Mends and Mystery Buildings: A case study of inter-structure cross-mended objects from Monticello's Mulberry Row Reassessment Project

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Intro

[SLIDE: Intro] Recently, the Monticello Department of Archaeology conducted re-analysis of all the archaeological sites on Mulberry Row using data housed in the Digital Archaeological Archive of Comparative Slavery, or DAACS. **[SLIDE: Project History]** Utilizing DAACS standards, the Mulberry Row Reassessment Project, includes contextual, artifact, and object data as well as intra- and inter-site chronologies of thirteen different sites. Using analysis at the sherd-based level of aggregation, this project has produced the identification of undocumented structures, and has given archaeologists a new understanding of the dynamic quality of mountaintop occupations. With these findings in mind, the door was left open for possible new discoveries and interpretations of Mulberry Row sites.

In a paper presented last March at the Mid-Atlantic Archaeological Conference in Virginia Beach, we performed the first object-level analysis using Reassessment data, focusing on vessels from the Smokehouse-Dairy site. This case study evaluated temporal patterns between archaeological deposits using object sherd distributions evaluated in conjunction with previously established site chronologies. Our results challenged the traditional assumption of synchronicity between contexts that contain fragments of a given cross-mended object.

In this paper, we build upon those findings and examine the spatial relationships between cross-mended sherds in a given object to evaluate depositional practices both within and between sites on the mountaintop. Particularly, we calculate and evaluate the mean distances between each object's sherds as a possible indicator for a re-deposition of those sherds. Finally, we link this spatial information to recent analysis of the main phases of occupation on Mulberry Row.

Chronology

One of the first steps of analysis at the completion of the Reassessment project was to establish chronologies for each site and one for all of Mulberry Row. As set forward by the DAACS project, site chronologies were established using detailed frequency-seriation-based analysis of ceramic assemblages, while taking into account TPQs (terminus post quem) for non-ceramic artifacts such as wrought or machine cut nails. **[SLIDE: MR Chrono/CA Analysis]** Aggregated data was then run through a correspondence analysis, or CA. In a paper presented at the 2012 SHA conference in Baltimore, Karen Smith, et al, used this method to generate a chronology for all of Mulberry Row. **[SLIDE: MR Phases]** The patterns that emerged demonstrated that the peak periods of occupation could be grouped into three major phases which correlate with architectural changes to the mountain: Monticello 1 (1770-1790), 2 (1791-1810), and 3 (1811-1826). These can be subdivided into 6 smaller Jefferson-period phases and 1 post-Jefferson. Not only does this clearly delineate which sites were occupied synchronically, but it also illustrates the dynamic nature of inhabitation on Mulberry Row.

[SLIDE: Object Case Study] Up to this point, all analysis was conducted solely on the sherd-based level. However, excavators in the 1980s cross-mended and analyzed over 2000 objects found during the Mulberry Row excavations that remained an untapped resource for study. In the database, each object record is linked to the individual sherds and the associated contexts that comprise it. This gives us the ability to organize the data on multiple levels of aggregation.

MAAC Tie-in

[SLIDE: Bldg m Object Histogram] In our paper for the 2013 MAAC conference, we investigated the temporal organization of the Smokehouse-Dairy site. We analyzed objects that have sherds mended together from contexts that were not contemporary, given our understanding of the stratigraphy and site phasing. By graphing the frequency of sherds at a given time for each object, we generated a

frequency histogram. We see four peaks where the concentrations of mended sherds are greatest, which correlates with the site phasing data, as expected.

[SLIDE: Pivot Table] What is meaningful about the patterns we see from site-specific temporal analyses is that individual objects have sherds spread throughout several phases of occupation at the Smokehouse-Dairy. We expected to see only mends between contemporary deposits, but with a few exceptions, this shows quite the opposite trend. However, when regarded in light of our understanding of the depositional history at the Smokehouse-Dairy and the site formation processes going on there, this pattern makes a lot of sense. What we have captured is evidence indicating that the deposition, disturbance, and re-deposition of sediments and artifacts occurred over the course of many years. We know that there were four phases of deposition at this site, including two periods of occupation in two different structures. It makes sense that objects deposited during an early phase would be disturbed, churned up, and re-deposited during the next phase of occupation. Our analysis demonstrated that cross-mended sherds cannot be assumed to be from contemporary deposits but rather object data must be reviewed in light of other, independent temporal analysis.

[SLIDE: MAAC Spatial Study] In addition, we touched the surface of examining the spatial patterns of inter-site crossmends, noticing how there are cross-mends from the Smokehouse-Dairy to sites all along Mulberry Row, including the West Kitchen Yard, Building *o*, MRS-2 and even Building *s* at the far eastern end of the Row. This basic spatial study laid the groundwork for this paper, which is an analysis of all Mulberry Row as one large site, rather than distinct sites.

Methodology & Analysis

In order to analyze the spatial distribution of objects, we needed to assign a specific geographic location to the individual sherds for each object. First, we generated a list of objects from 13 sites along Mulberry Row, and the contexts for the individual sherds that comprise each object. For sherds found within features, such as a posthole or subfloor pit, we used the coordinate information taken at the time

of excavation, and calculated the centroid point of each feature. For non-feature artifacts, we used the centroid point of each quadrat (or excavation unit).

[SLIDE: Object Sherd Frequencies] To narrow our research focus and to make our data set more manageable and meaningful, we generated a histogram which shows the number of sherds present in each object. This helped us determine that only objects with four or more sherds would be analytically useful and therefore narrowed our sample size to 295 objects. **[SLIDE: Object Sherd Frequencies n>=4]** One can also see on this plot that, with a few outliers, the vast majority of objects are comprised of between four and 50 sherds.

The next step was to investigate how widely dispersed were the sherds of each object across Mulberry Row. **[SLIDE: Mean Distances]** We calculated a weighted average centroid for each vessel and then calculated the distance between that centroid and the location of each sherd within the vessel. This data we then used to calculate a weighted average distance between the sherds of each object. For example, Object #71, a white salt-glazed tableware, has a weighted mean distance of 37.8 feet between its 24 sherds. Objects with a distance of zero are vessels with sherds that were not dispersed, but rather contained to one area, such as one excavation unit or one small feature.

[SLIDE: Object Mean Distances through Time] When we focus on temporal information, we start to notice some interesting trends. Bringing in Smith's phasing analysis, we calculated the *average* of the mean distances between object sherds (on the y-axis), and plotted them against the 7 Mulberry Row phases (on the x-axis). In the first graph, each dot represents one vessel, though many of them overlap. **[SLIDE: Average of Mean Distance]** On the second plot, each dot represents the weighted average distance for all sherds within that phase. Phases 1 and 2 represent adjusted MCDs up to around 1783, which is within the Monticello period I. These are the earliest occupation periods on Mulberry Row when there was a limited amount of buildings and activity. The major feature of this period was the Dry Well, which was used as a repository for trash after abandonment, and completely filled in

around 1780. As such, there is little distance between an object's sherds during this time. Phase 3, which correlates with the remainder of the broader Monticello I period, shows a drastic increase of distance, as more structures are added, and activity along Mulberry Row increases. Phase 4, with an adjusted MCD of approximately 1794, is the period of peak activity on Mulberry Row, when there were at least 15 structures present down the 1,000 foot avenue.

With Phase 5 there is a significant decline in the average distance between object sherds, corresponding to a decline of activity, and a reduction of buildings in use. Phase 6 shows a small uptick of average distance between sherds, which could be accounted for by the slow dismantling and filling in of buildings no longer needed after the completion of the mansion's dependency wings in 1809. The final phase, Phase 7, is actually the post-Jefferson period. During this time, there was significant disturbance to the landscape, including plowing of the Kitchen Yard, renovation of the mansion by the Levy family and the early Thomas Jefferson Foundation, and the installation of many utility lines.

Ware Type Graphs

[SLIDE: Ware Types and Mean Distances] A further illustration of the trends thus discussed is found in an analysis of objects grouped by ware types. We arranged ware types with the earliest manufacturing dates on the left side of the x-axis. As seen here, ware types dating to the middle period of occupation on Mulberry Row have the greatest mean distances, which match our previously identified trend. **[SLIDE: Chinese Porcelain]** Regarded individually with the Mulberry Row phasing data, the same general trend is echoed with individual ware types and some smaller, nuanced patterns also emerge. **[SLIDE: Creamware]** Creamware, for example, has both high disposal rates and high dispersion values in the earliest Mulberry Row Phase, although during the central period and later it echoes the broader object trends. What accounts for this difference and other variants from the object dispersion pattern through time will be the focus of future research.

Distribution Maps

[SLIDE: Map Phases 1 and 2] Our next step in analysis was to create maps showing the geographic locations of the sherds with the buildings that were likely standing during each Mulberry Row phase. We focused on the central and east portions of Mulberry Row, as there was little evidence of inter-site cross-mends further west. The map for Phases 1 and 2, which belong in the overall Monticello Phase I, show concentrations where we would expect them: in the Dry Well, just outside of Building *o*, and at the Negro Quarter. **[SLIDE: Map Phase 3]** Phase 3, which is also grouped in Monticello Phase I, shows an increased spread of object sherds, particularly in and around Building o. **[SLIDE: Map Phases 4 and 5]** Phase 4, shown here in red, continues the trend of Phase 3, while Phase 5 continues the spread of sherds north, into the West Kitchen Yard, and west, to the Nailery. These two phases comprise Monticello II, which was the peak period of activity, also evidenced by the greater number of buildings along Mulberry Row. While this map and the previous one represent two separate major phases, the spread of object sherds as we have seen reminds us that these phases, while shown to be statistically significant in other analyses, are still somewhat arbitrary; they are not distinct and separate, but part of a continuum of activity, construction, and deconstruction.

[SLIDE: Map Phases 6] Phase 6, or Monticello III, begins the decline of activity and occupation, as seen by the decrease of buildings, and the very noticeable decrease in object sherd distribution. **[SLIDE: Map Phases 7]** The map corresponding to our Post-Jefferson phase is interesting, because it shows a large amount of ceramics in the West Kitchen Yard, and spreading into the East Kitchen Yard. As noted earlier, during this time, areas close to the house, including the Kitchen Yard, were put under cultivation, and there was little occupation along the Row.

Biases in the Study

While we were able to use a very large data set, there are several ways in which our data is biased. First, the areas excavated along Mulberry Row were not always contiguous and there are spaces between buildings that have not yet been excavated or that were excavated, but were not analyzed as

part of the Reassessment. In addition, many sites were affected by modern earth-moving projects which impacted the ability to recover Jefferson-period artifacts from those locations.

Secondly, while the cross-mend project undertaken in the 1980s was extensive, it appears that sites which are close together and excavated at approximately the same time were given more attention than others. **[SLIDE: All Objects Surfer Map]** Additionally, there are very few inter-site mends between the East Kitchen Yard and other sites. The Road Restoration project, which took place from 2011-2013, occupied the same physical space as the East Kitchen Yard project, but the ceramics have yet to be analyzed for cross-mends. As such, there may be more artifact and object data than what we have available at the present.

Finally, the mends found in this, and any, cross-mend project are likely predominated by easy-to-identify sherds, such as rims, bases, and decorated fragments. There are likely many more cross-mends present in the collection that would be nearly impossible to identify. All of these issues combine to mean that there are gaps in our data with which we must contend and that we must address. However, given the sheer volume of data available to us, we believe that the trends identified in this paper are an accurate representation of trends that would be identified if these biases did not exist.

Conclusions

[SLIDE: Closing Thoughts] The analysis conducted in this paper illustrates the importance of having a standardized inter-relational database through which we can easily compare different archaeological sites and aggregate data on multiple levels. This type of fine-grain, detailed information allowed us to evaluate the inter-site deposition of mended objects and to identify spatial and temporal patterns. As with our Smokehouse-Dairy case study, we conclude that the dispersion of object sherds between site phases of occupation, and between sites themselves, is indicative of disturbance and re-deposition of artifacts during successive periods of occupation on Mulberry Row. Rather than assuming

that sherds which mend together were deposited at the same time, we demonstrate that on Mulberry Row the opposite is predominately true.

However, in some ways we are left with more questions than answers. There are other possible explanations for some of these patterns that we hope to explore in future research projects. Using an artifact size index analysis with spatial distributions may illuminate patterns of certain spaces being periodically cleaned and artifacts moved to specific areas. Furthermore, we hope to investigate how the slope of the mountaintop and other landscape features affect the dispersion of refuse on Mulberry Row. Finally, with structures that are closely clustered together, we may re-think our delineation of "sites" and instead view Mulberry Row as complexes or occupational clusters along a common avenue. This paper provides us with a solid foundation for moving forward with these additional analyses and we look forward to presenting those findings in the future.

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