Swift Creek Complicated Stamped Pottery & Issues of Archaeological Classification

by Karen Y. Smith & Michael J. O’Brien

Pottery typologies serve two main functions in archaeology, acting as communication devices and as analytical tools (O’Brien et al. 2000). Unfortunately, pottery typologies, like most archaeological typologies in general, often fail to perform either function well (Lizée 1994; O’Brien and Fox 1994). This is so because of a host of pitfalls encountered and assumptions made by archaeologists before, during, and after the initial procedure of pottery classification. We discuss just a few, albeit important, pitfalls of classification and erroneous assumptions as they relate to a specific case in the southeastern United States. We begin with an anecdote—one we suspect could be recited in similar terms by many students of American archaeology.

When Smith was a student at the State University of West Georgia, her advisor gave her a box of pottery sherds to classify. He said the sherds probably were Swift Creek complicated stamped (SCCS) but that there were early, middle, and late varieties of the type. He suggested that she consult the litera-

Karen Y. Smith received her B.A. in anthropology from the State University of West Georgia in 1995 and her M.A. from the University of Alabama in 1999. She currently is pursuing her doctorate at the University of Missouri–Columbia and is employed as a research specialist for the American Archaeology Division.
ture to find out the criteria for temporal discrimination of SCCS sherds. Everyone seemed to agree that curvilinear complicated stamped pottery, colloquially called Swift Creek in honor of its initial discovery at the Swift Creek site, near Macon, Ga. (Kelly 1938), was a middle-to-late Woodland phenomenon, dating A.D. 100–900 (Caldwell 1978; Kelly and Smith 1975; Steinen 1995; Willey 1949; Wood and Bowen 1995). There also seemed to be considerable agreement as to how SCCS pottery changed over time.

But past this point, the concept of an SCCS began to unravel. In fact, it became difficult to understand what SCCS as a type encompassed. From a historical perspective, some of the problem stems not from Kelly’s 1938 description but from decisions made in 1939, the year when SCCS as a type was formally described by Jesse Jennings and Charles Fairbanks (1939). That year other archaeologists (Caldwell and Waring 1939[see also Caldwell 1971]; Haag 1939) created separate types for curvilinear complicated-stamped pottery without providing explicit criteria for the delineation of these new types. In other words, they did not explain the differences between their types and SCCS. We suspect Caldwell and Waring’s reason for creating Brewton Hill complicated stamped had something to do with spatial distance from the Swift Creek site—what was considered the “heart” of the SCCS area (Figure 1)—but their motivation was never made explicit. Haag (1939), on the other hand, perhaps selected a difference in temper—limestone in northern Alabama as opposed to sand or grit in Georgia and Florida—as a justification for naming a new type, Pickwick complicated stamped (see also Griffin 1974), but his motivations also were unclear. One might expect that in the decades after these types were created there would have been attempts to better define them, but this was not the case. There still remains confusion over exactly what the necessary and sufficient criteria are for including vessels and sherds in one type as opposed to another.
Figure 1. Primary distribution of Swift Creek pottery in the Southeast and sites mentioned in the text (after Williams and Elliott 1998). Despite the uniformity portrayed in this map, the distribution of Swift Creek pottery is much more complex. The distribution is not continuous through time nor across space even within the shaded area. In Caldwell's (1958:2) words, "The patterns and discontinuities which seem abundantly present in our prehistoric universe become more apparent in proportion to our ever-increasing control of time," to which we would add, without adequate control of time, patterns and discontinuities can be misleading.

**Methods for Monitoring Time, Space, and Form**

Time, space, and form are measurable dimensions that have been targets of archaeological classification for years. By targets we mean things that the classifications are constructed to measure. In the New World, methods for measuring time were established during the second decade of the 20th century and included percentage stratigraphy and seriation (O'Brien and Lyman
The former method involves counting and converting into relative frequencies the members of artifact categories (types) by visible or arbitrary horizontal levels within a particular excavation unit or set of units. The relative frequencies are displayed by excavation level, and the pattern is observed (Figure 2). Stratigraphic excavation helps establish, or in some cases verify, the relative age of the strata and by extension the artifacts. Percentage stratigraphy helps one monitor any changes in the relative frequencies of artifact types over time. Unlike percentage stratigraphy, where the ordering of the excavation levels is known, seriation is a method that produces a relative order of archaeological units where the order of those units is unknown. Units in this method could be anything from surface collections to excavation levels from different sites (Figure 3).

Archaeological interest in space and form predates an interest in time, yet methods for dealing with either have been slower to develop. The Midwestern Taxonomic Method was created in the 1930s (McKern 1939) to address formal variation, or more specifically shared traits, without reference to aspects of time and space, but from the beginning the method incorporated both (Lyman and O'Brien 2002). It soon fell into disuse, only to be resurrected a decade later in the systematics of Philip Phillips and Gordon R. Willey (1953;)

![Figure 2. Example of a percentage-stratigraphy graph, showing relative fluctuation of four pottery types through time. Note that corrugated ware is not a good chronological marker. Note also the essentially monotonic frequency distribution of types I–III (data from Nelson 1916).](image-url)
Figure 3. Example of a frequency-seriation graph showing fluctuating relative frequencies (percentages) of five projectile-point types in six archaeological assemblages. Those percentages (the bars in each assemblage total 100%) are used to order the assemblages in correct chronological order. The ordering is based on the popularity principle (Lyman and O’Brien 1999; O’Brien and Lyman 1999): Types come into being, gain in popularity to a maximum, and then begin to fade, finally disappearing. Note that the ordering gives no indication of time’s arrow, meaning, for example, that assemblage F could be the earliest or latest of the six assemblages.

Willey and Phillips 1958), which emphasized time (tradition) as well as space (horizon). Procedures for measuring and evaluating spatial variation remain elusive.

Phillips, along with his co-authors James A. Ford and James B. Griffin (1951), recognized the difficulty in reconciling local classifications with spatial distance. Their now-famous diagram of the pottery type (Figure 4) illustrates formal variation and temporal continuity, yet they acknowledged that formal “variation and geographical range are closely related, so our circle represents, albeit crudely, the geographical range of the type as well” (Phillips et al. 1951:63). In other words, the centers of these circles can be seen as depicting either geographical centers (space) or type norms (form). In an almost contradictory statement on the same page they state, “It is scarcely necessary to draw attention to the additional difficulty of determining whether a given variation is the result of spatial or temporal factors.” This is the problem facing archaeologists studying complicated-stamped pottery in the Southeast: Is variation a result of time or space? Moreover, how can we distinguish between the two?
Variation in Swift Creek Pottery

Marked temporal variation in Swift Creek pottery is known to exist, and the type has been described in terms of early, middle, and late variants. In general, lips become thicker, and rims become wider over time. In some areas vessel volume decreases over time, but in other areas it decreases only to increase again. Clarity of stamping or extent of overstamping has a similar trend: from moderate overstamping for the earliest vessels to clearly stamped designs to heavily overstamped, or in some cases obliterated, designs for the latest vessels. We emphasize, however, that these are general trends. Joseph Caldwell's (1956) rendition of the development of the Swift Creek stamping tradition and how it was replaced over time by another decorative tradition moving from the Gulf into southern Georgia is shown in Figure 5. In A.R. Kelly's (1938:32–33) words, "the significance of Swift Creek lies unquestionably in the existence of a typological series of stamped sherds, stratigraphically distributed, which show stylistic variation implying the evolutionary development of a distinctive pottery decoration over a period of several generations."

In terms of changes in SCCS over time, variation in complicated-stamped pottery within a site was attributed to change over time—sometimes referred to as in situ change—insofar as the archaeological record suggested multiple
Figure 5. Two pottery traditions in southwestern Georgia (from Caldwell 1956). Here Caldwell is portraying the waxing and waning of two pottery traditions, the Swift Creek Tradition and the Gulf Tradition, through time in southwestern Georgia. Along the left-hand side, Caldwell places six pottery types in their relative position and identifies three phases of development of the stamping tradition.

occupations or a continuous occupation over some period. Yet variation in complicated-stamped pottery among sites was attributed to either time or space, seemingly at the whim of the archaeologist—the problem that Phillips et al. (1951:63) mentioned. We say variation here, but what we are really talk-
ing about are differences in the frequency of a trait or a suite of traits (e.g., scalloped versus folded rims) among sites. Are the changes in frequency a result of spatial distance or a result of vagaries in transmission (sampling error) over successive generations of related people living within a restricted area?

When the SCCS type was first described (Kelly 1938), the description was based on a collection from one site, the Swift Creek site. When the formal type description was published a year later (Jennings and Fairbanks 1939), complicated-stamped pottery was being found at sites in coastal Florida and northern Alabama. As we mentioned earlier, archaeologists had a choice to make and no apparent guidelines for making it: Either carve up space with the same classification used to delineate time at the type site (Swift Creek) or create a new classification that reflected geographic distance from that site and perhaps such things as a difference in temper. The latter choice might seem at first glance the more desirable, but consider this: To create a new pottery type—one similar to the original type—because “your” site (and pottery collection) is 150 mi from the type site assumes that any variation noted in the new type is in large part the result of distance. Put differently, rather than demonstrating that distance is involved in variation (see Lipo et al. 1997), the archaeologist has assumed that space is the mediating factor. This assumption can lead to erroneous interpretations of the archaeological record. Caldwell and Antonio Waring (1939) assumed that distance was involved when they created the type Brewton Hill complicated stamped to be the Georgia coast’s version of SCCS, and it became a self-fulfilling prophecy. The key point is that they assumed rather than demonstrated that distance was a mediating factor in pottery variation.

**Style and Transmission**

At the scale of the type, SCCS can be thought of as a pottery tradition, or “a line of . . . development through time within the confines of a certain technique or decorative constant” (Willey 1945:53). The technique in this case is stamping a vessel in its greenware state with a carved, probably wooden, paddle. The decorative constant is the use of curvilinear and linear lines to create a
carved-paddle design. Shifting scales for the moment, Swift Creek *designs* have the potential to be horizon styles, or designs having "definable distinct features, some of which extend over a large area, so that [their]relations with other, more local styles serve to place these in relative time" (Kroeber 1944:104; see also Willey [1945] and Willey and Phillips [1958]). Might Swift Creek design *groups*, indicative of horizons styles, be better units to use in measuring prehistoric social interaction than the pottery type itself? Probably so, because design groups are more likely to be stylistic in nature than the conglomerate pottery type, which no doubt includes both stylistic as well as functional characters.

Style is a word that has often been used uncritically, or at least without clarity of meaning, by many American archaeologists. In addition, style in some cases is used interchangeably with decoration and in other cases in juxtaposition with function (Loney 2000). As used here, style has a very specific meaning, one that deviates from more common connotations, eclectic though those might be (e.g., papers in Carr and Neitzel [1995] and Conkey and Hastorf [1990]). In a frequently cited article, Robert Dunnell (1978:199) stated that style "denotes those *forms that do not have detectable selective values.*" In other words, style is neutral, or perhaps more appropriately, nonfunctional. Here, Dunnell has given style a very specific, Darwinian-evolutionary meaning (see also Dunnell 2001).

A slightly different connotation affords stylistic traits equal selective value. In any event, with such a meaning come significant implications for the study of style in archaeology. As Dunnell (1978:200; emphasis added) noted, "Because of the independence of style from its environment and its homologous character it can also be employed as a tool to delineate spatial interaction." Style is independent from the environment because, by definition, it is nonfunctional; style is homologous—meaning similar as a result of heritable relations—because it is more parsimonious to "assume that styles are so complex that the probability of duplication by chance is astronomically low" (O'Brien and Leonard 2001:5; see also Gould 1986).

Style is important here because it reflects the transmission of ideas and hence the interaction of groups of people through time and across space. Style
is implicitly involved in the creation of historically useful pottery types, which are usually defined on the basis of decorative surface treatments. Lipo et al. (1997; see also Lipo and Madsen 2001) used relative frequency variations in Phillips et al.'s (1951) historical pottery types in a frequency seriation to infer the spatial extent of interaction during the Mississippi period (A.D. 1000–1500) in the central Mississippi River valley. Lipo et al. used concepts such as transmission, neutrality, and heritability to account for artifact similarity—why frequency seriation works—and to evaluate the validity of their interpretations (O'Brien and Lyman 2000). Further, they used evolutionary theory to explain "the differential persistence of traits.... Evolutionary theory is the only scientific theory that explains change (why rather than how), so our commitment to evolution arises from a commitment to an empirical epistemological standard, nothing more" (Lipo et al. 1997:304).

Style, the basis for many pottery types, is neutral, and is "not explained by selection. Such [stylistic] variation is explained by transmission processes alone or in combination with sampling" (Lipo et al. 1997:304). Transmission accounts for the way styles are distributed through time and across space; it is the causal explanation (Neiman 1995; O'Brien and Lyman 1999, 2000). As we stated earlier, despite the fact that the Swift Creek pottery type includes some stylistic attributes, it apparently includes functional traits as well. Swift Creek designs, on the other hand, are perhaps exclusively stylistic. Following the reasoning of Dunnell, Lipo et al., and others, Swift Creek designs or design groups are more appropriate units for measuring social interaction.

**Building Design-Based Units**

Bettye Broyles (1968) was the first person to attempt design reconstruction from Swift Creek pottery (Figure 6). She examined sherds from a number of sites in Georgia and built a collection of some 700 partial and complete designs. She noted among other things that some design impressions on the sherds reflected paddle flaws, such as cracks or nicks like the one illustrated in Figure 7. Using the flaws as diagnostics for a particular paddle, Broyles was able to identify the same paddle impressions on sherds from different sites or
Figure 6. Examples of Broyles' Swift Creek designs (after Broyles 1968). The speckled parts of the designs indicate what portions the sherds represent. The remainder is artistic license. Broyles (1968) did not describe exactly how she reconstructed the designs. Snow and Stevenson (1998) and Snow (pers. comm., 2000) have a method of design reconstruction that probably approximates that used by Broyles, which involves using multiple sherds, sometimes 50 or more, to find and reconstruct parts of a particular design. Often, the edges of a design, for example, are not represented in a collection of sherds. Other archaeologists (e.g., Saunders 1998) have studied the designs but have done so in lieu of individual design reconstruction.

on sherds from the same site found in different contexts. In one case, the same paddle was used on pots found at sites some 140 km apart. The ramifications of her findings are clear: matching paddles acts as an indisputable measurement of some kind of social connection, be it the movement of paddles, pots, or people. Unfortunately, only a small portion of Broyles' work has been published, making it difficult to build the comprehensive database needed for spatial and temporal evaluation of Swift Creek designs.

In an unpublished manuscript by Caldwell (1978) on excavations at Fairchild’s Landing and Hare’s Landing, 118 partial or complete Swift Creek designs were illustrated, with their stratigraphic positions noted. Interestingly, some of the designs were restricted to certain levels whereas others occurred
in multiple levels (Figure 8). Those designs that were found only in one stratigraphic level might make good horizon markers, being narrowly confined in time, and hence be indicators of contemporaneous social interaction when those designs are found at other sites. One problem with the designs used by Caldwell is that many of them are incomplete. Design interdependence cannot be ruled out when partial designs are used. One must be able to know that a partial design is not part of another partial design, particularly when quantifying design proportions. There are only two ways around design interdependence. One is to deal only with complete designs or with designs where multiple paddle edges are discernible. The other way is to build design groups,
<table>
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<th>Sample Size</th>
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<tr>
<td>565</td>
<td>A–B</td>
<td>108–118</td>
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<tr>
<td>139</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>B–C</td>
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<tr>
<td>769</td>
<td>C</td>
<td>80–93</td>
</tr>
<tr>
<td>407</td>
<td>C–D</td>
<td>53–62</td>
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<tr>
<td>253</td>
<td>D</td>
<td>28–45</td>
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<tr>
<td>116</td>
<td>D–E</td>
<td>13–19</td>
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<tr>
<td>250</td>
<td>E</td>
<td>20–27</td>
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<td>9</td>
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<td>2587</td>
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Figure 8. Stratigraphic distribution of complicated-stamped motifs at Fairchild’s Landing (from Caldwell 1978).

Based on a few attributes and their various states, ignoring individual designs as analytical units. Our current work centers on sorting through these issues and building historical types useful for arranging sites and site units chronologically.

**Conclusion**

To conclude this brief excursion into a single pottery type, albeit one that mirrors other in-use types in the Southeast, SCCS is an inappropriate analytical unit to use in monitoring prehistoric social interaction because (1) the description includes functional as well as stylistic attributes and (2) the distribution is too broad in space and time. Swift Creek designs, or perhaps Swift Creek design groups, are better suited for tracing ideas and monitoring interaction because they are decidedly stylistic; they share a homologous relationship; and they are more restricted in time.
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