Online Seminar

PROCESS Project

Pharaonic Rescission:
Objects as Crucibles of
ancient Egyptian Societies

Hiding behind a finger(print):
exploring the makers through dermatoglyphic impressions

29 November 2021 - 4 p.m. (GMT+1)

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Estimation of Biological Categories from Small and Non-standardized Fingerprints: Critical Notes and Perspectives

Akiva SANDERS,Andrew BURCHILL
Chicago University, Arizona State University

A New Statistical Approach for Archaeological Fingerprints

John KANTNER
University of North Florida

Division of Labor in the Ancient US Southwest: Potter Sex Identification and Implications

Kent FOWLER
University of Manitoba

Man the potter? Not so fast. The new potential of epidermal print research in archaeology

Vanessa FORTE, Gianluca MINIACI
University of Pisa

In search for the people of Lahun (Egypt, c. 1800 BC): fingerprints from the mud

The seminar will be held on Microsoft Teams at this link: https://tinyurl.com/egy2021

For more information: process.miniaci@gmail.com

Seminar program

Hiding behind a finger(print):
exploring the makers through dermatoglyphic impressions

Link Seminar: https://tinyurl.com/egy2021

4:00 – 4:10 p.m. (GMT+1)
Greetings and Introduction

4:10 - 4:25 p.m.
M. **Králík**, A. **Arslan**, L. **Polcerová**, L. **Koníková**
Estimation of Biological Categories from Small and Non-standardized Fingerprints: Critical Notes and Perspectives

4:25 – 4:30 p.m.
Questions

4:30 – 4:45 p.m.
A. **Sanders,** A. **Burchill**
A New Statistical Approach for Archaeological Fingerprints

4:45 – 4:50 p.m.
Questions

4:50 – 5:10 p.m. Break

5:10 – 5:25 p.m.
J. **Kantner**
Division of Labor in the Ancient US Southwest: Potter Sex Identification and Implications

5:25 – 5:30 p.m.
Questions

5:30 – 5:45 p.m.
K. **Fowler**
Man the potter? Not so fast. The new potential of epidermal print research in archaeology

5:45 – 5:50 p.m.
Questions

5:50 – 6:05 p.m.
V. **Forte**, G. **Miniaci**
In search for the people of Lahun (Egypt, c. 1800 BC): fingerprints from the mud

6:05 – 6:45 p.m.
Discussion and concluding remarks

Abstracts

Miroslav Králík[1], Aysel Arslan[2], Lenka Polcerová[1], Linda Koníková[1]
[1]Masaryk University, [2]Koç University

Estimation of Biological Categories from Small and Non-standardized Fingerprints: Critical Notes and Perspectives

Dermatoglyphic features can be studied at four levels of resolution - (1) the level of the entire hand, (2) the level of dermatoglyphic patterns and their parts, (3) the level of the relationships among individual epidermal ridges (minutiae - terminations and branching), and (4) the level of irregularities along one single epidermal ridge (metamerism, sweat pores). While the majority of dermatoglyphics studies focused predominantly on the levels (1) and (2), the non-standardized, naturally left small imprints of papillary terrain in archaeological context (mostly on ceramics) largely do not allow these levels to be assessed. Therefore, the study of ancient impressions in archaeology has mainly focused on features of levels (3) and (4), for which, however, there are not enough reference studies. Most attention has so far been paid to epidermal ridge metrics (density of ridges, epidermal ridge breadth). This contribution will focus both on the questionable issues of the use of this feature in an archaeological context, and on other promising level 3 and 4 dermatoglyphic features whose use could contribute to the development of paleodermatoglyphic methods.

Akiva Sanders[1], Andrew Burchill[2]
[1]Chicago University, [2]Arizona State University

A New Statistical Approach for Archaeological Fingerprints

Over the past five years, archaeologists have become increasingly interested in using recovered fingerprints on ceramics to draw conclusions about the demographics of production. Recent studies focus on measuring the density of epidermal ridges on prints, using one of two metrics: mean ridge breadth (MRB) or ridge density (RD). Studies of modern fingerprints show that the density of epidermal ridges varies predictably within a geographically defined population based on both age and sex. The majority of the archaeological studies use this variation to attempt predicting the age and sex of individual ceramic producers. Yet these methodologies encounter several problems: Firstly, as epidermal ridge density measured by both metrics varies with both sex and age, expected values for adult females and younger adolescent males are inherently indistinguishable. Secondly, adult fingerprint measures differ between populations due to a combination of genetic and lifestyle factors. Thirdly, epidermal ridge density estimates are scaled by unknown degrees due to ceramic shrinkage based on clay body and firing technique. Each of these factors greatly decreases the accuracy of predictions based on individual prints, and together they condemn this strategy to relative uselessness. However, with several minor assumptions, information in fingerprint measurements from across an assemblage can be pooled to create a more accurate depiction of potter demographics. In this paper, we present a new approach to epidermal ridge density analysis using Bayesian mixture models and a more data-driven understanding of how demographics and ridge density covary. We then apply these tools to datasets from three Early Bronze Age sites in the Near East: Tell Leilan, Hama, and Tell es-Safi.

John Kantner
University of North Florida
Division of Labor in the Ancient US Southwest: Potter Sex Identification and Implications

The ability to reconstruct how labor was organized in ancient societies is challenged by the paucity of direct evidence demonstrating who was involved in production. This is particularly true for identifying divisions of labor along lines of age, sex, and gender, for which archaeological interpretations mostly rely upon inferences derived from modern examples with uncertain applicability to ancient societies. Drawing upon biometric studies of human fingerprints showing statistically distinct ridge breadth measurements for juveniles, males, and females, this study reports a method for collecting fingerprint impressions on pottery and using them to distinguish the sex of the potters. The method is applied to a sample of ceramic sherds from a 1,000-year-old Ancestral Puebloan community in the US Southwest. The fingerprint evidence demonstrates that both males and females were significantly involved in pottery production and further suggests that the contributions of each sex varied over time and even among different groups in the same community. The results indicate that despite long-standing assumptions that pottery production in Ancient Puebloan societies was primarily a female activity, labor instead was likely quite dynamic.

Kent Fowler
University of Manitoba
Man the potter? Not so fast. The new potential of epidermal print research in archaeology

This contribution examines how the study of ancient epidermal prints can contribute towards our understanding of the social identity of artisans and the manufacture of objects. This deliberately provocative title addresses a common assumption that women make pottery in "traditional" societies and therefore did so in the past. While some authors think it unproductive to attribute pottery to males or females, others are more nuanced and posit certain conditions when women (foragers and early farmers) and men (more complex societies) would become the primary potters. Renewed study of epidermal prints on pottery has consistently found male or female and male and female prints on objects. These results force sex and gender into the conversation and the plurality of prints on objects challenges notions about who comprised groups of pottery-makers in past societies. While potters are no longer "face-less," we are left with serious questions about sample sizes, methods used to age and sex prints, how to quantify production groups, and how to interpret multiple prints and children's prints on objects. I will address these points by referencing our recent research on objects from Neolithic Scotland, the Early and Late Bronze Age Levant, Bronze Age Poland, and Viking Age Denmark.

Vanessa Forte, Gianluca Miniaci
University of Pisa
In search for the people of Lahun (Egypt, c. 1800 BC): fingerprints from the mud

This contribution focuses on the study of dermatoglyphic impressions found on the Middle Kingdom mud figurines of Lahun, Egypt (*c.* 1800 BC). Fingerprints were analysed to investigate the hypothesis regarding the use of these artefacts as symbolic and religious objects or even toys. A technological traces analysis was also applied to assess the variability of the

production chains at the base of the creative process, such as sequences and steps, corresponding to the shaping of the body, the modelling of the principal and detailed anatomical parts (e.g. arms or eyes) and surface finishing. The steps involved in the production shift in association with the accuracy of the final artefacts and the analysis of fingerprints was applied to identify age of the figurines' producers and reply to the question if the production was actually made by children. Based on the preliminary results, the mud figurines of Lahun were primarily made by late adolescents/adults while few fingerprints can be associated to children/early adolescents or only adults.