

The interest in archaeometry often lies in the idea that scientific analysis of artifacts can tell us something about the people who used those artifacts. Despite the importance of establishing this link between the scientific data and the people of the past, some studies make more of a connection than others.

Waelkins' and Poblome's report on the survey and excavation of Sagalassos IV¹ is a good model of a connection between scientific data recorded about unearthed pottery and the Romans who lived at the site about two millennia ago. Over an approximately 700 year period, distinctive SRSWs were found frequently throughout the Roman Empire, indicating industrial-scale production. Such a level of production would require a significant and constant influx of raw materials to manufacture so much clay and slip. This begs the question of raw material source(s). In attempting to determine the source(s), the authors seriate pottery by typological and stratigraphic data, resulting in groupings that span the 700 years of SRSW production. For each grouping, the authors determine the fabric (bulk) and slip compositions using AES and EDS, respectively. The composition data for both the fabric and the slip remains relatively constant over the 700 year period, indicating that in all likelihood, the sources of each raw material remained the same.

A case study of Mississippi Valley ceramics² makes a moderately clear link between scientific data and the Native Americans who lived in the region around 1000-1200AD. Given that the ceramics found in the sites in the Central Mississippi Valley are similar in form to ceramics found elsewhere, the authors attempt to determine whether the ceramics were manufactured locally in the image of the ceramics elsewhere or whether the ceramics could be considered trade goods. The authors take advantage of petrographic thin-section analysis and NAA to examine the grain structure and composition, respectively, of sherds. Inputting this data to multivariate analysis resulted in structure-composition groupings of sherds. From these groupings, the authors reach the conclusion that the sherds were manufactured locally. While at first glance this appears to be a robust link between the data and the

¹ Waelkins, M.; Poblome, J. 1997. The Clay Raw Materials of Sagalassos Red Slip Ware: a Chronological Evaluation. In Waelkens, M. and J. Poblome (eds). *Sagalassos IV: Report on the Survey and Excavation Campaigns of 1994 and 1995*. pgs. 507-518.

² Riley, T. J.; Hopke, P.; Martin, R.; Porter, J. W. 1994. The Diffusion of Technological Knowledge: a case study in North American Ceramic Analysis. In Wisseman, Sarah U. and Wendell S. Williams (eds) *Ancient Technologies and Archaeological Materials*. Gordon and Breach Science Publishers, USA, pgs. 41-58.

Native Americans in question, the authors fail to explain just how they infer local manufacture from the statistical groupings, which they call “locality-dependent clusters.” While the existence of “clusters” is believable, how the clusters are determined to be locality-dependent is unclear. While it may be obvious to an expert why the sherds were manufactured locally, it is difficult to see this conclusion offhand.

A third article detailing the characterization of ancient Egyptian pigments³ is an instance of complete disregard for links between people of the past and scientific data. Using PIXE, XRF, XRD, and ED-XRDF, the author (Uda) sets out to determine the composition and identity of ceramics pigments found on monuments in the Egyptian Museum and the walls of the tomb of Amenhotep III. While Uda conducts a thorough and impressive study in which he establishes the structure and composition of all of the pigments in question (including a long-unexplained blue pigment), he does not relate the pigments to the ancient Egyptians. His analysis could be expanded to make a social connection perhaps by discussing the chronological emergence or use of various pigments or the use of certain pigments for certain situations (e.g. on columns vs. on walls, etc.)

The analysis of Sagalassos IV ceramics makes an effective connection between scientific data and the Romans, while Uda’s investigation of Egyptian ceramic pigments makes almost no link at all to the ancient Egyptians. The study of Mississippi Valley pottery establishes a relation to Native Americans but it is seemingly a jump to an unsupported conclusion. Despite the variable social links, none of the three articles are necessarily ‘bad’ articles, as, depending on the situation or the journal, it is not always necessary to establish a connection to the people in the past.

Abbreviations:

- SRSWs - Sagalassos red slip wares
- AES – atomic emission spectroscopy
- EDS – energy dispersive x-ray spectroscopy
- NAA – neutron activation analysis
- PIXE – particle-induced x-ray emission
- XRD – x-ray diffraction
- XRF – x-ray fluorescence
- ED-XRDF – energy dispersive x-ray diffraction and fluorescence

³ Uda, M. 2005 Characterization of Pigments Used in Ancient Egypt. In M. Uda et. al (eds), *X-rays for Archaeology*, Springer: Dordrecht, pgs. 3-26.