

Scientific geo-ethnoarchaeology and its archaeological application to investigate farming, settlements and agriculture in the past

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Research Questions and Aims

How can we use **microscopic** and non-visual proxies instead of macroscopic proxies to examine **anthropogenic** and **animal signatures** from archaeological sites?

Can we use **ethnoarchaeological** sites to test a scientific archaeological techniques and new methodological approaches?

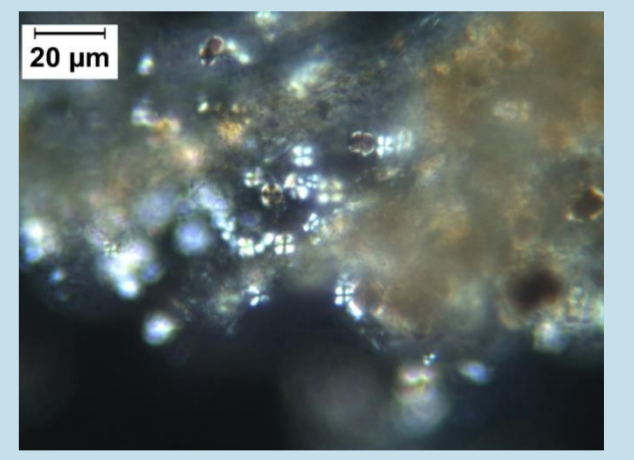
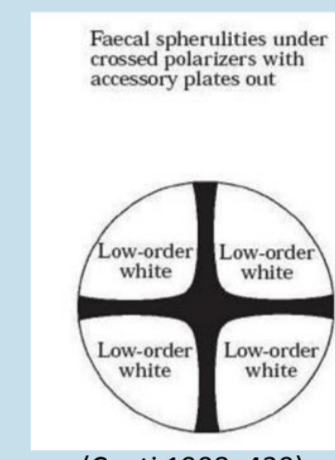
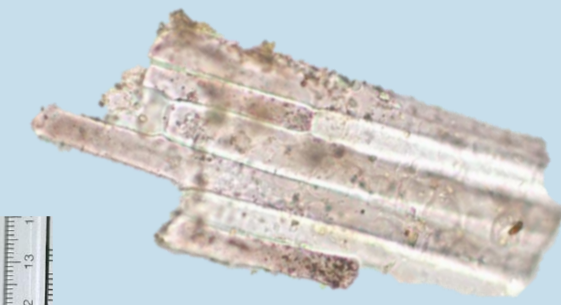
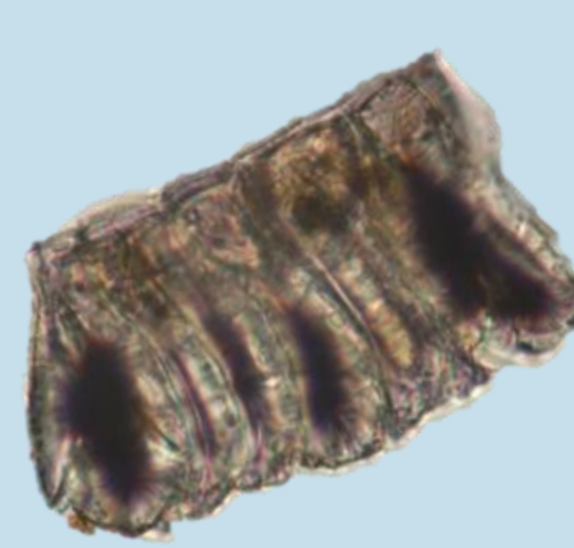
The aim of this research is to develop a inter-disciplinary research framework to better interpret the ephemeral archaeological signatures of the **Near East**, and further our understanding of the beginnings of **farming, agriculture** and **sedenterisation**.

This research combines the analysis of **archaeological** evidence with comparative **ethnoarchaeological** datasets. The aim is to implement and test this developing approach in the field on wide ranging case studies in an area where farming and settled villages first occurred, **Jordan**.

Methods

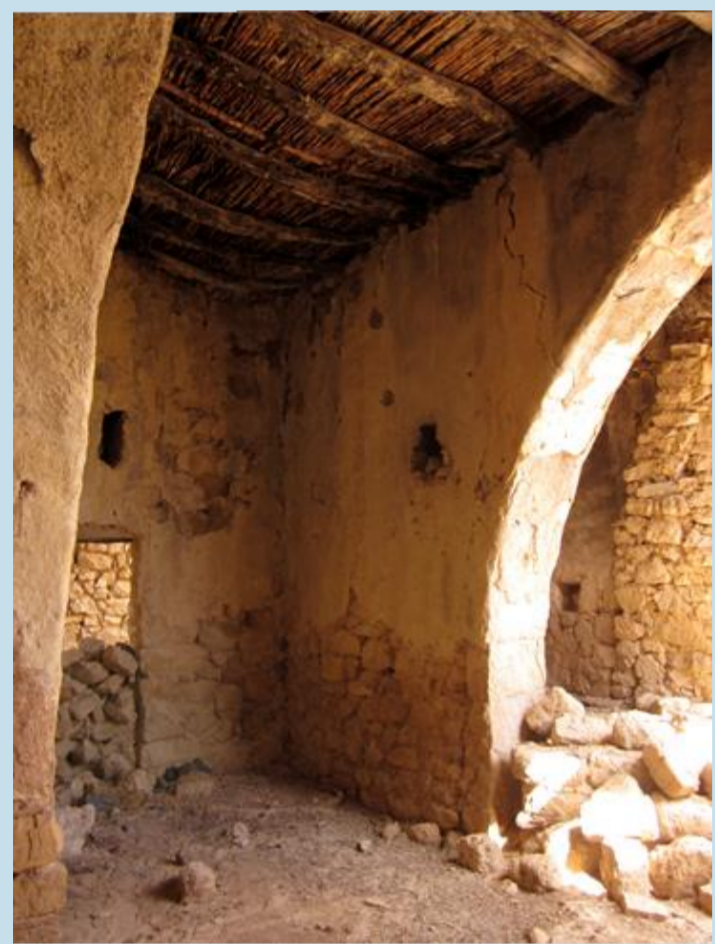
This integrated approach involves the analysis of multiple anthropogenic signatures in sediments and microanalysis of animal dung:

Portable X-ray Florescence (**pXRF**) of chemical elements
Silica **Phytolith** Analysis
Micromorphology
Faecal **Spherulite** Analysis



(Canti 1998: 439)

Ethnoarchaeological Data



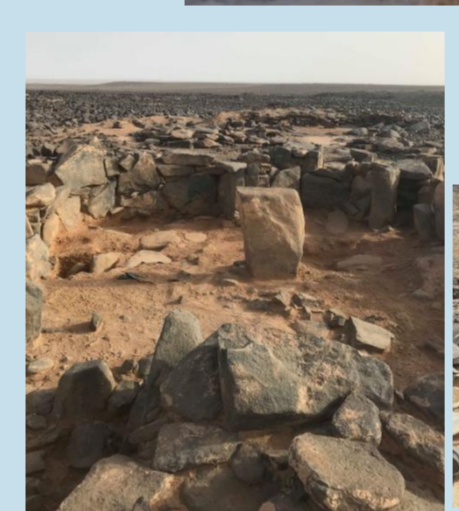
Archaeological parallels in modern villages (e.g. Al Ma'tan, Jordan)



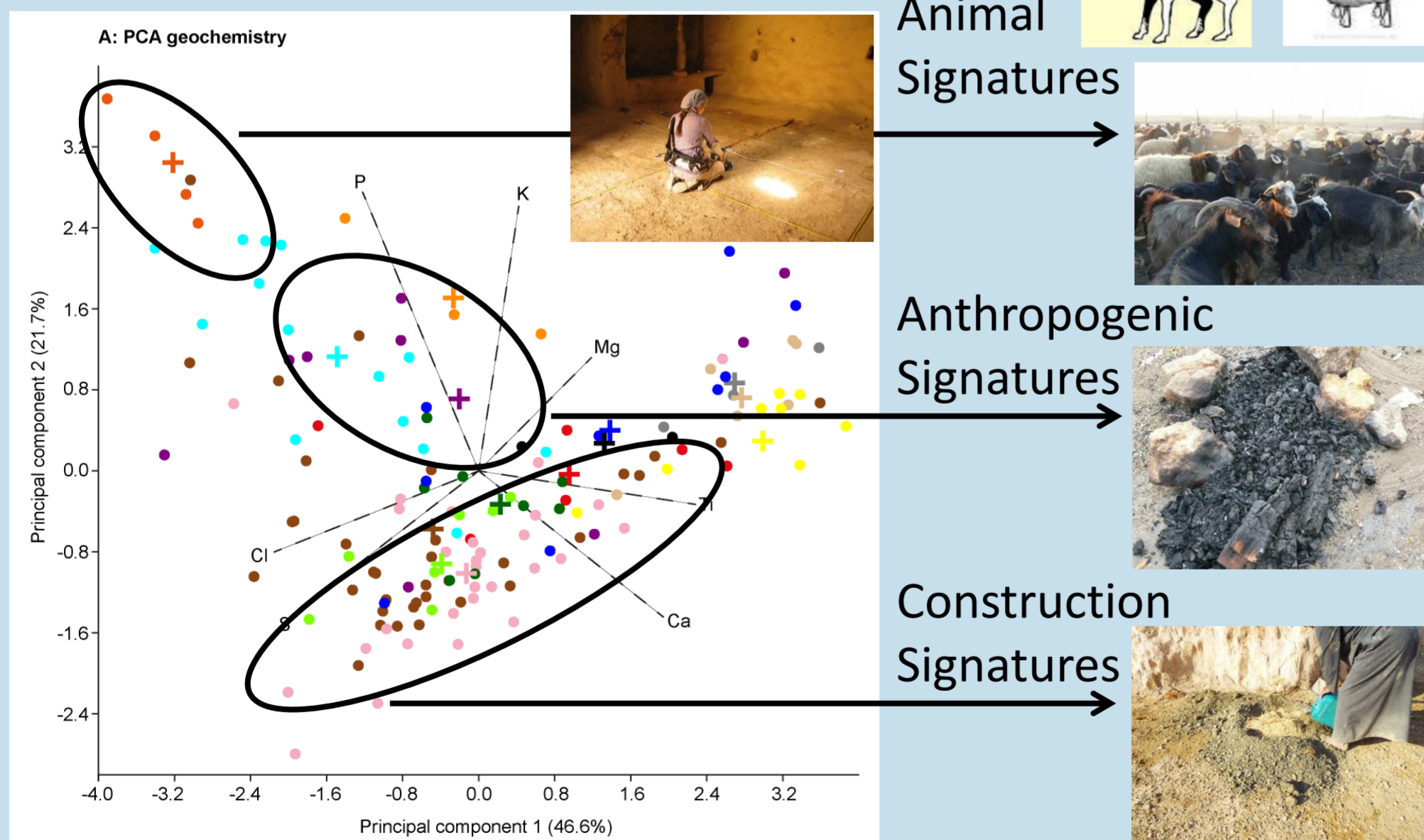
Modern Dung reference material with known diet and species analyses

Archaeological Data

Sediments from a range of Pre-Pottery Neolithic A and Pre-Pottery Neolithic B contexts in Jordan

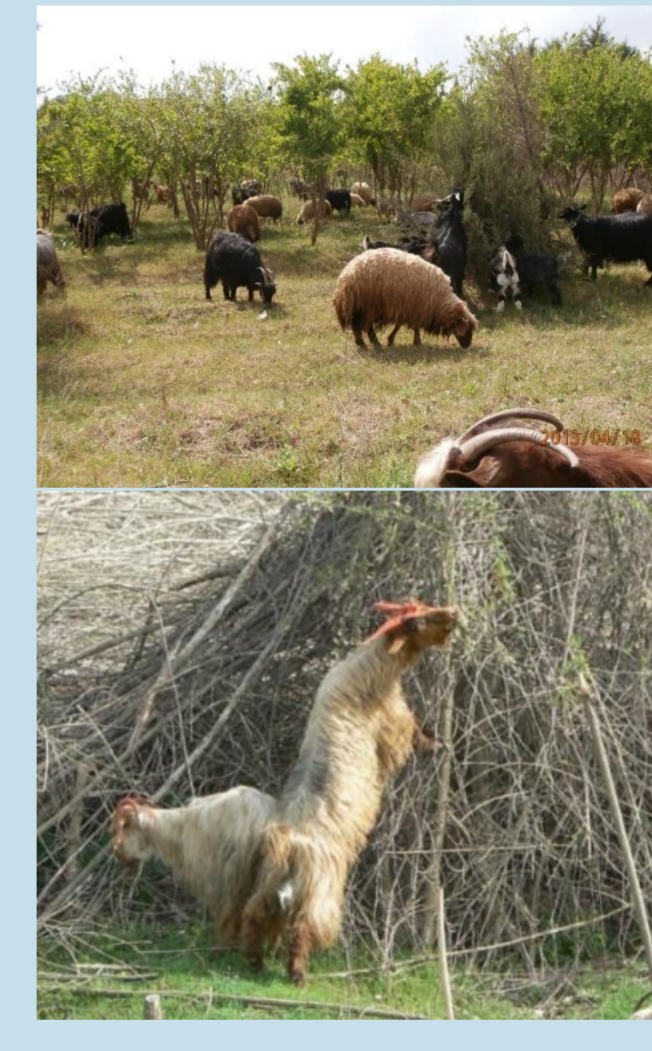
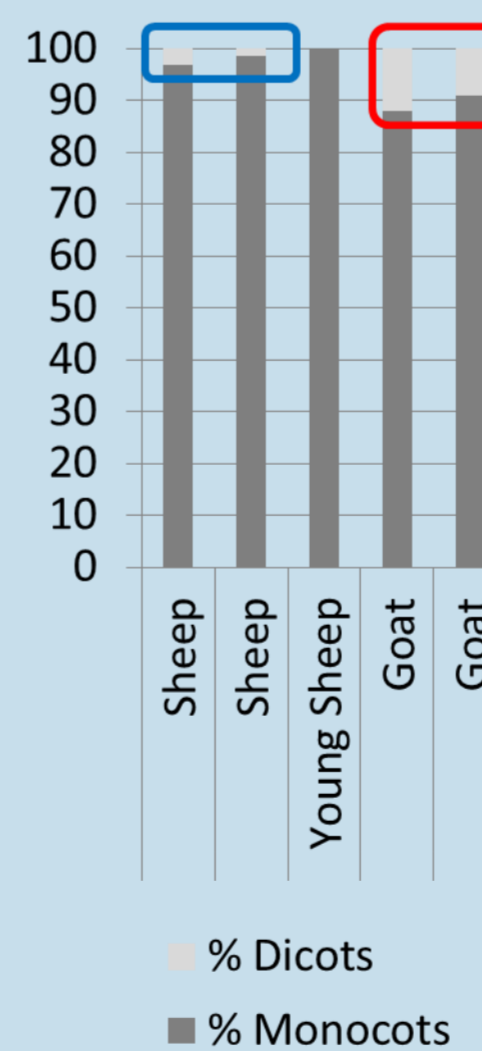


Settlements, People and Animals



- Key:**
- Animal Occupation
 - Control type 1
 - Control type2
 - External/Courtyard
 - External fire installations and ashy deposits
 - Floors and surfaces
 - Hearth make-up
 - Internal fire installations and ashy deposits
 - Midden
 - Mortars
 - Plasters and clay features
 - Platforms and benches
 - Roofs and roofing materials
 - Storage features

Farming: Grazing, Browsing, Foddering



Sheep: 1-3% Dicots (Shrubs and Trees)

Goat: 9-12% Dicots (Shrubs and Trees)



Conclusions

Preliminary **geo-ethnoarchaeological data** and **archaeological data** from **Al Ma'tan, WF16** and **'Ain Ghazal** have produced promising results using combined **geochemistry, silica phytolith analysis, micromorphological analysis** and faecal **spherulite analysis** (AHRC funded **INEA Project, BU/CBRL**). This current stage of funded research is expanding case studies to include more ethnoarchaeological sites and archaeological sites.

Acknowledgements

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