

Ceramics Response Paper

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Archaeological science employs the techniques of many heterogeneous disciplines. The instrumentation of materials science clashes with the literary origins of trade studies, and yet when integrated these disciplines produce a cohesive view of ancient life. While not all studies are comprehensive, the field as a whole provides a wide continuum which fosters greater understanding.

The science of archaeological science is exemplified by Ottenburg's 1993 report on mineralogy at the Sagalassos site [1]. This article aims to identify the major mechanical and chemical properties of the clay near Sagalassos. It used a number of technologies (e.g. XRD, DTA, and Young's modulus tests), but made no claims of cultural ties to these properties. The analyses relate to "firing tests" — controlled experiments to produce reducing/oxidizing environments for the clays. The research was not stated as based on the techniques or history of Sagalassos; rather, the study showed theoretical capabilities of the clay forms present. The question that was asked, what critical clay properties were present in the area, was answered in the superlative.

Extreme technical writing does lead to further exploration and a systematic approach to future work. This is illustrated by Poblome et al.'s article on a later survey at the same site [2]. They attempted to identify the production scale of Sagalassos Red Slip Ware. What makes the report so intriguing is the integration of archaeological and scientific knowledge. Chemical composition was determined with AAS and AES, and these data were interpreted in the greater context of a continually evolving, experimental clay body design. In addition, cultural pottery dating was possible using events and engravings which describe Sagalassos at deposition time. The questions Poblome et al. asked related to the scale of production were answered through chemical composition and dating, which shows an integrated understanding of the

cultural and social trends of the time, as well as a high degree of technical skill.

Another article which integrates cultural and technical knowledge is Riley et al.'s work in North America [3]. Did ceramic trade along the Mississippi, they questioned, consist of physical goods or just ideas? They used thin-slicing and NAA for compositional data, then ran a clustering analysis to determine the composition-location relationship. The interpretation of results reveals the archaeology. Rather than simply showing data and stating that pots excavated together were created together, they describe how ceramics were traded as ideas instead of as physical pots and can be thought of differently than other artifacts of that era. The material evidence was integrated thoughtfully in order to determine an interesting social implication.

While not all studies must necessarily use all possible forms of analysis, it is sometimes troubling to call certain works a member of the field of archaeology when they are essential materials science tests of excavated materials. No interpretation within the cultural context is difficult to justify and should be frowned upon. That being said, the majority of good studies integrate many forms of knowledge and produce a comprehensive, deep, and precise view of ancient culture through its material artifacts.

References

- [1] Ottenburgs, R. et al. 1993. Mineralogy and Firing Properties of Clays at and near the Archaeological Site of Sagalassos. In In Waelkens, M. and J. Poblome (eds). *Sagalassos II : Report on the Survey and Excavation Campaign of 1992*. pgs. 209-219.
- [2] Poblome, J. et al. 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.
- [3] Riley, T. et al. 1994. The Diffusion of Technological Knowledge: a case study in North American Ceramic Analysis. In Wisseman, pgs. 41-58.