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Unreviewed Mixed Matters Article:

Book Review: Archaeological and Anthropological Sciences by L. Shillito, E. Fairnell and H. S. Williams (eds)

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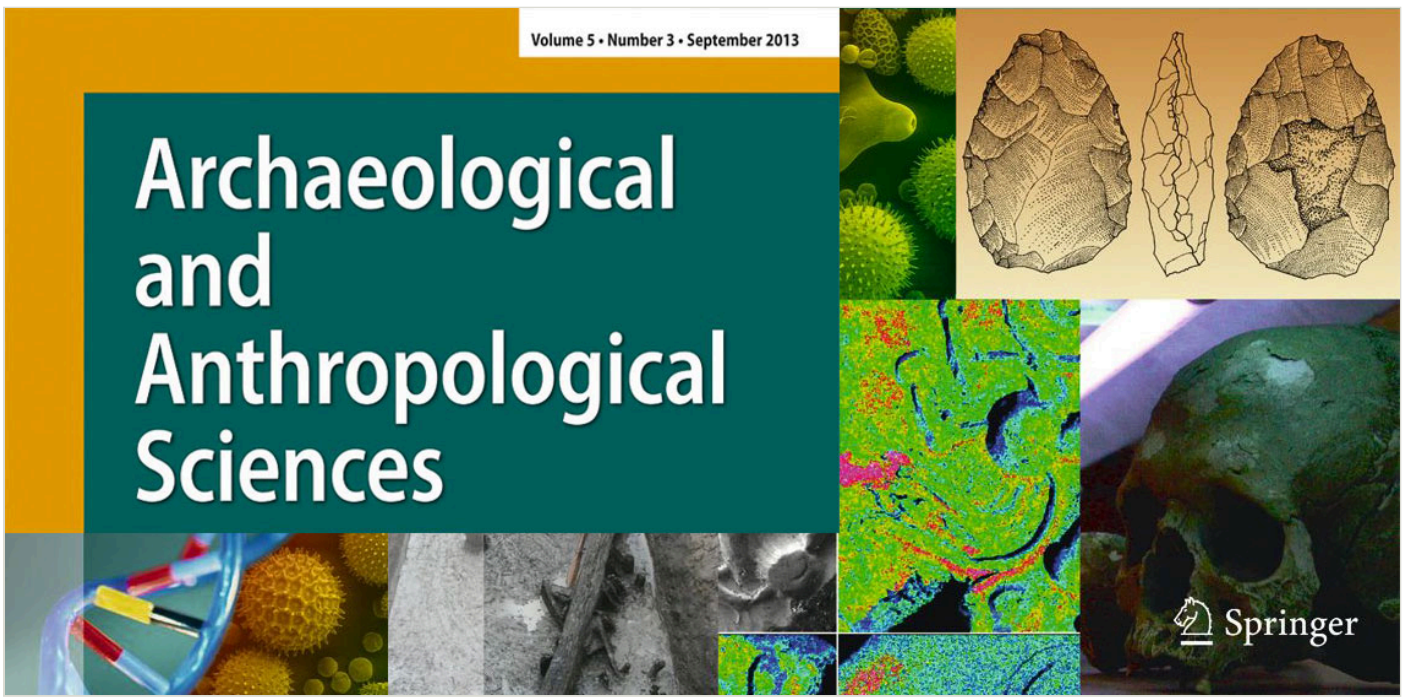
Author(s): Katy Whitaker [1]

[1] Historic England, The Engine House, Fire Fly Avenue, Swindon, SN2 2EH, United Kingdom.



A set of eleven articles resulting from the call for papers for the Sixth UK Experimental Archaeology Conference (held in York in January 2012) is now published in a special issue of the Journal of Archaeological and Anthropological Sciences. Edited by the conference conveners, Lisa-Marie Shillito, Eva Fairnell and Helen S. Williams, the issue is available online (http://link.springer.com/journal/12520) prior to print publication anticipated later this year (2014).

> As the AAS special issue draws on that year's conference call and later research, it comprises a more homogenous group of papers suited to the Journal's scope than might be expected from the mix of scientific, "actualistic" and experiential work that is more usually presented at the UK Experimental Archaeology conference.

The aim of the Journal of *Archaeological and Anthropological Sciences* (AAS) is "to bridge the gap between archaeologists and natural scientists providing a forum to encourage the continued integration of scientific methodologies in archaeological research." (Springer 2014). Experimental archaeology is not noted as a specific topic of interest of the Journal, although the editors of this special issue are quick to explain their aim is that the collected papers will shed light on this methodological approach, informing the Journal's readership about the value of experimental archaeology to understanding human behaviour in the past.

A common thread throughout the papers is the critical evaluation of the archaeological record and how archaeologists can go about interpreting their hard-won excavated evidence. Banerjea *et al* (2013), for example, describe the micromorphological analysis of deposits from six experimental buildings at Butser Ancient Farm, St Fagans (UK) and Lejre (DK), to understand both the formation of vertical deposits and also horizontal patterning within the structures. The work demonstrates the interpretative value to archaeologists of reference material with a documented history. For example, it was shown at Lejre that soil development had been brought about in occupation deposits where a building's roof was failing; a fact of significance to the identification of past buildings where there is no archaeological evidence for superstructures, and such a deposit might be misinterpreted as a garden soil.

Similarly, the wear experiment by Chu *et al* (2013) throws light on how archaeological deposits have been formed, specifically in river contexts. It is difficult to tell the difference between damage to early Palaeolithic artefacts caused by dramatic natural processes such as flooding, more gradual impacts such as long-term weathering, or human activity itself, when so many of the stone tools are historic finds from alluvial contexts with little or no excavation information. Is it possible to tell from the tools themselves whether such objects were excavated from *in situ* contexts, or had they been transported by water to their final resting place? By exposing carefully recorded freshly-knapped flakes to moving sediments in annular flumes, the authors were able to exert a high level of control in their analysis of the effects of low energy abrasion on the flints. The experiment documented the resulting microscopic wear, providing, it is hoped, a new way for archaeologists to distinguish specific types of damage to stone artefacts – and thus to evaluate the spatial integrity of individual objects or assemblages excavated in future. Whilst there is greater variability in the actual abrasion experienced by flint tools in different fluvial environments, the use of annular flumes represents the development of a better wear analogy than tumbler experiments.

The work by Birch *et al* (2013) also aims to improve archaeological practice. Following the restoration of an area of farmland that had been used for a documented campaign of iron smelting (an investigation into Roman-period iron working), various techniques including geophysical survey and excavation were used to investigate the remains of the site. The results formed a critical evaluation of the fieldwork methods that are normally used to investigate archaeological remains of iron production. This investigation had not been planned as part of the original archaeometallurgical work, so no record was made of the existing ground conditions prior to the smelt and its range of activities. Whilst this limits somewhat the absolute usefulness of the fieldwork (a limitation recognised by the authors), the exercise did demonstrate the difficulty in relating the results of non-invasive survey to what was known to have occurred on the site. The excavation results, however, especially the micro-residues, could be related to the smelting activities and the authors raise the possibility of blind-testing to evaluate critically fieldwork strategy and methods, through one team of excavators investigating an analogous "archaeological site" created by a separate team of practitioners.

Other papers in the collection focus on other, more targeted issues, such as Bradfield and Brand's (2013) experiments to distinguish between bone tool fractures caused by different impacts and the resulting implications for methods of macrofracture analysis. Kania (2013), however, is more concerned with some of the factors that influence the product of a pre-modern technical process – spun yarn – that can fortunately be investigated with the help of modern practitioners. The spindle whorl is a much more common artefact than the textiles that it helped to make; can archaeologists reliably draw conclusions about the gap in the archaeological record, based on this tool type? Put another way; which has most bearing on the characteristics of wool yarn – the fleece, the spindle, or the spinner? Kania suggests that experiments to investigate hand spinning have on the whole been unsatisfactory, because they have resulted in too small or too variable datasets, and so designed a large-scale experiment involving 14 spinners. The results have contradicted findings in some earlier investigations and suggest that it is in fact the spinner who has the most influence on the yarn.

This draws our attention to that problematic experimental variable, the human factor. In the papers that I have singled out for comment in this review, bar Kania, human agency tends to appear somewhat obliquely. The 2012 UK Experimental Archaeology conference was dominated by papers presenting investigations that tended to the more scientific end of the scale of archaeological experiments (and see a contemporary conference review, Fillery-Travis 2012). As the AAS special issue draws on that year's conference call and later research, it comprises a more homogenous group of papers suited to the Journal's scope than might be expected from the mix of scientific, "actualistic" and experiential work that is more usually presented at the UK Experimental Archaeology conference. Although it does not illustrate the value that can be found even in less strongly controlled, "actualistic" experimentation, where

the human factor that we seek to explore may play a more significant role, the issue is nevertheless a showcase for experimental archaeology. Most importantly, it demonstrates ways in which archaeology can adopt methodologies that are particular and relevant to its evidence base, an issue that should interest all archaeologists (Bell 2009). The editors are right to have every hope that this well-written, well-illustrated, well-referenced range of papers will provide both insight and inspiration to the Journal's readership.

Book information:

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Corresponding Author

Katy Whitaker
Historic England
The Engine House
Fire Fly Avenue
Swindon, SN2 2EH
United Kingdom
E-mail Contact