Spatial Variation and Activity Areas at Monticello's Site 8

Sara Bon-Harper, Monticello Department of Archaeology

1. African-American Yards

Based on travelers' accounts from West Africa and the Caribbean, yards surrounding historic African Americans' dwellings have been considered an element of ethnic identity, embodying a social and spiritual world view that originated in West Africa. Sweeping is said to be the means of maintaining trash-free space and reducing the grasses and weeds that harbored vermin. The research presented here employs quantitative methods to assess potential yard spaces and is grounded in the archaeological literature on refuse disposal.

2. Context

Thomas Jefferson's Monticello Plantation was located in the Virginia Piedmont. Originally a tobacco plantation, Jefferson switched to an emphasis on wheat farming in the mid-1790s.

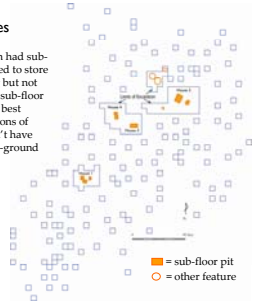
Site 8 belonged to the tobacco-farming period and was occupied from about 1770 to just before 1800. By this time, slaves lived in family-based household groups rather than barracks.

3. Slaves' Houses

Slaves' dwellings often had sub-floor pits that were used to store possessions, including but not limited to food. These sub-floor pits are frequently the best indicators of the locations of these houses that didn't have foundations or post-in-ground construction.

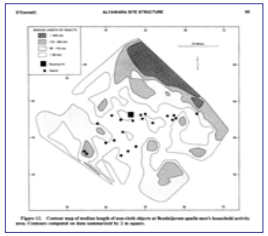
Sub-floor pits reveal the presence of four houses on Site 8.

The excavation of 238 5 x 5 foot quadrats ☐ provides spatial data from across Site 8.



4. Activity Areas Cross-Culturally

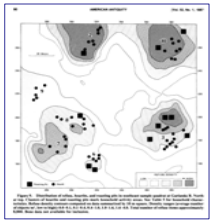
from Binford 1978



from O'Connell 1987

Trash deposition around activity areas is well-studied cross-culturally. Primary and secondary refuse often surround activity areas (Binford, top left). Areas of high artifact density can indicate occupation zones (O'Connell, at right), but specific classes of artifacts, including larger items and particularly messy or dangerous items (O'Connell, top right), can define arcs outside the area where activities occur.

The Site 8 dataset allows us to examine trash disposal and site maintenance around a group of houses of enslaved field hands. This is a first step in assessing yard maintenance as an African-American practice.



from O'Connell 1987

Binford, Lewis R. (1978) Dimensional Analysis of Behavior and Site Structure: Learning from an Eskimo Hunting Stand. *American Antiquity* 43(3): 330-361.

O'Connell, James F. (1987) Alyawara Site Structure and its Archaeological Implications. *American Antiquity* 52(1): 74-108.

5. Quantifying Site Maintenance

Artifact size can be used as an indicator of site maintenance. Wandsnider has applied this principle in ethnoarchaeological contexts (Wandsnider 1996:348). Each cell of a site is assigned a value that represents the degree to which its assemblage is characterized by all large, all small, or a mixture of artifact sizes (Wandsnider 1996: 353-4). These categories correspond to secondary refuse aggregates, maintained spaces free of debris, and unmaintained spaces where refuse is allowed to accumulate.

For Site 8 I have also applied this principle. I have employed a similar formula to assess the degree to which the artifact sizes from each excavated quadrat differ from a site-wide average of the proportions of small and large artifact sizes.

$$ASI_i = \frac{(S_i - pN_i - .5)}{\sqrt{N_i p(1-p)}}$$

Where S_i is the number of small artifact in the ith quadrat

and N_i is the total number of artifacts in the ith quadrat

and p is the proportion of small artifacts site-wide

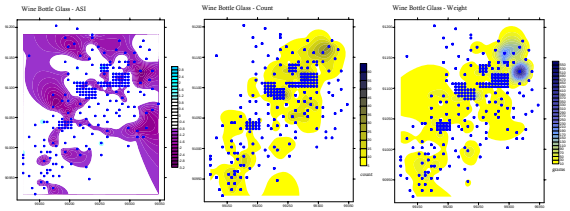
Artifact recovery on Site 8.

This Artifact Size Index (ASI) formula relies on the Gaussian approximation for the binomial distribution to model variation in the frequency of small artifacts among quadrats on the site. The formula measures the extent to which the observed number of small artifacts in a quadrat departs from the expected number, based on the site-wide proportion of small artifacts and the total number of artifacts found in the quadrat, placed on a standard deviation scale.

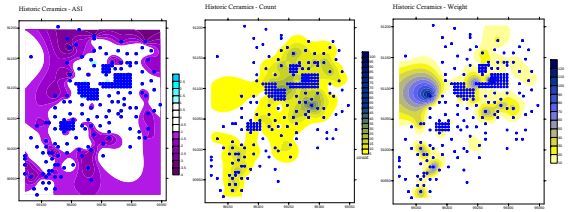
Wandsnider, LuAnn (1996) Describing and Comparing Archaeological Spatial Structures. *Journal of Archaeological Method and Theory* 3(4): 319-384.

6. Site 8 Activity Areas

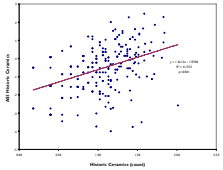
The ASI formula can be applied to individual artifact classes such as wine bottle glass, or to aggregated categories such as refined earthenwares, or all historic ceramics. The resulting ASI values from across the site can be used to produce a distribution map identifying maintained spaces and secondary refuse aggregates. The contour maps made from ASI values are compared here with distribution maps of the same artifact classes by count and weight.



Low ASI values (purple) show higher proportions of large artifacts per quadrat.



The purple on the ASI map represents a ring of secondary refuse (higher proportion of large artifacts per quadrat) around a central site area. The wine bottle glass ASIs as well as an ASI map for the refined earthenware group (not shown) present this area as encircling Houses 3, 4. and 2. The ASI map of all historic ceramics suggests that the earlier-occupied House 1 may also be a part of this central activity zone. The blips of large artifact size over the known houses may be larger artifacts plowed out of features in those areas.



Patterns of artifact count and weight suggest that more breakage is not solely responsible for the high-count areas over the houses.

Visual comparison of the maps of ASI and distribution by count show some correlation, in that the high-density areas over the houses are similar to the areas defined by the perimeter trash rings. Plotting the ceramic counts by ceramic ASIs shows that indeed, there is a modest correlation.

The ASI as presented here is a valuable tool for determining the presence of artifact rings surrounding activity areas, similar to those understood in cross-cultural contexts. ASI is more than a negative image of the artifact count distribution; as a tool for measuring spatial variation in artifact size, it specifically reveals the areas surrounding activity zones.

A quantitative tool for assessing site maintenance is a first step in investigating African-American yards as a cultural element. A next step will be comparing Site 8 to additional African-American sites and to those occupied by people of other ethnicities, including non-elite Euro-Americans, whose patterns of yard use may or may not be similar.

7. Households Defined

The data support an interpretation of a yard or general activity area on Site 8. General activity areas in this context were used for small gardens, the production and maintenance of tools, raising poultry, and for social activities. The activity area on Site 8 also allows us to examine the way the space was claimed by the enslaved field hands living in those dwellings.

"A Spring Scene Near Richmond, Virginia." Harper's Weekly, May 21, 1870, p. 321 . Image Ref. HW0054 , as shown on www.slaveryimages.org, sponsored by the Virginia Foundation for the Humanities and the University of Virginia Library.

Houses 3 (feature on right in bottom photo) and 2 (below right) have very large sub-floor pits. Together with the shared yard space, this may mean that the enslaved occupants of these houses coordinated their production and storage of food and other goods in addition to maintaining a common debris-free area. A possible interpretation may be that the houses in this compound made up multi-structure households that shared activity areas (yard space) and productive efforts toward food and other goods to be stored in the larger-than-average sub-floor pits.

Houses 2 and 3 may represent a particular kind of mid-eighteenth century slave household. Well past the earliest barracks-style housing, the pattern had developed beyond single-family residences to include households linked by family networks or other cooperative ties who shared efforts in production of food and goods and in maintaining a common activity area.

I offer sincere thanks to many years of field school students and staff for their work producing the data for this project, to Derek Wheeler for his collaboration on earlier versions of the analysis, and to Fraser Neiman for his research design, statistical insight, and encouragement.

Above left: large sub-floor pit on House 2; *Above right:* House 2 prior to feature excavation; *Below:* Houses 3 & 4 with partially excavated sub-floor pits.