in the Great Lakes, where male fur traders of French origin intermarried among the Hurons, Odawas, Potawattomis, Peorias, Ojibwas, Miamis, and Menominees. White (1991) describes these interactions as part of the creation of a "middle ground" where new social, political, and economic relations between Native and non-Native peoples were created. But Native women were more than merely translators and laborers, as these interactions profoundly impacted their social and sexual identities (Sleeper-Smith 2000, 2001). As intermediaries between worlds and active participants in trade and producers of objects, the identities of many Native women were more faceted in the context of new social roles (see Cobb 2000: 7); identities that were formulated through the use and exchange of local and foreign material culture.

12.3 Identity and Exchange

Identities were constituted by producing, exchanging, and using things; that is, in the entanglement of subject and object (Gosden and Knowles 2001: 5). The concern over identity construction with local and nonlocal material culture is a common

theme that runs through the chapters in this volume that examine historical contexts. While most authors articulate identity along different lines – gender, class, and ethnicity – their examinations of the process of identity construction generally agree. Individuals, regardless of their background, used different kinds of material culture to symbolically construct identity in relation to specific and sometimes constraining social, political, and economic conditions. How did the actual practice of exchanging objects and goods, not just the objects themselves, affect individuals, villages, and nations? How was the foreign incorporated into daily life to constitute one's identity? By placing our attention on the processes of identity construction in relation to exchange we can seek to draw out how people negotiated and articulated cultural practices to form new ones. Examining processes of identity formation allows for an examination of how individuals negotiated social, racial, and political boundaries through material culture to construct new social identities (Bayman, this volume; Lightfoot 1995; Loren 2007; Nassaney 2004).

Exchange not only enabled the introduction of new kinds of material culture, but also the introduction of new ideologies and social meanings. Exchange was a mechanism for introducing the foreign into daily life. Foreign objects were used to negotiate issues of identity, power, and status. But the meaning with which a foreign object was invested could vary dramatically in different hands. For example, Shannon (2005) illustrates how Europeans and Anglos regarded the pipe tomahawk as a weapon, souvenir, and collector's item. For these individuals, the incorporation of this Native American "exotic" in their lives and their collections enabled them to take on the identity as a culture broker or one knowledgeable in Native culture. But foreign objects did not always hold such special status as foreign objects were also integrated with local objects, at times to become mundane. Copper kettles that were brought to North America by Europeans were taken apart by Native peoples to be cut into familiar forms, such as arrowheads, and used as part of a common tool assemblage in daily life (Loren 2007: 26).

To understand how objects were used in daily life to become part of one's social world, attention must be placed on the intersection of social and material worlds. Recent literature in materiality situates the importance of study of objects and the nature of subject-object relationships in the constitution of identity (Gosden and Knowles 2001; Meskell 2004; Miller 2005; see also DeMarrais et al. 2004; White 2009). There can be no identity formation without a subject-object relationship, and objects can only be understood in their relationship to subjects (see Pinney 2005). Rather than viewing an artifact as a passive object, recent scholarship of materiality seeks to interrogate the intersection of objects' lives with the lives of individuals and expose rich detail in the ways that objects constitute expressions of human identity. It is our knowledge of the world and its spaces and peoples that designates the foreign and the local in our lives, and, at times, makes the foreign desirable. Think of the ways in which glass beads, such as those pictured in Figure 1, were manufactured in Italian glass factories, packaged into barrels, shipped across the Atlantic, admired and touched by various people, and exchanged through a variety of hands to then be embroidered on a shirt or strung into a necklace.

Much literature within historical archaeology has been concerned with the movement of material through an increasingly global market (see, for example, Hall 2000). As numerous examples in this volume indicate, there was often a tension that existed between the meaning an object once held for its producer and the ways in which that was object was used, manipulated, and appreciated later in its life by another individual. While there is value in understanding the nature of the political or economic value of objects at the time of manufacture, when we place emphasis on this aspect of an object's life over others we often strip away the connections between these objects and their impact and import in people's lives. Exchange was not just material, but also ideological, and we must be attentive to the social relations of exchange. While the exotic may be the object, it is the knowledge and power symbolically attached to that object that is truly desired (Cobb 2000: 34).

The lure of exotic is mediated through established tastes and ideologies, but local goods are also desired as exotic. Scarlett (this volume) illustrates how what is desired is not always the exotic of recovered from great distance, rather it could be the local exotic: one that has been curated over time to acquire meaning through continuous reacquisition and reincorporation into people's lives. And to this is added the concept that identity is multifaceted and that one's identity includes notions of age, race, ethnicity, gender, status, and sexuality. To constitute these facets of one's identity, different kinds of material culture — both exotic and familiar — were needed, desired, and then used in daily life and acquired new meanings in these processes.

12.4 Concluding Thoughts

German philosopher Georg Hegel argued that everything we create has the potential to appear and become foreign to us (Hegel 1900: 234). Foreign objects brought from afar are incorporated into people's daily lives and are part of their identities. In daily acts, the foreign often loses that gloss to join other objects in the material remnants of one's life. Archaeologists are in the position to capture the movements and location of exotic materials to sites where these objects were transformed to acquire new layers of desire and meaning. The lure of the exotic is not just esoteric, but is material, tangible, and traceable through the archaeological record. That is, until excavated material is relocated to university labs, state repositories, or museums where these items can be considered exotic in another fashion.

For me, it is difficult to divorce the term "exotic" from my work on archaeological and ethnographic collections housed in a Victorian museum. Authenticity lies in the process of collecting which inscribes at the moment of acquisition the character and qualities that are associated with the object in both individual and collective memories. I struggle with the term "exotic" as such a word often carries a legacy of the imperial and colonialist desires that filled our museum with the material remnants of other lands and peoples. These concerns over exoticism, and in

particular the European categorization of Otherness, are longstanding within the discipline, and several authors evoke this in this volume. As Skiles and Clark (this volume) note, it is how we construct the past for a curious public that defines what is exotic. How do we spotlight material culture in the past and define the exotic for others? Such concerns bring to light how we must carefully and thoughtfully craft our message for public and academic audiences.

As Luke (this volume) notes, the perceived meaning of things is culturally constructed in time and space. It is our goal in archaeological inquiry to question if what we view as novel or foreign in the material record was truly so for the peoples who created that record. How did the exotic fit with what was seen as commonplace in their lives? What did these objects or ideologies evoke materially, emotionally, and symbolically either for the peoples using the foreign material or for those viewing the use of exotic by others? What was the mechanism for exchange so that the exotic could enter the lives of those who desired it? The allure of the exotic was more than just consumer preference, production, and consumption but also about the meaning, desires, and diverse social and material entanglements of familiar and unfamiliar, local and exotic.

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Chapter 13
Exchange Systems in Prehistory

Timothy Earle

13.1 Introduction

Thirty years ago today (and then some), *Exchange Systems in Prehistory* (Earle and Ericson 1977) was published. The editors of the present volume offered me the chance to consider how exchange studies have grown over the last generation and what major challenges lie ahead. My plan is to summarize briefly the state of the field in the 1970s and then trace briefly major forward movements leading to this first decade of the twenty-first century. Rather than review the countless studies and stream of useful books and articles on the topic, I offer thoughts on where we have come from and where we must go (Earle 1994, 1999). We have solved many analytical problems with source identification and have learned to view exchange as a means to form and maintain social and power relationships, but challenges remain ahead. We are just beginning to model the complex and conflicting ways in which elites and commoners in opposition and in collaboration used exchange in their daily lives and on special occasions. The present volume points directions in our path toward a more integrated view of economy and society.

13.2 Studying Prehistoric Exchange in the 1970s

During the 1970s, the primary goal of exchange studies was to describe the spatial patterns of traded materials, especially obsidian, and to propose the mechanisms that distributed them. Derived from Karl Polanyi's (1957) seminal article "The Economy as Instituted Process," an anthropological approach in economic anthropology came to be known as substantivism (as opposed to formalism). Substantivism studied traditional economies as imbedded social processes, functioning to realize

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traditional social structures, and Polanyi argued that the main modes of exchange were each associated with specific social relationships: reciprocity with egalitarian social relations, redistribution with centralized political hierarchies, and market exchange with the modern world. The evolutionary models of the time (Fried 1967; Service 1962) described the association of these exchange relations with specific sociopolitical types: reciprocity with tribal societies, redistribution with chiefdoms and archaic states, and markets with modern states.

Polanyi's substantivist approaches encouraged and guided a decade of archaeological studies of exchange. In Sabloff and Lamberg-Karlovsky's (1975) *Ancient Civilizations and Exchange*, many authors used Polanyi's typology and related substantivist ideas to describe the social and political operations of prehistoric economies. Archaeological and ethnohistorical studies produced new cases illustrating how premodern economies had to be studied within their particular social and political contexts, distinct from modern market-based economies. Polanyi's typology and analytical approaches also suggested means to reconstruct prehistoric societies through an analysis of their exchange relationships. Most influential was Colin Renfrew's (1975) "Trade as Action at a Distance: Questions of Integration and Communication." As an elaboration of Polanyi's holy trinity, Renfrew diagrammed ten modes of trade (direct access, home-base reciprocity, boundary reciprocity, down-the-line, central-place redistribution, central-place market exchange, freelance [middleman] trading, emissary trading, colonial enclaves, and port-of-trade). Each mode was seen as having specific spatial relationships to settlements that could be recognized archaeologically. At the same time, technological developments in analytical chemistry and computing opened up new ways to characterize artifactual materials to their sources of origin, and the spatial distribution of materials from known sources became a basis for descriptions of prehistoric exchange. These combined intellectual and analytical advances spawned rapidly expanding research on prehistoric exchange.

The edited books *Exchange Systems in Prehistory* (Earle and Ericson 1977) and *Contexts for Prehistoric Exchange* (Ericson and Earle 1982) present an initial coming of age for regional studies of prehistoric economies. Investigations followed a fairly straightforward, logical path. "To describe exchange, the prehistorian has three interrelated jobs: (a) to source the commodities of exchange; (b) to describe the spatial patterning of the commodities; and (c) to reconstruct the organization of the prehistoric exchange" (Earle 1982: 3–4). Much of the work attempted to collect and analyze large numbers of samples of obsidian and an expanding list of other materials, including ceramics, cherts and basalts, metals and glass, various semiprecious materials such as jade, amber, and turquoise, and building material including marble, basalt, and sandstone (Harbottle 1982). The most common methods for chemical characterization and sourcing were instrumental neutron activation analysis (INAA) and X-ray fluorescence (XRF), and expanding computer capabilities helped cluster samples and assign them to specific sources and production groups.

From any individual site, the sources of materials recovered helped document the extent and nature of regional contacts, and the spatial distribution of materials from sources created maps of commodity movement. Deriving from Hodder (1974),

the idea was to study rates of fall-off in the distributions of commodities as a means to establish the specific economic conditions of trade. Archaeologists used an economic logic anticipating that, other things being equal, the rates of fall-off in abundance away from sources should reflect the law of monotonic decay. Depending on specific technologies of transportation, the costs of a product increased with distance from a source, making alternative materials available at lower costs. In California, for example, obsidian decreased in abundance in lithic assemblages as distance to sources increased; it was replaced by local chert (Ericson 1977). Chapters in the Ericson-Earle books attempted to map the spatial patterns of materials and to match particular patterns of fall-off with alternative mechanisms of exchange (for example, Bettinger 1982; Ericson 1982; Findlow and Bolognese 1982). Renfrew (1977), however, raised concern with "equifinality," the likelihood that alternative mechanisms of exchange (redistribution vs. market exchange, for example) could produce similar spatial patterning of traded objects.

The question of investigating exchange came to focus on the cultural context of exchanged materials. "Exchange involves the transfer of items that have symbolic and categorical associations… The exchange of appropriate items forms social obligations, status, and power, but it also legitimates as it forms. A fully contextual approach to exchange must incorporate the symbolism of objects exchanged" (Hodder 1982). Hodder's emerging postprocessualist approach was a turning point away from broad regional descriptions and toward understanding the specific and very localized patterns of exchange as part of a broad cultural system that created meaning in action (Hodder 1992). Moving beyond the narrow concern with prehistoric exchange as the movement of goods, studies started to investigate how material culture was used to develop systems of meaning, which became an important trend of the next generation of research.

13.3 Studying Prehistoric Exchange in the 2000s

During the thirty years subsequent to my first publications, trends in exchange studies achieved broad advances in technical precision and reliability in chemical characterization and sourcing and in attention to contexts of exchanged objects as related to power and cultural meaning. Exchange studies became less of a means to reconstruct prehistoric social relationships and more of a means either to document connection or to investigate how social structure was formed and culture's meanings were transmitted and reformulated. These advances created two rather separate developments in the field, one emphasizing scientific studies documenting patterns of commodity movements (the longer the better) and the other emphasizing a humanist approach to local contexts of meaning (the more local the better, as illustrated in the present volume).

First, technical precision and reliability in chemical characterization and sourcing have increased markedly. In archaeology generally, the last 30 years has witnessed an explosion in archaeometric studies (Killick and Goldberg 2009). A much wider

range of materials can now be analyzed because technical difficulties have been resolved in source recognition and because individual laboratories have analyzed large numbers of samples and established the signatures of many sources. Major laboratories have assembled impressive regional databases, especially of obsidian and ceramic fabrics, but unevenly across the globe, and the analytical methods, computer power, and laboratory equipment have improved in accuracy, cost, sample sizes, and minimal destructiveness of the methods. Large-scale analytical studies of prehistoric exchanged materials are increasingly practical and almost routine. In the present volume, chemical characterization was used for obsidian, marble, and pottery. In the field generally, the analytical sophistication of much chemical work on exchange, however, seems rarely to be connected meaningfully to detailed social analysis. Such integrative work shows great potential, as illustrated by Scarlett's (this volume) chapter on Mormon earthenwares that I discuss in a moment.

A second major advance in the study of trade and exchange has been increasing attention to contexts as related to power and cultural meaning, and the chapters of this volume illustrate this work well. Considering contexts has allowed us to consider in great detail exactly how exchange was imbedded in societies and made significant differences in how they operated. Conceptually, archaeologists have come to consider the economy as consisting of spheres of action (the subsistence economy, the political economy, and the ritual economy), each with rather distinct objectives and dynamics (Earle 2002). The subsistence economy is often taken for granted primarily as a local sphere of mundane activity. Significant factors, however, are increasingly shown to be complicated, especially when considering the important role of everyday household activities and its articulation with market exchange (Hirth 2006). The recognition of the political economy as a sphere involved in the mobilization and control of surpluses in subsistence goods and in the administered trade of wealth objects has taken on considerable interest (Earle 1999, 2002). Here the concern is with the means by which a surplus could be generated and used by different segments of society to support their political agenda. And the ritual economy has more recently been highlighted as a separate sector involved in the production and enactment of sacred ritual actions in a wide range of social contexts from the family to the state (Wells 2008). These spheres are intertwined significantly, but learning to consider them separately has added understanding to our analyses.

I draw special consideration to craft specialization. A series of important articles and edited books have considered different forms and operations of specialization in interhousehold relationships, political control, and religious practice (Clark 1995; Costin 1991; Costin and Wright 1998; Hruby and Flad 2007; Wailes 1996). As discussed in *Housework* (Hirth n.d.), most prehistoric specialization apparently took place within household context. Since at least V. Gordon Childe, however, archaeologists have recognized the central role of specialization in complex societies. Brumfiel and Earle (1987) argued that specialization itself was less important than the way in which it was imbedded in society. Distinctions between attached and independent specialization came to emphasize different economic strategies: political control by emerging elites vs. efficiency for competition in interhousehold market exchange. Considerable debate emerged over a range of typological categories,

their significance, and recognition. Many chapters in the edited books cited earlier ask: is it attached or independent specialization? I see such discussion as highlighting the relative sterility of typologies, except as ideal types to illustrate the economic processes involved. Much work on specialization has allowed for a detailed consideration of the particular place of production in societies. For example, I have argued that, as part of a political economy, the shift from flint to bronze in weaponry increased the effectiveness of some weapons over others, but also required a technical sophistication that greatly narrowed initially the number of specialists and thus made weapons' production easier to control by local chieftains (Earle 2002, 2004). As part of the ritual economy, Spielmann (1998) argues that, in chiefdom-like societies, the specialists, who produced ritual objects, were ritual practitioners with both the technical skills and the special knowledge to make powerful things. In the present volume, Scarlett (this volume) describes the cultural significance of local specialist manufacture of earthenware pottery for Mormon communities. Starting by characterizing the waster piles from individual kilns, he establishes the chemical signature of individual producers and then maps the distributions of their products. Local production of these household objects helped create a social identity of independence from the non-Mormon world. More generally, specialization has become closely associated with issues of social identity (Costin and Wright 1998) and meaning (Hruby and Flad 2007).

Deriving from Hodder's (1982) analysis, much work in exchange studies has begun to focus on the creation and significance of meaning. Several studies included here broadly address "how the exchange of material goods and the incorporation of distant things allowed for new constructions and understandings of social identity" (Loren, this volume). Her research summarizes this theme very well. The conclusion drawn is that the meaning of style and its associations with the local and the foreign are complex and easily misunderstood. Thus, the foreign Chinese-style referent in both ceramics and ceremonies is entirely of local signification, having nothing to do with its original Chinese meaning (Williams, this volume), and the relatively high use of Japanese ceramics in the internment camps suggests careful curation of household goods rather than procurement of distant objects (Skiles and Clark, this volume). Thus, one cannot understand patterns of exchange without understanding patterns of use, but the reciprocal relationship is also critical. The specific uses of the Ulua marble vases surely reflect local ritual and political economies, but they also probably reflect specific patterns of long-distance elite relationships of real significance to their local use (Luke, this volume).

13.4 Future Directions

In the future of exchange studies, the biggest challenge is to conceptualize prehistoric economies as dynamic, integrated systems of flows, connections, dependencies, and power. Exchange studies have become increasingly sophisticated in their details of analyses, but, perhaps as a result of a need for finer grained and more

extensive studies, work has ironically become increasingly specialized with each segment produced largely in isolation from others and without a commitment to rebuild an integrated and multiscalar understanding of economies. As discussed by Killick and Goldberg (2009), the biggest challenge is to place training and operation of archaeological sciences within Departments of Anthropology (or archaeology), where the intellectual challenges and technical changes can be conceived together.

Prehistoric economies should be conceptualized as organized into complicated, intertwined commodity chains for which production, exchange, and use must be considered together as deeply imbedded within social context of meaning and manipulation, and as joining social groups into "international" systems of connections affecting broad processes of social change. None of these ideas are new to archaeologists, but all have escaped our focus as we have considered increasingly narrow topics in the field. A commodity chain analysis should help archaeologists tie broad patterns of international trade to local patterns of production and consumption.

Used for the last 20 years or so by economists, economic historians, and geographers, *commodity chain analysis* studies the changing structure and operation of global economic flows (Bair 2009). For any commodity, its chain is composed of the stepped sequence from initial resource extractions, to manufacture and assembly of components, to the global distribution, and ultimately to local consumption. Each commodity has a unique chain depending on its particular manufacturing steps, components, and markets. Considerable attention has also focused on why some commodity chains form together, while others operate separately. The overall economy can be visualized as many overlapping and interconnected webs of component commodity chains that braid together and split apart at innumerable nodes. Although rarely identified explicitly by archaeologists, the notion of commodity chains underlies the ways that we have come to study prehistoric economies. I recognize the theoretical distinctions made between gifts and commodities, but I find the typology to obscure the likely variation in the nature of goods exchanged. Here I define commodities as all goods exchanged interpersonally, at whatever scale from the household to the global systems. The commodity chains of prehistoric artifacts were certainly highly variable and that variation made for great differences according to the goods moved, the scales of movement, and the sociopolitical contexts of the exchanges.

Familiar to most archaeologists, the primary steps in a commodity chain analysis are: (1) resources procurement, often involving mining, quarrying, collecting, or the like; (2) production, involving one or more steps, often with specialists, to make and assemble parts; (3) exchange of objects through varying social and political contexts; and (4) the multiple uses of objects in everyday life and special occasions. Individual steps can be combined within a single unit, such as a household, artisan shop, or firm, or spread out with many social groups adding value along the pathway. Involving multiple issues of technology, efficiency, property, and organization, steps in a commodity chain combine multiple social, political, and economic relationships.

The idea of a commodity chain extends the analytical frame developed by Kopytoff (1986) and by Appadurai (1986). Kopytoff and Appadurai emphasize the

social, political, and economic contexts of exchange, use, and curation in traditional societies, for which the history from initial production to final use could be known and remembered. A commodity chain analysis makes no such assumptions about knowledge, as goods flow across borders with little knowledge transfer and remarkably creative reinterpretations. Thus Williams (this volume) describes how the local meaning of blue and white ceramics was concerned with local politics that stand apart from the meanings of the style in China. In terms of commodity chains in archaeology, most researchers focus on the broad distributions of a commodity like obsidian or amber that would represent a system only very partially understood by any participant, and on limited segments within a commodity chain like procurement, crafting, exchange, or consumption, which would be understood in the object's biography. The exciting potential is to conduct research at multiple scales associated with different social contexts, but still linked by the flows of goods.

Using the steps in commodity chains, archaeologists have substantially reconfigured the means to study prehistoric economies to recognize how a prehistoric economy combines contrasting relationships of production, exchange, and use. To illustrate, let me consider contrasting commodity chains of different length and complexity within the Scandinavian Bronze Age (Earle 2002). A short commodity chain characterized many expedient stone tools that were made and used by households as part of everyday subsistence activities. Needing a cutting edge for a particular task like animal butchery, plant preparation, or woodworking, an individual collected local stone materials. Chosen for size and expected knapping characteristics, a cobble was quickly reduced to flakes, which were then retouched to provide sharp working edges. These flake tools were used immediately or over a short time, and then discarded without curation. With little labor, knowledge, or skill needed in the chain's short linkages, each family using such tools could combine within itself all steps in the chain. Especially nonformal tools of stone, plant, and animal parts, and clay and pigments were made from local materials and used within the household. Archaeologically, such short commodity chains can be identified by the use of local materials which vary from site to site, by fairly uniform ratios between waste and retouched tools, and by localized production of some tools at particular sites. Making an important contrast, although usually a very small part of the lithic inventory, formal tools including flint scrapers, daggers, and sickles were produced by specialists and traded over considerable distances (Steinberg 1996). The debris from these tools was highly concentrated at a few sites, and the flint used to produce them was carefully selected from particular sources to get desired characteristics for knapping, durability, and sharpness. The distributional pattern of stone debris and tools, along with evidence of other tools, can be used to investigate spatially the social organization of households as to specific task groupings likely associated with gender divisions. Community size may be important here; in Bronze Age Europe, larger and denser communities were associated with more specialized production and interhousehold exchanges involving objects of everyday life (Sofaer n.d).

A long commodity chain involves many more steps such as in technically complex, composite objects, like Bronze Age European swords. With some difficulties, the alloyed materials of copper and tin can be identified to source. According to the

nature of the source and its development, both the scale and the organization of labor for extraction were quite variable. Sources range from relatively small and minimally developed scrapings to large-scale tunnel mining. The chemical composition of the ores (oxides vs. sulfides) set technical requirements for smelting, knowledge of workers, and economies of scales for production; all of these can be studied archaeologically. Although smelting normally took place close to mines, as a means to minimize transport costs, other factors can intervene to have smelting done down the chain. A common next step is to produce ingots to be traded broadly. Although production of finished products added value to traded commodities, trade across cultural boundaries might be hampered by specific demands for forms based on local tastes and uses. The alloying of metal and its manufacture into swords required technically highly sophisticated craftsmen (Earle 2002). Because of the relatively few numbers of such metallurgists, chiefs could assert control over production and distribution of swords, thus helping establish regional political hierarchies. Determining the location of commodity manufacture helps describe the nature of technological and cultural transfers down the chain.

Metal objects were often traded over great distances, sometimes by land, but often by water as a means to lower transport costs. As distances involved movement across many groups' territories, exchange could be handled one step at a time, down the line from group to group, or alternatively middleman traders often moved larger cargoes by ships. The movement of such valuable cargoes would, however, have required warriors to protect their shipments, a pattern known historically for the Vikings and undoubtedly extending back into the Bronze Age. The swords, often produced by craftsmen attached to chiefs, were then distributed probably as gifts to attendant warriors. The swords then became "inalienable," closely associated with individual warriors, with whom they were buried or after whose death they were offered to the gods. With such a long and complicated commodity chain, the potential nodes of control by elites and involvement by many are incredibly diverse, offering many contexts for detailed investigation on how changing economic structures could fundamentally affect power relationships. Using these contrasting commodity chains, I discuss conceptual approaches at each step and, where appropriate, illustrate with examples drawn from the present volume.

Looking more broadly at the progressive steps in commodity chains, resources procurement was the first step. The potential exists to see how the procurement of any material was imbedded in broader patterns of movement through the year. For example, low-density hunter-gatherers moved broadly across large regions and access to specific materials probably fit into specific trips for food procurement and rituals. Procurement often involved quarrying and mining, sometimes of remote resources that may have been open to all. Based on patterning of primary processing and mining, many possibilities exist to study the scales of production and activities of extraction that can be linked to specific social organization. Some of the most interesting have involved the extensive Neolithic flint mines in Europe, but many others are considered. In the present volume, the location of the Chivay obsidian source high in the Andes argues that it was most probably first exploited and distributed by pastoralists, who used it for everyday cutting tools and distributed

it regionally by caravan (Tripcevich, this volume). Similarly, obsidian exploitation in East Africa probably reflected the seasonal movements of hunter-gatherers and herders (Ndiema et al., this volume). In both cases, the argument is made that procurement and distribution were largely a pattern of everyday life; in others, mining became a local specialization related to specific trading opportunities.

Production then involves the secondary steps in a commodity chain. The nature and extent of specialized production has already been described. Using spatial contexts as the basic units for analysis, considerable work can focus on household production (generalists to specialists), of workshop production associated with specific political and economic institutions, and of ritual production associated with practitioners and institutions. Here the question relating to degrees of specialization is whether steps in the production process are handled by all participating households or are organized within a select group of households or chain of households. The association of production with particular household structures helps understand how these steps of the commodity chain were imbedded within local and regional social formations that then link up to the same concern with the exchange of the objects.

Archaeologically, production is fairly easily identified by concentration of manufacturing debris, like lithic waste or ceramic wasters, by production tools, like polishing stones or spindle whorls, and by major facilities, like kilns and furnaces. In the present volume, relatively little concern is given to systems of production. Recently Brumfiel and Nichols (n.d.) capture the potential for a commodity chain analysis in archaeology as connected to domestic-based craft production being studied in Mesoamerica (Hirth n.d.). Here, Scarlett (this volume) was able to identify local pottery workshops for earthenware pottery by the piles of ceramic wasters. INAA of sherds collected from household midden linked patterns of consumption to these short commodity chains, which he used to argue for particular biographies useful in created Mormon identify. As I have argued before (Earle 1982), production must be linked to pattern of exchange to get a comprehensive understanding of the prehistoric (and historic) systems involved.

Exchanges of objects are the tertiary step in a commodity chain. As described by Polanyi (1957) and refined by Renfrew (1975), a wide range of different trading options were possible. Generally, such "types" should not be taken as exclusive categories, but only as idealized points along variable organizational forms. The desire is to figure out the social, political, and economic contexts in which the exchange worked and to realize that an object can be exchanged in different ways along its chain. To the degree possible, the goal should be to describe changing contexts of exchange in particular commodities. For example, attempts have been made to distinguish market exchange by describing the existence of market places. Market exchange (distribution being regulated by "market forces"), however, must be distinguished from market places (Dalton 1961) so that the best approach is to focus on the distributional patterns of commodities (Hirth 1998). For a single commodity, like the textiles of the Aztec, context of exchange can change dynamically through space and time from market to tribute to gift (Brumfiel 2006).

Commodity chains link to local patterns of consumption. Meaning is seen as tied largely to local use, an important insight from Hodder (1982). The three contributions

by Scarlett (this volume), Skiles and Clark (this volume), and Williams (this volume) illustrate the importance of considering the dyad local-exotic in terms of a local social group's particular history. Of social contexts and meaning, individual locales and their polities should be considered complex sociocultural phenomena that have specific historical characteristics based on their material essence. Life is material, and this materiality realized through intricate economic systems gives changing characters of social action. The material conditions as the media of social life further suggests that regularity in process should exist across social worlds (Earle 2004).

Commodity chain analysis has several excellent examples in anthropology. Although not using the name, an early example is Sidney Mintz's (1985) *Sweetness and Power*, in which he shows how the development of industrial-scale sugar production using slave labor was closely linked to emerging capitalism as its large workforce was removed from subsistence. Using the concept explicitly, Hansen's *Salaula* (2000) constructs the commodity chain for used clothing that often is collected by churches from western communities, amassed by western businesses that sorted clothing bundles for export, sold as bundles to local African entrepreneurs who break them open for sale in the market places, and then purchased by small-scale tailors and consumers with a sharp eye and creative energy to transform them into distinctive local dress.

Perhaps the best model for a commodity chain analysis in archaeology is *An Archaeology of Black Markets* by Mark Hauser (2008). Slaves in the Caribbean used a distinctive local pottery, long thought to have been produced, distributed, and used in short and uninteresting commodity chains contrasting to global movements of European and other international ceramics. Employing thin-section petrography and INAA in a detailed characterization study of the pottery from Jamaica, however, Hauser demonstrates that their specialized production and market distribution linked enslaved laborers across Jamaica and possibly beyond. By looking at the multiscalar patterns of exchange within communities, across islands, and between islands, he presents a dramatic understanding of the black market system, the active involvement of slaves, and how that involvement leads to a new understanding of the structures of inequality and agency for slaves. The integration of scientific analyses and social interpretation of their study is exemplary.

In these cases and many others considered by archaeologists, the use of commodity chain analysis immediately allows us to investigate the national and international linkages responsible for and coming from locally imbedded activities. I am reminded of Eric Wolf's (1982) emphasis on interconnection. Archaeologists frequently refer to "influences" of one culture on another, as technologies diffuse and new social formations emerge. Using the broad core-periphery framework developed to study the development of industrial Europe, some researchers have argued for the broad economic integration of prehistoric societies (see for example, Chase-Dunn and Hall 1991; Rowlands et al. 1987). Such formulations, however, had many problems based on the very different economic and political characteristics of the ancient and modern world, but also on the lack of detailed analyses of documented exchange relations. More effectively based on a detailed archaeology, but ultimately unconvincing to many, was Santley's model of a "dendritic" central place system in Mesoamerica responsible for the spread of a Teotihuacan-dominated

political economy (Alexander 2008). Such large-scale relationships, however, have fallen from favor, largely because they emphasized a centrally controlled and relatively static understanding of economic systems.

From a distinguished lecture to the Archaeology Division of the American Anthropological Association, Philip Kohl (2008) returned to the challenge of Wolf. He quotes: "the entities studied by anthropologists owe their development to processes that originate outside them and reach well beyond them, that they owe their crystallization to these processes, take part in them, and affect them in their turn" (Wolf 1984). Kohl picks up on the concept of social fields, which Wolf referred to, but Kohl de-emphasizes Wolf's central point that the connections or influences that created fields of interlocking social change were largely economic and created political and social relationships that affected long-term historical developments at all scales of analysis from the household to the empires and beyond. We need evidence, which Kohl did not really believe was possible from archaeological data. What is missing in these global approaches to broad social connections is an understanding of the diffuse political economies with many competing interests and objectives, but linked together through chains of economic relationships. Exchange studies allow us to look at specific linkages between one society and the next and to postulate how patterned movements of commodities affected local political and social strategies.

Picking up on Wolf's challenge, a new consideration of human sociopolitical process is needed that is materially based and realized by a subspecialty in historical economies. Exchange can move from just another way to look at meaning or relationship to the processes that lay at the base of human history. The challenge suggested by Wolf is to create a broad-scale and integrated understanding of how human societies operated, and I for one believe that exchange studies offer the portal to that understanding. My only surprise is how little prehistoric exchange studies have been used to unpack larger topics like these. Prehistory offers the scope and tempo needed to understand large-scale processes like state formation and collapse, and exchange systems provide a key way to move forward. We have achieved the scientific analytical ability to study exchange accurately and we have developed a sophisticated contextual understanding of production, exchange, and use. Based on what the contributors have achieved in this volume, I anticipate a 30-year period of progress that will help create a truly integrated, multiscalar approach to human economies and societies.

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