

21st-century Challenges in Archaeology

Synthesis of information from developer-funded investigation to create new historical narratives

Themes and questions

Online discussion on **25th – 26th October** will focus on how we transform recorded data from archaeological investigations into wider knowledge and new narratives:

1. What questions are we asking of the data? How is this moderated in the planning process?
2. In current excavations, are we collecting the right data to enable the full range of these questions to be answered?
3. How are we assembling the data to ensure that we are comparing like with like?
4. How are we organising the primary data to allow the greatest access for those wishing to synthesise it?
5. How are we ensuring the distinction between data and interpretation is clear for others using the information?
6. Are there scales of synthesis? If so, are there obvious candidates for funding and undertaking these different scales?
7. Should developers pay for synthesis? Is there room for an escrow model, where a percentage of the funding for every dig goes into a common fund? Should it be left to chance and circumstance, or does it need a formal programme?
8. How do we ensure synthesis informs subsequent investigations? What might this mean for backlogs?
9. What new technological approaches might assist synthesis?
10. How would we know things have changed for the better?

Background

As a result of the introduction of PPG16 in 1991 and its successor policies (PPS5 and the NPPF), more than 90% of archaeological investigation in England is now initiated by the planning process. Depending on the state of the economy, more than 5000 archaeological investigations can be carried out annually. These range from surveys to small-scale field evaluation and large-scale excavations. This commercially-driven research is joined by academic research in over 30 active university departments, and by community-led investigation. In the last 25 years, perhaps 80,000 investigations have occurred. Although some (perhaps 10%) of these excavations are formally published (through journals, monographs etc) and some 43,000 so-called 'Grey Literature' reports arising from work undertaken since 2005 are freely available online via the Archaeology Data Service, many more remain relatively inaccessible, lodged with local authority planning departments, HERs or, occasionally, still held by the excavator or client.

Reasonable concerns were raised at the time of the introduction of PPG16 - and in what was effectively a pre-Internet age – about our capability to digest and make sense of the expected deluge of data¹, and to a considerable degree these fears were realised. However, in the last decade this situation has changed. We have begun to reap the potential of this vast body of data to contribute to new insights through a series of large-scale syntheses, undertaken primarily within academic institutions or as collaborations between universities and commercial archaeological practices, and funded either by major charitable trusts (eg Leverhulme), AHRC, and/or English Heritage (now Historic England). In 2005, Bradley was able to assert of his survey of the British and Irish later prehistory that '*we can now prove that good and useful work is being done: the challenge now is to make it [commercially led evidence] more readily accessible to ensure that it is put to good use*'². In 2011, Fulford and Holbrook could claim that '*In the twenty-two years since the publication of Richard Hingley's Rural Settlement in Roman Britain there has been an increase in knowledge of several orders of magnitude*'³. And in 2013, Thomas noted of the value of large-area development-led investigations, that '*Their value is especially high when the results from multiple investigations are combined*'⁴.

The British Academy Reflections on Archaeology identifies (in academia) new kinds of archaeological enquiry and synthesis emerging, observing that '*Some archaeologists do not ever engage in fieldwork, their research instead relies on existing information often now in so-called 'big data' projects, building large databases of compatible information and analysing them digitally, with an especial emphasis on the spatial and temporal patterning of information*'.⁵ And the development industry itself has seen the value of such projects. Melanie Leech, Chief

¹ Cunliffe, B, 1990 'Publishing in the City', *Antiquity* 64: 667-71; Thomas, R, 1991, 'Drowning in data? - publication and rescue archaeology in the 1990s', *Antiquity* 65: 822-8

² <http://www.archaeologists.net/sites/default/files/ta56.pdf>

³ Fulford and Holbrook, 2011 *Antiq J*, 91, , pp 1-23; doi:10.1017/s0003581511000138

⁴ Thomas, R M, 2013 'Bridging the Gap? Scale and Development-led Archaeology in England Today', *Landscapes*, Vol. 14 No. 1, June, 2013, 92–102

⁵ <http://www.britac.ac.uk/reflections-on-archaeology>

Executive of the British Property Federation, in her foreword to *Building the Future, Transforming our Past: Celebrating development-led archaeology in England, 1990-2015*, said 'What particularly excites me is that university researchers are now using the enormous body of development-led archaeology results as the basis for major national research projects, looking at the findings from hundreds of individual development sites'⁶.

Despite this considerable advance, it is quite apparent that we are not yet confident or comfortable enough with the manner in which we synthesise data to ensure that it can regularly, intuitively and rapidly deliver advances in knowledge and drive future research questions.

Reviewing the progress of the Roman Rural Settlement project in 2011, Fulford and Holbrook observed that '*developer archaeology, by its very nature, has an inevitable focus on single sites or, in the case of infrastructure projects, groups of sites. Opportunities for synthesis have been rare.*' Commenting on the limiting scale of the undertaking, they calculated that University of Reading researchers had spent around 10 person years interrogating c.3,500 grey literature and published reports, making it likely that such syntheses would be a '*once in a generation event*'. They further recognised that the mass of developer-funded archaeology had '*engendered an urgent need to review our research aims in relation to the agricultural economy of Roman Britain and how we might achieve them*'.

Reviewing a very extensive synthesis of developer-funded later prehistoric archaeology in north-west Europe in 2015, Harding reminded us of the need for total synthesis: '*...whether one can write a prehistory of an area based solely, or even mainly, on rescue excavations... there is bound to be a tension between the story already known (from all kinds of fieldwork, not just rescue work) and the story that development-led work can produce. Neither is complete in itself...*'⁷

And in the case of the 'big data' projects – for example the University of Oxford's EngLaiD project – very considerable difficulties have been encountered in gathering and preparing national or regional data in a consistent format for interrogation at sufficient speed to fit the timeframes of even the largest research grants⁸.

Against this background of extraordinary potential and constraints of scale, access and methodology, the technological basis on which synthesis can be founded is changing very rapidly too. Along with extremely sophisticated Geographical Information and visualisation technologies, research infrastructure and common reference languages for archaeological datasets are emerging (ARIADNE, CIDOC Conceptual Reference Model)⁹ along with semantic searching (where the *sense* and *context* of data can be searched, rather than just the appearance of a search term

⁶ <https://content.historicengland.org.uk/images-books/publications/building-the-future-transforming-our-past/building-future-transforming-past.pdf/>

⁷ http://www.prehistoricsociety.org/files/reviews/Bradley_et_al_Later_Prehistory_final_review.pdf

⁸ <http://www.oerc.ox.ac.uk/projects/englaid>

⁹ <http://www.ariadne-infrastructure.eu/>; <http://www.cidoc-crm.org/>

alone) are now routinely used in a wide range of sectors¹⁰. So brand new and very powerful tools are increasingly at our disposal.

Overseas, national approaches to synthesis have been developed. In Ireland, the INSTAR programme aimed to synthesise the results of numerous projects from the 1990s and early 2000s¹¹, while in the US, a 'National Center for Archaeological Synthesis' has been proposed¹²

This conversation will not focus on the details of particular projects or specific approaches. Rather, it aims to open the debate about how we might aspire to a world where data and information are gathered and presented with the specific intent of ensuring that they can and will be accessed, synthesised and fed back into a virtuous circle to provide new narratives and set more pointed research agendas for future work. We will also explore who is best placed to fund and undertake synthesis. Workshop 6 in the 21st-century Challenges for Archaeology series will pick up the baton from there, considering issues of publication.

¹⁰ For example: Medicine (<https://academic.oup.com/bib/article/7/3/256/327857/Bio-ontologies-current-trends-and-future>); Tourism (https://link.springer.com/chapter/10.1007/978-3-319-51168-9_14); Built Environment: <http://www.semantic-web-journal.net/blog/call-papers-special-issue-semantic-technologies-and-interoperability-built-environment>

¹¹ <http://oldsitehc.info/seandalaiocht/tionscnaimh/instar-web-archive-grant-programme/?L=3>

¹² Heilen, M, Ciolek-Torello, R, and Grenda, D, 2016 'Enabling Archaeological Research within a Cultural Heritage Management Context: A View from the United States', in Novaković, P, Horňák, M, Guermandi, MP, Stäuble, H, Depaepe, P & Demoule, J-P (eds.) *Recent Developments in Preventive Archaeology in Europe Proceedings of the 22nd EAA Meeting in Vilnius, 2016*
<http://www.ff.uni-lj.si/sites/default/files/Dokumenti/Knjige/e-books/recent.pdf>