MATERIAL EVIDENCE: Learning from Archaeological Practice

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Material Evidence takes a resolutely case-based approach to this question, exploring instances of exemplary practice, key challenges, instructive failures, and innovative developments in the use of archaeological data as evidence. The goal is to bring to the surface the wisdom of practice, teasing out norms of archaeological reasoning from evidence.

Archaeologists make compelling use of an enormously diverse range of material evidence, from garbage dumps to monuments, from finely crafted artifacts rich with cultural significance to the detritus of everyday life and the inadvertent transformation of landscapes over the long term. Each contributor to *Material Evidence* identifies a particular type of evidence with which they grapple and considers, with reference to concrete examples, how archaeologists construct evidential claims, critically assess them, and bring them to bear on pivotal questions about the cultural past.

Historians, cultural anthropologists, philosophers, and science studies scholars are increasingly interested in working with material things as objects of inquiry and as evidence – and they acknowledge on all sides just how challenging this is. One of the central messages of the book is that close analysis of archaeological best practice can yield constructive guidelines for practice that have much to offer practitioners within archaeology and well beyond.

CHAPTER ABSTRACTS

Introduction

1. Material Evidence: Learning from Archaeological Practice

Alison Wylie and Robert Chapman

A passion for things has taken hold in a great many fields, as subjects of inquiry and as a crucial source of evidence. The difficulties of working with material evidence are legendary; an interest in material objects and traces does not necessarily translate into direct engagement with them. It is primarily archaeologists who have successfully taken on these challenges. We provide an overview of the wisdom in practice articulated by contributors to this collection, delineating a repertoire of strategies by which archaeologists induce things to talk, building and refining interpretive scaffolding in ways calculated to counteract the risks of projecting “pre-understandings” onto the past.

PART I. Fieldwork and Recording Conventions

2. Repeating the Unrepeatable Experiment

Richard Bradley

The results of two British field projects allow me to discuss whether excavation represents an unrepeatable experiment. South Lodge Camp is a prehistoric enclosed settlement first examined by General Pitt-Rivers in 1893, and Croftmoraig is a stone circle that was first excavated in 1965. The original reports have been treated as an objective record of what was found, but in each case, the field observations had been influenced by the assumptions of the excavators (respectively, nineteenth century evolutionary theory and the distinction between nature and culture). Repeating the unrepeatable experiment has allowed both sites to be interpreted in new ways.

3. Experimental Archaeology at the Cross Roads: A Contribution to Interpretation or Evidence of ‘Xeroxing’?

Martin Bell

Experimental archaeology has featured little in literature about archaeology theory. In this chapter, I introduce key concepts deserving greater emphasis by experimental archaeologists. Analogy from ethnography and experiment expands our pool of ideas. Pre-understandings can be controlled for, and interpretations can be tested against a range of sources of evidence of varying independence. The focus here is on medium and long-term experiments, e.g., in Open Air Museums. The chapter draws examples from earthworks (barrows, banks and ditches) and buildings (round and rectangular), and it highlights the role of faunal agents in the formation of the archaeological record and the reciprocal relationships between faunal and human agents.

4. 'Proportional Representation': Multiple Voices in Archaeological Interpretation at Çatalhöyük
Shahina Farid
This chapter explores the successes and failures in practice of the suite of reflexive methodologies employed in excavation at Çatalhöyük that acknowledge early on in the process that there is an inevitable bias in archaeological research owing to our individual life experiences, cultural background and education. By bringing all participants together we can arrive at a collaborative rather than a compartmentalised or isolated interpretation of individual components of the data. For the system to work effectively it requires explicit expectations, a well-balanced experienced team, a commitment of teams to engage with the systems, comprehensive resourcing, and regular and direction of overall aims of the project.

5. Integrating Database Design and Use into Recording Methodologies
Michael J. Rains
In this chapter, issues surrounding the introduction of new hardware and software technologies into well-established archaeological excavation, recording and post-excavation systems will be examined from the perspective of the Integrated Archaeological Database (IADB). Two case studies, one concerning the introduction of digital pens to the recording of a major academic research project, the other a new approach to digital context recording in commercial developer funded archaeology, will demonstrate the need for true integration of the design and development of both excavation and recording strategies and methodologies and database structures and functionalities.

6. The Tyranny of Typologies: Evidential Reasoning in Romano-Egyptian Domestic Archaeology
Anna Lucille Boozer
Excavations in an underexplored region of Egypt encountered the remains of a house that did not match existing domestic typologies. The structure lacked clear archaeological evidence of a roof over a central room in the house, and evidence of food preparation was found within, rather than outside of, the house. Did this evidence signify a new house type? Or, was the archaeological evidence open to question? This raises a long-standing issue in archaeology: how and when should we use, modify, and abandon typologies? And, how does our training impact on our use of typologies and archaeological evidence? This contribution explores these questions in order to understand how archaeologists weigh competing clues between typologies, taphonomies, and depositional episodes in our evidentiary reasoning.

PART II. Cross-field trade: Archaeological applications of external expertise and technologies

7. The Archaeological Bazaar: Scientific Methods for Sale? Or 'Putting the 'Arch-' Back into Archaeometry
A. Mark Pollard and Peter Bray
Archaeology and the natural sciences have been intertwined for more than 200 years, but there is still room for improvement in the way the many disciplines which contribute to archaeology interact with each other. This is particularly so when 'hard sciences' are used to provide information of fundamental importance to archaeology (such as the provenance of metal objects), but which do not take into account the 'human dimension' of how metal may actually have moved around the ancient world. As an example, we highlight the potential impact of very human behaviours such as the mixing and recycling of metals o the process of determining provenance by chemical or isotopic means.

8. Radiocarbon Dating and Archaeology: History, Progress and Present Status
Sturt W. Manning
This chapter reviews the history of the developing relationship between radiocarbon dating and archaeology over the last 65 years, discussing problems, changes, challenges, and developments. In particular, it considers the process of acceptance/resistance of radiocarbon by archaeology and the special problems in the east Mediterranean region—where radiocarbon ran up against long-established chronologies built up on the basis of close associations with the historical chronology of Egypt. Finally, the impact and importance of the recent Bayesian chronological modelling revolution in radiocarbon dating is discussed with regard to archaeology, using two Aegean case studies.

9. Using Evidence from Natural Sciences in Archaeology
David Killick
Since 2000, archaeological practice worldwide has been markedly altered by the adoption of many new - or substantially improved - methods from the natural sciences and engineering. Scientific evidence is generally

independent of other types of archaeological evidence and can be combined with these to make more persuasive reconstructions of the past. This chapter suggests some ways by which the integration of archaeological and scientific data can be improved.

10. Working the Digital: Some Thoughts from Landscape Archaeology
Marcos Llobera
This chapter highlights some of the potentials and challenges of using digital methods when investigating archaeological landscapes. Emphasis is put on the use of simple simulations as a way of 'contextualizing' archaeological datasets and questions the adequacy of traditional forms of spatial representation when exploring experiential properties of past landscapes. To illustrate some of these points, an example focusing on a set of Neolithic barrows, or mamoas, from Galicia (NW Spain) is explored using GIS. More specifically, the relationship between patterns of movement and the mamoas, and the visual impact of the latter on prehistoric travelers, is examined in detail.

11. Crafting Knowledge with (Digital) Visual Media in Archaeology
Sara Perry
Archaeologists have long drawn on the skill of visual producers to enable and extend their expert practice. The success of these alliances is debateable, as visualisers have often been consigned to the discipline's sidelines, their epistemic credibility and relevance challenged even by the visual community. Such tension is apparent with digital graphic producers whose craft skills, contributions to knowledge, and reliance on new technologies are not uncommonly subject to suspicion and misunderstanding. This chapter presents examples of digital reconstruction in which practitioners are changing the nature of thinking. I aim to demystify this process and to speak both to best practice in the application of visual technologies and theory, and to the epistemic productivity of visualisation in archaeology overall.

PART III. Multiple working hypotheses, strategies of elimination, and triangulation

12. Uncertain on Principle: Combining Lines of Archaeological Evidence to Create Chronologies
Alex Bayliss and Alasdair Whittle
With the underlying principle that our measurement of time is fundamentally linked to uncertainty, we explore how Bayesian chronological models are constructed by weaving together different strands of scientific and archaeological evidence. We illustrate the application of formal modelling to a variety of archaeological situations, from individual sites to chrono-typologies, seriations and timescapes, and we consider how multiple interpretations are judged. We discuss the impact and consequences of the widespread availability of the radically improved chronologies, which formally modelled estimates bring to the construction and interpretation of our narratives.

13. Lessons from Modelling Neolithic Farming Practice: Methods of Elimination
Amy Bogaard
Major models of early farming in central Europe can be distinguished by three ecological variables that also have important social implications. These models and variables can be arranged like the taxa and identification criteria in a dichotomous key, such that unlikely models are eliminated in a step-wise fashion, leaving a single, plausible answer. This system was applied by assembling weed survey data from present-day farming regimes or agricultural experiments to represent each model, and by framing comparisons between modern and archaeobotanical weed data using weed functional attribute measurements. By eliminating three farming models, the conclusion was reached that a form of small-scale intensive farming was plausible. The potentials and limitations of this approach are discussed as an instance of 'inference to the best explanation'.

14. Evidence, Archaeology and Law: An Initial Exploration
Roger M. Thomas
There are interesting parallels, hitherto little remarked on, between law and archaeology as intellectual processes. Both use evidence and inference to establish what happened in the past; both accept that the past is not knowable with absolute certainty. Some legal approaches and techniques, such as Wigmore's 'chart' method, may be relevant in archaeology. This method has similarities to the Harris stratigraphic matrix, and may also offer pointers to how to publish excavations. The method may be applicable to larger historical questions as well as to primary archaeological evidence. The chart method promotes clarity and rigour in the use of evidence and inference, important both law and archaeology.

15. Law and Archaeology: Modified Wigmorean Analysis
Terence Anderson and William Twining
This paper considers the potential application to some archeological enquiries of a modified form of John Henry Wigmore's "chart method" of analyzing evidence. The method is used to marshall a complex mixed mass of evidence into a coherent argument for both sides in respect of a hypothesis or ultimate probandum and visually depicting all of the relations between the propositions in that argument. Originally developed in relation to complex cases in law, it has been applied in a number of fields, including intelligence analysis, police investigation and contested historical events. This paper introduces the method and illustrates it in relation to the thesis that cuneiform survived beyond the second or first century BC, as had been widely supposed.

16. Traditional Knowledge, Archaeological Evidence, and Other Ways of Knowing
George Nicholas and Nola Markey
This chapter explores the nature of knowledge of the past by examining the question of what and is not considered "evidence." from the perspective of archaeological and Indigenous ways of knowing. We present a series of examples that range from congruence to contradiction and rejection of either archaeological data or oral histories as evidence? We argue that the tension that exists at the intersection of different ways of knowing provides an opportunity to evaluate archaeologically derived evidence, and to strengthen archaeological inferences, while also generating new questions that can inform our understanding of both past lifeways and contemporary heritage concerns.

PART IV: Broader perspectives: Material Culture as Object and Evidence

17. Evidence of What? On the Possibilities of Archaeological Interpretation
Gavin Lucas
This paper discusses the limits—and possibilities—of archaeological interpretation by framing the issue in terms of how to conceptualize archaeological evidence. It argues that two dominant metaphors have been used to understand archaeological remains: the fragment and the relic, with the former dominating. I suggest we reverse this and foreground the idea of the relic, which means thinking about the archaeological record in terms of survival. Using as a case study research into an abandoned fishing village in Iceland, this paper explores what such an approach might mean for archaeological interpretation.

18. Meeting Pasts Halfway: A Consideration of the Ontology of Material Evidence in Archaeology
Andrew Meirion Jones
Archaeologists have been remarkably consistent in their characterisation of material evidence: it is conceived as the material trace of past human activity. This paper seeks to question this by focusing on the ontological character of material culture as evidence. To do this it is important that we reconsider the role of evidence in relation to the archaeologist describing and framing that evidence. I argue that evidence emerges through a process of intra-activity between materials and archaeological analysts. I examine how processes of intra-activity shaped excavation and post-excavation analysis of materials from the rock art sites of Torbhlaren, Scotland.

19. Matter and Facts: Material Culture and the History of Science
Simon Werrett
This chapter explores changing approaches to material culture in the history of science and ways that archaeology and the history of science have served each other in the assessment of historical evidence. Historians have increasingly explored the role of the body, instruments, models, and other materials in the history of science, and use material re-enactments to learn more about past scientific practices. This work offers archaeologists opportunities to better understand archaeological assessments of evidence. Archaeology, in turn, offers new ways for historians of science to appreciate the material dimension of science and the places where it is practiced.