

A preliminary approach from Material Science to Copper Age funerary pottery in Southern Iberia. The Palacio III (Sevilla, Spain) tholos tomb



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Palacio III funerary complex

Introduction:

Palacio III is a funerary complex located on the northern sierras of Sevilla province (SW Spain). Used throughout the Late Prehistory, the excavated area of this complex revealed a Late Neolithic or Early Copper Age passage grave, a Copper Age tholos built just in front of the entrance to the passage grave, as well as an Iron Age cremation cairn built between the two. The tholos chamber was found in an excellent state of preservation, providing a good-quality picture of the funerary patterns that it was once part of. At the rocky base (floor) of the chamber, a collection of nearly 200 artifacts was found, including pottery vessels, flint tools (especially arrow heads and blades) and other stones used with votive purposes. The series of more than 60 ceramic items identified within this chamber provides a unique opportunity for the characterization of Copper Age funerary ceramics.



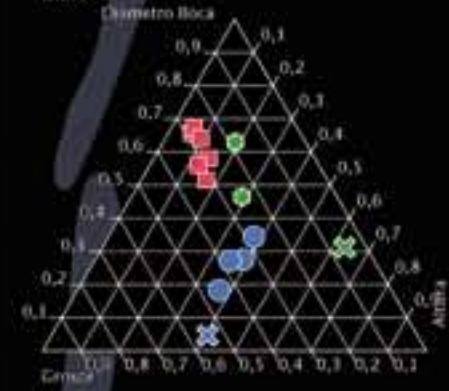
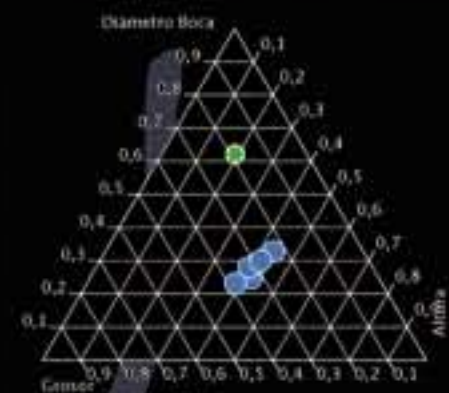
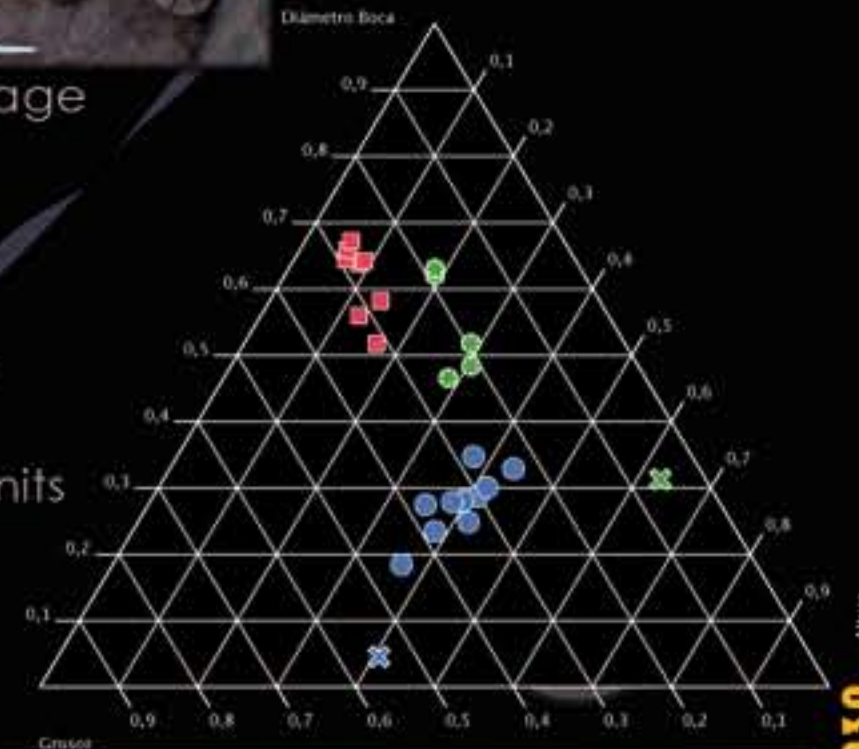
In situ pottery assemblage

Methodology:

Compositional analysis by WD-XRF was carried out on samples taken from 31 vessels spanning all three main depositional levels (or activity phases) of the burial (labeled I, II & III). The compositional evidence (22 elements) was statistically evaluated (PCA on the covariance matrix and Ward's methods on square Euclidean distance (Cluster analysis) in order to explore the grouping of the samples.

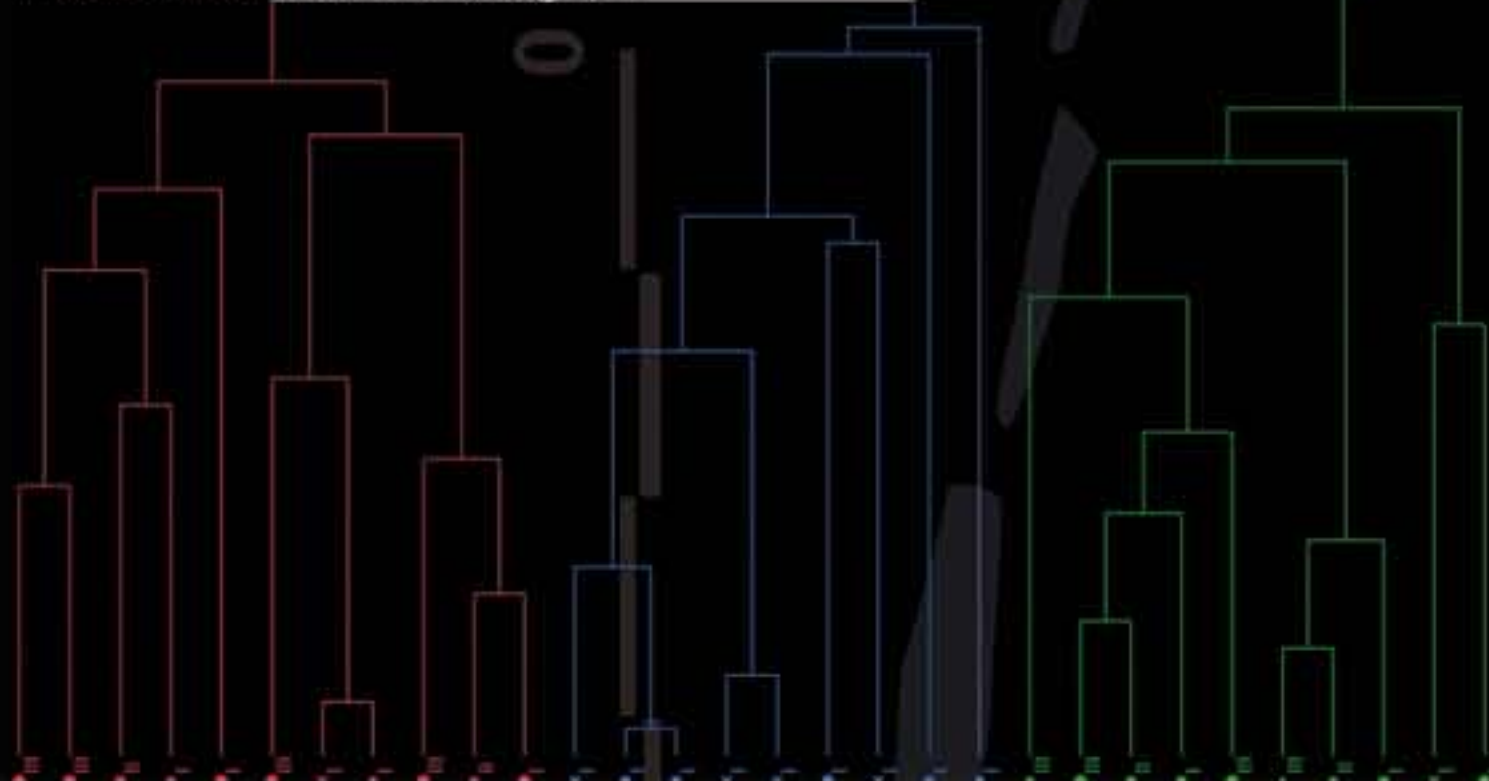
In addition, three parameters have been examined in order to investigate the morphological (typological) clustering of the vessels: maximum height, rim diameter and thickness. The three axes of variation of the tholos ceramics examined in this research therefore include compositional, morphological and contextual data

Ternary diagrams for shape analysis. 1.-all the stratigraphical units 2 & 3.-units III and I.



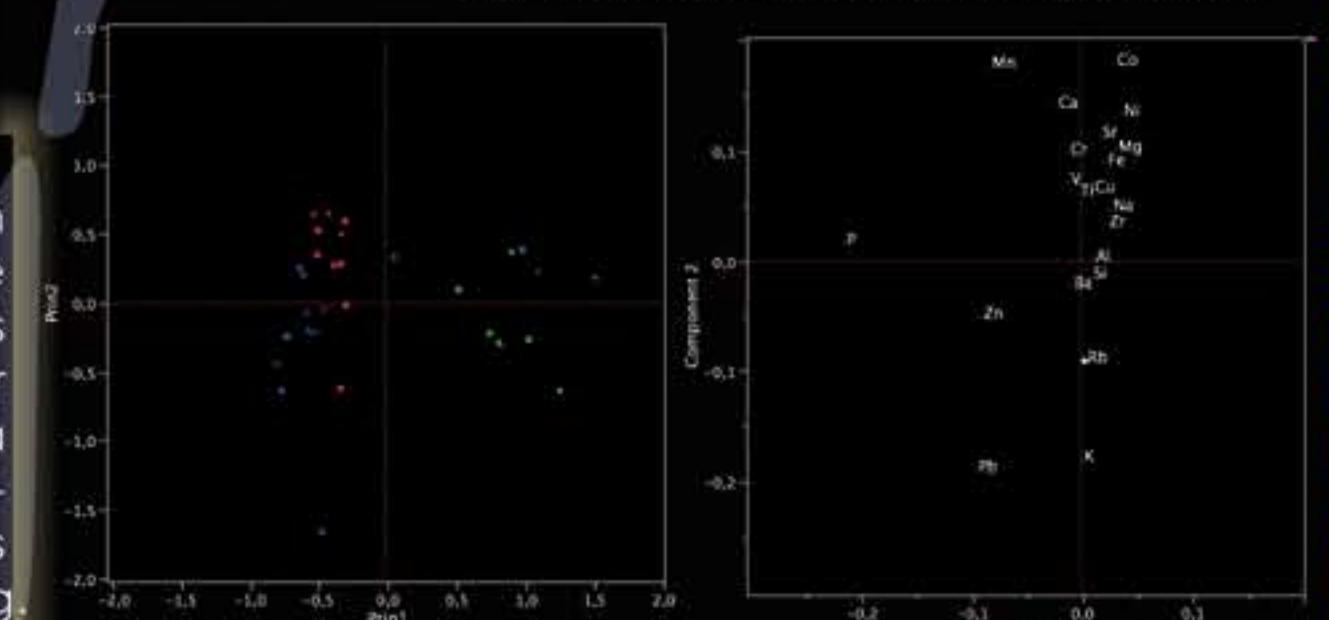
Vessels from Palacio III tholos burial

Ward's method dendrogram



Results:

The resulting statistical plots suggest the existence of three main groups in terms of morphology, which in turn correlate with the grouping observed at the compositional analysis. However, there is no obvious or straightforward correlation between vessel shape or composition and contextual/stratigraphic position. Altogether, a simple conclusion from this study is that the people using the Palacio III tholos burial used three main different technological patterns that combined form and matter and, to a lesser extent, processing.



PCA Scores and loading plot