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Feasting at Poverty Point with Poverty Point Objects

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ABSTRACT

Attempts to account for the impressive and unusual archaeological record of the World Heritage site of Poverty Point have often faltered. The vast and diverse set of artifacts, the spectacular and well-designed earthworks, and the millions of baked-clay objects known as Poverty Point Objects are all distinctive and anomalous features of the site. This paper argues that the archaeological record of Poverty Point can best be explained as the product of periodic, ritualized feasting events. Drawing on diverse archaeological and anthropological studies of feasting I demonstrate that it is a useful research framework for understanding the site's content because many of the archaeological signatures of feasting are present at Poverty Point. I argue furthermore that Poverty Point Objects were an integral component of this culture of feasting and offer hypotheses on their role in the feasts.

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The Poverty Point site (16WC5), located in northeast Louisiana, is unlike any other archaeological site in the world (Figure 1). Archaeologists use terms like singularity and *sui generis* to characterize how unusual it is in North American prehistory (e.g., Kidder 2012). It is the premiere site of the Poverty Point culture, which was centered in the Lower Mississippi Valley (LMV) during the end of the Late Archaic period (ca. 3000–1000 BC). But it has puzzled archaeologists ever since it was first identified and defined in the 1950s. Hunting and gathering groups are traditionally not thought to be capable of creating monumental construction or engage in extensive exchange systems because they, in general, are not typically sedentary nor do they typically have the large food surpluses that agriculture provides (cf. Saunders 2017; Thompson and Andrus 2011). This conventional wisdom applies generally to many other hunting and gathering cultures around the world both historically and prehistorically, but it does not fit Poverty Point (Kidder 2011:95).

There are three major anomalies associated with Poverty Point: the massive earthworks, the voluminous and diverse artifacts, and the Poverty Point Objects (PPOs). Kidder (2011) and Ortmann (2007) have extensively documented the complexity and the monumentality of the earthworks. Perhaps their most astonishing finding is that Mound A, which is over 23 m in height and over 6 ha in extent, appears to have been built in about three months (Ortmann and Kidder 2013). Kidder (2011) argues convincingly that they were built as part of world renewal ceremonies.

While the earthworks are impressive, one of the most extraordinary aspects of the site is the enormous amount and diversity of the artifacts. The area of Poverty Point is rich in plant and animal resources but it is essentially a stoneless land with the closest gravels suitable for use over 30 km away. Therefore all the tens of thousands of stone artifacts (e.g., thousands of kg of chert, hundreds of plummets) found at Poverty Point were transported to the site from distances ranging from 30 to over 500 km (Gibson 2001). In fact both the volume and diversity of stone artifacts at Poverty Point exceeds most archaeological sites in North America, including ones occupied by people over 2,000 years later who produced agricultural surpluses. Typical Poverty Point artifacts such as plummets, steatite bowls, Motley projectile points, and galena were also used by other Late Archaic groups, but the magnitude of their presence at Poverty Point compared to contemporary sites is remarkable.

The number of stone plummets found at Poverty Point illustrates this point well. These plumb bob–shaped artifacts are commonly believed to have been used in fishing and hunting, and they are one of the most widespread and plentiful artifacts associated with the Poverty Point culture (Webb 1982). Using Webb's counts from his 1982 summary alone, Poverty Point had 2,790 whole or partial plummets, most made of magnetite or hematite imported from sources in Arkansas that were hundreds of kilometers away. Other areas with roughly contemporaneous sites have only a few stone plummets per site (Goldstein 2004). After Poverty

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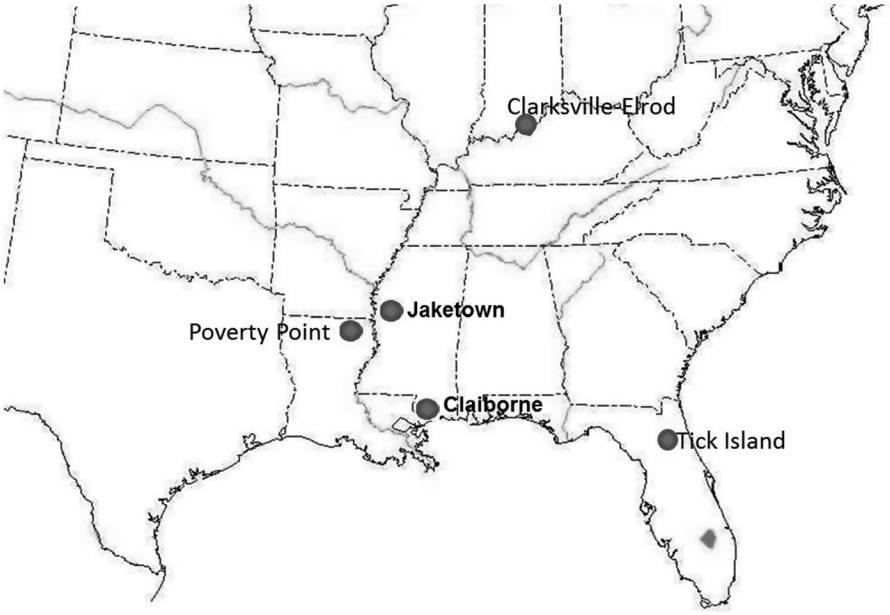

Figure 1. Important archaeological sites discussed in the paper (base map from http://jan.ucc.nau.edu/~alew/maps/se-us-bs-h.jpg, accessed September 20, 2017).

Point, however, hematite and magnetite plummets essentially disappear from the Southeast. Therefore, their abundance and utility in the Southeast is bound up in the Poverty Point culture. Table 1 documents how anomalous Poverty Point is in artifact numbers and types compared to other large Late/Terminal Archaic sites, and it demonstrates that one of the main reasons why Poverty Point is so exceptional is because of the abundance and diversity of its material culture. As Gibson (1996:288) has succinctly put it, Poverty Point is the culture that did not fit.

One other major anomaly at Poverty Point is the superabundance of Poverty Point Objects. For approximately several hundred years before the widespread adoption of pottery in the Southeast, the people of the Poverty Point culture made PPOs by the millions at the type site and by the thousands and hundreds at other sites in its sphere (Figure 2). PPOs are hand-molded baked-clay objects that were formed into a series of standardized shapes (e.g., melons, cylinders, and biconicals). They are found at Poverty Point culture sites throughout the LMV and are even found in sites in the Lower Ohio Valley and Florida (Hays and Munson 2016; Hays et al. 2016; Figure 3). PPOs are the most diagnostic artifact of the Poverty Point culture. Their importance to the Poverty Point culture is highlighted by the fact that when Webb (1968) delineated the extent of the culture, he used sites containing PPOs as his boundary markers. A few other archaeological cultures around the world made clay balls similar in basic form to spheroidal PPOs, but no other

Table 1. Comparison of Poverty Point to other major Late Archaic sites.

Artifacts	Poverty Point	Indian Knoll	Riverton culture sites
Plummets	2,790	0	0
Projectile points	11,714	8,714	261
Stone beads	1,214	88	51
Microliths	ca. 30,000	0	23
Copper objects	155	5	ca. 4
Stone gorgets	546	3	0
Pendants	296	3	6
Celts/adzes/axes	445	187	1
Hammerstones	348	665	10
Banner/boat stones	67	43	0
Galena objects	702	0	0
Clay figurines	133	0	0
Pipes	50+	0	1
Steatite objects	2,221	0	0

Note: Sources for information are Webb (1974, 1982) and Winters (1969).

Figure 2. Example of a large concentration of PPOs at Poverty Point from N55 E15, Feature 6, Sharon I. Goad excavations. Courtesy of Poverty Point World Heritage Site.

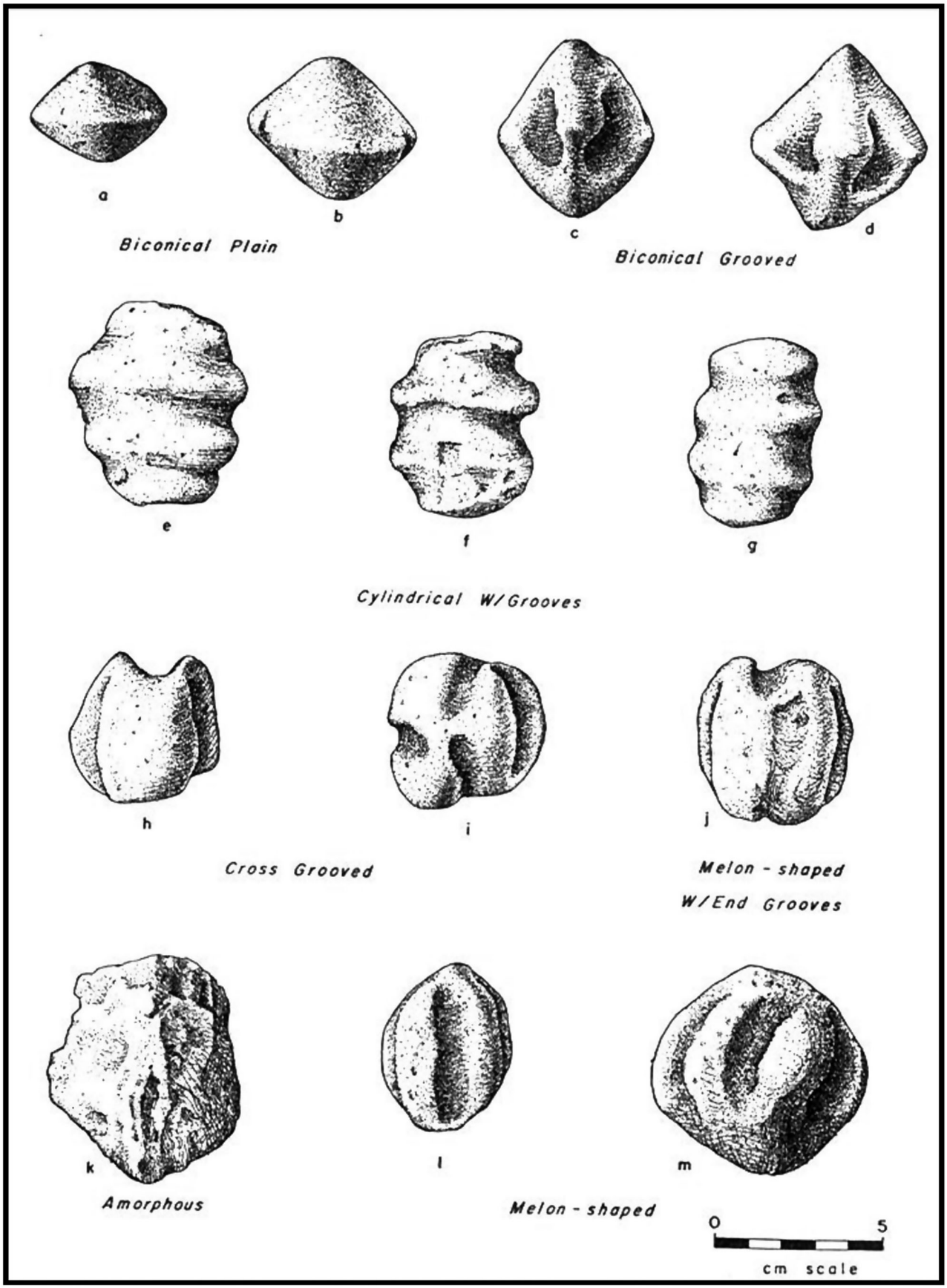

Figure 3. Common PPO types (after Ford and Webb 1956:41). Courtesy of the Division of Anthropology, American Museum of Natural History.

culture manufactured them in such enormous amounts and no other culture made them with the care, variety, and standardization of form as the people of the Poverty Point culture (Hays et al. 2016).

Attempts to account for the unusual nature of Poverty Point have included it being occupied by a ruling class from the Ohio Valley (Ford and Webb 1956), the center of a great chiefdom (Gibson 1973), the site of a great trading fair (Jackson 1991a), and it has even been characterized as the "forgotten city" (Ellerbe and Greenlee 2015). In Gibson's (2001) portrayal, there was a single ethnic group living at the site. Archaeological evidence (e.g., Byrd 1991) indicates that there was a resident population at or near Poverty Point, which Renfrew (2001:20) suggests is common at sites that are Locations of High Devotional Expression (LHDE), such as Chaco Canyon and Stonehenge. He argues that local populations function at LHDEs as ritual specialists and as food preparers and producers because of their knowledge of the local resources.

But on balance, the archaeological data do not support the model that a sizable, single ethnic community continuously resided at Poverty Point. The great volume of the artifacts and their diversity and the unusual and relatively rapidly built large earthworks at Poverty Point only make sense if there were large numbers of people from different ethnic groups coming together at the site. Poverty Point is anomalous in the massive numbers, diversity, and types of artifacts compared to contemporary Late Archaic sites. Kidder (2011:112) highlights the fact that Poverty Point has a remarkable variety of formal tool types, whereas its contemporary sites have typically one or two formal tool types. Finally, Jackson (1991b) has argued that the available data on foods consumed by local populations in the Poverty Point area indicate that it is more likely that the site was occupied periodically rather than continuously. The poor floral and faunal preservation at Poverty Point makes it difficult to evaluate directly the food resources that were consumed there, but Jackson's analysis of the flora and faunal at nearby Copes (16MA47), where preservation is good, indicated no regional stress on subsistence resources. Indeed the Copes residents were highly selective in their subsistence pursuits, which would not occur if there was a large resident population. In summary, neither the earthworks, the artifacts, nor the available subsistence information support the hypothesis that there was a large permanent community residing at Poverty Point.

Spivey and colleagues (2015) recently offered an intriguing model to account for the singular characteristics of Poverty Point: they propose that Poverty Point was a pilgrimage site. They conceptualize what hunter-gatherer behavior would look like in a resource-rich environment and argue that the Poverty Point site can best be accounted for as the center of a multiethnic gathering. Sassaman (2005:358) describes a similar conception of Poverty Point as "the ultimate ethogenetic event of ancient Native America as various populations converged in northeast Louisiana from points north and south." The pilgrimage model agrees relatively well with the Poverty Point data since it accounts for the great variety in the artifact assemblage and the paucity of evidence for a large resident population.

In this paper I take the pilgrimage model a step further and argue that a primary focus of periodic journeys to Poverty Point was a series of large-scale ritualized feasts. It seems likely that the feasts were centered on world renewal and creation stories that Gibson (2001:185–186) and Kidder (2011:105–107) argue were instrumental in the layout and construction of the Poverty Point earthworks. But I will focus my analysis on the feasting events and associated activities (e.g., craft production) that likely supported and highlighted the religious ceremonies associated with these cosmological beliefs. Fasting ceremonies followed by feasting ceremonies were a common part of Native American life renewal and world renewal ceremonies such as the Green Corn Ceremony and the SunDance Ceremony (e.g., Hudson 1976:366–371; Walker 1917:62).

Other archaeologists have made brief references to feasting activities at Poverty Point but rarely do they do more (e.g., Gibson and Melancon 2004). Among the issues that I examine are the role feasting played in prehistoric societies, the role of feasting in different sociopolitical groups, and the relationship of craft specialization and feasting. I then demonstrate that the archaeological signatures of feasting are present at Poverty Point and its satellite sites, and that the conceptual framework of feasting explains the extraordinary characteristics of the site better than other theoretical models. I will follow this discussion with a consideration of Poverty Point's most abundant artifact – PPOs – and offer hypotheses on their use in the feasts.

Anthropological perspectives on feasting

Everyone loves to eat and drink. As the food writer Fisher (2004:5) famously said, "first we eat, then we do everything else." Wrangham (2009) maintains that cooking food was a key event in hominin evolution and ultimately it made us human. Event planners know that if they have any food and drink at a talk or exhibit they are much more likely to get a large audience. But an event that has food and drink as well as entertaining speeches, music, and maybe even dances is even more likely to attract a large audience. Such events could be called feasts and anthropologists are becoming increasingly interested in their role in shaping cultural values

(e.g., O'Connor 2015). One way of defining feasts is that they are marked by the communal consumption of food and drink, and often they are accompanied by ritualized speeches, performances, dancing, singing, and even healing (Dietler and Hayden 2001a:3). What distinguishes a feast from the daily consumption of food is that it is an event rather than a mere intake of calories and liquids. Feasts are sensual experiences that extend beyond the practical necessity and ordinariness of daily meals. A really good feast gives one a perception of being part of a special event, and it can give the participants a sense of *communitas*, which is marked by a release from day-to-day structural role-playing and a feeling of cohesion within a group.

There are, of course, a wide range of feasts from the simple to the elaborate and expensive. The larger ones can be challenging to put together since they require substantial planning and work. But the planning and work are often accompanied by a feeling of anticipation, a sense of meaning and purpose, a sense of fulfillment, and the satisfaction of working together with others to an eagerly expected event. For all these reasons, feasts attract participants, people look forward to feasts, and all the work that goes into them is viewed as necessary and can even be pleasurable. Another motivating factor is competition. Feasting can be used as a type of aggrandizing gift giving: I give so that you may return my gift. Putting on the "best" feast and even a "legendary" one will give the hosts social prestige and probably attract more participants and followers in the future. Certainly this was one of the motivating factors in the famous potlatches of the Northwest Coast Indians.

Anthropologists are intrigued with how feasts provide important insights into the social and political dynamics of past and present societies (Dietler and Hayden, eds. 2001b; Hayden 2014). O'Connor (2015:8) asserts that, like Mauss's concept of the gift in cultures throughout time, feasts can be called total social facts since their practice and structure are influenced by, and have implications for, all aspects of a society from religion to economy to politics. Archaeologists and anthropologists have studied feasts in a wide variety of societies including the ancient states of Mesopotamia and China (O'Connor 2015), tribal societies in the New Guinea Highlands (Wiessner 2001), prehistoric chiefdoms around the world, and the modern United States of America (Dietler and Hayden, eds. 2001b). Feasts are important in all these societies because they perform a kind of alchemy; they transform food and associated performances into social relationships. Food, drink, and events at a feast can be used to facilitate all the key elements of human social interaction including alliances, competition, dominance hierarchies, and marriage bonds.

Feasting and sociopolitical organization

Hayden (1998, 2009, 2014) has been studying feasts longer and with greater breadth than any other anthropologist and has considered their archaeological signatures and implications in great detail. He believes that feasting is one of the primary movers in cultural evolution and that it is recognizable in the archaeological record at least 30,000 years ago during the Upper Paleolithic period. Hayden (2009) contends further that domesticated plants and animals were typically used first by elites as luxury foods in feasts to differentiate themselves but eventually these foods became in widespread domestic use. He argues furthermore that pottery was initially used on special occasions by elites for ritualized feasting and drinking (Hayden 1998).

While most societies have feasts for various reasons, the types of feasts practiced and the motivation for their performance varies considerably. Hayden (2014) argues that how a society feasts will tell you a lot about its sociopolitical structure. He divides sociopolitical organizations into five categories (simple or generalized hunter-gatherers, transegalitarian hunter-gatherers and horticulturalists, chiefdoms, early states and empires, and current industrial states), each with characteristic numbers and types of feasts. Here, I focus primarily on transegalitarian hunter-gatherers because this is, in all likelihood, the sociopolitical level of the Poverty Point culture (e.g., Gibson 2001). The term "transegalitarian" is used to describe a sociopolitical organization that lies between the egalitarian power structure of generalized hunters-gatherers and the inherited, coercive power found in chiefdoms.

While simple or generalized hunter-gatherers share food, transegalitarian hunter-gatherers commonly hold feasts supported by food surpluses (Hayden 2014; Woodburn 1982). In effect, feasting replaces the sharing ethic of generalized hunter-gatherers. When the subsistence base is unstable and fluctuating, some groups can do well and at other times experience misfortune and food shortage. Feasting establishes ties between groups near and far, and this creates alliances that act as social safety networks (Hayden 2009:600). Transegalitarian societies permit and encourage competition between kin groups and individuals to promote themselves and their self-interests. Typically these societies have unilineal descent groups that are arranged in clans and sometimes moieties. In practical terms, this means that they often engage in raids and warfare but also practice clan exogamy, which means that they need to establish marriage alliances with other groups.

Transegalitarian groups typically store food that becomes surpluses that can be used in feasting

ceremonies. These feasts create debts that bind disparate groups together and generate demands for further surplus contributions from their participants (potlatches among the Northwest Coast Indians functioned in this way [Hayden 2014]). The demands are heightened by the fact that a failure to contribute sufficiently to a feast can lead to a social downgrading and shaming of groups. On the other hand, prestige and honor are given to those who can both create and pay off debts as symbolized by fabulous feasts. Great feasts display the host group's success and because there are benefits to showing solidarity with a wealthy and unified group, successful feasts can attract followers and labor for them. Feasts then can be used to underwrite major projects such as house building, irrigation works, planting, and harvesting (Dietler and Herbich 2001). In his analysis of festivals in Mesoamerica, Wells (2007:33–35) notes that work party feasts serve and support multiple purposes including subsistence activities, craft production, architectural constructions, and the integration of dispersed groups. For the Poverty Point culture, the construction of the earthworks would have been labor intensive and feasts could have supported and even attracted people to participate in their creation.

Wiessner's (2001) analysis of feasting among the Enga tribe of Papua New Guinea emphasizes another important outcome and even a goal of feasting ceremonies: the creation and negotiation of the value of items. Feasts are a type of ritual theater for the Enga where, among other things, pigs, sacred stones, and pearl shells are used and displayed in various performances. Wiessner (2001:117) notes generally that feasts provide an excellent context for defining the value of objects because: (1) values and meanings of ritual items can be broadly introduced to a large number of people; and (2) ritual displays of items during feasts are the focus of attention for the participants, which consequently raises the status of the users and the items. Feasts then function as key public venues for negotiating cultural values and norms.

Feasting and crafts

Another aspect of feasting that archaeologists have examined is the role of ritual craft specialists in the feasting ceremonies of small-scale societies. Spielmann (2002) argues that in most small-scale tribal societies, ritual crafts are typically made for use by everyone in the group rather than just elites, and the group usually places restrictions on status-seeking behavior. Those who seek status do so with the permission of the group. Spielmann stresses that while higher-ranking individuals may dominate the use of the crafts in a feast, these ritually charged objects are made for the community. She argues further that when aggregation is confined to ritual precincts, we find evidence for larger-scale production on the part of aggregated artisans. Spielmann (2002:197) characterizes craft production for ritual feasting in small-scale societies as a ritual mode of production in which "the goal is not profits but, rather, acceptable, often superlative performance and participation. Thus, feasting and craft production are supported not by elites but by numerous individuals as they fulfill ritual obligations and create and sustain social relations."

Feasting signatures

In this review, I have highlighted three aspects of feasting in transegalitarian societies that are particularly relevant to our understanding of Poverty Point. First, large and successful feasts help cement and maintain alliances between visiting groups, and they also advertise the desirability of being affiliated with the hosts. Second, feasts are often used to attract and support communal labor for projects. These two characteristics of feasts would help explain why a large number of people appear to have been present at Poverty Point and motivated to construct the earthworks, culminating in the rapid building of Mound A. Ortmann and Kidder (2013) estimate that it was built in about three months with a workforce ranging between 1,000 and 3,000 laborers plus their families.

Third, crafts are often produced by and for the community in preparation for feasts (Spielmann's ritual mode of production). The implications for the Poverty Point archaeological assemblage seem clear. One of the most distinctive qualities of Poverty Point assemblages is the wide range of "nonutilitarian" artifacts that could have been used in ritualized feasting ceremonies, e.g., the pipes, the lapidary items, possibly the soapstone bowls, and more. These items fulfill several of Hayden's key archaeological signatures of feasting (Table 2). Five of Hayden's feasting signatures that pertain to craft production are present at Poverty Point: (1) unusual preparation and (2) serving vessels (the steatite vessels and the spiculate pottery [Hays and Weinstein 2004]); (3) prestige items; (4) ritualized paraphernalia for public rituals (the figurines, beads, and gorgets); and (5) ritualized items for smoking or drinking (the tubular pipes).

However, while Poverty Point has quite a few artifact categories that are archaeological signatures of feasting, they provide only indirect evidence. Direct evidence of feasting in the form of food remains is scarce at Poverty Point, even though the area has a great number of economically useful plant species and abundant fish (Jackson 1991b:141–148). Indeed most of Hayden's archaeological signatures of feasting that are absent from the site

Table 2. Hayden's archaeological signatures for feasting and their presence at Poverty Point.

Items	Archaeological signatures	Examples at Poverty Point
Preparation vessels	Unusual types, sizes, and numbers (perhaps the initial appearance of cooking pots)	Exotic pottery (e.g., spiculate pottery) and exotic stone vessels (e.g., soapstone)
Serving vessels	Unusual quantity or materials (first occurrence of pottery, stone bowls)	Exotic pottery (e.g., spiculate pottery) and exotic stone vessels (e.g., soapstone)
Food preparation facilities	Unusual size, number, and location of roasting pits	Numerous hearths and pits and ca. 15 million PPOs
Special food-disposal pits	Bone dumps, feasting middens	Poor preservation
Feasting facilities	Special structures (temporary vs. permanent)	Large structures in plaza?
Associated prestige items	Prestige items used in feasts (feathers, jewelry)	E.g., figurines and lapidary work
Ritualized items of etiquette	Smoking or other narcotic paraphernalia; vessels for consumption of alcohol, kava, etc.	Stone and ceramic pipes
Paraphernalia for public rituals	Dance masks or paraphernalia	E.g., lapidary work and gorgets
Resource characteristics	Abundance, intensified exploitation	Abundant food resources in the area

Notes: Archaeological signatures modified from Hayden (2001:40). Sources for information are Connolly (2001), Hays and Weinstein (2004), and Webb (1982).

are those relevant to food remains (e.g., rare or labor intensive plants/animals, bone dumps and feasting middens, storage pits and granaries). The paucity of food remains at Poverty Point is likely due to the acidic loessal soils that ensure poor preservation of organic remains. Both floral and faunal remains have been recovered at the site, but the bone is mostly small, unidentifiable fragments and a limited amount of flora that consists mostly of nut shells (Connolly 2001; Ward 1998). There is, however, abundant direct evidence for large-scale cooking activities: the PPOs. There is considerable archaeological evidence that many PPOs were used in cooking activities, but they probably served other functions as well (Hays et al. 2016:214). In the following section of the paper, I will examine in some detail the function of PPOs and offer hypotheses on their role in feasting activities.

An overview of PPOs

A few other cultures in the Old World and North America have used baked-clay objects as heating elements (e.g., Beveridge 1889). However, three aspects of PPOs stand them apart from any other baked-clay-object tradition in the world. The first is the remarkable standardization in the basic forms of the objects. While there are a number of unusual types and variants of PPOs, according to Webb (1982:37) the people of the Poverty Point culture primarily made six major types, which constitute about 87% of the total classified: biconical plain and grooved, cylindrical grooved, cross grooved, and melon shaped, with or without end grooves (Figure 3). Webb (1982) also described a category of PPOs as unusuals; these objects are relatively few in number and are frequently elaborately decorated with incising or punctations and have highly specialized forms (e.g., pillow shaped, barrel shaped, cuboidal; Figure 4).

The second striking aspect of PPOs is that the standard forms are found at a considerable number of sites within the LMV, with distances of over 480 km between the sites (Hays et al. 2016:217). Moreover, most of the same basic types are found at the major well-excavated sites. The third striking aspect is that they were produced in large quantities. Gibson (1973:129) has estimated that Poverty Point holds around 15 million. They are also quite numerous at other Poverty Point culture sites, particularly Claiborne (22HA501) and Jaketown (22HU505), which each contain about 12,000 recorded PPOs. Even relatively small sites have several hundred of them.

We know that PPOs were made/used in standardized forms in Poverty Point culture sites throughout the LMV and other areas of the Eastern Woodlands, ranging from the Falls of Ohio to eastern Florida (Hays et al. 2016). But what we are not sure about is why these patterns persisted and how PPOs functioned in the Poverty Point culture. Most archaeologists in the Southeast have assumed PPOs were used primarily as a type of "cooking stone" to hold and release heat when roasting food. While the archaeological evidence indicates that this is probably true for a large portion of PPOs, this explanation is insufficient to account for the forms and distribution of PPOs in the Poverty Point culture. Put simply, the function and use of PPOs is complicated.

Function and use of PPOs

Some of the lesser or secondary explanations for the function of baked-clay objects are as gaming devices, grooved net weights, spindle whorls, and plummets (Heizer 1937). South (2002) argues that the perforated baked-clay objects recovered at the Charles Towne site (38CH1) in South Carolina may be been used as fishing and net weights. This proposed function fits with a pattern in the Poverty Point culture where perforated PPOs are also present primarily in sites along the Louisiana and Mississippi Gulf Coast, particularly at Claiborne.

An additional proposed function for baked-clay objects and PPOs is that they were used to heat liquids in a manner directly analogous to the hot-rock method of cooking in containers. The perforated objects in South Carolina and along the Gulf Coast could have functioned in a manner similar to perforated soapstone

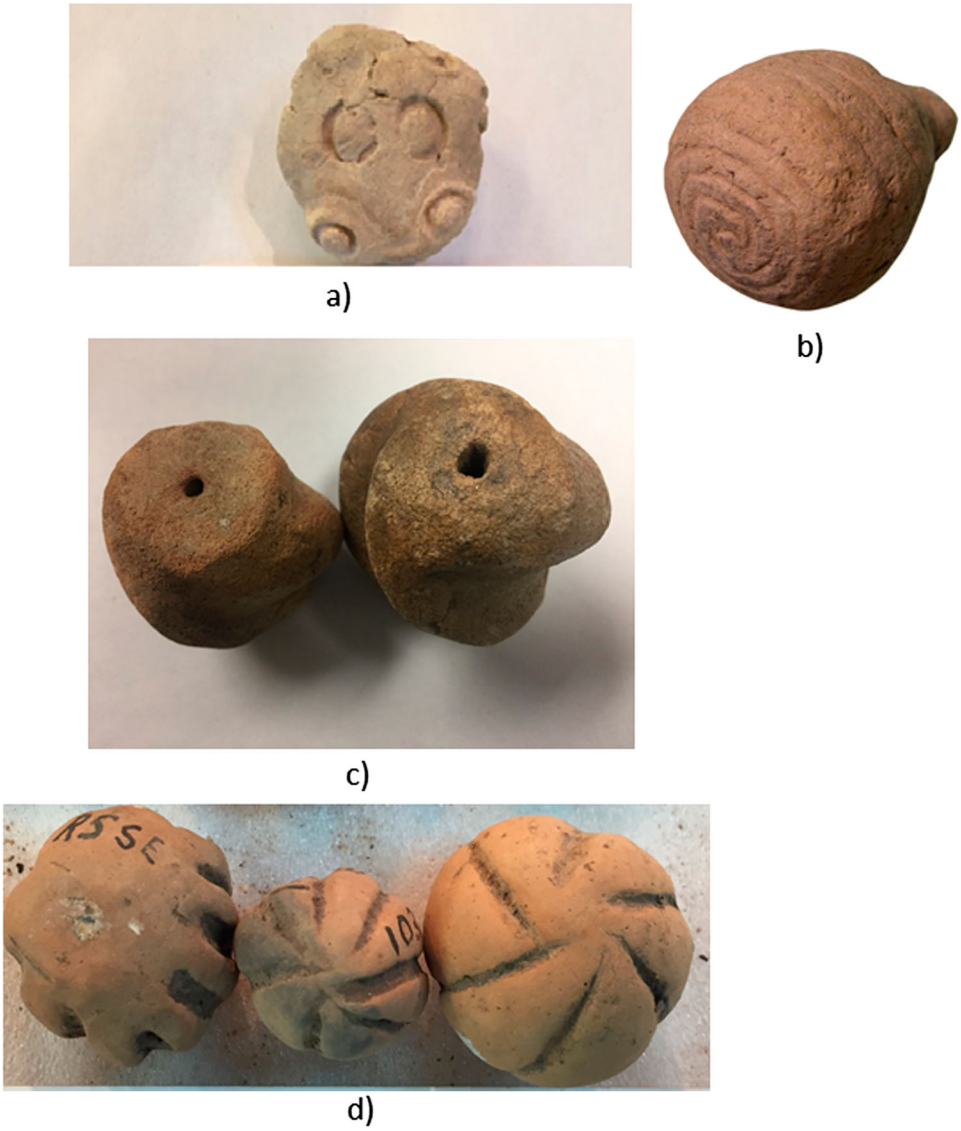

Figure 4. Selected images of unusual and miniature PPOs: (a) cane impressed PPO from Poverty Point; (b) PPO with spiral designs from Tick Island; (c) PPOs with twists, flat tops, and perforations from Claiborne; (d) miniature PPOs with incising from Poverty Point.

slabs, which are widely believed to have been used in liquid boiling (South 2002). Based on an extensive series of experiments, McGee (1995:114) concluded that simple spherical baked-clay objects are "equal or superior to all stone (except possibly steatite or soapstone) in stone boiling." Interestingly, there is evidence from Poverty Point culture pit features that support the idea that PPOs were used in boiling or steaming. Thoms's (2008:455) cooking experiments demonstrated that steaming pits and stone-boiling pits that are heated only by stones transferred in from adjacent hearths have relatively little ash or charcoal. This may explain why all the pit features at Terral Lewis (16MA16) lacked ash or charcoal (Webb 1982:5). In other words, PPOs at Terral Lewis could have been used primarily in clay-lined pits to boil food rather than for roasting food.

The main explanation for a PPO as a type of cooking stone is its ability to hold and release heat when roasting food. The archaeological evidence for the use of PPOs as roasting stones is particularly conspicuous at Poverty Point and Jaketown where the vast majority of PPOs are buff to reddish in color, suggesting that they were fired repeatedly in oxidizing conditions. Gibson (2001) observed, moreover, that many PPOs are oxidized in the interior. The frequent presence of PPOs in earth ovens and hearths at these sites support this inference as well. In an extensive set of experiments, Hunter (1975) discovered that the best configuration for cooking meat involved having heated ash and coals on the bottom of a pit and surrounding the meat with heated PPOs. His experiments also produced large quantities of PPO fragments. Hunter notes that most archaeological pits in the LMV containing

PPOs also have ash and charcoal, so he concluded that his experiments had probably successfully related the cooking technology used by the Poverty Point people.

Based on his experiments cooking food with PPOs, Gibson (2001:114–116) argues that different types of PPOs had different heating qualities and therefore, that the variation in PPO types can be best explained by the variation in cooking needs (e.g., roasting nuts vs. roasting meat). Indeed, it does seem likely that some of the variation in PPO shape is related to technical considerations. For example, the grooves on PPOs would have made their transfer between pits easier, and the grooves would also make it easier to stack PPOs together in a pit (Ford and Webb 1956:44; Hunter 1975:67). But several lines of evidence do not support Gibson's general hypothesis that PPO shapes are determined primarily by cooking needs.

First, systematic thermal and cooking experiments indicate that heating and cooking with simple clay lumps is a more efficient technology than the relatively complex forms used by Poverty Point people. Pierce (1998:178) concluded that "the wide variety of shapes appear to have no impact on performance." McGee's (1995:114) experiments indicated that amorphous or round forms work just as well (or perhaps better) at retaining and releasing heat in baking food as the standard PPO forms. So if simple clay balls work as well or better for roasting foods than PPOs, then why take the time to make such forms as cylindrical grooved and biconical grooved? Furthermore, replication experiments show that PPOs take more steps and effort to create than simple amorphous objects (Pierce 1998). While the standard PPO forms are not complex, they nonetheless require some skill to make. Hunter (1975:65) found that the cylindrical-grooved objects were particularly difficult to replicate. He notes with apparent chagrin that in his replications "only a few examples were produced that resembled even the poorest example of this type."

Second, worldwide archaeological and ethnographic data on the use of baked-clay objects indicate that round or amorphous forms were preferred for heating and cooking purposes (Hays et al. 2016:230). This suggests that the standardized PPO forms were probably not dictated by varied baking or roasting needs. Moreover, it seems reasonable that if the people of the LMV had discovered that different PPO forms gave them subtle control over roasting various foods, they would have maintained this technology into later periods. However, the number of PPOs dwindles to only two or three objects per site in well-excavated Early Woodland period middens on the Gulf Coast, and PPOs are virtually absent from the Tchefuncte/Early Woodland component at Jaketown where they were replaced by the tetrahedron (Heller et al. 2013; Henry et al. 2017).

Third, if the different types of PPOs were designed specifically for distinct cooking needs (e.g., cylindrical-grooved for low simmering) then one would expect that pits would contain all or mostly all of one type. Evaluating this expectation is difficult because the specific types of PPOs found in a pit are not consistently recorded (and most PPOs have been found in general midden contexts rather than in hearths or earth ovens). But in most of the instances where the types of PPO in a pit were recorded, several were present. For example, Ford and Webb (1956:44–47) recorded six types in one hearth and three types in two other hearths. Another example, Webb (1982:25) states that the six pit features excavated at Terral Lewis had 12–30 PPOs of several different types. Given the diversity of PPOs in pits, it seems highly unlikely that the primary reason for the stylistic differences is related to different cooking needs. In other words, it seems highly unlikely that the Poverty Point people were mixing the different PPO forms together to arrive at some optimal cooking temperature or environment.

Furthermore, the distribution of PPO types between Poverty Point culture sites is very uneven. As indicated in Table 3, there are sites that contain almost exclusively one type of PPO (e.g., Lake Enterprise [3AS379] Mound – biconical grooved), some sites contain a variety of PPO types but they lack or have very few of one or two of the types (e.g., Terral Lewis lacks cylindrical grooved PPOs), and some sites contain all of them (e.g., Poverty Point and Claiborne). It seems unlikely, furthermore, that these large variations can be accounted for primarily by temporal differences. At Poverty Point, the only site with good stratigraphic information on the distribution of PPOs, all six main types are present from the lowest levels to the upper levels (Connolly 2001:105). In summary, it makes little sense to argue that the variations in types present at a site could be accounted for by different cooking styles or food types, given the very uneven distribution of PPO types between sites. I am not arguing that PPO shape is completely unrelated to their heating capacities. However, neither controlled experimental cooking with baked-clay objects and PPOs nor archaeological evidence support the argument that the variation in PPO types can be best accounted for by variation in cooking needs.

Webb (1982) surmised that because PPOs are often found in areas lacking large amounts of gravel suitable for hot-rock cooking, PPOs were being used as substitute heating elements. But as I and my colleagues have demonstrated elsewhere, PPOs have been found in areas with abundant river gravels and at sites with abundant fire-cracked rock (Hays and Munson 2016; Hays et al. 2016:230). Furthermore, PPOs are not found in all areas

Table 3. Distribution of major PPO types in selected important sites by site and region.

Region	Site	Biconical	Biconical grooved	Cylindrical grooved	Cross grooved	Melon	Melon w/end grooves	Spheroid	Biscuit	Amorphous
Southeast Arkansas	Lake Enterprise Mound (3AS379)	1	50	0	0	0	0	0	0	0
Poverty Point Area	Poverty Point (16WC5)	1,248	1,602	4,579	3,359	1,682	3,116	224	138	866
	Terral Lewis (16MA16)	44	81	0	113	98	11	7	9	53
	Copes (16MA47)	63	3	78	17	98	37	2	10	56
Yazoo Basin	Jaketown (22HU505)	426	3	1,411	410	1	2	29	0	0
	Teoc Creek (22CR504)	167	0	9	1	0	0	11	2	1
Catahoula Lake Area	Caney Mound (16CT5)	144	4	4	2	0	1	26	74	556
Gulf Coast of LA/MS	Claiborne (22HA501)	1,153	2,069	1,171	2,006	2,106	1,356	377	22	476
	Linsley (16OR40)	26	32	7	8	32	1	4	4	7
	Apple Street (22JA530)	19	2	0	0	4	0	17	0	0
Lafayette Area	Beau Rivage (16LY5)	5	0	17	2	0	0	11?	0	734
	Ruth Canal (16SM20)	15	8	0	0	0	0	0	0	1

Note: Sources for information are Blitz and Mann (2000), Ford et al. (1955), Gagliano and Saucier (1963), Gibson (1976, 1991), Jackson and Jeter (1994), and Webb (1982).

of the Southeast lacking river gravels (Southerlin 1989). Therefore the abundance of gravel in an area is clearly insufficient to account for the distribution of PPOs.

In fact, even in major Poverty Point sites in the LMV with massive numbers of PPOs, fire-cracked rock has been found in abundance. Ford and Webb (1956:39) note that at Poverty Point "a considerable amount of fire-cracked rock was scattered through the midden deposits. For the most part, these were angular broken fragments of sandstone." Even in the stoneless land of the Poverty Point site, people were transporting in considerable amounts of sandstone for use in cooking. Based on my 2017 examination of the collection from Marshall's (1970:16–18) excavations, the Claiborne site also contained substantial amounts of fire-cracked sandstone. These examples raise the question: did the people of the Poverty Point culture use rock and PPOs for distinct heating purposes or were they used interchangeably? Given the technical effort needed to create the distinct PPO types, it seems plausible that PPOs had a distinct heating purpose different from that of sandstone. Since technical reasons and the distribution of gravels seem to be insufficient for explaining the variety and standardization of PPO types, or their distribution in the Eastern Woodlands, it follows that social and historic factors are likely to be the key determinates.

One category of PPOs that seems particularly likely to encode social information is Webb's (1982:38) category of rare or unusual PPOs (Figure 4). They are frequently elaborately decorated and have highly specialized forms and, unlike typical PPOs, they often are not oxidized through repeated firings (Hays et al. 2016:232). Because these unusual forms are found most frequently at Poverty Point and Claiborne, the two sites with the largest proportions of exotic artifacts, perhaps they were tokens signifying a connection to some locale in the far-flung Poverty Point exchange system. Another minor category of PPOs that are unlikely to have functioned primarily as cooking elements because of their size are miniatures (Connolly 2001:117). These are PPOs that are noticeably smaller than standard PPO types, are typically well-executed objects, and a number of them, particularly the spheroids, have precise tool incising. Based on my observation of collections and Webb (1982), miniatures are present in several Poverty Point culture components in the LMV, Tick Island (8VO24), and the Lower Ohio Valley (Hays and Munson 2016). Overall, it seems likely that the shapes and decoration of the unusual PPOs and the miniatures were primarily designed to convey social information. I suggest this was also true of the standard PPO types.

Discussion

Kidder (2011:119) has described our archaeological understanding of Poverty Point quite well: "We only dimly understand the place of Poverty Point in the social, political, and economic landscape of eastern North America at the end of the Archaic." I argue that neither Gibson's initial characterization of Poverty Point as a chiefdom nor his later interpretation of it as a great town built by a single community fit the archaeological data well. Poverty Point's massive earthworks and its extraordinarily large and diverse artifact assemblages

make sense if there were large numbers of people, forming multiethnic groups, at the site. But this interpretation raises the questions: why did these groups come to the site and what did they do to create the archaeological record? Along with Spivey and colleagues (2015), I argue that many different ethnic groups regularly made pilgrimages to Poverty Point, and I argue further that ritualized feasting events, probably associated with religious concepts such as world renewal ceremonies, were a primary reason for the journey and a focus of the activities at the site.

One part of my argument is that the feasting model fits well with our understanding of social and economic developments during the Late Archaic period. As Dye and Watson (2010:164) put it: "By the end of the Late Archaic, primary forest efficiency provided sufficient security to permit activities such as construction of large earthworks and accumulation of wealth for the dead." People had become more sedentary and accumulated food surpluses that could be transformed through the alchemy of feasting into more complex and extensive social relations. The number of PPOs at Poverty Point suggest, however, that the feasts hosted there were much larger and more numerous than at any other Late/Terminal Archaic site (e.g., Heyman et al. 2005).

Poverty Point's archaeological remains fit well with what we know about the social aspects of feasting in transegalitarian societies. Large ritual feasts at Poverty Point would have been an eagerly anticipated and attractive experience for a large and multiethnic population. Once there, the feasts would have been excellent venues for creating and attracting alliances between groups for various purposes including marriages and alliances to raid other groups or to defend against raids. They would also have provided a great opportunity for staging competitions between groups or between aggrandizers. The gathered people could have been willing recruits for major labor projects including collecting food for the feast, finishing craft items, and constructing structures and earthworks. Finally, since large and noteworthy feasts display the success of the people who stage them, accounts and reports on the feasts could have in turn attracted more participants since there are benefits to showing solidarity with a wealthy and unified group. In summary, the social structures created by feasting would help explain the large numbers of people who occupied the site periodically, with the numbers perhaps increasing over the course of the site's use-history, as well as the presence of a willing labor force necessary to construct the spectacular Poverty Point earthworks.

Following Spielmann, some of the most distinctive and artistic artifacts are found at Poverty Point are craft items (e.g., the baked-clay figurines, the lapidary items). When nonutilitarian/ceremonial items are found at other Late Archaic sites they are usually far fewer in number than the number present at Poverty Point (see Table 1), and they are almost invariably found in mortuary contexts (e.g., the Green River Archaic cemeteries such as Indian Knoll (15OH2) [Webb 1974]). By contrast, at Poverty Point these items are widely distributed across the site ridges, suggesting that no person or group had control over their use and that they were used in activities that spanned the site ridges (Webb 1982:67). This pattern fits well with Spielmann's argument that in small-scale societies craft items are made by the group and for the group for use in feasting.

Moreover, as Wiessner (2001) points out, feasts provide an excellent context for defining the value of such craft items. This is because feasts are public venues and the craft items used in them become a focus of attention, which raises the status of both the items and the people using them. In the proposed Poverty Point feasts the display and use of ritual paraphernalia (e.g., pipes, figurines) and the use of specialized serving vessels (e.g., exotic soapstone and spiculate-tempered bowls) would almost certainly have increased their value in the culture. Their high value within the Poverty Point culture is suggested by the fact that these artifacts are either absent or in very small quantities at other contemporary Late to Terminal Archaic sites in the Midwest and Southeast, but they are found in great abundance at Poverty Point and in substantial numbers at major satellite sites such as Claiborne and Jaketown (Webb 1982). Interestingly, it appears that their value drops dramatically after the "collapse" of the Poverty Point culture around 1000 BC, because many of these items are either very rare or not present in Early Woodland/Tchula period sites in the LMV. In other words, these items became highly valued in the Poverty Point culture, but with its termination their importance and meaning to Native Americans in the LMV diminished.

PPOs are the most common artifacts at the Poverty Point site and in the culture. Since most PPOs probably are directly related to cooking activities, it follows that cooking and feasting must have been an essential activity in the culture. But as I established above, PPOs cannot be seen only as handy and easily made substitutes for cooking with rocks. PPOs are present in areas with abundant gravels, absent in areas of the Southeast lacking gravels, and considerable amounts of fire-cracked rock are found at major Poverty Point culture sites. The distinctive PPO shapes can reasonably be said to contain social information about their makers that fire-cracked rock cannot. It seems plausible, therefore, that rock was used in more mundane cooking contexts. This also

might have been true of amorphous PPOs (Webb 1982; Figure 3), masses of fired-clay and smoothed objects of no distinct shape that represent 4–5% of the total number of PPOs at Poverty Point and Claiborne (and were the dominant form of PPO at Caney Mound (16CT5); see Table 3). As observed above, other cultures who used baked-clay objects as heating elements favored simple spherical forms or amorphous lumps, and experimental evidence indicates that these work as well or better than specialized PPO shapes in retaining and releasing heat. Although amorphous PPOs would have functioned efficiently as heating elements, their shape was not designed to convey social information.

The standardized PPO shapes cannot reasonably be accounted for as a technical response to different cooking needs. This interpretation is not supported by experiments or by the distribution of PPOs in hearths or between sites. I conjecture that PPOs were used most often as a specialized type of cooking element encoded with social information that was created for and used in ritualized feasting contexts.

Discerning the social information encoded in PPOs is not a straightforward task. One relatively clear-cut route is to look for historic and geographic patterns in PPO distributions. I and my colleagues have documented four examples (Hays et al. 2016): (1) biconical PPOs appear to be strongly associated with people north of the LMV; (2) cross-grooved and cylindrical-grooved PPOs are strongly associated with the LMV and the Gulf Coast; (3) sandy-paste mulberries likely originated on the Gulf Coast; (4) the white, cane-punctated PPOs at Poverty Point may signify ties to west Tennessee sites where they likely originated.

The geographic distribution of PPOs between sites is distinctly uneven. As discussed above, while some sites have almost exclusively one type of PPO, other sites contain a variety of PPO types but either lack or have very few of some types, and some sites contain all of them. This distribution suggests that people in different sites of the Poverty Point culture consistently favored certain PPO types and a likely source of this variability are social factors. It makes sense that the two Poverty Point culture sites with the largest assemblages, Claiborne and Poverty Point, would have the most diverse assemblage of artifacts since, as Conkey (1980) argued, aggregation sites for hunters and gatherers tend to have a greater diversity of artifact styles than their dispersion sites. Perhaps distinctions in PPO forms would have been useful to differentiate and distinguish ethnic groups when large numbers of people came together at Poverty Point. One possibility is that the different PPO types may have served as emblems of clans or other social units, just as Sassaman (2010) and Townsend and Sharp (2004) have argued for bannerstone types. In particular, the unusual PPOs and the miniatures may have functioned primarily to encode social information. As discussed above, their unusual and elaborate shapes and decorations suggest that they were not used primarily as heating elements. I and colleagues have suggested that they may have functioned, in part, as tokens of connection to the widely dispersed Poverty Point culture. We argued that they "may have served as part of a socio-economic bundle that mediated or translated relationships within the Poverty Point culture (*sensu* Pauketat 2013)" (Hays et al. 2016:214).

Conclusion

The hypotheses offered here concerning Poverty Point are by no means definitive. They do not, for example, account for the presence of major enigmatic artifact categories (e.g., the 30,000+ microliths [Webb 1982]), explain how the location of Poverty Point became a focal point of periodic journeys, illuminate the relationship between Poverty Point and the other sites in the culture, nor solve many other puzzles about the site. But I hope that this paper has demonstrated the analytical value of using the structural and archaeological implications of feasting to understand Poverty Point and its culture. Although it is beyond the scope of this paper to develop, I conceive of what united Poverty Point together as a culture was in large part a commitment to a program of ritualized feasting. I previously described the phenomena of Adena as a mortuary program that consisted of a conventional set of religious practices, rituals, and symbols that were used to perform a culturally prescribed proper disposal of the dead (Hays 2010). The fact that Poverty Point material culture remains are found in diverse areas of the Eastern Woodlands ranging from eastern Florida (e.g., the site on Tick Island) to the LMV and north to the Lower Ohio Valley (e.g., the Clarksville-Elrod [12CL1] and Murphy [12PO1] sites) indicates that its participants must have shared an ideology and associated set of practices, which could be called a feasting program, that transcended local subsistence patterns, languages, customs, and kinship patterns (Hays and Munson 2016). The one thing that I am fairly certain about Poverty Point is that PPOs are a very important part of its puzzle because they truly are the sine qua non of the culture.

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No potential conflict of interest was reported by the author.

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