Form and Function in Coles Creek Ceramics

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Introduction

Beginning with the assumption that ceramic vessels are utilitarian objects that reflect the needs and desires of their users (Braun 1980; 1983), functional analyses attempt to explicate what activities took place on a given site. In particular, this study is part of a broader project aimed at using the ceramic assemblage from excavations at the Feltus site in Jefferson County, Mississippi to understand the activities taking place during the Coles Creek period.

Functional analyses often rely on collections of whole (or nearly whole) pots; however, like most archaeological assemblages, the Feltus collections are highly fragmentary. Thus, illustrations of 97 whole Coles Creek pots from Ford 1951 and Phillips 1970 form the basis of our analysis. To our knowledge, these are the only images of whole Coles Creek vessels in existence.

Objective 1: Devise a set of vessel forms common during the Coles Creek period

We identified six basic vessel shape categories by examining contour and proportion (Table 1). Figure 2 shows typical vessels from each category. Category definitions were based on:

- Number of inflection points (IP) and/or corner points (CP)
- Number of points of vertical tangency (VT)
- Location of widest point (WP)
- Location of narrowest point (NP)

Table 1: Observations used to define Coles Creek vessel forms (as defined in Shepard 1956).

Vessel Form		IP/CP (#)	VT (#)	WP (location)	NP (location)
Bowl	n=24	0*	0	Rim	Base
Restricted Bowl	n=14	0-1†	1	Midline or Above	Base
Pyramidal Beaker	n=2	0	0	Base	Rim
Beaker	n=16	0	0/All	Rim/All	Base/All
Necked Jar	n=25	1-2†	1-2†	Around Midline	Rim/Base/Neck
Restricted Jar	n=16	0	1	Midline or Above	Rim/Base

* unless carinated
† depending on the degree of shoulder/neck elaboration

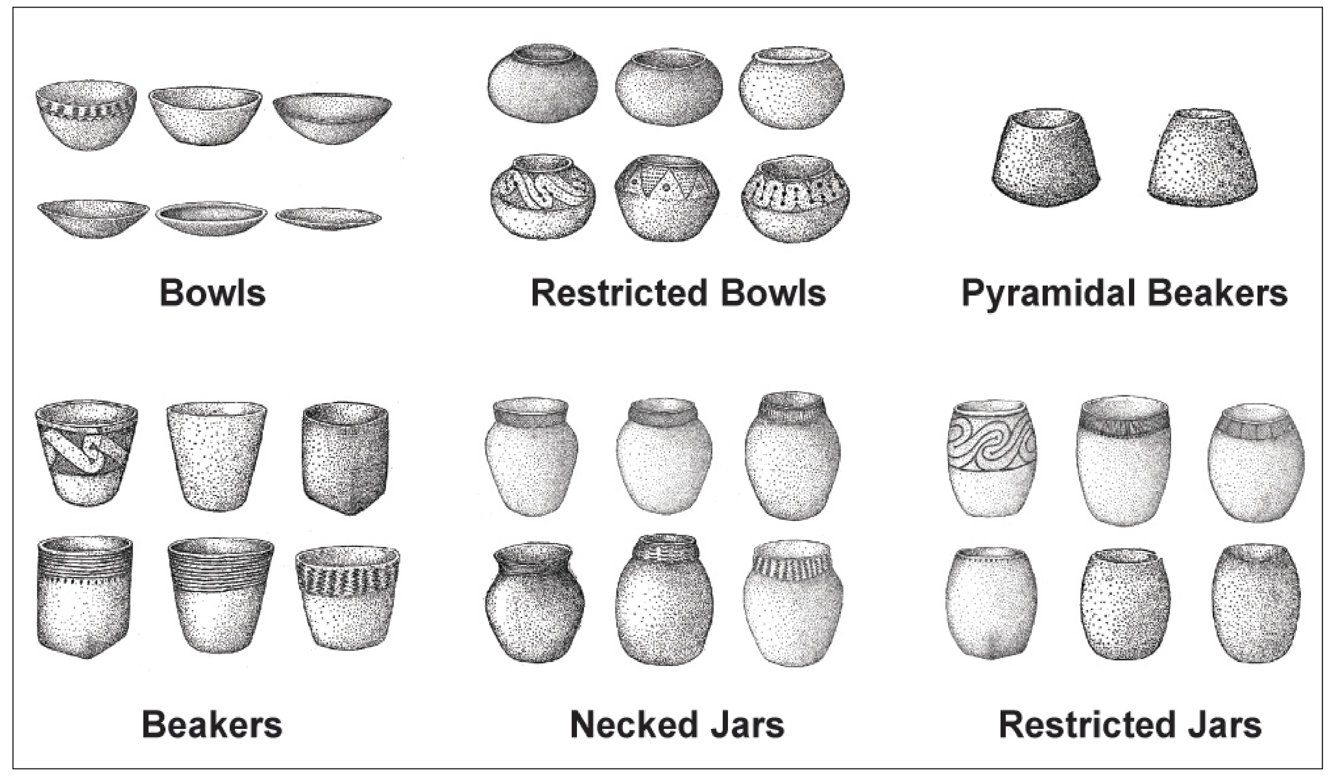

Figure 2: Typical vessels from each shape category (from Ford 1951).

Objective 2: Record and quantify the range of variation within and between these forms

Measurements taken at characteristic points along the vessel contour facilitated looking at relative proportions. Because the vessel drawings were published with no scale, eight key ratios were used (Table 2).

Table 2: List of the ratios constructed for all whole vessels and what those ratios represent.

Ratio	Measure	High Value	Low Value
Rim Diameter:Widest Pt. (RD:WP)	Constriction at Rim	Less constricted	More Constricted
Shoulder Diameter:Widest Pt. (SD:WP)	Constriction at Shoulder*	Less constricted	More Constricted
Height:Rim Diameter (H:RD)	Containment Security	High	Low
	Frequency of Access	Low	High
Shoulder Height:Shoulder Diam. (SH:SD)	Containment Security*	High	Low
	Frequency of Access*	Low	High
Height:Widest Pt. (H:WP)	Shape of Vessel	Tall and Skinny	Short and Squat
Height@Widest Pt.:Widest Pt. (H@WP:WP)	Rate of Constriction at Base	Gradual	Rapid
Height@Widest Pt.:Height (H@WP:H)	Location of Widest Point	High on Vessel	Low on Vessel
Rim Diameter:Shoulder Diameter (RD:SD)	Degree of Flare in Neck	More Flared	Less Flared

*applies only to necked vessels may take the place of the ratio immediately above it.

The ratio of height to diameter at the widest point (H:WP) is most sensitive to general vessel shape. A histogram of all H:WP values shows that there are noticeable differences between each of the categories (Figure 3).

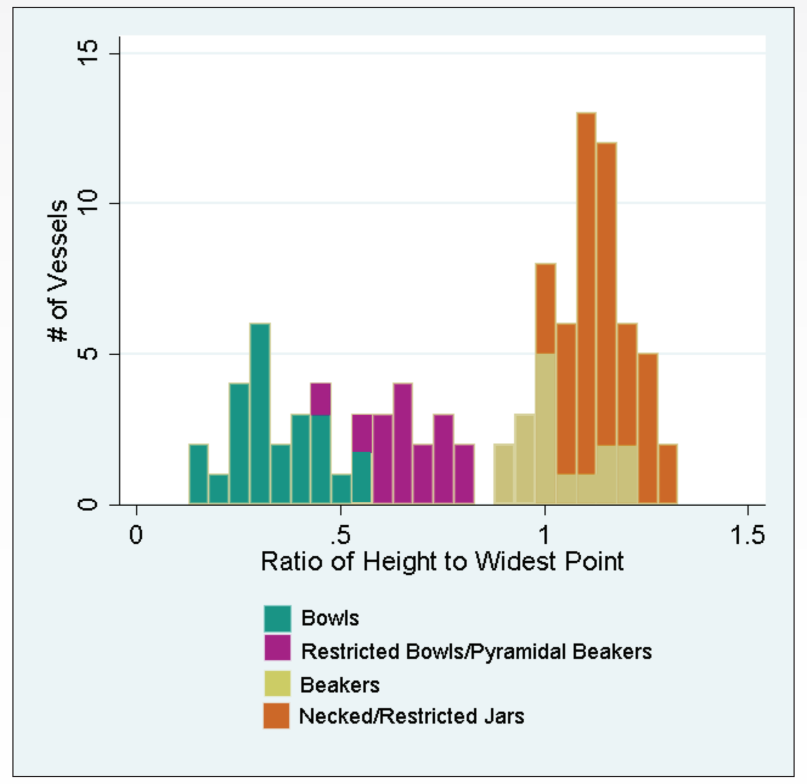

Figure 3: Histogram of H:WP values for all vessels showing a modal distribution.

Vessel forms that have the same ostensible definitions when relying solely on the above observations (i.e.: bowls and beakers, and restricted bowls and restricted jars) are clearly separated on these histograms (Figure 4).

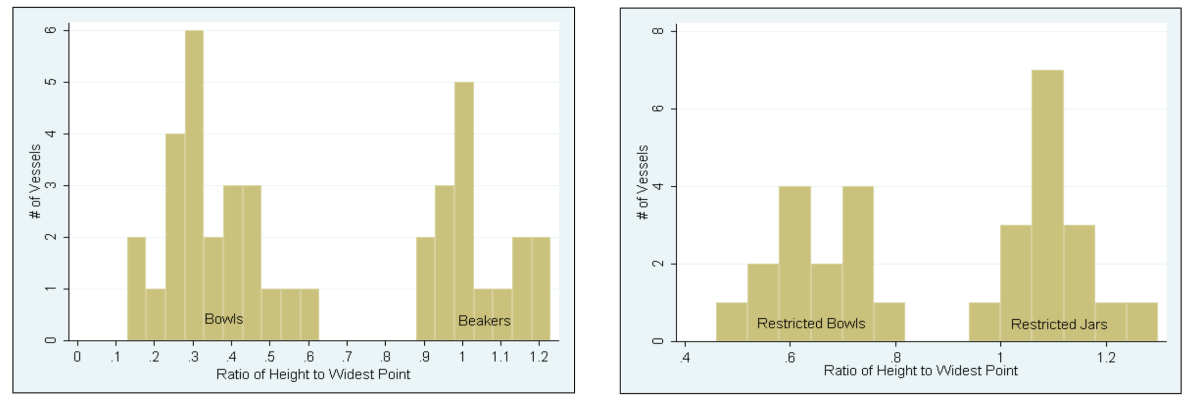

Figure 4: Histograms showing separation between vessel shapes with the same basic definition.

In addition to quantifying the variation *among* the vessel shape categories, we quantified the variation *within* the categories to see if there was reason to subdivide them (e.g.: Ryan 2004; Wells 1998; Steponaitis 1981; 1983). Bowls appear to have three legitimate subcategories: shallow bowls (H:WP values below 0.20, n=3), simple bowls (H:WP values between 0.25 and 0.35, n=11), and deep bowls (H:WP values above 0.40, n=10) (Figure 4).

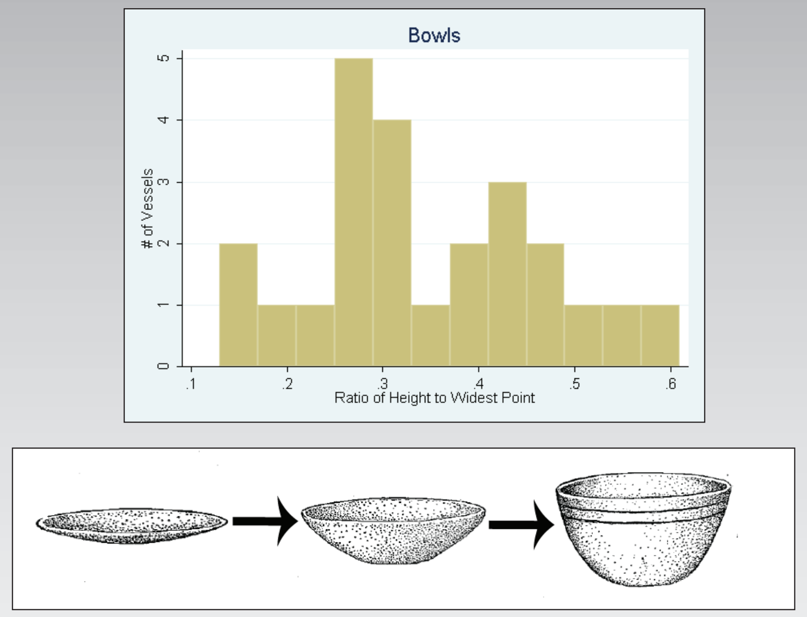

Figure 4: Illustration of the change in bowls as H:WP value increases trimodally.

Beakers also show potential subcategories. There is a natural break between H:WP values of 1.10 and 1.17. Visually, this represents a shift from beakers with walls that slant outward from the base to the rim (n=12) to beakers with more-or-less vertical sides (n=4) (Figure 5). Pyramidal beakers represent the other end of this spectrum.

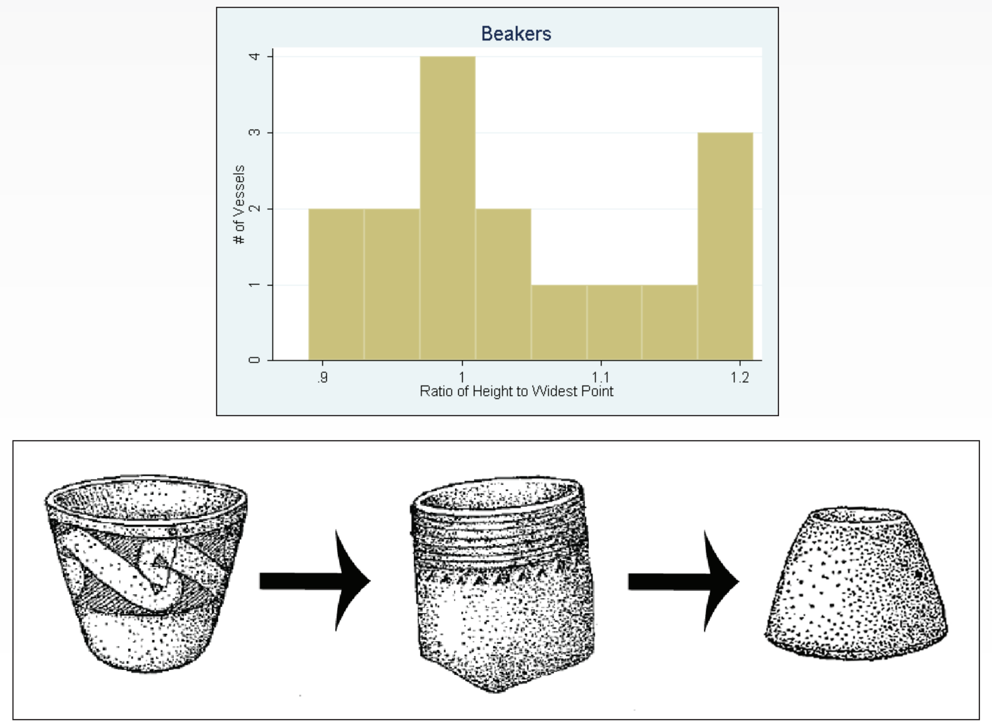

Figure 5: Illustration of the change in beakers as H:WP value increases bimodally.

Objective 3: Consider potential functional categories that correlate with these forms

Two ratios (H:RD and SH:SD) help reveal vessel function because they relate to degree of containment security and frequency of access (as defined by Braun 1980). The histogram of these values has a trimodal distribution (Figure 6). The cluster with values below 0.6 can be interpreted as serving vessels, the cluster with values of 0.7 to 1.9 can be interpreted as cooking vessels, and the cluster with values above 2.0 can be interpreted as storage vessels. With regard to the commonly accepted uses of different vessel forms, this division of functional categories appears to fit reasonably well—bowls are serving vessels, beakers, restricted bowls and some jars are cooking vessels and other jars are storage vessels.

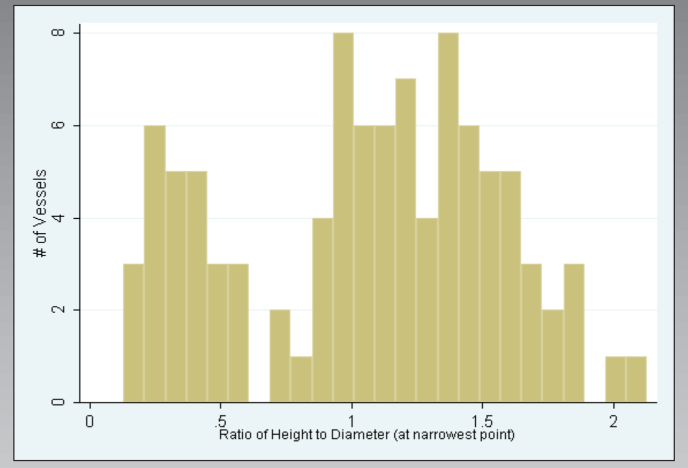

Figure 6: Histogram of all H:RD (or SH:SD) values showing a trimodal distribution.

Conclusions

When applied to the vessel drawings, our initial categories hold to both visual and quantitative measures. Moreover, these categories have some utility in determining vessel function. This rough categorization provides a starting place for a functional analysis, but other aspects of vessel shape must also be taken into consideration. Moreover, many scholars now recognize that size may actually be an equal (or better) determinant of vessel function (Blitz 1993; Hally 1986; Whallon 1969). By using sherds from the Feltus assemblage (from which direct quantitative measurements such as rim diameter can be taken), we will next work to locate additional subcategories based on size (Figure 7).

Figure 7: Measureable sherds from the Feltus site.

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