

**Discussion 5 in the 21st Century Challenges for Archaeologists Series:
'Synthesis of information from developer-funded investigation to create new
historical narratives'. 25-26 October 2017**

Project members participating

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Also...At the “London’s Historic Environment Strategy” Facebook group, Peter Eldon Rowsome noted that the need for syntheses (especially period-based syntheses) were represented in the Greater London Historic Environment research Strategy).

Introduction and Setting out the Questions

Welcome to this 5th online discussion in the “21st-century Challenges for Archaeology” series, led by the Chartered Institute for Archaeologists and Historic England, taking place from now until tomorrow 26th October 2017. This time the discussion will focus on how we transform recorded data from archaeological investigations into wider knowledge and new narratives.

Further background briefing information for this discussion is available through the ClfA website: <https://www.archaeologists.net/sites/default/files/21st-century%20Challenges%20Workshop%205%20programme%20%20.pdf>

You can also catch up on the four online discussions and workshops that have taken place so far at: <http://www.archaeologists.net/21st-century-challenges-archaeology>

or find out more about the project generally from the Historic England website:
<https://historicengland.org.uk/whats-new/research/21st-century-challenges-archaeology/>

If you are reading this after 26th and have missed the main online discussion, you can still contribute as comments on the recommendations from each workshop (see main ClfA project page above) are invited. Please send to them to Jan Wills (janwills@keme.co.uk).

Here are the questions we'd like to consider (Qs 1-7 of 10)

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?

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[Robin Page](#) ..and Qs8-10 of 10

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?

Main online discussion

Robin Page- on behalf of Barney Sloane

Barney Sloane of Historic England will be joining us later, but here is his take on the discussion and why it's so important:

"Welcome to everyone!

If there is any reason at all to fund and undertake archaeological investigations, it is, surely, to increase the sum of human knowledge – to learn who we are and where we came from, to spark wonder and inspiration, and to help the lessons of the past inform our own future.

Archaeological activity across Europe and beyond has burgeoned in the last quarter-century, due in part to the Valletta convention, in part to an accelerated investment in

infrastructure (roads, rail, energy etc), and in part to the increased adoption of a 'polluter-pays' principle of funding. In England this last is especially true: we now undertake very roughly 5000 investigations a year..."

..."The online Grey Literature Library managed by the Archaeology Data Service (www.archaeologydataservice.ac.uk) has some 45,000 reports available, free, worldwide. The British Library electronic Thesis service (www.ethos.bl.uk) has 3000 PhDs on archaeology available to download. And this is all in addition to the formal publications of journals and monographs.

This extraordinary resource present huge opportunities as well as daunting challenges. CIFA and HE are both very keen to find ways to harvest the riches and surmount the challenges. We have posed a few questions to help galvanise the discussion. These effectively fall into two categories – about principles and concepts, and about practicalities and policies. It might make sense to tackle them in that order, the logic being that if we know where we want to get to, we can then work out what mechanisms we need to get there."...

...This is no empty academic exercise. The justification of the cost of archaeology is vitally important both at an individual funder level and at a national policy level. Closing the loop between what we already know and what we set out to learn will make that justification far easier. It is our hope that what comes out of this online discussion and from the workshop which will follow will make a significant contribution to that endeavour.

We look forward to a creative and stimulating discussion. Many thanks for taking the time to join in."

Martin Locock Although access to the primary data is important, even more important is that the data is properly reflected in the key searching tools, in the case of archaeology this should be the HERs. If people preparing syntheses have to rely on workarounds because the HER coverage is incomplete, inconsistent, or not current, the profession as a whole is having to do the work twice. HER backlogs and data quality are therefore fundamental issues in the development of an effective synthesis framework. (there are primary data backlogs due to post ex but to some extent these are inevitable since there are dependencies which prevent parallel working: HER backlogs only exist because of lack of resources)

Thanks, Barney, and welcome from me at ClfA too.

Picking up the first question that we posed, I'm interested in the disconnect (as I see it) between the world where the need for the development -led investigation is identified and then specified (i.e. the planning system), and the end use of the data generated for synthesis (in an academic context). Is there a disconnect? How can we join up the two worlds rather better?

Michael Heaton Forgive me if I don't answer the numbered questions directly, but this is a huge challenge that, I believe, requires wholesale changes to the way

commercial archaeology is undertaken. I am a great fan of the PPG16-inspired system, but the opportunities it offers are being squandered, for reasons I have written and ranted about already; whilst our knowledge exchange strategies are stuck in the 19th century. The fundamental problem is that all commercial archaeological contractors are stuck in a treadmill that leaves them no time for wider consideration of the data they are collecting, whilst academics seem uninterested in the results of commercial projects. Not until we have learned to reduce our workloads and increase our financial returns through the demand-management intended by PPG16, will we have time for the 'blue sky' thinking necessary for the realisation of our intellectual aspirations.

Sadie Watson To try and answer Jan's question about the disconnect - I think we should sub-contract academics with expertise in a particular area to contribute to WSIs etc, in the same way we would sub-contract a finds/enviro specialist. They could inform which data; and how it should be collected from the start.

Nicola Thorpe Following on from your point Jan - are we indeed clear about the parameters / potential of that 'end use'? Is there sufficient clarity / agreement about what synthesis (as both an action and a product) is?

Phil Mills From a personal point of view (as a freelance pottery and CBM specialist) I try to cost the analysis of comparative data certainly at regional level certainly for any publication/ analysis (and this is usually accepted by my clients) In practical terms this is comparison with published phase groups and increasingly what I can find on OASIS (as less and less data is being published formally) backed up with informal data sharing with other pottery specialists - in practical terms I can't visit HERs very often as my clients aren't generally that understanding....

Kate Geary I think Mike is right; as we found in the WSI workshops we ran last year, seven years on from the replacement of PPG16 'preservation by record' is still the abiding principle. Archaeological investigation undertaken as part of the planning system is not routinely being designed with the aim of increasing the sum of human knowledge and it would appear that the sector needs ongoing support in order to change that.

Rob Lennox What potential is there for closer working between major contracting organisations and university departments? This would not only enable greater connection, inspiring that interest in development-led archaeological data, but would also bring students closer to the process, and even provide opportunities to widen public engagement as at least part of the research imperative will be able to be taken on in a different context.

Jan Wills An underlying strand in many comments seems to be that we need to think more about what we're doing and why we're doing it, and to do the thinking together out of our silos. Any takers for working out how we do this?

Kate Geary The pre-AGM workshop we're running on Friday will look at opportunities for greater collaboration between the 'commercial' and academic

sectors and discussion at the end will, I hope, consider exactly that. The workshop is now fully booked which shows how interested archaeologists wherever they work are in this subject and, I hope, an enthusiasm to work towards solutions.

Edmund Lee One approach to closer working between universities and commercial units is the Knowledge Transfer Partnership scheme: a 3 way partnership between a business, a university and a recent graduate. I don't think archaeology has used this route yet, but happy to be corrected! <https://www.gov.uk/guidance/knowledge-transfer-partnerships-what-they-are-and-how-to-apply#who-can-take-part>

Barney Sloane Picking up Michael's point regarding academic interest, I am aware of a number of recent, significant (and successful) grant applications to the likes of AHRC and Leverhulme by academic teams which are focusing on synthesis of commercial data. I think the key to driving more interest here is simple access to that data. What does this imply for the way we create research frameworks, and dependent upon that, how we articulate specific research designs and report against them?

Bert Groenewoudt We have recently done exactly the same in the Netherlands, organised by our Cultural Heritage Agency (RCE). Details on the way it was organised, and lessons learned, in English, in:

https://www.academia.edu/33432428/Synthesising_data_from_development-led_archaeological_research

<https://cultureelerfgoed.nl/publicaties/knowledge-for-informed-choices>
(Chapter 8)

Edmund Lee On Q2, a specific issues raised by the Roman Rural Settlement Project methodological studies, was the need for artefact / ecofact specialists to know (if only as an estimate) the volume of the contexts excavated on site, to allow comparison of assemblages. Do any units listening in routinely record that information and pass it on to specialists?

Edmund Lee On Q3, the evidence from RRSP suggests we are not: "Sometimes rather than a single pdf report, specialist data are made available as individual downloadable files (excel spreadsheets for instance). There can be advantages to the latter approach as this allows the specialist researcher to re-order data and amalgamate results from a number of different sites without the need for manual re-keying"... RRSP paper2 <http://cotswoldarchaeology.co.uk/wp-content/uploads/2017/08/RRS-Methodology-Paper-2-field-practice.pdf>

Edmund Lee On Q4, Phil - can you expand on why you feel "less and less data is being published formally"? Do others agree? That's a crucial issue for this discussion, I'd say. What are the causes? Technically it has never been easier to publish data files.

James Dinn I agree with Martin and Jan about the importance of HERs in this process - but there need to be better ways of feeding the results of synthesis back into the HERs.

James Dinn Trying to explore Jan's 'disconnect' a bit more. The planning system delivers (successfully or not) a lot of things which are not actually development, including archaeology. What counts is how we are able to use the hooks in that system. We engage in two main places - NPPF para 128 for describing significance, and para 141 for recording and advancing understanding of significance. The 5000 interventions are split between these, not sure of the proportion. Describing significance (evaluation) is never going to do as much for synthesis as 'mitigation' will - but a key question for me is how (and how far) evaluation can go beyond description towards setting out a research agenda for mitigation.

Barney Sloane Thanks James, although the only bit of national synthesis I have personally done (medieval graves for the Requiem book back in the early 2000s) was less focused on the pre- post-determination split and more on identifying the presence of potentially valuable info. I think there may be a block in the cycle of [current knowledge]>[Research Design]>[Investigation]>[Analysis]>[Dissemination+Archive]>[Updated Current Knowledge]. Could we systematise that in any way to benefit each new potential project?

Robin Page Posting a personal thought of my colleague Jonathan Last (Landscapes Strategy Manager). "With aerial mapping to National Mapping Programme (NMP) standards now covering more than 50% of England it may be worthwhile to investigate whether these data-sets could provide a useful framework both for informing the appropriate scale of synthesis and creating landscape narratives that incorporate information from development-led investigations. This is what we tried to do as part of HE's National Archaeological Identification Survey (NAIS) South-West Cambridgeshire project, which also looked at how each type of data complements and informs understanding of the other."

Robin Page Jonathan continued..."A related challenge is to develop ways of presenting and interpreting the evidence that do not privilege a particular scale but are properly multi-scalar, linking landscapes, sites, features and artefacts within an integrated narrative framework. Given the map-based methodology of the NMP, one way forward might be to further explore the possibilities of GIS 'story maps' alongside or instead of traditional synthesis."

Edmund Lee A step towards bridging the [Dissemination+Archive] >[Updated Current Knowledge] gap is shown by the East Midlands Research Framework wiki. See end of this page <http://archaeologydataservice.ac.uk/researchframeworks/eastmidlands/wiki/Media...>

James Dinn Barney I think you are right. What I was trying to say was that while mitigation work can and should directly address advancing understanding, it's much

harder with evaluation. There is a big difference between the two types of investigation, albeit they use the same set of techniques. Maybe the presence of medieval burials was a strong encouragement to find design approaches which avoided the need for larger-scale investigation?

Phil Mills Hi Ed - what I meant is that the sort of data I use(pottery occurrence. phase groups) I can generally find in the grey literature but by the time the site is formally published that data is being left out (which makes me wonder why I subscribe to so many regional periodicals)

Phil Mills I think that there are increasing constraints to word length for journal publication driven by drives to keep journal costs down - but not really my area

Martin Locock I'd second Phil's view from an animal bone perspective- although a massive amount of time and money has gone into identification and analysis, the published version is usually restricted to a summary table or two.

Phil Mills In terms of disseminating the data - very few of my clients appear to expect a digital copy of my full catalogue or have any specifications of what form it should take - and it is unclear to me what happens to such files after I have submitted them!

Phil Mills I certainly agree having data in a spreadsheet or similar is much more useful than trying to extract it from a pdf to get into a database

Phil Mills and to answer Ed again - the only clients I have that regularly supply volume information are academic ones

Jan Wills Hi James, There are very important moments in the planning casework process - as you say, assessing significance, and specifying investigation (if the development is deemed acceptable with conditions). Both have a fundamental effect on what data we end up with - do you think curators/contractors have the knowledge and resources to make judgements and develop projects that do advance understanding, or is there no time/resource to do this??

James Dinn That's a very big question! Yes, up to a point, but most curators and contractors are GPs, not brain surgeons, and to get the best research needs more than 1 or 2 people's input and quite probably some specialist (academic?) advice. Projects like the Roman Rural Settlement are tremendously useful where they exist, though there is a danger that they will be used as a substitute for thinking by hard-pressed archaeologists. There is also the question of having the confidence to not do a mitigation project, because the judgement is that it won't advance understanding. And as for urban sites ...

Stewart Bryant a couple of points: an issue which links those involved with development-led archaeology and the academic community (and which could be the

focus for discussion between those parts of the sector) are the data issues that are barriers to developing good national synthesis. For the Roman Rural Settlement Project, it was pottery quantification (amongst others), which is now being addressed. For later prehistory, the evidence is more anecdotal, but chronology, especially the lack of absolute dating, appears to be a problem. Another more local issue (occurring frequently in the East of E) is where a single synthesis is required for site - or landscapes - which have been worked on by multiple contractors. Here, there may be a case for requiring financial contributions (as part of WSIs) from all the developers involved to producing the single synthesis?

James Dinn Stewart, that would be a great way of dealing with synthesis in urban archaeology as well.

Robin Page In case there are any non-archaeologists following the conversation, I believe "WSI" in this case means "Written Scheme of Investigation".

James Dinn Further to the discussion about full publication of individual sites, several recent projects in Worcestershire have had a short 'highlights' report in the county journal, with a full detailed report available online through the County Council website and also via ADS.

Robin Page Thanks for all the useful and thoughtful comments so far today -and greetings to potential participants just joining us from the US. I have to sign off now, but please do keep the contributions coming.

Jan Wills Likewise I have to sign out, but look forward to hearing more tomorrow, on the subject of synthesis of information from development-led investigations. Use some of our questions posted above, or give us your thoughts on any aspect of this topic. Thanks to everyone who has participated today.

Robin Page Welcome back to day two of the discussion. This morning I've received by email some thoughts from contributors to the UK Academic Archaeologists List that cited the Roman Rural Settlement project that we discussed yesterday and also a project on Roman London synthesising some commercial and academic work. One comment also suggested that provision for synthesis should be built into the process of commissioning archaeological projects.

Nicholas Boldrini I'd like to question the first assumption here, that Synthesis should only happen in Academia. There is also an assumption here that it is only commercial archaeology that produces data that doesn't see the light of day. ALL work (ideally) should involve an element of synthesis, but that is sometimes hindered by information in academic circles not being available to non-academics. That issue also needs to be addressed.

Nicholas Boldrini On Question 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?

This is a tough one. It raises questions of what is reasonable in planning terms. Is it

reasonable to ask developers for synthesis of data from sites which are not part of their development impact? Is it reasonable to ask them to fund this even indirectly? Is there any precedent in other disciplines for this sort of thing eg ecology?

Nicholas Boldrini Arguably, in planning terms, they fulfill their NPPF obligations by producing a report/publication, which should include some basic attempt at synthesis. Synthesis outside of those documents is arguably not their responsibility. I can see developers resisting this if it will raise costs (ie an extra 1% on each evaluation for the Escrow fund), and if it doesn't come as extra, then it means that each individual site has 1% less funding to examine it.

Nicholas Boldrini Questions 8, 9 and 10 - the new research framework proposals (wikis) would seem to be an attempt to deal with this issue. And their success might be a good measure of synthesis success.

Whether these work largely depends on regulation by Local Authority Curators, who are getting thinner and thinner on the ground.

And it raises the question - what does this synthesis look like? Is it an academic publication, published in a journal curators can't access? Or does a Wiki count?

Edmund Lee Q7. for synthesis at the level of an individual site, with multiple previous investigations should this not be an objective of Desk Based Assessment, which seeks to "determine...the nature, extent and significance of the historic environment within a specified area"? The word synthesis isn't used in the CIFA standard, but perhaps that's the way to build it into the developer funding and planning model. Better DBAs would also help close the research loop that Barney referenced http://www.archaeologists.net/sites/default/files/CIfAS&GDBA_2.pdf

Robin Page Posting on behalf of Professor John Barrett of University of Sheffield. "The problem, as I see it, is that developer led policy is effectively a policy of Cultural Resource Management in which 'we think that this stuff matters and we had better record it before it goes' is a motivation that runs throughout the history of 'rescue archaeology' and is expressed by the old 'preservation by record' notion. This is NOT the same as investigating the material to gain a historical understanding of its significance. And who said that understanding (aka research) is a matter of 'synthesis'? Synthesis is just a matter of accumulating ever bigger patterns of the Cultural Resource, it is not a matter of understanding the historical significance of that resource, or for that matter the old (new archaeological) motivation of explaining why such patterns had come about."

Barney Sloane On Nick's point, I am not sure that anyone has made the assumption that Academia *should* undertake all synthesis. It does remain the case that academic institutions have more opportunity to undertake major works of synthesis because of the funding models. I would certainly like to see the opportunities available equally across commercial, academic, governmental, and third sector groups/institutions - wherever the expertise and capacity exists. The Roman Rural Settlement project brought Cotswold Archaeology and Reading University together, and combined funding from a charitable trust and a Government body (Leverhulme

and EH/HE) - and even a private individual. What would trigger more such collaborations?

Robin Page And posting about the perceived academic/ commercial disconnect on behalf of Professor Richard Hingley, Professor of Roman Archaeology at Durham: "I suppose that one reaction is to mention the Reading-based Roman Rural Settlement project - this has successfully (to my mind) created excellent synthesis based on a set of really interesting research questions. An issue here, from the university research side of the divide, is that we find it really hard to justify synthesis based research where we cannot gain research funding (preferably from the Arts and Humanities Research Council or the British Academy which pay overheads). The Reading project was funded by Leverhulme and there may be possibilities for university department to do more of this. The Reading project was masterminded by Mike Fulford and Neil Holbrook, so it interfaced between a unit and an academic department."....

Robin Page Prof. Hingley continued..."I have a new book on Roman London in press and I have attempted to synthesise the published material from commercial archaeology. The scale of the project means that I have had to be very choosy and I have followed rather a thematic/theoretical lead. I did this without a grant but supported by the other two major AHRC-funded projects that I have been leading since 2007. These two projects do not involve synthesis of excavated material. One was on the afterlife of Hadrian's Wall and the other is the 'Ancient Identities' project (see first footer below). AI is looking at perceptions of Iron Age and Roman Heritages across the UK. It is divided between a digital heritage theme (based in UCL) and ethnographic research (based in Durham).

Having previously worked in heritage management, I am very interested in encouraging discussion about how we bridge between commercial and academic archaeology."

Nicholas Boldrini Jans first comment yesterday, to me, suggested the model I was challenging.

Barney Sloane On John Barrett's point, I entirely agree. Synthesis does not = significance. It does, I assert, permit nuanced understanding of the broader cultural patterns that are not detectable at the site level (however significant that site might be). Consider the notion of regionality being explored by the Roman Rural Settlement project, or the detection of persistent yet very rare unorthodox medieval grave rites found by myself and Roberta Gilchrist. I'd argue that these patterns can really aid the focus and methodology of new investigations, and refine the research objectives to avoid unthinking repetition. But its hard to do and I want to see whether we as a profession can find ways of making it simpler and more integral to archaeological practice.

Nicholas Boldrini Responding to Eds point, DBAs could be a place of synthesis, but they are the start of a new phase of development (usually) and I would suggest that the synthesis would perhaps be better in the final phase of an investigation (ie the reporting) of work done on a site.

Barney Sloane I am aware that a group of archaeologists in the US is attempting to set up a National Center for Archaeological Synthesis. It is modelled on the experience there of gathering ecological data together. Here is an introduction: <http://www.pnas.org/content/114/42/10999.full>. It would be interesting to see what people think of this approach.

Jan Wills Hi Nick, I now can't find my earlier comment but I think it was a general point about the disconnect between the place where the data originate (the planning system) and the place where they are drawn on for synthesis. The first determines what's available for the latter, and works within a very specific structure/policy framework. In my previous life I initiated some synthesis projects within a local government context - one soon to be published - but it's very difficult now to find capacity to do these kinds of projects in that environment. As to Barney's point about how to trigger collaborations such as the RRS: has this project demonstrated well enough to academics the potential of the data held from development-led investigation? Show less

Edmund Lee Barney, Nick, yes I agree (mostly). Synthesis at a site level via a DBA would not resolve the issue, but it may help the discussion to break 'synthesis' down into different complementary types or scales of work as I think was mentioned yesterday. Even if only to get to your point that significance is not = 'synthesis', which I agree with (though to get to significance surely requires some synthesis of values: evidential, communal, historic etc). At the site level I suggest that pre-investigation and post-investigation synthesis would also complement one another and help shape investigation: 'this is what we thought we knew before we started' > 'this is what we know now' = 'here's the knowledge we've gained'

Bob Sydes 1/2 Jan, you hit the nail on the head earlier on. The questions being posed in this discussion are, to my mind, the wrong ones. They reflect an inward looking process driven 30 year old (PPG16) model of archaeology that has frustratingly not managed to keep pace with a changing world. We need to concentrate on, why we do what we do and who we do it for. As I have said before, the all too apparent disconnect in our profession is deep and broad and the losers to my mind are the communities in whose patch we carry out our mitigations and evaluations and in whose name we supposedly act. How do we tackle this? For a start we should just accept that what we do is just not good enough in terms of public benefit and we should start having serious discussion on developing new models in which we professionals work with, and for, the local communities in the true spirit of 21st century archaeology.

Bob Sydes 2/2 I think Mike's observations on the squandering of resources and the treadmill of commercial archaeology are illuminating and should be taken more seriously than I think they are. The issue of how we deal more practically with archaeological data and syntheses is not the thing. What is the thing, is how we turn this mountain of material into coherent historical narrative that we can better share with the wider community of non-technical and technical audiences. How might we integrate the Young Archaeologists Club into real time archaeological fieldwork?

How might we seek the active engagement of local communities in evaluating the significance of the historic environment in their patch?

Bob Sydes 3 (sorry) In response to Sadie's point on WSI's, yes, a great idea but let's not stop just there. Academics have been involved in the preparation of Regional Research Frameworks in some regions and there has been an increase in more locally based University research projects – think Star Carr in my own region. Is there a tendency to spend a development investor's capital on archaeology (controversial statement warning) that has more to do with job creation than addressing local or national research priorities?

Bob Sydes Caveat - For some reason I did not have many of this mornings contributions in my feed when I wrote my piece, so Nick B, fully agree on the point on academic publication and James Dinn, "having the confidence to not do a mitigation project, because the judgement is that it won't advance understanding" is a more polite way of putting my point!

Barney Sloane Thanks for your comments Bob. I realise there are wider concerns about the nature of development-led archaeology, but in this particular online discussion we were trying to establish how we could best unlock the stories contained in the thousands of investigations which take place yearly. That does focus on a key concern of yours (in your 2/2) of "how we turn this mountain of material into coherent historical narrative that we can better share..." I think its hard to tell the story if you haven't worked out what that is, whether your audience is local and non-technical, or international and highly specialist. The 6th workshop in this series will look at publication and dissemination, so perhaps the focus on local communities as the audience should be raised there?

Jan Wills picking up Bob's 'mountain of material' (not literally), and apart from well known national examples such as the RRS how much do local govt colleagues think the potential of HER data from the last 25 yrs + of investigation is now appreciated by academic colleagues as a research resource?

Jan Wills maybe I can rephrase the same question to Barney and say from your perspective are more of the sort of collaborations like RRS (or on smaller scale) coming forward with an eye to mining the post-PPG16 mountain of data?

Barney Sloane As far as Bob's (3) 'controversial' statement, the relationship between the spend and the priorities can be a relatively weak one in many cases. Do people think there is a way to make research designs more keenly focused, and field methodologies more attentive to those research objectives? Is there a way of ordering the resulting reports so that access to key information is made more straightforward? Or should we be looking at machine learning technologies (such as natural language processing) to help?

Barney Sloane Jan. Yes, I would say that the frequency is increasing, albeit slowly. Historic England (as well as AHRC and Leverhulme) have grant-aided regional or national projects. The difficulty is where more local synthesis might be helpful -

gathering evidence for, say, a single river catchment or upland zone, or examining local material culture trends such as diet or industrial development. We don't currently have any obvious models for driving such work forward, so have little evidence to see how valuable that might be.

Nicholas Boldrini This is increasingly (to me anyway) looking like a job for the Regional research Frameworks, in there new improved versions. If done right they may well fill this gap, and thus make syntheses at higher levels easier.

Jan Wills Can we make the new generation of RRFs act as the stimulus to this more local work?

Judith Winters This will of course be revisited in the Publication challenges workshop in December, but I just wanted to mention in response to some earlier comments, that the journal Internet Archaeology IS interested in publishing data and synthesis etc etc. and don't have a page/word limit. I would be very keen to collaborate more with the commercial archaeology sector for those projects where broader dissemination is needed and where full(er) publication is a condition of discharge. Much can be done to enrich and encourage reuse of even the most straightforward of outputs. We have recently published an example from a commercial unit which include specialist catalogues / data <https://doi.org/10.11141/ia.45.3> and I am in discussion with a(large) unit about another.

Barney Sloane HE's Dan Miles is working with the East Midland RRF team to develop a wiki-type pilot which we hope can ensure that the RRF will remain dynamic and become scaleable. If it succeeds as we hope it will, I think that may well stimulate such local work - and help specialists to argue a case for more than 'spot-dating services' (if I can put it like that). However I can't yet see the funding model. HE could never cover it I am afraid. Ideas anyone? Stewart Bryant suggested yesterday that all developers in a particular locale might contribute, through the WSIs. Could that work at a national level?

Terry Klein Greetings from across the pond! This is Terry Klein of the SRI Foundation, and also President of the Register of Professional Archaeologist. Sorry to jump in so late - can blame it on the time difference! Excellent discussion and ideas, and we are having very similar discussion about synthesis here in the US. In a quick read of all of the comments, this discussion is looking at different types of synthesis: synthesis of classes of sites, synthesis of periods, synthesis of regional data, etc One thing that has been slowly growing here in the US is the development of regional archaeological syntheses or syntheses of a class or classes of archaeological sites as a tool for heritage management decision making as part of compliance with our historic preservation laws and regulations. These syntheses are developed as part of what we refer to as "creative" or "alternative" mitigation. That is, a mitigation plan includes as an integral element the development of a synthesis.

Terry Klein And to continue, the development of a synthesis is part of the mitigation budget paid by the developer or federal agency. In some cases, the development of the synthesis is an addition to normal archaeological data recovery. In other cases, a

decision is made by all of the parties not to dig, or to dig less, in order to develop the synthesis as a future planning tool. And these syntheses provide the framework for defining site significance, research questions that are to be applied to future excavations/mitigation, and even where to conduct future inventories. In a few cases, these syntheses also provide the foundation for public outreach and education on the topic covered by the synthesis. Well, enough of my rambling for now! Good discussions everyone!

Jan Wills Hi Terry, and glad you could join us. If you are still out there: this sounds wonderfully collaborative. How are you securing that collaboration across what must be diverse parts of the profession i.e. commercial, govt, academic etc

Helen Wells Hi, haven't managed to read all the comments, but HERs are the obvious place to go to get developer-led archaeological data (they're the only places that should have all the data) and they very rarely seem to be used by academics to create syntheses. Creating syntheses is something our old pre-cut Museum Service was good at, and some regional publications still come of avenues such as the Leicestershire Fieldwork Group (for example "Medieval Leicestershire: Recent research on the Medieval Archaeology of Leicestershire"). But sometimes I WISH we had the ability to do more with the data (there's so much!). I've been to talks by academics that are so out of date because they haven't include the last 20 years of developer-led fieldwork. What you do to fix this I don't know...

Robin Page Reinforcing what Helen has said I cross-posted Jan's question about use of HERs to the Jiscmail list for HER officers, in the albeit small straw poll of replies the observation was (with some local variation) that there wasn't often much take up in direct approaches to HERs by the academic community and where this did happen it was more likely to be students rather than more established academics. One poster also noted that there was also little feed in to HERs from academics.

Terry Klein Jan, this is done through the consultation process that is an integral part of our historic preservation compliance process. Folks sit down at the table and discuss how best to mitigate impacts on an affected archaeological site and then hammer out the process, which in this case includes some creative mitigation involving the development of a synthesis. The development of the synthesis is then codified in a formal and legal agreement among the parties, usually including the federal agency, the state historic preservation agency, the developer/applicant for a federal permit of funding, and other participating parties. Universities are usually not involved unless they have a role in carrying out some element of the mitigation. The actual development of the synthesis is usually done by a commercial firm hired by the lead agency or the developer. In some cases, the firm may participate in the development of the mitigation plan/synthesis development.

Terry Klein We have another tool that can lead to the development of these types of syntheses: statewide programmatic agreements for a single federal program within a state or for the management of a class of heritage resources. These agreements are prepared outside of the project-specific process and lay the groundwork for all future projects that fall under the purview of the statewide agreement, establishing

how historic preservation compliance is done for the program or class of resources. So, the agreement would stipulate that syntheses will be developed going forward and establish how these would be paid for. A few federal agencies actually have planning funds that can be used to prepare these syntheses, which again are planning tools for future projects. The selling point for all if this is having the syntheses in place streamlines future compliance in terms of time and cost.

Jan Wills Terry - this is very interesting and so different from what we do in UK. What range of projects/development would this apply to? By which I mean is this the standard approach, or just big developments e.g. infrastructure? And who decides, who holds the power in the process?

Jan Wills Thanks Robin - useful to capture this information.

Terry Klein We too, here in the US, have not been very successful in getting universities to use data from commercial archaeological work, and taking these data to the next level to enhance our understanding of the past and to share this understanding with the public who are paying for all this work. There are, however, a few universities that are doing this, and these are universities with strong departments that recognize the value of compliance-mandates archaeological work. In a few situations, this is accomplished through both formal and informal partnerships between a commercial archaeological firm and a nearby university.

Terry Klein Creative mitigation of the type I am referring to is usually done on large infrastructure or development projects or where a major site is being impacted by what could be a small project, such as a highway bridge replacement. However, if you take a programmatic approach at a state or regional level, you could bundle lots of small projects, but I have rarely seen this done. The decision maker in this process is the agency who provides the funding or the permit, but this is still done as a consultative process among all of the parties. I should say that the approaches I am discussing here is not a common, every-day practice in the US, but is a growing one given that some agencies, state historic preservation offices, and commercial archaeologists are not happy with doing the same old, same old. Many of us want to do archaeological work that results in an improved and enhanced historic preservation payoff.

Barney Sloane Thanks for joining Terry. I wonder, are there published examples of a local and a statewide synthesis developed using the process you outlined earlier? It would be useful (for me at least!) to see the outputs themselves. It sounds a really interesting model to explore with colleagues here.

Terry Klein Unfortunately, there is no one place to get examples of these syntheses, they are scattered here and there in agency and state historic preservation offices. They are all part of the "grey literature" associated with commercial archaeological work. Let me ponder this a bit more and see if I can compile some easily accessible examples and maybe send them to someone within ClfA.

Nicola Thorpe Considering Jan's point about data 'potential', and having analysed a number of synthesis projects working predominately with GL for my doctoral

research – statements of potential are often couched in terms of data being new, fresh, unfamiliar, ‘unbiased’ – and it is a common attribute of most synthetic projects to claim how the potential of data increases exponentially when considering their accumulated value. The mechanisms for unlocking this potential seem to stem from the data’s cumulative or relative values, and sometimes value is merely inherent within the data. Describing, compiling and comparing data, as a means of synthesis is perhaps falling short of the true purpose of the act. Agreeing with John Barrett’s earlier point – accumulating the details about more stuff doesn’t necessarily mean that stuff is more likely to lead us neatly towards the narratives we aspire to write, and the histories we aim to understand.

Terry Klein I know that it is getting toward the end of the day in the UK, but I need to do a plug (commercial) for a different type of archaeological synthesis initiative that has just been launched. We now have in place a Coalition for Archaeological Synthesis (CfAS), and this initiative is not restricted to the US. The goal of the Coalition is to foster synthetic research on important social science questions whose answers will have important implications for addressing contemporary social issues. This initiative does not involve doing regional syntheses, or syntheses of classes of sites, but looks at using archaeological evidence (and other types of data) to address research issues that will have a social and public policy impact. The Coalition’s website is at <http://www.archsynth.org/index.html>. Do let me know if anyone has a problem accessing the website. Thank you all!

Robin Page I have also seen this from Nina Steele via HER Forum about the situation in Wales- "In Wales there has recently been a discussion about the need for HERs and other record-holding institutions (e.g. RCAHMW, Cadw, National Museum) to engage with universities in order to develop closer relationships with them. We are keen to highlight the relevance of HERs and other records to research programmes, to emphasise the utility of developing research datasets in liaison with HER staff, and are aware of the need to promote responsible archiving of the outcomes of research projects. We have high hopes that the issues noted below will be addressed in time".

Barney Sloane I am signing off now. I just wanted to thank everyone who has made the time to contribute to the last two days. There is significant food for thought, sensible cautionary advice, and some good ideas to work on. I hope we can convert some of this into positive action. Have a good evening (or morning!).

Mike Nevell Late in the day but I thought I would just pickup on the Regional Research Framework synthesis approach which has been touched upon earlier. The North West England RRF update is moving towards synthesis through updating the original resource assessment from 2006 using what's gone on in the last 12 years in the region .The intention is that the Wiki site mentioned earlier (sorry forgot by whom) that Dan Miles at HE is involved with will then be linked to OASIS and the grey literature archive so that outputs of all sorts can be funnelled to the appropriate areas of the NWRRF when it goes online. Our period workshops have shown that a huge amount of new and old material still needs to be synthesised, but that's not a surprise. Finding a way of making this more available to synthesise is crucial.

Jan Wills I too have to go, but thanks to everyone who has contributed. We'll be taking your thoughts into the workshop we're holding next week. You will be able to see the collated comments from the last two days on the ClfA website at: <http://www.archaeologists.net/21st-century-challenges-archaeology> as well as the notes from the workshop, as soon as we've written them up.

Robin Page I too must now sign off-many thanks everyone. I'll keep the conversation open into Friday morning for late contributions.

Terry Klein All the best for your workshop next week! Looking forward to seeing the results!

Bob Sydes Responding to these on-line discussions is quite challenging really principally because each of the "sessions" is trying to focus on a particular aspect of the 21st century challenge and I do understand why. However, It does seem to me that to find ways forward for the specifics we need to deal with the bigger picture first, and that means challenging the very basis of what we do. I really do not see that there is a lot to gain from discussing developer led archaeological synthesis without thinking about the public benefit (or lack of) of what we do. The same goes for thinking about the future of local authority services, commercial archaeology and the survival of archaeology in our universities. I am sure it will all become clear at the end of this process but I can't help thinking that the truly creative solutions are just out of reach at the minute!

Robin Page Here is an interesting contribution to question 9 about tools to aid synthesis via the HER Forum list from Dr. Emily Penniford and Crispin Flower of Exegesis. "CHIRP" is our working name for an idea we are currently developing and discussing with partners - an online platform for community/academic historic environment research that automatically integrates the research efforts with HERs. Watch this space...It stands (provisionally) for "Community Heritage Investigative Research Platform" and it is a technical solution aiming to solve the issues raised in the work by Aisling Nash and others on the value and needs of community heritage, plus the long history of problematic/insufficient engagement with academic research." Crispin stresses it's at the initial ideas stage at present.

Robin Page Thanks again to all for taking part, from the UK Europe and USA. I'll close this discussion now. The next online discussion in the series on the challenges of publication in the digital age will here be on 29th-30th November.

