WORKING WITH CLAY

Rosemary A. Joyce\textsuperscript{a}, Julia A. Hendon\textsuperscript{b}, and Jeanne Lopiparo\textsuperscript{c}

\textsuperscript{a}Department of Anthropology, University of California, Berkeley, Berkeley, CA 94720-3710, USA

\textsuperscript{b}Department of Anthropology, Gettysburg College, Gettysburg, PA 17325, USA

\textsuperscript{c}Department of Anthropology and Sociology, Rhodes College, Memphis, TN 38112-1690, USA
Abstract

Evidence from sites in the lower Ulua Valley of north-central Honduras occupied between 500 and 1000 AD provides new insight into the connections between households, craft production, and the role of objects in maintaining social relations within and across households. Production of pottery vessels, figurines, and other items in a household context has been documented at several sites in the valley, including Cerro Palenque, Travesia, Campo Dos, and Campo Pineda. Differences in raw materials, in what was made, and in the size and design of firing facilities allow us to explore how crafting with clay created communities of practice made up of people with varying levels of knowledge, experience, and skill. We argue that focusing on the specific features of a particular craft and the crafter’s perspective gives us insight into the ways that crafting contributed to the reproduction of social identities, local histories, and connections among groups.
Between 500 and 1000 AD in the lower Ulua valley of Caribbean coastal Honduras, objects made of fired clay were deeply embedded in the texture of daily life through their participation in both ritualized and quotidian practices. These objects, including pottery vessels, musical instruments, ornaments, and figural sculptures, were produced in house compounds, the settings of everyday life and face to face social engagement. We draw on two recent contributions to Mesoamerican analysis of production, the concepts of craft and multicrafting, and another concept less familiar in Mesoamerican studies, communities of practice, to explore how working with clay in house compounds produced and reproduced identities, histories, and connections between social groups, and with places on the landscape. Transforming how we think about apparently simple and ubiquitous craft practices, like working with clay, allows us to begin to see more social complexity among households often treated as interchangeable parts of a single social stratum. This re-emphasizes what household archaeologists working in Mesoamerica have long proposed: households are sites where social, economic, and political complexity was shaped, not just objects of processes located outside "domestic" spaces.

CLAY AS CRAFT

Craft can be defined as “a productive process that involves skill, flexibility, creativity, choice, and knowledge accumulated over time, often through non-verbal experiential and observational learning, and embedded in a social context” (Hendon 2006:355). Crafting is intimately tied up in the specificity of the materials used, the technologies of production chosen, and the body techniques employed by crafters as they move through the production process. Hendon (2006, 2007, 2010a, 2012) has suggested that archaeologists adopt a perspective on
skilled production that begins with the craft worker, rather than only studying the integration of craft production into economic structures or relations.

Focusing on the craft and beginning with the crafter allow us to bring out the ways that different materials and technologies required their own bodies of knowledge and skills. Charles Keller (2001; Keller and Keller 1996) notes that crafting requires both a plan and the ability to adjust as the process plays out. He argues that trying to take the practitioner's perspective helps one appreciate the degree of skill and knowledge involved to become proficient in a particular craft. The practitioner's perspective thus provides a powerful complement to the more externally imposed analyses of production processes, including the chaîne opératoire and operational sequences approaches, in which a technological process is broken down into its component parts by the analyst (Dobres 1999; Lemonnier 1992; Miller 2007).

Starting with the crafters and the particulars of their craft also allows us to avoid the entrenched archaeological distinctions between "luxury" or "elite" and "utilitarian" objects that have tended to privilege the former as providing more insight into economic relations and social complexity. Our perspective allows us to explore any craft in terms of the knowledge required, and the skills that need to be developed, to acceptably craft goods, as well as the choices made and the meaning ascribed to these processes. In the case of fired clay, success in making even the "simplest" or "least costly" of the kinds of objects that form the focus of our analysis, unslipped jars, required expertise and knowledge that was not necessarily easily acquired or general in the population. Such objects of everyday use in a household context, like the mundane objects discussed by Lemonnier (2012), can prove to be rich sources of information about experience and internal complexity within households critical to better understanding how households worked.
ULUA VALLEY HOUSEHOLD ARCHAEOLOGY

The lower Ulúa Valley (Figure 1) is made up of the floodplain of the Ulúa river and its major tributaries, the Comayagua and the Chamelecon, after they leave narrow canyons and reach absolute elevations below 100 meters above sea level. Defined in this fashion, the valley covers approximately 2400 square kilometers. It was the focus of successive multi-year projects designed to systematically survey, locate, map, and date archaeological sites, using test excavations where necessary, in service of cultural resources management in the face of development of the region (Beaudry-Corbett et al. 1993; Henderson 1992; Joyce 1985; Pope 1985; Robinson 1989). These projects identified over 500 archaeological sites, many with surface visible architecture dating to between 500 and 1000 AD. A small number of sites were subject to more extensive investigation, including household archaeology, involving broad area excavations designed to identify contemporaneous features resulting from daily life (Hasemann et al. 1977; Joyce 1985). Along the edges of the valley, where mountains gave way to floodplain, and in zones where hills up to 300 meters above sea level interrupt the floodplain, settlements from this period are represented by surface visible mounds, platforms made primarily of cobbles that once supported perishable structures, organized in groups around exterior workspaces that were often paved with cobblestones. The most intensively investigated of these sites is Cerro Palenque (Hendon 2010a; Joyce 1985, 1991). In the central floodplain, where sites employed clay as the primary construction material, settlements with sequences of residential construction rebuilt over periods from ca. 1600 BC to at least 1000 AD were intensively explored in advance of site destruction. In problem-oriented projects in this zone, Jeanne Lopiparo (1994, 2003) investigated the integration of ceramic production in daily life.
Cerro Palenque is the largest documented settlement known for this time period, with over 500 buildings organized in approximately 100 residential compounds (Joyce 1991). Most platforms making up these residential compounds both at Cerro Palenque and in other sites in the valley averaged 5 by 7 meters, with smaller platforms (average 2 by 2 meters) occupying special locations such as the centers of patios. In the central floodplains, substantially larger platforms, up to 100 meters on a side, are the visible evidence of settlements. Excavations demonstrate that these larger earthen platforms supported multi-structure house compounds or clusters of compounds, raised above the floodplain, whose constituent buildings fall into the same size range as other sites in the valley. Whether in the form of surface visible cobble mounds, or as traces of perishable structures on earthen platforms, these groups of buildings occupy similar spatial footprints. Exterior spaces around which groups of buildings clustered averaged 12 meters in width, and the total size of compounds was on average 20 by 20 meters.

Burials were located under house floors and patios in residential settlements of both kinds dated to between 500 and 1000 AD. Built-in benches occur in some excavated buildings, with examples of clay and of cobble stone construction known. Exterior subterranean "bell-shaped" pits, probably originally for storage, have been identified on the periphery of house compounds excavated in the central floodplains. They were sometimes reused for burial and for refuse disposal. Animal bone and plant remains recovered from residential sites show use of a wide range of domesticated and gathered plants, and exploitation of large and small land mammals and riverine animals (Henderson and Joyce 2004; Morell-Hart 2011).

The material recovered at sites in both zones also provides evidence for a variety of crafts, including knapping of chert and obsidian, textile production, and, the subject of this article, ceramics. In particular, excavations at Cerro Palenque, Travesia, and sites identified as
Campo Pineda (CR 103), and Campo Dos (CR 132) have produced assemblages of artifacts, features, and by-products of production that serve as the basis for our discussion of working clay (Hendon 2010a; Hendon and Lopiparo 2004; Joyce 1987; Lopiparo 1994, 2003, 2004, 2006; Lopiparo and Hendon 2009; Lopiparo et al. 2005).

ULUA VALLEY POTTERY CRAFTING

Like spinning and weaving fibers such as cotton, making objects out of clay requires embodied skills and esoteric, experiential knowledge acquired over time. The particulars skills required, however, are different from those needed to produce good quality thread or fabric.

Owen Rye (1981) provides our beginning point for considering the steps that potters in the lower Ulúa valley would have had to take to carry out the production processes for which we have evidence in household settings. He provides a step by step outline of procedures for making traditional pottery that takes the crafter's perspective. Rye (1981:v) writes that his "personal experience with archaeologists left [him] with the impression that many are not familiar with the principles of pottery making". It is consequently pertinent to note that one of us (Joyce) is an experienced, if not skilled, potter, and brings to this study that experiential perspective.

Clays that were potentially workable could be found in many areas of the lower Ulúa valley (Figure 1). At least four distinct kinds of rock formations surround the valley. Vesicular lava flows extend over wide areas at the south end of the valley (Williams and Mc Birney 1969:21-27, 63-64, 70-72). Ignimbrites, or rhyolite tuff, form the southeast and southwest edges of the valley (Williams and Mc Birney 1969:31-45), The hills found throughout the floodplains expose formations of alternating limestone and cobble conglomerate layers, including cobbles of quartzites and cherts (Williams and Mc Birney 1969:14-17). Much older granites, diorites, and
metamorphosed sedimentary rocks (including marble) are found on the northwest valley edge
(Williams and Mc Birney 1969:5). The gneiss and schist in these formations were high in mica,
making clays of northern valley mica-rich. As a consequence of this geologic complexity, potters
in this area had a range of materials available.

The analysis of ceramics made between 500 and 1000 AD in the lower Ulua valley
demonstrates a wide range of textures, colors, and degrees of particle size sorting that likely
resulted from exploiting multiple potential clay sources (Beaudry-Corbett et al. 1993). Lopiparo
(2003, 2004) has demonstrated that sites in the central floodplain were likely obtaining abundant
clay suited to their purposes from the immediate region, where a number of streams produced
well sorted clays derived from the weathering of a combination of metamorphic and igneous
rocks in the surrounding mountains. In addition to such secondary clay deposits, primary clays
derived from different igneous and volcanic rocks would have been available at higher elevations
in the mountains. While primary clays would not have benefitted from the sorting of particle
sizes that was accomplished by water transport, they offered uniformity in color and texture, and
possibly specific desirable characteristics of limited distribution, such as concentrations of
mica.

Knowledge of clays, and expertise in working with them, would have to have been
developed through practical experience. Here, we would suggest Vitelli’s (1998) caution not to
use arguments based on outcomes of historical processes is pertinent. We cannot act as if people
went out in search of the varied clays we know were in use in the valley. We have to at least
attempt to construct a model of how they might have encountered clays of such variety and
experimented with them.
We suggest this took place during the course of other everyday activities that brought people into contact with clay. The more distant clays, removed from settlements, could have been encountered by people gathering obsidian nodules from rhyolitic ignimbrites, or seeking micaceous schist as a facing stone for buildings, both practices documented in excavated sites. The properties of clays that would have formed in primary beds near such geologic resources would have been quite different, and the people collecting clays from these locations would have had to develop different expertise to employ these primary clays.

While geologic prospecting for stone provides an obvious context for clay crafters to develop knowledge of the material, the river-laden clays that were located closer to settlements also would have had to be identified, and their properties recognized, tested, and finally, exploited, by people going about their everyday routines. Here, we would point to the use of clay as an architectural material (Joyce 2007). Used for finished floors, rammed earth wall footings, and clay plasters on pole frameworks (wattle and daub construction, locally called bajareque), such architectural uses provided a context within which clay crafters might have identified clay lenses of particular potential for different uses.

These two different routes to identifying clays to shape into fired clay artifacts should be viewed as potentially giving rise to very different craft knowledge. Primary clays encountered in the context of geologic prospecting might be thought of as another kind of mineral resource. Exploring these clays could have built on existing approaches to working with other inorganic mineral resources, where uniformity in texture is important, such as obsidian and chert used for chipped stone artifacts, or marble used for the distinctive local carved marble vases.

Gathering clay as a step in the construction of architecture would have led to a somewhat different experience of the material. First, river-lain clay deposits would have been
wetter and more plastic than primary clays in upland settings. Collected as part of a range of architectural materials, they would have lent themselves to use in diluted forms as thin coats. This is, of course, the familiar way that clay is made into slips and slip paints: by settling, draining off of a thin suspension of clay and water from above heavier particles, and application as a surface layer (Rye 1981:37). Some of the shallow basin-like features that Lopiparo (1994, 2003) documented in her research at Campo Dos and Campo Pineda, and similar features Joyce excavated at Campo Pineda, could have been used for this step in clay processing. The body of Baracoa Group Fine Paste bowls, cups, and vases that developed after 800 AD also reflects the existence of such processes in the workshops where these vessels were made at sites like Cerro Palenque (Lopiparo et al. 2005). With no added nonplastic particles, the walls of these vessels are extremely thin, with bodies showing evidence of lamination, likely made by depositing relatively wet clay in thin layers in a mold.

Mold technology for working with clay was a key form of technical expertise in the clay crafting that developed in the Ulua valley between 500 and 1000 AD. Fired clay molds and products of molds are found in very high numbers and at many sites. Both vessels and other objects were made with molds. Imagery on the most detailed mold-made figurines contains so much fine detail that it makes clear that the prototypes from which molds were made were themselves products of skilled crafting, possibly of a completely different material: molded from wax or resin, or carved from wood (Hendon et al. 2013).

The use of molds in working clay consequently implies the integration of clay crafting with other crafts in the same residential settings. This is what Kenneth Hirth (2009) has labeled multicrafting. Hirth (2009:17) argues against the "traditional view of the household as a passive and inefficient unit of production". In particular, he critiques the idea that the intermittent and
part time nature of crafting in households was typical of poorly developed economies, and that crafting arises as a response to economic stress. He calls for recognition of the "entrepreneurial initiative" of crafting, and notes that the "incentives for crafting are multiple and may just as often originate in the household as in external conditions" (Hirth 2009:18).

Where Hirth is most concerned with the advantages of engaging in a variety of craft activities for the economic success of households, we would add that household multicrafting required the development of a wider range of skills, expertise, and knowledge. It would have allowed for assertion of difference in knowledge and status based on expertise within multicrafting households (Hendon 2004, 2007). In the Ulua valley example, the skills required to carve or model the prototype figurine were fundamentally different from those needed to successfully fire a clay impression of such a prototype.

Nor was the expertise required to create prototypes the same as the skill set needed to make clay objects using molds. Lopiparo (2006) has argued that fired clay molds served in the lower Ulua valley to ensure that less skilled crafters were able to produce objects whose imagery was "legible" to others in the community (see Bowser 2000 for the idea of "legibility"). In the lower Ulua valley, we have few objects that precisely match molds, but many molds and objects that incorporate the same imagery, suggesting that most molds were probably produced to make few, perhaps even one, impression.

This implies that the crafters making the prototypes were, in effect, the masters within the network through which less experienced crafters obtained the knowledge and consolidated the skills needed to competently execute the task of making mold-made ceramic objects. Tracing the chain of knowledge, skill, and experience required to produce even the least impressive of the classic Ulua figurines reveals the complexity of social acquisition of skill and its practice.
Making a good mold-made figurine would actually be quite difficult. Within the crafting households where novices learned to do this, a great deal of effort went into making it possible for new crafters to learn the procedures and be successful in implementing them.

Crafting clay required knowledge of clay resources; understanding of the behavior of clay when mixed with water; a capacity to adapt clay-water mixtures through the addition of nonplastics in the correct proportions, so that objects did not shrink too much, or fail to maintain cohesion. Crafting clay also required an understanding of the behavior of a clay-water-nonplastic mixture when exposed to heat. One of the striking things about clay crafting on the household scale in northern Honduras is the variety of firing facilities that were employed, the final part of the process of crafting clay, to which we now turn.

FIRING WORKED CLAY

The first concrete identification of probable kilns in Honduras was made at the site of La Sierra in the Naco Valley (Urban et al. 1997; Wells 2004). Research in the lower Ulua Valley since then has identified at least three different kinds of apparent ceramic firing facilities, none with the suite of features found at La Sierra. Two patterns of firing facilities in the lower Ulua valley are, like those reported at La Sierra, above ground; one other is below ground.

The most common firing facility is also the oldest recognized: a round, above-ground fired clay chamber, somewhat less than a meter in diameter, with vertical walls and an open top, provided with a fired clay vent on one side (Figure 2). Multiple examples were documented at Puerto Escondido (Joyce and Henderson 2003). At the time these firing facilities were in use, between 1150 and 1000 BC, clay crafters at this site began a long history of experimenting with
control of the atmosphere of firing, producing distinct blackened and fully oxidized beige or buff vessels, as well as others with contrasting zones in black and beige.

The same basic form of firing facility was excavated at Travesia, in deposits dating to around 400-650 AD (Joyce 1987). Joyce recovered sherds fired harder than normal, with colors shifted from the norm in association with this oven. Among them were examples of the first Ulua Polychrome ceramics, produced by using different densities of iron pigments to make very dark red and black motifs. While innovations in painting slips on the new polychromes have been emphasized in their definition, it is also notable that these early polychrome ceramics demonstrate evidence of different firing than the ceramics they most closely resemble that precede them. Where the paste color of earlier painted finewares is normally somewhat red brown, with a dark black core, Ulua Polychromes show a clearer yellow body on either side of a more variable grey to black core (Beaudry-Corbett et al. 1993). Also found near the Travesia oven were sherds of Sulaco Polychrome, similarly fired to unusual colors. Sulaco Polychrome as a whole is even more distinctive in paste, when compared with earlier pottery, with a fully oxidized orange body, or at most a very faint light grey core. Thus, the badly fired sherds found near the Travesia kiln may be understood as failures produced in the course of crafting new ceramic bodies for the new polychrome painted pottery.

The kind of firing facility seen at Puerto Escondido, and centuries later in use at Travesia, was small in size, but built to allow control of the atmosphere surrounding the small number of vessels being fired. The second kind of above-ground firing facility identified in the lower Ulua valley does not seem to have as small a capacity, and may be closer in conception to the kilns of La Sierra in the Naco Valley. Examples from Cerro Palenque (Figure 3) have a stone pavement (a detail found at La Sierra) and fired fragments of burned clay covering poles.
(bajareque) forming curving walls, also like the reported kilns from La Sierra (Urban et al. 1997). The Cerro Palenque firing facilities are located next to a pit containing broken vessels and molds, suggesting a dump of products of the firing (Hendon 2010a; Hendon and Lopiparo 2004; Lopiparo et al. 2005). The molds recovered all are for small open vessels, bowls or cups. The most common vessel form was a distinctive open bowl with a glossy red-orange interior slip and an unslipped or poorly slipped exterior. Defined as the type Lasani Orange based on a small sample from outlying houses in the Cerro Palenque settlement, these bowls share a uniform paste that is completely oxidized, yellow in color, and somewhat soft and easily eroded. The ware implies the use of a facility allowing control of the firing atmosphere, the introduction of abundant oxygen, but protection from fire clouds, yet perhaps not a high or long sustained maximum temperature. These are very different characteristics than the harder, but incompletely oxidized products of the thick-walled round firing facility at Travesia.

The third type of formal firing facility type identified in the lower Ulua valley is a below ground pit. They can be compared to firing facilities that Rye (1981:98) describes as "an intermediate stage between open firing and true kilns". An example documented ethnographically in Pakistan shows raised areas in the bottom of the firing facility, allowing circulation of oxygen around fuel and unfired ware (Rye 1981:fig. 87). At Campo Dos, the potters used interior hearths and may also have used subterranean firing facilities for Baracoa Group fine paste vessels (Lopiparo 1994; Lopiparo et al. 2005). An excavated example of a below ground pit from Campo Pineda (Figure 4) has a raised ring of fired clay in the base allowing air to circulate somewhat freely around the ware being fired, including the bottom of the clay objects at the base, elevated on the raised ring (Lopiparo 2003).
Lopiparo (2003) found abundant evidence in the vicinity of this kiln for local use of figurine molds to produce mold-made figurines. If these were typical products of this firing facility, then a single firing could have produced a large number of fired objects. Both figurine molds and mold-made figurines were constructed of a clay body that fired brown to orange. In most instances, there is no firing core on the relatively thin figurines, but their texture is soft, suggesting relatively short firing or low firing temperature. The exterior surface on many of these objects is somewhat darker than the paste in section, suggesting that more carbon circulated in the atmosphere around the objects during firing, and was deposited and not burned off.

We have taken the time to point out the distinctions between these firing facilities and their products to underline the point we are making: ceramic production in the lower Ulua valley between 500 and 1000 AD required the development of varied knowledge and skill. As household craft production, we can be tempted to view clay crafting as relatively uniform, even unskilled work. This would be a mistake. As the ubiquity of fired clay forms of great diversity in lower Ulua valley houses would suggest, clay crafting was central to the work of creating social relations. In the final section of this paper, we turn to the concept of communities of practice as a model for these household scale social relations.

THE WORK FIRED CLAY DID

Fired clay objects served to mediate both distinction between persons and identification with others in small-scale face-to-face encounters, through exchanges of people and person-like objects among communities of various sizes, and via interregional long-distance interactions between social actors who did not encounter one another very often. These relationships operated
at multiple social and geographic scales, integrating what have been considered separate
economic spheres in the non-state societies of northern Honduras (Hendon 2010a; Lopiparo
2003, 2006).

We suggest that a focus on craft allows us to examine how a "community of practice"
developed among household members, through participation in shared craft practices.
Anthropologist Jean Lave, with sociologist Elliot Wenger, defined communities of practice in
their study of "situated learning" (Lave and Wenger 1991; Wenger 1998). They found that more
successful learning was promoted in apprenticeships when beginning practitioners were given
tasks that were not artificial or make-work, a condition they defined as legitimacy. We can use
the example of making figurines in the lower Ulua valley using molds. Beginning practitioners
could share in the legitimate task of pressing clay into molds without having developed the
greater skill needed to make the clay mixture, oversee the firing, or produce the highly detailed
prototype images. When beginning practitioners undertake legitimate tasks that they can actually
accomplish, they risk less than if they had attempted tasks they were unprepared to accomplish,
but their work still situates them within the community of practice (Joyce 2012).

Learning creates the community of practice, which is a network of relations among
people and objects continuing over time (Lave and Wenger 1991:98). In an extension of her
analysis of textile craft in Mesoamerica, Hendon (2010a) has argued that crafting at home (in a
household setting) creates communities of practice that cross generations and shape social
relations among at least some members of the household, through a shared focus on the
particular craft. Because learning is part of each individual life, skill is constantly recreated in a
community of practice (Bowser and Patton 2008; Minar 2001).
Within a crafting household, individuals with the most experience and greatest skill would have had special places, as guides for others. In the literature on apprenticeship such individuals are called "masters", a term with unfortunate overtones of control as well as being open to unreflective gendering. Recognizing that these individuals developed their skill over their lifetime, we would describe them as senior crafters: older and as a consequence more knowledgeable, but neither inherently in control of junior crafters, nor automatically recognized as having the right to claim credit for all the work done with and around them.

The products of crafting households circulated locally within regions like the central floodplains of the lower Ulua valley via exchanges that in at least some cases took place as part of larger social events, marked by dances, games, feasting and quite possibly gifting of worked clay objects (Hendon 2010a; Lopiparo 2006). The range of gifted craft objects could be quite extensive. For the event that produced the trash found near the firing facilities at Cerro Palenque, potentially gifted crafts included clay figurines, serving bowls, and effigies of Ulua Marble vases. A similar array of objects was found in trash that probably originated with similar events at Travesia, there accompanied in at least some cases by carved Marble Vases themselves (Joyce 1987; Luke and Tycott 2007). In this local scale of the network of households, the relative skill represented by different craft goods, products of household-scale multicrafting, would have been relatively evident, especially to individuals who themselves were engaged in craft. This is a scale at which social credit might continue to be strongly tied to the individual crafter.

Not all of the products of craft work in the household stayed local, however. Some figurines traveled long distances to the sites were they were eventually deposited (Hendon et al. 2013). While it is possible that they retained some traces of the name and identity of their maker, more likely they took on the burden of standing for a larger community of practice within a
wider constellation of practices. The concept of "constellations of practice" describes the articulation of separate communities of practice that share common historical roots, have members in common, share certain things, or engage in overlapping styles or related discourses (Wenger 1998:127-133, 168-169, 256-260).

CONCLUSIONS

In this paper, we have consciously adopted a practitioner’s perspective to craft. As a result, we have tried to enmesh ourselves in the production process, thinking about the steps involved, the kinds of tools used, and the consequences of making different kinds of clay objects. Our perspective also provides us with a way to look at the raw materials used and the ways that clay objects were produced in the lower Ulua valley. The use of molds, common during this time period in figurine production and also used to make fine paste pottery after 850 AD, does not seem to have been adopted to increase the scale of production or to turn out multiple identical copies of the same image. Instead, molds were chosen as a way of facilitating the involvement of practitioners with more and less degrees of skill.

The variation in production facilities is something that only became apparent to us when we reviewed and compared excavation results from sites throughout the valley, research carried out in some cases by ourselves and in others by colleagues, and spanning several decades of fieldwork. The variability in types of kilns that we discuss here accords well with the information derived from petrographic and INAA analyses of the clays used for different types of pottery and at different sites (Lopiparo 2007; Lopiparo and Hendon 2009; Lopiparo et al. 2005). We would state that lower Ulua valley households engaged in multicrafting as defined by Hirth (2009) but would also suggest that our data also argue for a different or expanded
definition of this concept. The potters, for example, were multicrafters because they maintained distinct ways of doing things even though all could be lumped into the category of potters and produced items of similar use or purpose.

As a result of this evidence, derived from multiple kinds of analyses and research, we see crafting in the lower Ulua valley creating communities of practice. These communities of crafting practice are situated in household settings. Their participants would have overlapped with the people making up the households living in these residential spaces, whose everyday work also created communities of practice. This overlap was undoubtedly not complete. Consequently, we argue that viewing these communities not just as households but also as crafters gives us deeper insight into both communities of practice. The household is not just a term for people who live together or who are kin but who also share "an intensity of functional association" (Hammel and Laslett 1974:78). The household is an abstraction that is not as useful as thinking about households as communities of practice, as Hendon has discussed from an engendered perspective (Hendon 2010b). Households vary, and one way this variation manifests itself is through involvement in crafting communities of practice.

Learning to craft is also learning to be a person in a social group. In the case of working with clay in the lower Ulua valley, we see the creation of many different communities of practice with different choices of raw material, different production procedures, and different ways of firing what they made. A single uniform clay crafting enterprise did not exist in the lower Ulua valley. At the same time, the common products produced through different technologies at Cerro Palenque, Travesia, Campo Pineda, and Campo Dos point to the creation of a constellation of practices that together constituted the social context of this network of
settlements, a binding force that originated in the household, with the simple task of working with clay.

RESUMEN

Investigaciones arqueológicas en el valle inferior del río Ulúa en Honduras han revelado evidencia de una población substancial que vivieron en esta valle grande y fétil. Esta ocupación llegó a su tamaño máximo entre los años 500 y 1000 AD. Excavaciones en sitios residenciales nos proveen muchos datos sobre la vida cotidiana, incluyendo evidencia de la producción artesanal que indica que muchos unidades domésticas correspondieron a los “multicrafting households” de Hirth (2009). Aquí nosotros enfocamos en la evidencia para la alfarería. Adoptamos la perspectiva del artesano, como ha recomendado Keller (2001) para explorar los vínculos entre unidades domésticas, la artesanía, y como los objetos ayudan mantener relaciones sociales. La producción de vasijas, figurillas, silbatos, y efigie del tamaño grande ocurrieron a la pequeña escala en varios sitios en el valle, incluyendo los de Cerro Palenque, Travesía, Campos Dos, y Campo Pineda. Discutimos diferencias en la selección del barro, en los productos, y en el tamaño y diseño de los hornos. Identificamos tres tipos de hornos. Uno es el más antiguo en el valle. Construido del barro, el horno tiene una forma redonda con paredes verticales y una apertura abierta. El segundo tipo era más grande. Era construido de bajareque, es a decir un armazón de madera cubierta con barro, una técnica de construcción muy parecida a mucha de la arquitectura doméstica en el valle. El tercer tipo de horno es un pozo. Un ejemplo tiene un collar de barro quemado alrededor de la apertura. Sostenemos que la diversidad en la alfarería indica que los artesanos eran miembros de comunidades de práctico (“communities of practice”), como los definidos por Lave y Wegner (1991). Estas comunidades consistía de individuos que son
diferentes en términos de sus experiencias, sus entendimiento de la alfarería, y sus talentos.

Propongamos que nuestro enfoque en una artesanía específica y sobre la perspectiva del artesano nos dan nuevos ideas sobre como la artesanía ha contribuido a la reproducción de los identidades sociales, las historias locales, y los lienzos entre grupos.

ACKNOWLEDGEMENTS

The information contained in this article stems from survey and excavations in the lower Ulua Valley carried out over several decades. We wish to thank first of all the Instituto Hondureño de Antropología e Historia (IHAH) for its support of these projects and for permission to use data from these projects for our research. Fieldwork at Cerro Palenque, Campo Pineda, Campo Dos, and Travesia was supported by the Jefe del Centro Regional del Norte of IHAH, the late Juan Alberto Durón. The original work at Cerro Palenque and Campo Dos in the 1980s and 1990s was part of projects directed or co-directed by Professor John S. Henderson of Cornell University. Subsequent work at Cerro Palenque was directed by Julia Hendon with the assistance of Jeanne Lopiparo. Funding for research at these sites came from a variety of sources: grants from the National Science Foundation (BNS-8319347 and BCS-0207114), the H. John Heinz III Fund (Heinz Family Foundation), the American Association of University Women Educational Foundation, and a Presidential Research Fellowship, Gettysburg College, to Julia Hendon; from the Wenner-Gren Foundation for Anthropological Research to Jeanne Lopiparo; a Fulbright-Hays Fellowship and an OAS Traineeship Grant to Rosemary Joyce; and grants from the Stahl Endowment of the Archaeological Research Facility, University of California, Berkeley; Research and Professional Development Fund of Gettysburg College; and the Owens Fund of the Peabody Museum of Archaeology and Ethnology, Harvard University. While the
support of these institutions and programs is greatly appreciated, we take full responsibility for the ideas and information in this article. Any errors are our own.

REFERENCES

Beaudry-Corbett, Marilyn, Pauline Caputi, John S. Henderson, Rosemary Joyce, Eugenia Robinson, and Anthony Wonderley


Bowser, Brenda J.


Bowser, Brenda J., and James Q. Patton


Dobres, Marcia-Anne

Hammel, Eugene A., and Peter Laslett

Hasemann, George, Lori van Gerpen, and Vito Veliz

Henderson, John S.

Henderson, John S., and Rosemary A. Joyce

Hendon, Julia A.


Hendon, Julia A., Rosemary A. Joyce, and Jeanne Lopiparo


Hendon, Julia A., and Jeanne Lopiparo


Hirth, Kenneth G.

Joyce, Rosemary A.


Joyce, Rosemary A., and John S. Henderson

2003 Investigaciones recientes de la arqueología del periodo Formativo en Honduras: nuevos datos según el intercambio y cerámica pan-mesoamericana (o estilo "olmeca"). In XVI

Keller, Charles


Keller, Charles M., and Janet Dixon Keller


Lave, Jean, and Etienne Wenger


Lemonnier, Pierre


2012 Mundane Objects: Materiality and Non-Verbal Communication. Left Coast Press, Walnut Creek, CA.

Lopiparo, Jeanne L.


Lopiparo, Jeanne L., and Julia A. Hendon


Lopiparo, Jeanne L., Rosemary A. Joyce, and Julia A. Hendon


Luke, Christina, and Robert H. Tykot

Miller, Heather M.-L.

Minar, Jill C.

Morell-Hart, Shanti
2011 *Paradigms and Syntagms of Ethnobotanical Practice in Pre-Hispanic Northwestern Honduras*. Ph.D. Dissertation, Department of Anthropology, University of California, Berkeley.

Pope, Kevin O.

Robinson, Eugenia J.

Rye, Owen S.
Urban, Patricia A., E. Christian Wells, and Marne T. Ausec


Vitelli, Karen D.


Wells, E. Christian


Wenger, Etienne


Williams, Howell, and A. R. Mc Birney

List of Figures

Figure 1: Map showing sites discussed in text and main geological sources of clays.

Figure 2: Firing facility excavated at Puerto Escondido.

Figure 3: Remains of above ground firing facility at Cerro Palenque.

Figure 4: Below ground firing facility from Campo Pineda.