discussion article

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We still have to excavate – but not at any price

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Abstract

We have no choice: we must excavate, first because whole continents are still barely known from an archaeological point of view, and second because thousands of archaeological sites disappear every day as a result of economic development. Rescue or preventive archaeology is thus an ethical duty. Nevertheless, there is a serious risk of a split between academic archaeology, with its wealth of thinking but poverty of funding, and commercial archaeology, where the situation is the opposite and the goal is, above all, financial profit. So the question is not just to know why one excavates, but also how.

Keywords

preventive archaeology; commercial archaeology; excavation; methods; rescue archaeology; economy; psychology

Tothe general public, archaeology is equated with excavations and discoveries of objects, even treasures. Incidentally, the archaeologist Indiana Jones is only interested in objects and seemingly he does not publish very much, even if he provides academic lectures to his students from time to time. However, for most contemporary archaeologists, excavation is only one step within a global and continuous process traditionally involving six stages:

1. the definition of scientific objectives,
2. the collection of relevant data according to these objectives,
3. the analysis of these data (typologies, physical and chemical analysis, etc.),
4. the classification of these data (seriations, spatial analysis, statistics, models, etc.),
5. the interpretation of these results,
6. the validation of this interpretation.

In its broader outlines, this approach is identical to that practised in any other given scientific field, whether in the natural or the social sciences. But archaeology is without doubt the science amongst all the others with the

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most unfavourable ratio between the time required for the collection of data and the time needed for their interpretation. Several years of meticulous excavations, sometimes under hard physical conditions, are equivalent to the few seconds necessary for a historian to take an archive register from the bookshelf or to the nanoseconds that particle collisions take in a 'large hadron collider' for a physicist. The interpretation work of the historian or of the physicist only starts thereafter, just as that of the archaeologist begins after the excavation. Moreover, as we teach our students, excavation is also a destructive process, which bestows an irreparable character upon it, and the archaeologist sometimes feels guilty about this. This is why the dream of many archaeologists is a magic radar screen – which will certainly exist one day in the future and will permit us to explore in detail the soil from a distance without having to excavate.

Is the practice of archaeology without excavating a dream that could become true from now on, as is proposed by the abstract of this round table? There are, however, several poor reasons for avoiding excavation, the most important being:

1. As mentioned above, archaeological excavations are time-consuming, with a particularly unfavourable ratio between the time invested and the scientific but also academic results. Moreover, given the Anglo-Saxon funding system of short-term projects, a system that is tending to become pan-European, it is difficult to plan an excavation programme over 20 years – which nonetheless is often a reasonable time span in which to obtain significant results. But in countries in which the researchers themselves can only benefit from short-term contracts, it becomes impossible for them to plan such a long programme if they do not want to compromise their own academic career. They are forced to obtain the quickest scientific results within the tightest deadlines. But we all know that the archaeological excavations which have provided the most crucial results are large-scale excavations running over a long time period. Concerning the Neolithic, this is the case, for example, of Bouhumil Soudsky's excavations at Bylany in the Czech Republic, which took place for eight months each year over more than fifteen years (Pavlů, Zápotocká and Soudský 1983–87); or the excavations conducted by Pierre Pétrequin on the shores of the lakes Clairvaux and Chalain in France (e.g. Pétrequin 1997); or the rescue excavations by Jens Lüning on the Aldenhoven plateau in Germany (Bölicke, Lüning and Stehli 1994). I have myself, together with Marion Lichardus-Itten, excavated the site of Kovacevo in Bulgaria during 20 years at a pace of two months per year (Lichardus-Itten *et al.* 2002). As a matter of fact, this was indispensable to examining a sufficiently adapted surface (2,000 square metres) for a stratified site and implementing sufficiently meticulous techniques.
2. Archaeological excavations are costly, which is a striking consequence of the preceding statement. It needs much individual energy to collect funds, and much diplomatic persuasive effort with the institutions that provide these funds and with the scientific councils they are assisted by. Academic studies do not necessarily prepare for this kind of ability.

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3. Archaeological excavations require complex logistics and thus thorough organization, even social psychology, which are not necessarily taught at university. In part, archaeological excavations take place under difficult conditions, in particular in certain foreign countries. Climate and supply problems can complicate the work. It is necessary to form alliances and to have faith in the population and the local dignitaries. One has to master completely or at least partially foreign languages. In the case of rescue excavations, often a very limited amount of time is given prior to construction and, as a consequence, this requires perfect organization and constant choices.
4. More particularly, rescue excavations often take place in a hostile environment created by developers and local politicians and sometimes even by the media. Here too, diplomatic capacities and pedagogic abilities are required.

This is why one could be easily tempted to favour theoretical reflection, comparatively less costly and intellectually much richer than fieldwork. Incidentally, this is what happened, as if by chance, to one part of the so-called 'postprocessual' or 'postmodern' archaeology in the Anglo-Saxon countries. Thus a strong division can be observed in the United States between two types of archaeology which have become almost two distinct professions:

a) Rescue archaeology, related to cultural resource management (CRM), which provides important funding for rescue excavations but which publishes little and is not very present at scientific meetings and contributes little to scientific journals. In the United States, there is no centralized access to excavation reports and it is very difficult to develop a global and comprehensive image of the situation of rescue excavations in this country. Some of our North American colleagues consider the results of a greater part of these excavations almost unusable.
b) Research-oriented archaeology, which has much less funding and as a consequence excavates much less but publishes abundantly and elaborates on very sophisticated and ambitious models and theories, often based on limited data only.

Intermediate situations exist, of course. It can be stated, for example, that Ian Hodder, one of the most important leaders of 'postprocessual archaeology', also supervises the excavation of the famous Neolithic site of Çatal Höyük in Turkey, which involves considerable human and financial means implemented in a large-scale excavation. Nonetheless, these two trends can be identified and they tend to develop in all countries where contract archaeology is practised, as well as in countries favouring, as in the Anglo-Saxon academic system, short-term research contracts, as was mentioned above.

Turning back to rescue archaeology, there is also strong pressure exerted by certain developers to favour 'non-intrusive' methods during the survey of archaeological sites in the course of important construction work (highways, rapid railway systems, industrial zones and so on): aerial photography, electromagnetic conductivity or ground-penetrating radar, bore-holes and so on. But all these methods, though they make sense, are no substitute for the

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practice of systematic small-scale test excavations to determine archaeological sites. Thus a series of Palaeolithic sites has recently been discovered thanks to this method in the north-western part of France. Simultaneously, on the other side of the Channel, in south-western England, where systematic small-scale test excavations are much less practised, they remain largely unknown and this despite identical geo-morphological conditions. The archaeological precept we sometimes hear, at least in France, from opponents of rescue archaeology, 'let's excavate less but better', primarily serves the developers.

Equally, there are at least two good reasons to continue excavations and to excavate on a large scale:

1. There are almost entire continents where archaeology is virtually unknown. This is the case in large parts of Africa and even of South America. Though imposing monuments with visible remains are generally known, the less-visible sites remain unknown in wide parts of the world and for large parts of the history of mankind too. As a matter of fact, our knowledge is mostly important in the rich industrial countries, where the soil is more widely examined due to economic activity and where true archaeological surveillance exists. But this concerns only a small part of our planet. Important construction work is performed in numerous countries without any archaeological survey. To name only one example, mines of precious metals, generally under US control, in the Indonesian part of New Guinea actually affect dozens of square kilometres without any archaeological control. One agrees that international effort under the aegis of UNESCO, who nonetheless permitted the salvage of the Nubian temples during the construction of the Aswan High Dam in Egypt during the 1960s, would actually be unthinkable. One may definitely say that the question 'who excavates?' is, similar to pollution problems, a question for rich countries.
2. Either way, excavation according to rescue archaeology is an ethical obligation. We have to preserve the cultural heritage of humanity for future generations. It is not sufficient to construct nice theoretical models with the currently available data and according to our intellectual preoccupations of the moment. Our scientific and civic responsibility is larger than this.

It is nonetheless true that two important problems remain concerning the question 'why excavate?':

1. On the one hand, a considerable amount of unexploited or unpublished data exists. Yet it can be considered that an unpublished excavation is a lost excavation. Moreover, the analysis of excavation documentation by someone other than the one who has actually excavated is very often a difficult endeavour. In countries promoting contract archaeology, each private firm has, in addition, different registration standards and documentation systems, which complicates all comprehensive approaches. But the problem is foremost a financial one. Though the developers pay rescue excavations according to the 'polluter-pays principle', the funding of subsequent scientific research normally should

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be the responsibility of states. One of our priorities should thus be the definition of national scientific engagements within large, adequately funded scientific study and publishing programmes.

2. On the other hand, the constant progress of archaeological methods (see the most recently obtained results by DNA or strontium analysis) sometimes makes us feel guilty: is it good to excavate sites today, thus unknowingly destroying precious information that future generations will be able to collect better than we can? At least this could encourage us to create archaeological reserves in order to be able to excavate them later with much-improved methods. This seems to me the only good reason not to excavate. But this is only valid in very particular cases.

In the present debate, we can also invoke psychological and sociological factors. As a matter of fact, for some archaeologists excavating is a boring activity, in particular for the reasons mentioned above in this paper. Meticulousness and precision are constantly required during excavation. For a long time, the archaeologist is no more a treasure-seeker and should be vigilant even against enthusiasm. As was formulated by the French prehistorian André Leroi-Gourhan in his guide *Les fouilles préhistoriques*, published in 1950, in the case of 'a really great discovery' the archaeologist 'is truly valiant if he has the guts to sit down and light a cigarette to think' – advice that would be politically incorrect today and even forbidden! But for certain other archaeologists, on the contrary, archaeological excavations are first and foremost a moment of living together in a group, meeting other people and having fun. This is why others prefer to flee and to excavate non-stop rather than to analyse their discoveries and to publish them.

Finally, I would like to clarify certain aspects within the debate on archaeological excavation. Many times I have emphasized rescue archaeology concerning the necessity to excavate. Yet three points should be highlighted in this regard.

The first point concerns the number of rescue excavations that should be done in each country. As a matter of fact, it is beyond our capacity to excavate everything. In France, for example, only about 15 per cent of 60,000 hectares threatened every year by construction work is excavated after a preceding survey through small-scale test excavations. I think that there is no global answer to this question. The level of rescue archaeology in each country depends on three factors: the interest of the general public in archaeology (the French public was only very little interested in archaeology before the 1970s), the economic possibilities of the country (there are no rescue excavations in poor countries) and finally scientific standards (they tend to increase regularly and consequently lift the costs of excavation).

The second point is that, with regard to rescue archaeology, the term 'developer-funded excavation' is extremely confusing and ambivalent. It leads one to believe that the developers are the ones who decide about the excavation and that we execute the work for them. Yet this is not the case at all. The developers do not want to fund archaeological research and initially this is not in their interest. They do not aim at detailing the chronology of the Late Bronze Age in their country, for example, or at a better

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understanding of the neolithization of this or that region of the world. They are simply indentured, through the laws of each country and also through the Valletta Treaty (Malta Convention) to pay for rescue excavations prior to their construction work.

The third point of possible confusion is that archaeologists, whether public or private, all do the same work. Yet this is inaccurate, as quoted in a recent paper published in 2009. In different domains, private research exists, for example, in medical research or the armament industry. However, the aim of this research is application on the one hand and financial finality on the other. The reasons are definitely economic, which is not reprehensible as such but which completely changes the goal of the work. If we take, for example, private medical research, it favours the development of new drugs for profitable diseases in rich countries to the detriment of the treatment of less-profitable diseases in poor countries. The same observations apply to private archaeology. Precisely in France, where private archaeology was introduced in 2003 by a conservative parliamentary majority, we can already state such commercial misuse when a minimalist excavation is undertaken in order to preserve the benefit of the private company. In addition, it is quite amazing that there are many critical papers on theories and ideologies developed in archaeological publications, mainly British and American, but only a few on the actual working practices of archaeologists, more particularly in the context of private archaeology (Cumberpatch and Blinkhorn 2001; Chadwick 2003; Bernbeck and McGuire forthcoming 2011).

That is why it is insufficient to ask 'why excavate'. We should also raise the question 'who excavates?' and 'how?'.

In any case, we do not have the choice: we have to excavate in order to increase the production of archaeological knowledge in still poorly documented parts of the world and in order to preserve the archaeological heritage of humanity for future generations. But we are also obliged to publish our results in a correct manner according to scientific engagements. We have to do both, to excavate and to think.

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Still not digging, much

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Abstract

The impulse to keep excavating, set against widespread failures to publish in a timely manner, has created a crisis of confidence for archaeology. This is especially so in Europe and North America, where contract archaeology has witnessed dramatic growth in recent decades, but it is not universally the case. Far from being the defining practice of the discipline, excavation is not the only technique for generating

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data relevant to archaeological problems and, ideally, should be deployed as one element in multi-stage, multi-scalar fieldwork strategies. In any given situation in different parts of the world, many locally specific factors affect the role and relative importance of excavation. Examples are given from the author's recent fieldwork in Greece, southern Armenia and the eastern Caribbean.

Keywords
publication crisis; multi-stage fieldwork; archeological survey; Greece; Armenia; Caribbean

Nearly 25 years ago, Anthony Snodgrass (then my colleague at the University of Cambridge) and I co-authored a short paper for the *Cambridge review*, on much the same subject as the one addressed in this panel discussion (Snodgrass and Cherry 1988). It was born out of sheer frustration at trying to explain to our non-archaeological colleagues why it was that we were not excavating sites, like all the other archaeologists they had ever met or seen on television, but rather were conducting large-scale regional surveys in Greece – Snodgrass (with John Bintliff) in Boeotia, myself (with Jack Davis) in the Nemea Valley near Mycenae. Our paper's title, 'On *not* digging up the past', was of course a playful allusion to one of the most famous of archaeological books, Sir Leonard Woolley's *Digging up the past* (1931). My general views, and the character of my own fieldwork activities, have not changed much since then: hence my present title, which likewise plays on another very well-known work, Sir Mortimer Wheeler's *Still digging* (1955).

The organizers of this forum have raised two main problems: first, the exponentially growing number of excavations, many of them (allegedly) merely adding to the mountain of data on types of site, periods, or regions we already know well; and second, the glaringly obvious fact that many of them are not being published adequately, if at all. They suggest that stiffer obligations and sanctions for failures to publish in a timely manner are perhaps a blessing in disguise. And by asking, 'how can we go on excavating new sites?' (editorial, this issue, p. 1), they raise the worrying possibility of some voluntary or even mandatory moratorium on excavation, as well as, perhaps, a consequent downgrading of the defining role of excavation for the discipline of archaeology itself.

These are big issues, to be sure. Yet my first reaction is a sense of disciplinary amnesia, a forgetfulness that these questions have been asked many times before, perhaps especially since the 1960s and 1970s, the era that witnessed the dramatic growth of employment in rescue, contract and CRM archaeology in western Europe and North America, and the concomitant acceleration of archaeological data production. Almost three decades ago, for instance, the famous Cunliffe report on *The publication of archaeological excavations* (Cunliffe 1983) proposed, as a formal policy, much greater selectivity in both excavation and post-excavation activities; more particularly, in hopes of encouraging more rapid publication of archaeological work in Britain, it advocated a multi-level dissemination strategy whereby only the most synthetic and interpretive parts were to be formally and concisely 'published'.

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The report did not have the desired effect. A comparable survey report by the Council for British Archaeology some 20 years later (Jones *et al.* 2001) likewise appears to have had little impact. Indeed, over the years there have been many conference symposia and round tables tackling much the same themes as the present panel discussion: to name just one instance, the session 'To dig or not to dig?' at the 1992 Archaeology in Britain conference. It is tempting to conclude that archaeology's publication problem is intractable, and that archaeology itself (in Björn Nilsson's words, p. 27) is 'an unstoppable excavation machine'.

Here is a more specific example. As co-editor of the *Journal of Mediterranean archaeology* I helped organize a discussion forum in response to a paper submitted by two Israeli archaeologists, Raz Kletter and Alon De-Groot (2001). They were able to document that no less than 2,200 excavations had been carried out in the state of Israel during the decade 1989–98, and that the number of projects conducted annually was constantly rising and, in fact, had more than doubled during that decade (their figures, moreover, refer only to excavations, not surveys). Yet final publication – however that term is to be understood – lagged far behind, running at about the 20 per cent level. This, incidentally, is hardly aberrant. Renfrew and Bahn (2008, 573) cite figures showing that only 27 per cent of the digs funded by the National Science Foundation since 1950 have ever reached print, and as much as 60 per cent of modern excavations in Britain remain unpublished 10 years after completion; another study of biblical archaeology estimates that only 19 per cent of excavation projects in the Syro-Palestinian region in the 1980–89 period were fully published (Shanks 1996), and the ratio of published reports to excavation licenses in the Republic of Ireland from 1992 to 2004 appears to be far worse still (University College Dublin 2006). Kletter and De-Groot's proposal was a radical one: a temporary moratorium on new permits to excavate, whether on salvage or research projects, as the only means of restraining this burning desire to dig so much. Predictably, the several forum discussants did not take well to that idea, variously regarding it as an unfair collective punishment, as having no sound legal standing, or as being in any case unenforceable. Some saw the obvious solution lying with greater use of digital media and the Internet, whether for formal publication or for the archiving of data. But the intervening decade since this *JMA* forum was published has shown that 'archaeology's dirty secret' (Fagan 1995) actually remains stubbornly intransigent in the face of digital technologies (Watkinson 2008).

This forum's organizers refer to the publication crisis as 'an additional complicating factor' (editorial in this issue, p. 1) in answering the question 'why excavate?', but it is surely more than that. A site that has been dug in the public trust and (almost always, one way or another) at public expense, but that remains unpublished decades later, is really little different from one that has been looted: a part of the archaeological record has been destroyed for ever, with nothing to show for it, rendering the entire process both meaningless and ethically reprehensible. The shrivelling of state and local funding in the face of the current economic crisis is already forcing severe

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retrenchment in the furious pace of excavation, the closing of archaeological units, scaled-back university degree programmes and so on (Schlanger and Aitchinson 2010), but by the same token it will further limit both the means and the incentives for post-excavation analysis and publication.

Unfortunately, because the crisis is of global dimensions, it will impact archaeology not only in countries that already have an abundance of excavations and excavated data, but in poor ones too – 'poor' in the sense not only of economic underdevelopment and thus shortage of resources to devote to archaeology, but also in the sense of having an impoverished archaeological record as a result of insufficient fundamental field research. One of the obvious features of the statement for this forum, and of almost all those who participated in it, is a perspective largely rooted in experience in northern Europe, an area where archaeology has behaved like a glutton, unable to digest the huge amounts of data already produced, but always craving more. Archaeology in many other parts of the world, however, is a far leaner affair. Where resources are scarce and archaeological data still at a formative stage, excavation remains central and critical to knowledge production, and the question 'why excavate?' can have little relevance.

Here it is worth making the obvious comment that excavation is the only technique that can produce certain types of data that are crucial for understanding the human past. Only by digging, for example, can we recover C14 samples with sound provenances; reliable archaeobotanical, zooarchaeological, and osteological materials; perishable finds such as textiles, leather, wood, ivory, or papyrus; the full range of artefactual materials in securely stratified contexts that allow them to be sequenced; detailed understanding of built structures; and so on. One is hard pressed to imagine the future development of any technologies that might dramatically reconfigure the central role of excavation in this regard, so it would be absurd to maintain that it has lost, or is ever likely to lose, its signal importance to the field. Rather, the key questions are whether excavation should continue on such a massive scale in areas where the widespread failure to publish undermines its very purpose, and how and where excavation should fit amongst the now far wider range of available techniques for acquiring data.

I turn to these questions below, but first I must register disagreement with the organizers' suggestion that we already have an ample stock of certain types of site, rendering further digging pointless. We should not forget that any excavation – indeed, fieldwork of any sort – takes place at a unique point on time's arrow. There exist many examples that illustrate just how productive can be the re-examination of sites first investigated long ago, in another age altogether – Star Carr, Phylakopi, Çatal Höyük, and many, many others – but now approached with entirely novel and different technologies, fresh theoretical assumptions, revised research goals, and new data requirements. In fact, every site is unique. If the postprocessual turn has shown us anything, it is that the past is not 'out there', as some static repository of 'primary data', to be retrieved by neutral, scientific methods. It is co-created in the very act of investigation itself: excavation as reflexive field practice, or 'interpretation at the trowel's edge', to use a currently popular buzz-phrase (e.g. Hodder and

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Berggren 2003). What we see in the data, of course, depends on what we ask (a central tenet of problem-oriented 'New Archaeology'), but consideration of archaeology within its social context introduces factors that make purely objective analysis an unattainable fiction. As Witmore (2007, 550) puts it, 'multiple fields cover the components, contexts and connections implicated in real-time archaeological practice'. This makes me uneasy with the notion that we already have enough Bronze Age barrows (say), or too many Roman villas.

However excavation may be conceived, there is probably near-universal agreement among practitioners that it is integral to the archaeological process – but far less explicit acknowledgement that it is only one part of that process. As a survey archaeologist first and foremost, my own opinion has always been that the most effective archaeological research designs are those that are multi-stage and multi-scalar, with feedback loops. Charles Redman's (1973) well-known formulation envisaged a progression through a series of stages, roughly as follows (with some additions):

1. study of known sites and past research in a wide region, inspection of aerial and space imagery, interviews with local inhabitants about known sites;
2. extensive-mode survey reconnaissance of the region;
3. intensive survey of some carefully chosen sample within this region;
4. detailed studies of the surface and sub-surface expressions of a sample of the sites located, via geophysical survey, phosphate analyses, mapping of visible remains, etc.;
5. selective test excavation of a sample of these sites;
6. large-scale excavation on one or more key sites within the region.

Of course, in the real world such a logical sequence rarely plays out in so orderly a progression. Some stages may take place concurrently, or in reverse order; several may be omitted altogether, for logistical or financial reasons; and others may be entirely precluded by the archaeological laws that apply locally. Above all, explicit research design – which, after all, should guide practice even in the direst of salvage situations – still 'requires the constant intervention of thinking human beings' (Redman 1987, 249).

What this idealized sequence highlights, however, is that excavation is only one among a plethora of methods for archaeological data collection, methods which interpenetrate in complex ways. Yet excavation remains, stubbornly, the signature gesture of our discipline. Certainly, both in the popular imagination and as measured by actual employment, archaeology is virtually synonymous with excavation. One may be allowed to wonder, nonetheless, whether archaeologists have too willingly adopted a mindset where excavation is almost always given primacy, irrespective of circumstances. Two brief examples may serve to illustrate the point.

The Birecik Dam, on the Euphrates River near the Turkish–Syrian border, was completed and filled in 2000, as part of Turkey's Southeast Anatolia Project (Shoup 2006). Displacing thousands of local villagers, the reservoir flooded 100 square kilometres of arid land, rich with archaeological

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resources, along the Euphrates River valley, in an area almost completely blank on the archaeological map. The only regional-level response to this disastrous situation was a modest six-week survey, whose final report (Algaze, Breuninger and Knudstad 1994) briefly catalogued just 82 sites, within an area that assuredly contained many hundreds more that were flooded before study of any kind. But the chief outcry was about the partial flooding of Zeugma, a provincial Roman capital with remarkably well-preserved architecture, mosaic floors and wall-paintings. As the rising waters of the dam began to inundate the site, billionaire David Packard provided $5 million to assist in the recovery of the mosaics, affording lively media coverage of archaeologists racing against time to retrieve them, with the reservoir's rising waters literally lapping around their ankles. We can conduct a thought exercise here. What if those $5 million had been devoted to a thorough and systematic survey of the entire catchment of the reservoir, with selective test excavations on a range of representative sites? Would that not have been more archaeologically informative overall than the excavation of what, in the end, turned out to be less than 1 per cent of the flooded area of Zeugma (Kennedy 1998; Early *et al.* 2003)?

As a second example, take the Boeotian city of Thespiai in Greece, a large and important place, as is borne out not only by its continuous occupation for some 5,000 years, but by the very high density of surface material from the 5th and 4th centuries B.C. covering about 140 hectares. Because the site is essentially unexcavated and lies on land that is not today built up, it was possible to conduct an intensive survey of its entire extent, in the context of a comparable survey of its hinterland, that revealed in great detail its changing size and layout over five millennia, as well as allowing examination of those centre–periphery interrelationships which made the classical *polis* such a distinctive institution (Snodgrass and Bintliff 1988; 1991). This, however, is the telling statistic. It required about 300 person-days to cover the whole city. For the same expenditure of time and money, it was estimated (Snodgrass and Cherry 1988, 13), one could have conducted an excavation down to natural covering only about 75 square metres, or roughly 1/20,000th of the classical site! That choice was not a difficult one for the project's organizers. One can think of plenty of examples, furthermore, where resources expended on geophysical survey at large sites (e.g., in Turkey alone, the lower town at Troy, Kerkenes Dağ, or Zincirli Höyük) have yielded very detailed plans of urban layouts that it would have taken many decades of excavation to match.

Excavation, in short, is a technique that does many things well, but it cannot do everything, above all where the spatial dimensions of the research problem (or the salvage contract) greatly exceed the scale of any standard dig. At Thespiai, some limited test excavation subsequent to the urban survey would certainly have been desirable, as a logical step in the sort of multi-stage research programme mentioned above, but that was not an option. Greek archaeological law allows members of foreign schools and institutes to apply for (an extremely limited number of) survey permits, or excavation permits, but not both at once. In other words, this is an unavoidable constraint that

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operates locally, and greatly affects strategies and practices of archaeological research in Greece, including the balance between excavation and other methods for data collection.

This observation leads on to the final comment I wish to make. The question 'why excavate?' is a good one to think with, especially in the context of the current state of archaeology in north-western Europe, where it arguably has the most relevance. But it is also a question about which it is very difficult to generalize or to provide answers that are widely applicable across the discipline. All answers are surely regionally specific and dependent on a whole range of extremely variable factors – the history of archaeology in any given part of the world (and thus the store of previously accumulated knowledge and the relative need for basic research); the disciplinary, governmental, legal and ethical frameworks under which archaeology operates in a country; the balance of salvage versus research needs; the sources and availability of funding; and so on. Let me illustrate the point by providing three brief snapshots of the very disparate situations I have encountered in my own fieldwork in recent years in Greece, Armenia and the Caribbean.

In southern Greece, where I have been active in survey archaeology on and off since 1974, one is constantly mindful that the work we do stands on the shoulders of seven or eight previous generations of archaeologists, and against the backdrop of many thousands of past excavations. Why excavate, indeed – especially given that foreign archaeologists are generally not allowed to involve themselves in the very salvage digs where their funding and expertise could be of greatest assistance (Cherry 2003)? Here the clearest need, as many of us came to realize during the 1970s and 1980s, was to provide a regional context for all those excavations by conducting high-resolution surveys to explore the rural landscapes of Greece, a palimpsest of the visible traces of the last 10,000 years of its history, which are increasingly being damaged by development, intensified agricultural practices, and a variety of other threats. Similar circumstances apply in neighbouring countries, and the responses have been comparable; thus there has been astronomical growth in the quantity of regional survey-based projects around the Mediterranean in recent decades (Alcock and Cherry 2004). In a number of countries in this part of the world, it would be fair to say (in the words of the panel organizers) that excavation is no longer quite 'the same defining practice of our discipline that it used to be' (editorial, this issue, p. 1).

In Armenia, where I codirected a project from 2004 to 2008 (Zardaryan *et al.* 2007), things could not be more different. A far less restrictive permit regime than in Greece allows for virtually any sort of fieldwork to take place. Because so little archaeology (except for burial excavations) has taken place in the south of the country where this project was located, there is a pressing need to establish artefactual sequences, site typologies, and relative and absolute chronologies – the kind of basic work, in fact, that took place in Greece many decades ago. Here, therefore, extensive and intensive regional surveys and excavations at several key locations have fruitfully gone hand in hand, the former to locate and map hundreds of hitherto unknown sites, the latter to investigate stratified deposits and provide firmly dated assemblages.

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In this situation, excavation is essential to provide material that can help anchor down materials encountered by survey that would otherwise remain chronologically vague, while survey provides the necessary information to have a better understanding of the sites we have excavated in their wider regional contexts.

Lastly, my current work on the island of Montserrat in the eastern Caribbean presents a different situation again (Cherry *et al.*, forthcoming). Two-thirds of the island is now a no-go zone, having been devastated by a volcano that has been erupting continuously, and with devastating impact, since 1995; the population that has remained has been forced to relocate to the north, and active resettlement and infrastructural development there is already doing serious damage to archaeological resources. Yet there has only ever been a handful of excavations on Montserrat; there exists no adequate inventory of known sites, nor an archaeological service to make one, nor even a resident archaeologist on the island. Here is a rescue situation, if ever there was one. Our project's strategy thus prioritizes urgent extensive-mode survey, alongside the analysis of space and aerial imagery, to locate and map archaeological resources, as well as a risk assessment of the sites we encounter; test excavation of at least some of the sites that are in most immediate peril is certainly a desirable option, but mainly as a follow-up procedure.

I was invited to participate in this interesting panel discussion, evidently, because its organizers wished to hear the voice of someone such as myself whose career has *not* been dominated by excavation. I have certainly served my time in the trenches, including several years in the late 1960s employed in year-round rescue archaeology in the United Kingdom, as well as long spells as a trench supervisor on large-scale urban excavations in the classical lands. The fact that most of the projects I have co-organized over the past several decades have focused on regional survey indicates no antipathy to excavation per se, but merely reflects the fact that the types of research question I have been most interested in pursuing can best be addressed – perhaps can only be addressed – by acquiring archaeological data on a regional scale. Several of these projects have taken place in parallel with substantial excavations, under the primary direction of other colleagues, and that has been mutually very beneficial. I am still not digging, much, myself. This does not mean that I fail to appreciate the dilemmas faced by archaeologists working in those parts of the world where (until recently, at least) a relative abundance of resources for excavation, but a paucity of support for post-excavation analysis and publication, has led to the crisis of confidence reflected in the opening statement by this panel's organizers. In the final analysis, I think it is not helpful to frame the question in terms of whether excavation is, or can remain, the defining practice of archaeology as a discipline, as compared to the ever-growing number of other methods for acquiring archaeological data. So many locally specific factors intervene in any given situation, in different parts of the world, with variable research goals in play, that the only appropriate answer to the question 'why excavate?' must be: *it all depends*.

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Reflections on the archaeology of archaeological excavation

*Geoff Carver**

Abstract

The present study adopts a reflexive, critical stance in examining the premises underlying the conference session and, by extension, those underlying archaeology as a discipline. The role played by excavation in archaeology both today and historically underlines a wide variety of and changing perceptions about the goals and even the definition of what 'archaeology' is, while bringing our effectiveness at achieving those goals into question.

Keywords

history of archaeology; archaeology of archaeology; reflexivity; antiquarianism; archaeology and the public; dissemination of results

This paper examines some of the basic premises of archaeology as reflected in those of the round table. Simply asking 'why do we excavate?' is already revealing either of a will to provoke discussion about something which many might take to be self-evident, or of an academic attempt to shift the emphasis away from praxis to theory, or even of a failure to recognize how all such premises are culturally contingent.

The first point I would like to raise is the supposed 'widespread failure of archaeologists to ensure that the results of excavation are published and accessible' (editorial, this issue, p. 1). This is not a 'failure' archaeologists face alone, and more a problem for archivists. Similar problems are being faced – and solved – by chemists and biologists who make their results available online while protecting corporate secrets, and archaeologists should learn from other disciplines.

The point is that this 'failure' seems to contradict the idea that 'the material recovered only adds to an existing body of data on types of site, periods or regions we already know well' (editorial, this issue, p. 1). I will not argue that we have not done enough with the data we have, but this seems contradictory: how can we 'know everything' if we cannot access 'grey literature'? The real problem is not just a matter of not having access to information: even when we have it, we do not always learn from it, possibly because our natural habitat is *not* the library, museum or archive. I would like to develop this further, and ask just how effective we can be at understanding the material that is the main focus of what we do study if we are not very good at understanding the history of our own discipline. As Cherry noted (this issue), this 'why?' debate has taken place already, and it may be that we

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keep returning to these same questions because we need to. And I would like to suggest, in light of a study of the importance fieldwork has for geologists as a 'liminal experience' (Rudwick 1996), that maybe we have to have these periodic debates in the same way that we need to excavate in order to be initiated into archaeology.

The degree to which we fail to learn from others or from the past can perhaps be indicated by considering another of the points from the session abstract, the idea that – at least in the public mind – 'archaeology is synonymous with excavation' (editorial, this issue, p. 1). I would like to suggest that some members of the public equate archaeology with treasure (King Tut) and adventure (Indiana Jones and Lara Croft), ley lines, Stonehenge and 'ancient astronauts', maybe even dinosaurs. Some people might even associate us with boring museums, or think that archaeologists 'kill jobs' and delay 'progress' by adding costs to construction projects (and it is useful to contrast the public perception of environmental and heritage protection).

What we define as being 'archaeology' (or even 'the public', for that matter) is culturally contingent. To illustrate this point, I often list definitions of the word 'archaeology', or contrast English-language archaeology with the divisions between *Ur- und Frühgeschichte/Vor- und Frühgeschichte* and *Archäologie* in German-speaking countries (cf. Carver 2009), partly because 'it is widely recognized that German archaeologists dig with a different method' (Hodder 1999, 9). The significance of these distinctions can be illustrated by attempting to translate into German Binford's famous adage that 'archaeology is anthropology or it is nothing'. Bernbeck (1997, 37), Veit (1998, 122) and Kümmel (1998, 122) do not even try. While Binford (1962, 217) may be right about American archaeology (where archaeology is often taught as a subdiscipline of anthropology), in Britain 'it is concerned more, but not exclusively, with early and prehistoric phases than with those illustrated by written documents' (Crawford 1960, 15). To confuse Binford even further, German-language texts refer to Winckelmann as the father of an *Archäologie* which focuses mainly on *classical* antiquity, and German *Anthropologie* usually only refers to what Anglo-Americans know as physical anthropology (although the situation was different until the beginning of the 20th century – cf. Boas 1902; Fetten 2000, 159–69). How can we claim to know what the public thinks about us when we are not even sure who we are, or what we do? Which 'public' associates us with excavation, and which 'archaeology' does this 'public' have in mind?

Such problems relate to my work on archaeological documentation methods, definitions, epistemology and so on. Although this might seem abstract and theoretical – armchair archaeology – I try to tell myself I am on the 'field' side. Which suggests that we might be having this debate again because we have yet to balance practice and theory – armchair versus field archaeology – where the differences might be as significant as those between English- and German-language or between 'commercial' and 'academic' or 'scientific' archaeology (Demoule, this issue), or between archaeologists' perceptions of archaeology and how archaeologists think the public perceives us. If we stay out of the archives and do not learn from history

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because archaeology is fieldwork (Crawford 1960, 232), we risk repeating ourselves.

Dissecting the discipline's origin myth

If 'archaeology is synonymous with excavation', then this should show up in the historical record. Discussing the evolution from antiquarianism, Redman (1999, 49) wrote,

> Three major intellectual currents reached fruition in the middle of the nineteenth century, setting the conceptual basis for archaeological interpretation. First ... the geologist Charles Lyell proposed his principle of superimposition, or uniformitarianism ... Second, Thomsen and Worsaae proposed the three-age system ... Third, Charles Darwin published his *Origin of Species*.

Another variant lists the 'three great conceptual advances – the *antiquity of humankind*, Darwin's *principle of evolution*, and the *Three Age System*', which 'at last offered a framework for studying the past' (Renfrew and Bahn 2000, 25, original emphasis), while Audouze and Leroi-Gourhan (1981, 170) traced 'French prehistoric archaeology' to 'geology and palaeontology ... cultural anthropology ... stratigraphy ... and evolutionism'. Comparing such genealogies reveals recurring elements and an emphasis on theoretical issues which may reflect a shared derivation from Glyn Daniel's 'antiquarian revolution' (Daniel 1975, 32), and a contrast with Crawford's schema (1932, 173), where archaeology leads to the recognition of 'the antiquity of man' and 'evolution' is in a separate lineage. But excavation ...?

Ploughs and coins

From a historical perspective, archaeology used to be synonymous with 'accidental discoveries' in the 'antiquarian way' (Pegge 1789, 84), traditionally with a plough or bought and later brought to the attention of some local authority (teacher, priest, antiquary; cf. Schlanger 2010). Thus Wordsworth (1994, 275) wrote of how 'The unlettered ploughboy pities' Romulus and Remus (depicted on a coin) 'when he wins / The casual treasure from the furrowed soil'. Although remote sensing offers 'a plethora of other methods', there have always been alternatives to excavation. 'The purpose of an excavation is to acquire data' (Carver 1990, 77), and we excavate now because excavation is a more efficient means to do this.

Notice the shift from 'facts' (i.e. 'artefacts') to 'data'. We acquire data partly so that others can use it. Francis Bacon argued that making data available to a critical audience should lead to better science (Quinton 1980, 31), and we see traces of his arguments combined with concerns for efficiency in some of the debates on 'big data' related to computers and data-mining large databases, since such data, 'produced at great effort and expense, are only as useful as researchers' ability to locate, integrate and access them' (Howe *et al.* 2008, 47). So if we excavate to acquire data and want to share our information, then we need to be concerned with our 'widespread failure ... to ensure that the results of excavation are published and accessible' (editorial, this issue, p. 1), as this shifts the emphasis to questions of accuracy, raising issues like

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data quality that were unimportant in the days of accidental discovery by 'unlettered ploughboys'. Otherwise: garbage in, garbage out.

Before we can 'acquire' or 'produce' data – and do it efficiently – 'it is incumbent upon us clearly to comprehend the nature of our mission and the limits of our field' (Kemble 1849, 2), if only so that we can distinguish between data and 'irrelevant information' (Collis 2001, 1). Like history and geology, archaeology is a study of the past. Whereas history focuses on written documents, archaeology is primarily concerned with 'material culture' or 'human antiquities', often but not exclusively 'as revealed by excavation' (*OED* 1997). Like written documents, archaeological remains are often incomplete, but generally skewed more towards everyday life and away from the lives of the literate elites.

Otherwise Kemble was not concerned with excavation:

> It is our business to rescue from neglect and ruin the fragmentary remains which tell of the past, but, unlike them [i.e. Kemble's predecessors], we group these facts by a system, class them as it were in genera and families ... it is enough for the Archaeologist that any one fact should be a fact of the past; and it is enough for science that such one fact should be capable of arrangement and comparison with any one similar fact, or any number of them (Kemble 1849, 2).

Particularly noteworthy is that Kemble's reference to *archaeologists* predates Daniel's 'antiquarian revolution' (the histories tell us he should have been writing about *antiquaries*). This can be 'explained away' by tricks of semantics: since many archaeologists pursued 'antiquarian studies' and antiquaries did 'archaeology', the terminology had not yet been settled and has since evolved, or Kemble (despite having, like Winckelmann, 'a framework for studying the past') was part of a pre-'scientific' archaeology and so on. The *OED* includes an 1824 reference to 'English historical archæologists' and a statement from 1880 to the effect that 'The archæologists have raised the study of antiquities to the rank of a science', while '"Archaeology" itself' was

> a seventeenth-century term for the study of antiquities, linguistic as well as material. Sir Henry Spelman, for instance, used the term *Archaeologus* for his glossary of medieval words, published in 1626, just as Edward Lhwyd called his comparative study of the Celtic languages *Archaeologia Britannica* (1707). The French antiquary Jacques Spon proposed the alternative terms *archaeologia* and *archaeographia* to describe the science of antiquities, including numismatics, epigraphy, glyptography, and iconography, as well as *angeiographia*, Spon's name for what we call the history of technology (Burke 2003, 274).

The most important point is not the fact that the words changed, or that their meaning changed over time, but rather that the disciplinary space they described evolved to reflect the shift from antiquarianism to scientific archaeology: as the linguistic component split off to become philology, as the role played by coins and medals declined from the point where numismatics could be labelled 'an important branch of archaeology' (Pettigrew 1848, 8),

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as the accidental discovery by some 'unlettered ploughboy' gave way to deliberate excavation, and as 'archaeology' expanded to include work done by Foucault (i.e. *The archaeology of knowledge*, *The order of things. An archaeology of the human sciences* and so on), with the result that archaeology now resembles Lévi-Strauss's *bricolage* more than it does the scientific ideal.

Archaeology and autopsy

As the session abstract notes (and as my ongoing work with soil colours and so on shows), even when data has been recorded it is not necessarily accessible; even then, having been recorded in a different theoretical paradigm, it may as well have been written in a different language. Kemble separated himself and his contemporaries – 'modern antiquaries' (Hutchinson 1887, 470–71) – from their 'predecessors' in the same way that Daniel and other historians of the discipline separate 'modern' archaeologists from *our* predecessors, the 'antiquaries'. For Kemble, the deciding factor was the fact that his generation of archaeologists 'group … facts by a system, class them as it were in genera and families'. In addition to the obvious reference to Linnaeus, it might be tempting to read this as an allusion to the three-age system. It is more likely that Kemble was referring not to the system we know (i.e. Thomsen and Worsaae's Stone, Bronze and Iron Ages), but one comprising Celtic (or 'Druidic'), Roman, and Saxon (or Danish) periods (cf. Way 1844, 2; Briggs 2007, 251), given that the three-age system had not yet found wide acceptance among the British archaeologists of 1849.

The point is this: Kemble was arguing that his 'archaeology' was a science simply because its data could be classified, whereas we would now say that science comes with trying to explain such 'arrangements'. In Kemble's eyes, it was simply 'enough' that 'any one fact should be a fact of the past' for it to be archaeology; for it to be science, it was simply 'enough' that 'one fact should be capable of arrangement and comparison with any one similar fact'. For Kemble, totally oblivious to considerations of the context from which these 'facts' derived, it was 'enough' that this 'fact' could be arranged and compared with other 'facts', and

> From that moment it becomes lawful prize of the Archaeologist … an old song is as valuable as an arch Pointed or Round. An Anglo-Saxon, or Norman, or Early English spell, prayer, law, legend, nay, even word, has its profound meaning: so has a mullion, a corbel, a clerestory, a whole cathedral. So has a cabinet of medals, a pot, a pan, a battle-axe, or a woman's jewel, if properly appreciated (Kemble 1849, 2).

Included in this prescriptive assemblage of examples of what would have been of interest to British 'archaeologists' of 1849 are items which would not now normally be considered 'archaeology'. Kemble's pots and pans also provide a response to accusations of Romanticism levelled against antiquaries by their detractors, accusations which fail to account for their obsession with 'facts'.

Kemble's 'cabinet of medals' – now an apparently minor detail – actually reflects the success early archaeologists had studying medals (or medallions) and the coins found by Wordsworth's 'unlettered ploughboy'.

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These antiquaries were so successful that geologists wished for something analogous. Robert Hooke is cited as lamenting the fact that geologists had nothing comparable to 'Monuments or Medals' (Schneer 1954, 266), recognizing the value of equating fossils with artefacts. Later geologists made the links between *fossils* and antiquities in general on the one hand and *medals* in particular on the other more explicit. William Smith (1816, p. i) wrote that 'organised fossils ... might be called the antiquities of Nature'; Gideon Mantell (1844) named one of his books *The medals of Creation*, while Lyell (1991, 47) supported a comment regarding the importance of testacea by stating that 'they are the medals which nature has chiefly selected to record the history of the former changes of the globe'. Recognizing that 'The comparison between fossils and medals has frequently been made and fossils have well been styled the "Medals of Creation"', John Edward Marr (1898, 40–41) expanded upon this theme by making specific reference to the three-age system. It was only after Daniel's 'antiquarian revolution' of 1859 that people like Lubbock (1865, 336) began reversing the analogy.

The foregoing contrasts with the 'cardboard-history' depiction of antiquaries as sterile scholastics. If anything, early archaeologists opposed scholastic adherence to the written authority of classical authors and later commentaries:

> the fifteenth-century Byzantine humanist Manuel Chrysoloras used the term *autopsia* – in other words eye-witnessing, seeing with one's own eyes – to refer to the evidence of material remains such as sculptures for 'what kinds of arms the ancients had, what kind of clothes they wore ... how they formed lines of battle, fought, laid siege' (Burke 2003, 276).

The concept is actually much older – 'when men first began to philosophise crudely, they used the evidence of their senses, which the Greeks call *autopsía*, seeing for oneself' (Vico 2001, 204 [499]) – and one might consider the derivation of 'the original Greek term for "historian," which means an "eyewitness,"' as 'the one who obtains truth about what happened not merely by repeating "what they say" ... but rather by examination of witnesses and through enquiry into the actual causes of what happened' (Mali 2002, 214). What was revolutionary to an extent now difficult to recognize was the way antiquaries deliberately sought *material* culture to help address shortcomings of *written* text. As a literal 'rebirth', the Renaissance – 'when *re*discovery of *classical* knowledge became the primary goal of scholarship (Gould 2000, 148, added emphasis) – was largely text-based:

> Universities had been founded in the Middle Ages not so much to create *new* knowledge as to preserve *old* knowledge. This meant that knowledge, almost by definition, came from books. Whatever you saw with your own eyes [i.e. 'history'] didn't qualify ... To dirty one's hands with the things themselves was beyond the pale for academics (Cutler 2003, 19).

Cutler refers to the 'dirty hands' of Nicholas Steno (saint, geologist and dissector). The idea of *autopsía* is useful, given the relatively common metaphor of excavation as 'careful archaeological dissection of the earth'

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(Brown and Harris 1993, 10), of archaeological excavation and legal autopsy being both methodologically analogous and comparably irreproducible experiments (cf. Oebbecke 1998, 218). Excavation, by accessing primary sources ('archaeological' and textual), can overcome errors caused and compounded through what Richard Dawkins (2006, 194–95; cf. Dawkins 2004, 133) called 'copying-fidelity', and through transmission from one medium or (as in the Binford example) from one language to another (cf. McLuhan 2003, 230; Hodder 1992, 12).

As archaeology, though, the present study is intended to reverse general trends by focusing on textual problems which spurred initial interest in material culture as an object of study: 'antiquarianism was originally text-centered, focused on the reading of inscriptions on monuments and coins, marble, and metal' (Burke 2003, 273). Some of the problems with textual interpretation include the fact that text can be biased, contradictory, unclear and/or incomplete (cf. Taylor 1948, 31). When T.G. Bonney (1866, 6), for example, noted that 'there is no mention whatever of stone circles in any of the Roman accounts of Britain', the question arises, how did the Romans miss Stonehenge? Discussing 'the manuscript sources for the topography of Roman Britain as Stukeley would have known them', Piggott points out that, 'Apart from scattered references in the Greek and Roman geographers and historians . . . the essential documents are five in number' (Piggott 1985, 134). The lack of written references to Stonehenge may only reflect sampling error, given the relatively small number of Roman sources now extant. Lyell notes how the few classical references to the destruction of Pompeii and Herculaneum enabled an Italian Wernerian to contend 'that neither were the cities destroyed in the year 79, nor by a volcanic eruption, but purely by the agency of water charged with transported matter'. As with much Wernerian geology, despite seeming too ridiculous to be believed, 'His arguments were partly of an historical nature, derived from the silence of contemporary historians, respecting the fate of the cities' (Lyell 1990, 351). And in the sense that Daniel's 'antiquarian revolution' opened up an archaeology that was not text-based, it represented a great leap forward, except that – by leaping straight into prehistory – it contravened uniformitarian principles of moving from the known (historic or ethnographic) to the unknown (cf. Woolley 1961, 54). More important, though, is the fact that written text can be as incomplete as the archaeological record due to analogous problems of preservation. Recognition of this fact inspired Lyell to use an extended metaphor comparing the geological record to texts written in an ancient language (Lyell 1990, 461–62), inspiring Darwin in turn (1859, 310–11).

The point is that text provided an accepted analogy long before postprocessualists rediscovered hermeneutics, as British geologist Henry Thomas de la Beche (1835, 6) made clear by describing strata as 'when rocks are divided into beds like the leaves of a book'. The strength of this analogy, then, reflected more than scientific transparency, or even an appeal to common sense; since it was tied to the common metaphor of *reading* geology – stratigraphy, specifically, but the past in general – *as a text*, any problems then became those of textual interpretation already familiar to the humanist and/or scholastic traditions, and the various forms of the metaphor of the

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archaeological record being like a 'text' were strengthened by the extent to which the archaeological record is as incomplete as written history:

> So few of the Anglo-Saxon monuments, if you accept the manuscripts and coins, have escaped the shipwreck of time, that ... I could never procure more than one small remnant of that nation ... This brass fragment ... was bought out of a brazier's shop at Canterbury, where coins of the ancient Saxons are often found (Gemsege 1754, 245).

Gemsege's *historical* context is evidenced by the fact that his fragment has no *archaeological* context other than 'a brazier's shop at Canterbury'. This is not archaeology, not because Gemsege lacked the three-age system, uniformitarianism and evolution and so on, but because this 'monument' was not found in the ground. Despite this lack of provenance, artefacts – i.e. 'non-verbal documents' (Taylor 1948, 43) – had a long tradition of being valued over texts:

> In 1664 it was the turn of Ezekiel Spanheim to emphasize the importance of coins as historical evidence because they survive better than manuscripts, because they are less biased than texts and because they fill gaps in the historical record with their images of houses, ships, and so on (Burke 2003, 276–77).

Archaeology's eventual evolution as a science resulted from contact not only with images on coins but with *provenienced* finds of all kinds (cf. Edgeworth 2003, 53; Petrie 1904, 51).

Historically, archaeologists excavate because excavation is a more efficient and systematic means for gaining data than such alternatives as the 'antiquarian way'. Not only can archaeology be systematic – a coherent science – if it does not rely on Wordsworth's 'unlettered ploughboys', but the data itself is of potentially higher quality (although still subject to our own biases: paradigms and various potentially idiosyncratic research interests and so on).

Conclusion

As a prelude to a general critique, I would like to ask how we can be good archaeologists, given that we are such lousy historians. I have been trying to show how our biases and preconceptions often lead us astray. I have contrasted cross-cultural and historical examples with the premises of this session, trying to suggest that we excavate *now* in part because of *past* failings: bias, data quality and accessibility and so on.

But, in a sense, the question 'why do we excavate?' is now misleading because, to a large extent, *we* – as archaeologists – no longer excavate. As Jean-Paul Demoule noted (this issue), most archaeology is now done in rescue excavations performed in advance of construction or development work: we do not choose the sites ourselves any more, we only come in to record as much as possible before it disappears. To some degree I see this as positive, in that we are in a position where we could undo some of the mistakes we have made in the past, to look beyond King Tut and Stonehenge and see

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the small, everyday objects archaeology deals with so well (i.e. James Deetz's 'small things forgotten' (1996)).

Thus the problem is not 'the widespread failure of archaeologists to ensure that the results of excavation are published and accessible'. Even when results are accessible (as was the case with the historical and cross-cultural sources cited above), they are rarely examined, and often misinterpreted. Clearly a lot of good work was done without evolution, uniformitarianism and the three-age system, or even 'the application of scientific method to the excavation of ancient objects' (Woolley 1961, 18). But until we develop 'an X-ray machine which would allow us to locate and formally evaluate the range of variation manifest in cultural features' (Binford 1964, 437), excavation generally seems to make for better archaeology.

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Archaeology and the unstoppable excavation machine. A Swedish point of view

*Björn Nilsson**

Abstract

In trying to understand why archaeology is so strongly associated with the method of excavation, this paper examines different relationships between excavation, archaeology, archaeologists and modern society.

Keywords

excavation; field archaeology; Sweden; construction of modernity; cultural heritage

It is a big yellow bulldozer. There are heaps of soil on flattened ground. No humans in sight, but in the background high, towering buildings dominate the horizon. This oil painting by Gerhard Nordström (1925–) is a nice representation both of Swedish welfare and housing programmes during the 1960s and 1970s and of Swedish archaeology (figure 1). The large triptych was commissioned in the 1970s by the director of archaeology at the Malmö city museum. It hung directly above the entrance to the new prehistoric exhibition. It was a thoughtful and ambiguous illustration: the true field of archaeology. After some years it was taken down for reasons unknown; maybe it became too ambiguous.

When my colleagues heard the round table's central question, they exchanged questioning glances since they know all too well my ambivalent position towards traditional archaeology. 'Please tell me you will argue "pro excavation"' was a common reaction. Well, the question demands a different answer than a simple for or against.

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Figure 1 *Triptyk*, 300 × 190 cm. Oil painting by Gerhard Nordström. Published by courtesy of Malmö Muséer. Photo Andreas Nilsson.

Why excavate? My rhetorical point of departure would be that we do so because we cannot stop excavating: archaeologists have become part of an unstoppable excavation machine, at least in Sweden. Now, the metaphor of the machine conjures up both positive and negative associations. What I want to stress is not that archaeology finds itself in a mechanistic condition, but that it must be seen as a vast and never-ending field of activity. Archaeology is not only a scientific discipline, but also a cultural expression. The culture of archaeology is rather physical and connects past and present through tangible historical remains. Excavation is essential in connecting the present to the past. I will argue that archaeology is an unstoppable excavating machine – and that archaeologists are not really in charge.

Let me point out eight distinguishing features of excavation that explain why archaeology can be compared to an unstoppable machine. Nothing new, nothing complicated, but important enough when trying to understand why archaeologists excavate, especially in a modern north European country such as Sweden.

Excavation is a brand

As shown by Cornelius Holtorf (2005; 2007) excavation has become a brand. The image of the archaeologist, in both popular and professional media, centres around excavation. The excavation process is most often treated as the main source of archaeological knowledge and we ourselves tend to reinforce this methodological simplification, especially through popular media. On the edge of the excavation pit, with moving backhoes behind, we hear the archaeologist explaining the archaeological process: after meticulous preparation and excavation, careful post-excavation will succeed. In the three-step method of the archaeological knowledge process – pre-excavation, excavation, post-excavation processing – excavation as the hallmark of the discipline is centre stage and dominates the image and perception of what archaeology is all about.

Excavation is a common metaphor

Equally strong is the more abstract image or metaphor of the archaeological excavation as used by scholars like Freud and Foucault to explain their

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methods of research. There are plenty of other philosophical, poetical and artistic 'archaeologists' doing their own cultural excavations. The excavation as a metaphor for unveiling and uncovering hidden truths is not to be explored here in more detail, but one may assume that 'real' archaeology gains from this figurative use of the archaeological excavation, maybe more than we might expect. Consequently, these other 'archaeologies' tend to flatter, provoke or even influence the more theoretical archaeologist (cf. Holtorf 2005, 16 ff.).

Excavation is a cultural heritage

Archaeological excavation is not just a method of exploration regarding various forms of cultural heritage; it has become a form of cultural heritage in itself. As part of the modern, the Western, the scientific and the colonial, archaeological excavation, and its people, rules and goals, can be seen as a cultural praxis. That archaeological excavation can be seen as a cultural tradition is yet another part of the unstoppable excavating machine. To put it rhetorically and ironically: every civilized country must conduct archaeological excavations. In Sweden, where I work, cultural-heritage laws are strict, and archaeology-friendly. We still spend much money on excavation, although there is a growing body of people who want to reduce the budget for archaeology in general and particularly for archaeological fieldwork.

Excavation is a groundbreaking ritual

The rapidly expanding city of Malmö, in southern Sweden, has been paying millions of euros for excavation every year. The mayor is a proud man. In a groundbreaking ceremony for Hyllie, a new residential suburb of Malmö, he made clear that the first diggers to appear on the spot were archaeologists. As the example illustrates, ideologically, archaeological excavation has become part of the construction of modernity, while more practically, field archaeologist are seen as part of the construction business who come to clear the ground. After completion of the excavation, road or house building can start to take place. Excavation in a sense is thus more of a ritual than a scientific or a rescue operation (Nilsson and Rudebeck 2010, 61). In this sense excavation is beyond the control of archaeology itself.

Excavation produces excavations

Excavation not only produces material and knowledge, it also produces future work and costs. Once the field project has been concluded, excavations continue to generate costs through processing finds and, more generally, the production of a past. But archaeological excavation also produces additional archaeological work in the future. On the one hand, in areas where large-scale exploitation has revealed significant amounts of archaeological materials and 'new' knowledge, archaeology tends to entrench and reinforce its power. Sites or areas of previous archaeological inquiry – spared from exploitation – continuously attract new excavations. This is indeed true for famous sites such as Pompeii or Çatal Höyük, but it is also evident on a more regional or national scale. Repeated excavations can be spread out over decades,

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and do not necessarily relate closely to each other from a scientific point of view. Areas of archaeological research are unevenly spread geographically. Sites or areas with a high density of archaeological activity are often of marked importance for the construction of archaeological biographies, of both individuals and institutions.

Excavation produces archaeologists

People and research institutes are connected to special places, and excavations perform an important role in archaeological categorization and ranking. You are what you excavate – or, more often, what you have been excavating. In that sense, excavation is powerful, since it binds people together, living and dead. Prestigious archaeologists excavate prestigious places, and you can inherit, or earn, part of that prestige if you put the shovel in the same soil yourself. Excavations are great producers of archaeology, not only in a material or epistemological sense. They also produce archaeologists.

Excavation produces archaeology

Excavations produce cultural history, but the excavation process itself is also taken as a guarantee for 'real' archaeological research. It is difficult to think of a rescue archaeological project without 'real' digging, even though one easily can imagine that other methods in some cases could be more effective. If you need research funding, excavation is a good thing. Hence excavation is a prime motor in archaeology, not only as a mode of gathering prehistoric data, but to ensure and secure the field of archaeological thinking.

Excavation is far more than archaeology

From the above one could conclude that archaeology needs the excavating machine. The machine gives us an image, a reputation, a task, people, and money. These are some of the explanations for why we excavate, and also for why a questioning of the *raison d'être* of excavation might frighten some of us. What would archaeology be without excavation? Let me put it this way: excavation is not exclusively archaeological. The excavation machine existed long before the professional discipline of archaeology came into being and will continue to exist longer than our discipline. This recognition is central for the metaphor of the unstoppable machine: to excavate and search for past material is not an exclusively professional enterprise. In order to answer properly the why-question, one has to include other excavation practices: scientific and unscientific, justified and illegal. That is the composition of the excavating machine, and that is why it has become, or has always been, unstoppable, from the archaeologist's point of view.

From a Swedish perspective I dare to claim that the question 'why excavate?' is redundant. Of course, things do change: the future of archaeology is hard to tell. In a longer-term perspective, more thrilling questions might be raised, such as 'how long can archaeology live with excavation?', and indeed, 'how long can excavation live with archaeology?'

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A new empiricism. Excavating at the start of the 21st century

*Jan Kolen**

Abstract

This paper investigates the rationale for excavation against the background of a new trend in archaeology: the renewed interest in the values of experience and empiricism in both archaeological practice and interpretation. It is argued that we should seriously reconsider the principles of archaeological heritage management as it has developed from the 1970s onwards. Reasons for excavating are discussed by referring to three examples: (1) the reconstruction of cultural evolution in the time period roughly between 40,000 and 30,000 B.P, when anatomically modern humans entered Europe but Neanderthals were still there; (2) recent excavations in 20th-century terrorscapes; and (3) public activities, like geocaching, that evoke a kind of 'archaeological experience'. It is concluded that the time is ripe for a broad empirical and experiential attitude, based on new intellectual orientations like the new empiricism, to return to the archaeological agenda. Excavation may fulfil a vital role in this project.

Keywords

excavation; new empiricism; experience; Palaeolithic archaeology; terrorscapes; heritage

Archaeology: excavation machine or ethics of abstinence?

In the 1970s, doubts emerged amongst European archaeologists with regard to the necessity and inherent importance of excavating. These doubts originally existed amongst a very few scholars, and they emerged in some countries (e.g. England) somewhat earlier than they did in others. Nonetheless, they gradually grew into a sort of subdiscipline – archaeological heritage management (AHM) or, more generally, cultural resource management (CRM) – with its own principles, theories and methods (Cleere 1989). The practitioners of this subdiscipline provided a source of reflection for the profession: non-scientific actors and groups are not the only ones to treat archaeological heritage carelessly and wastefully; archaeologists do as well. Through their often undisciplined acquiescence to their desire to excavate, they share the blame for the destruction and endangerment of important cultural resources (Bonnie, this issue). Archaeological heritage management therefore argues for a strict ethic of abstinence, a policy that initially appears impossible to reconcile with the personality structure of the average archaeologist. The word *Lustgrabung*, the practice of excavation

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purely in the interest of scientific gain, is now being applied outside Germany to denote a questionable practice.

Although the AHM discourse suggests that the cultural interest of archaeological heritage should play the central role, the quest to preserve archaeological sites became emphatically grounded in an undiluted ideal of scientific progress. The most important goal was the conservation of sites and remains so that future generations of archaeologists would be able to consult an authentic 'soil archive' with improved methods, techniques and research questions (Skeates 2000; Bonnie, this issue). Upon closer examination, the ethic of abstinence thus emerged as a technique for *delaying* the act. Although it is assumed that, in addition to archaeological science, society stands to benefit, AHM has not yielded the desired effects in most European countries. More than a quarter-century after the birth of AHM, archaeologists continue to excavate with abandon almost everywhere. In addition, despite the gradual increase in the number of protected archaeological monuments, this increase has been greatly exceeded (particularly in terms of surface area) by the loss of archaeological heritage, sometimes involving entire landscapes.

Tangentially, this could have something to do with the mentality of the archaeologist, for whom excavation has remained a sort of 'second nature'. It seems unlikely that a theoretical power shift would have much influence in this regard. In the 1990s, although postprocessual lines of research have gained ground, thereby eroding the promise of scientific progress in archaeology, the influence of these lines on the practice of excavation and heritage management ultimately remained quite limited. The most important cause of the advancing destruction of archaeological heritage and the further increase in excavations should be sought in an irrefutable regularity: the world is stronger than archaeology, instead of excavation being stronger than the archaeologist. In this regard, I am referring particularly to the world of builders, land managers, project developers and real-estate traders.

This natural law was clearly proven after the establishment of the Valletta Treaty in 1992 and the development of 'Malta archaeology' in various European countries in the years that followed. Even in a small country like the Netherlands, the Malta regime led to an increase of tens of millions of euros in the total budget for excavations (reaching a total of €70 million), a fourteenfold increase in the number of small-scale excavation projects (trenching) and an increase in the number of large-scale excavations from a few dozen to just under 200, all within the span of 10 years (Bazelmans, in press). The Valletta Treaty still refers to the protection of archaeological heritage *in situ*, preferably in the form of continuous reserves. Many are afraid, however, that the introduction of 'Malta' in various countries will actually result in a destructive and exorbitant excavation machine (cf. Nilsson, this issue), which will prove disappointing in terms of scientific production and social impact. There is a fear that motives related to economics, financing and urban planning will be the most prominent drivers in decisions regarding whether and what to excavate, and that commercial operations and excavations will lead to risk-free reproduction and deficient exchanges (and thus fragmentation) of knowledge (e.g. Sommer 2009). For this reason, the question is being posed once again: why excavate? Are archaeologists

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excavating too much and too easily? Is it possible to formulate stricter conditions and better research questions that would allow us to curb the excavation frenzy to some extent? We have obviously conceived of answers that are better than simply saying that excavating is 'our second nature', that the public likes to see us doing it, or that we simply need excavations to support the discipline (and archaeological community) economically and financially during a time in which marketism has replaced Marxism as a widely accepted ideology, even in intellectual circles (as proposed by one Dutch sociologist).

I obviously do not pretend to provide a clear-cut answer to these questions – or even to make a cautious start – within this short time. To be precise, there are conceivably a million good reasons to excavate, although the validity of these reasons varies for each situation. My contribution therefore does not involve conceiving of possible answers; it is more likely to signal a trend. It expresses the sense that excavation is becoming more important (although not necessarily in terms of total volume), as the discipline currently seems to be rediscovering and revitalizing the values of experience and empiricism. I shall briefly discuss three possible reasons, using examples to illustrate each reason. The new interest in the empirical and the experiential may help us approach the central issue ('why excavate?') from a new angle. I would like to state in advance, however, that I do not necessarily identify with the positions and developments described or predicted in my paper.

Example 1: unravelling the enigma of arrival (40,000–30,000 B.P.)

Possibly more than all other 'branches' of the discipline, Palaeolithic archaeology has become accustomed to the fact that the archaeological patterns that we excavate do not always match our everyday perceptions and concepts of time. Even the Palaeolithic patterns that have been handed down and excavated under the most favourable of conditions often leave us wondering whether they were formed in a matter of minutes or over thousands of years (Roebroeks *et al.* 1992). The precise identification of time volumes and the fine-grained reconstruction of temporal rhythms within them usually remain outside the reach of the methodological and interpretive frameworks with which Palaeolithic archaeologists think and work (Verpoorte 2001). Archaeologists who are cognitively opposed to these frameworks run the risk of 'putting Charlemagne on a motorbike' – the unjustified coupling of events that seem to be closely related in the archaeological record but in fact were far removed in time (and sometimes also space) in the past (Pettitt 1997).

Despite this risk, Palaeolithic archaeology has the unique potential to follow cultural changes and developments that took place over tens or hundreds of thousands of years and that made us who we are (or have shaped others who are no longer on the scene any more, but who should not be considered any less or less interesting). Particularly in the most recent decade, this has generated creative and innovative insights into the evolution of human societies, as with the changing relationships between identities, forms of material culture and technologies (Gamble 2007), as well as the diverse origins of human burial (Pettitt 2011). In a few cases, however, the excavation and analysis of well-preserved archaeological deposits *has* shown

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that Palaeolithic archaeologists can reach an unexpected level of temporal detail. For example, this has been the case at Kebara (Bar-Yosef *et al.* 1992; but see Bailey and Galanidou 2009 for comparable achievements for other cave sites). These excavations did not deliver any sharp snapshots of past events. In a sense, however, they did offer the opportunity to visualize or conceptualize the layered evidence of sites as a kind of film (albeit yellowed and grainy) of the dynamics and rhythms of human action that took place on that particular spot.

One of the major problems of Palaeolithic archaeology is that we are currently lacking all these opportunities, with regard both to conceptualizing the finer temporal rhythms and to telling reliable stories about far-reaching histories, for particular time periods that are crucial to our understanding of human evolution, at least on the European continent. One of these is the time period roughly between 40,000 and 30,000 B.P., when anatomically modern humans arrived in Europe while the Neanderthals were still there. The manner in which they coexisted and interacted with each other for more than 10,000 years is one of the major enigmas of Palaeolithic archaeology, and it makes this period one of the most intriguing episodes in human history.

In Europe, a sharp dividing line has traditionally been drawn between an older Middle Palaeolithic, associated with Neanderthals, and a younger Early Upper Palaeolithic with more evolved technologies and material culture, associated with the first anatomically modern humans who spread over the continent. In the last 20 years, however, this picture has become more complicated through the discovery that Neanderthals survived in south-west Europe until around 25,000 years ago (Finlayson *et al.* 2006). The cultural package of the anatomically modern humans is thought to be best represented by a small number of classic cave sites, notably in the Lonetal in southern Germany (the Vogelherd, Hohlenstein-Stadel, Brillenhöhle, Hohle Fels and Geissenklösterle caves; see figures 1 and 2). In these caves, the relics of campsites from the so-called Aurignacian culture were excavated from the 1930s onwards (Riek 1934; Hahn, Beck and Taute 1985). The sites contained not only the remains of the earliest colonists themselves, but also everything we would like to see in the behavioural repertoire of our earliest ancestors: evolved projectile technologies, fine flint implements and well-made bone tools, body ornaments and even impressive art objects. Together with the evidence from key localities in France (mainly the Périgord), the German sites formed the basis for inferring a rapid cultural revolution, set in motion by anatomically modern humans between 40,000 and 30,000 years ago. Later theories elaborated on this image by defending the idea that anatomically modern humans replaced the Neanderthals because they were smarter, more efficient and better adapted to extreme environments and because they were better social networkers (Mellars and Stringer 1989; Mellars 1990).

In the 1990s, this 'replacement theory' was attacked by Joao Zilhão and Francesco d'Errico. Reanalyses of old excavations in the Grotte du Renne at Arcy in France, and close inspection of a more recently excavated site at Saint Césaire (Charente, France) revealed that another 'modern-looking' Upper Palaeolithic culture that is believed to be even older than the Aurignacian (i.e. the Châtelperronian) must have been the work of Neanderthals, and not

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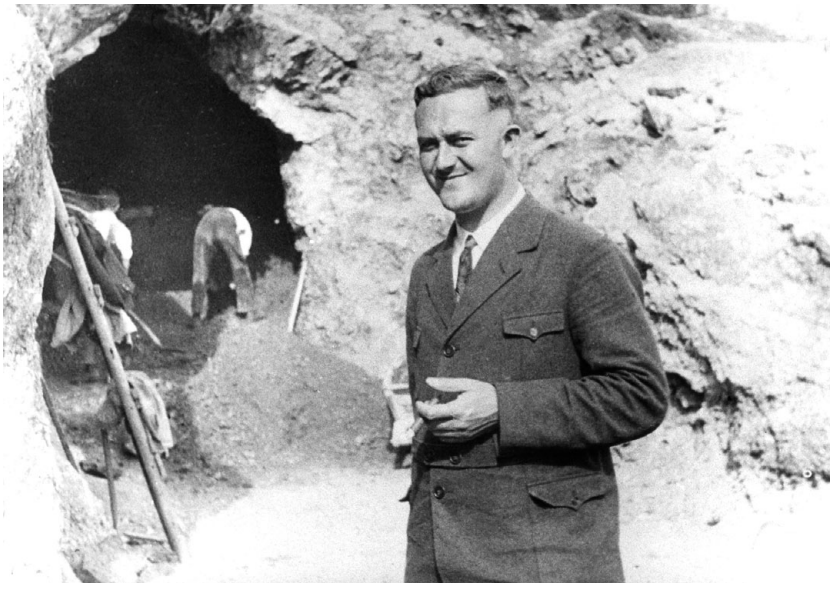


Figure 1 Gustav Riek in front of the excavations in the Vogelherd cave (Germany), 1931 (photograph University of Tübingen).

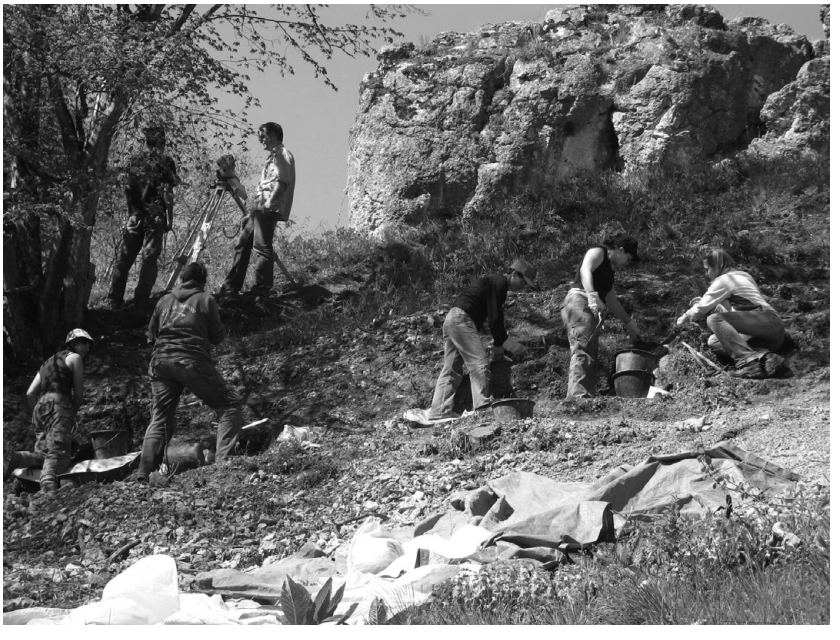


Figure 2 New excavations at the Vogelherd cave by a team from the University of Tübingen (supervised by Nicholas Conard), 2008 (photograph Teresa Verrept, University of Tübingen).

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of anatomically modern humans (Hublin *et al.* 1996; d'Errico *et al.* 1998). The two Châtelperronian sites contained evolved bone and stone technologies and body ornaments, and even the supposed outlines of elaborate dwellings and hearths. The conclusion was drawn that the late Neanderthals were no less smart than were their anatomically modern contemporaries. Zilhão and d'Errico therefore proposed *replacing* the replacement theory with a model of regional continuity. In its turn, however, this new model has been criticized in recent years based on a *second* re-examination of the Châtelperronian key sites, leading Ofer Bar-Yosef and his team to conclude that the occurrence of Neanderthal remains in the Châtelperronian levels could well be the result of a postdepositional mixing with older Mousterian levels (Bar-Yosef and Bordes 2010). This conclusion is not watertight, as the resolution of data recovery and processing during the old excavations obviously did not meet current standards, thus leaving us with relatively crude excavation plans and stratigraphies.

In the meantime, the reanalysis of human remains from the Aurignacian Vogelherd site (southern Germany) revealed that these remains could not have belonged to the first anatomically modern humans of Europe. Instead, they turned out to be the remains of people who had visited the caves or who were buried there much later, during the Neolithic (Conard, Grootes and Smith 2004). In light of these new findings, Clive Finlayson concluded that all existing theories about human evolution between 40,000 and 30,000 years ago should be completely reconsidered. By now, they all seem to be castles in the air, as we have no reliable evidence whatsoever concerning the relationships between the earliest Upper Palaeolithic cultures and the different kinds of human who were living in Europe at that time (Finlayson 2009, 121–42). Both the Châtelperronian and the Aurignacian cultures could have been made by Neanderthals, by Moderns, by both or even by a yet unknown proto-ancestor. According to Finlayson, this 'frustrating picture of gloom and doom' (ibid., 129) should not be cause for despair. It is clear, however, that the debate about cultural evolution in the Early Upper Palaeolithic cannot progress through further theory building and interpretation, as recent theories have considerably overstretched the interpretive potential of old excavations.

To conclude, the archaeology of the first anatomically modern humans in Europe started with a period of intensive digging (between about 1930 and 1970), followed by a period of constant reinterpretation and reanalysis of older excavation plans and finds (1970–2000), ultimately resulting in the constructive debunking of the most important theories (2000–10). This means that we should return to the excavation pits to clear up this enigma. At this stage, the debate about human evolution within this particular timeslot presents an empirical rather than a theoretical challenge. Although the chances of discovering sites from this time period are extremely small, we should use every opportunity to gather new information using the highest standards of modern field research. Although many of the caves have a protected status, we should even reconsider the principles of archaeological heritage management in order to re-create the possibility of field research at the classical sites of Palaeolithic archaeology (cf. Conard and Malina 2007). In this context, the careful re-excavation and re-examination of old

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profiles and still-existing sediments may develop as a new specialization of field archaeology.

Over the last 20 years or so, the notion of scientific progress has largely disappeared from theoretical discourse in archaeology. Instead, many (but not all) postprocessual archaeologists are defending the idea that the discipline is not *progressing* but *proceeding*, albeit in exciting and challenging ways, and that new theories and insights are actually no more reliable or factual than were earlier ones. Although such constructivist notions of science are well argued at times, the Early Upper Palaeolithic 'enigma of arrival' reminds us of the fact that empirical observation and early archaeological experiences set clear limits to, and can seriously improve or decrease, our present-day imagination and theory building.

Example 2: the archaeology of terrorscapes

For the second example, we will look more closely at the other end of the archaeological timeline: the archaeology of 20th-century terrorscapes. The term 'terrorscape' (or 'traumascape') has been introduced recently by historians in order to refer to networks of places of trauma and terror (e.g. concentration camps and mass graves), and their relationships with present-day memory cultures (Tumarkin 2005; Nachama 2008; Logan and Reeves 2008). The archaeology of 20th-century war, terror and conflict is a growing field of research. It largely follows the methodological innovations of battlefield archaeology that developed somewhat earlier as a separate, specialized subdiscipline. The archaeological research of terrorscapes often overlaps with personal and collective memories. It also shows that archaeology is able to contribute to a fuller story about the war-related past by literally presenting a view 'from the underground'. In methodological terms, the discipline is eminently suited to present micro-histories about the material aspects of everyday life in local settings. Although this potential firmly positions archaeology in relation to other historical disciplines, it has not yet been fully explored, as academic archaeology generally produces 'grand narratives' using models from economic, social and political history, as well as anthropological blueprints.

The terrorscapes of the Second World War and the post-war years have understandably attracted the most interest amongst archaeologists to date. In this respect, the research in Germany (Ravensbrück, Kleinmachnow,Rathenow, Buchenwald) and Poland (Katyn, Szczecinek) sets the agenda, although other countries are following rapidly, as shown by recent excavation projects in France (La Glacerie, Normandy), Sweden (Eckersta) and the Netherlands (Amersfoort). Excavations at the Sobibór extermination camp (Poland) conducted by a team from Ben Gurion University uncovered a small informal pathway to the gas chambers, as well as a concentration of scissors and shaving brushes that mark the spot of a 'hair-cutting section' (www.yadvashem.org). Neither could ever have been located if only historical archives and personal memories had been used for reconstructing the use of space within the camp. In cases like these, archaeological discoveries tell the story of how oppression, terror and conflict infiltrated into the intimate and private life worlds of camp prisoners.

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In some concentration camps (e.g. Rathenow in Germany and the SS Konzentrationslager Herzogenbusch in Vught, the Netherlands), personal possessions were rediscovered that identify individual camp prisoners or were recognized by survivors. The finding of an aluminium key with a Cyrillic text reading 'Take your own key, not mine, Gypsy' indicates that the supposed solidarity amongst the camp prisoners of Buchenwald was not always the rule or that interpersonal and intergroup relationships may have been much more problematic than remembered or recounted afterwards (Toebosch 2006). The excavated relics of a small camp near Kleinmachnow, where prisoners were forced to work in a factory producing Bosch machinery, show that the Nazis treated western European and Soviet prisoners quite differently: the barracks of western European prisoners were provided with a sturdy concrete foundation and plumbing facilities, while those of Soviet prisoners were built on wooden posts and lacked good sanitation.

In some cases, excavations at the hotly debated sites of the Second World War may have important political consequences. A well-known example is Father Patrick Desbois's reconstruction of the precise ways and exact locations of the extermination of more than one million Jews in the Ukraine and Belarus by mobile Nazi units between 1941 and 1944 (Desbois 2008). In this case, archaeological excavation was combined with archival research and the recording of witness reports in order to fill in the details of the 'Holocaust by bullets'. Another example involves the discovery of camp Rathenow by German archaeologists six years ago, despite the fact that the present community was unaware of or denied the existence of the former camp (Toebosch 2006; see also Antkowiak 2002).

It is evident that archaeological research at the terrorscapes of the Second World War, particularly those connected with the Holocaust, is concerned with more than making reconstructions of everyday life in the concentration and internment camps; in a sense, it also involves the process of unearthing *truth-values*. In this respect, the archaeology of the Second World War contrasts with recent autobiographical literature, in which some camp survivors have expressed the opinion that the time has come to mix fact and fiction in order to represent the war-related past in more imaginable ways for the wider public and younger generations (as in the work of Imre Kertész). In the case of archaeological research on terrorscapes, a postmodern constructivist notion of archaeological interpretation as relative to place, time, culture and political context is problematic. In the light of ongoing and recent Holocaust denials and the contested nature of more recent war events, archaeology faces the burden of proof. One fundamental factor in this burden is the public conviction (at times shared by archaeologists) that archaeological traces do not lie, whereas written and oral accounts of the past may potentially distort or misrepresent the picture of what actually happened (Toebosch 2006; see Wagenaar and Groeneweg 1990 for the distortions of autobiographical war memory). In response to such claims, Philip Grierson remarked long ago that 'it has been said that the spade cannot lie, but it owes this merit in part to the fact that it cannot speak' (Grierson 1959, 129). Regardless of what archaeologists may think of the truth-value of archaeological interpretations, however, it is clear that the discipline cannot

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withdraw entirely from public and political expectations in these matters. Society expects archaeologists to reveal the truth (or most probable scenarios) about the war past in local settings.

We should be aware that such political embedding of archaeological excavation is likely to increase further in years to come, as archaeology may become even more involved in the historical and political evaluation of contested wartime events. This will involve events not only related to the Second World War, but also with regard to the Balkan War and more recent conflicts in the Near East and Africa.

Example 3: geocaching as a model for the public experience of archaeology

In an earlier article for this journal (Kolen 2009), I stated that a considerable impact has traditionally been attributed to archaeological discovery and the unearthing of archaeological traces from the past, by both professional and free-time archaeologists. Experiences reported after excavating or making a discovery are often reminiscent of what historians have termed the 'historical sensation' (Huizinga 1936; Ankersmit 2005; see Shanks 1992 for a similar concept). In many cases, this moment of discovery, for which excavation is an important medium, is described as an immediate and pre-reflexive experience of the past. Archaeological perceptions of this kind also evoke a process of 'singuralization' – the production of a unique, true and highly personal relationship with a place, object or event. Under the Malta regime and other versions of market archaeology, however, non-professional archaeologists and other (non-archaeological) interest groups are increasingly being restricted from active participation in the process of excavation or from opportunities to make archaeological discoveries. They simply do not fit in with the highly professionalized frameworks and procedures that are employed in commercial archaeology in order to safeguard commissioning bodies from high costs, planning disasters and political mistakes. Paradoxically, even as they are being excluded from the most fascinating parts of the archaeological process, groups within society are developing all kinds of activities and techniques for evoking similar events, experiences and emotions, especially in the context of what has now been called the 'experience society'.

One of these activities is 'geocaching'. This new trend offers a preview of how public experiences of archaeology may appear in the near future. Geocaching is an outdoor activity that involves the use of a global positioning system (GPS) to hide and discover small treasures or caches in the landscape (see http//en.wikipedia.org/wiki/Geocaching). These caches need not have monetary value, but some may hold unusual coins or currency, toys and other small objects. In the last few years this activity has become extremely popular worldwide. Geocachers are exchanging information through the Internet, field gatherings and magazines (e.g. the English-language *Geocacher Magazine* and the German-language *Geocaching Magazin*). The experience evoked by geocaching mirrors the archaeological experience in several respects. First, it provides the thrill of unearthing a hidden treasure or meaningful trace. Geocaching also offers a lively encounter with the historical layeredness of places, as its goal is to lead the geocacher to remote locations with spectacular

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Figure 3 This photograph presents a view of the landscape of Ringebu, Norway, through the wreckage of a German Junkers 52 (after Gründel 2010, 72). The well-preserved wreckage, dating from the Second World War, is the destination of a long geocaching travel which – like other geocaching sites – evokes a lively experience of nature, landscape and historical relics.

views, natural or geological qualities and unexpected archaeological or historical traces.

Figure 3 shows the main target of one such journey: the forgotten but well-preserved wreckage of a German Junkers 52, dating from the Second World War, situated in the empty landscape of Ringebu in Norway (Gründel 2010). In some regions, notably in nature reserves in the USA, the possibility of geocaching is considerably restricted, as it is believed to cause damage to archaeological monuments.

New phenomena like geocaching indicate that the public can no longer be excluded from archaeological discovery and the practice of excavation, and that we must look for new digital formats for the exchange of experiences, memories and stories about excavation sites between archaeologists, inhabitants and visitors. This third example, therefore, may make us aware that we also excavate – or *should* excavate – in order to offer the public an opportunity to identify with places in their living environments through the experience of the material past.

From models and meanings to experiences and empiricism

I have presented the foregoing examples somewhat simplistically as having different profiles: scientific, political and public. With the first example, I tried to show that archaeology is likely to be increasingly influenced by its own empirical heritage. Key sites discovered during the early stages of the discipline's history continue to inform archaeological interpretation and theory building, but it is increasingly felt that excavations in question took

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place in other scientific worlds. The growing need for reanalysis and even re-excavation of sites therefore entails much more than the mere attempt to calibrate them according to modern theories. In a sense, they aim to calibrate old interpretations according to our present-day empirical standards. This inevitably implies a belief that scientific progress in archaeological research is facilitated by universals of some kind. The second example highlighted the urge for the straightforward verification and falsification of stories about the past in relation to the production of truth-values and ethical values in the political arena. While this demands critical reflection on these burdened concepts, we cannot escape the involvement of archaeology with political and ethical concerns of this kind. With the third and final example, I pointed out that we have to look creatively and inventively in order to facilitate public experiences of the past during excavation and field discovery. If we cannot realize this ourselves, we may eventually expect reinforcement from groups within society, as commercial excavations are well embedded in interactive planning procedures and are being commissioned by private or governmental organizations.

Nevertheless, all three examples eventually touch upon the task of archaeology to provide society with 'richer or fuller stories' about the past and our living environment (Ingold 2000, 199). In this respect, all of the examples obviously combine scientific, political and public issues and challenges to varying degrees. They also share a third significant trait of the modern archaeological project: the renewed primacy of and interest in experiences and the 'empirical'. In the past four decades, archaeological theory relied heavily on branches of rationalism and idealism. In the rationalist branch, archaeological phenomena were explained with the help of deductive logic, in which models and law-like generalizations formed the guidelines for making the past understandable in terms of the present and according to modern concepts. In the idealist branch, the emphasis was on meanings and ideas, primarily those of people in the past, but with a rapidly shifting focus towards the production of identities and values by people who have an interest in the past for present-day purposes (including archaeologists).

In recent years, archaeologists have begun exploring alternative routes that may help them escape from these relatively closed realms of models and meanings. We can see the same happening in such neighbouring disciplines as cultural geography, sociology, social anthropology and history. Phenomenology is understandably an important source of inspiration in this respect for some (Weiner 1991; Tilley 1994; Ingold 2000; Thrift 1999), as it is based on a well-developed interest in the ways in which we perceive the world with our senses and body (Merleau-Ponty 1962; Lemaire 2002). Others follow pragmatic routes, focusing on the way the world works and how people (and animals) act, rather than on how the natural and social world is represented and imagined, as is the case with performance theory (Cresswell 2002; Lorimer 2005; 2006). Pleas for a return to empiricism in the natural and life sciences (e.g. genomics) prove that this in no way implies a simplification of scientific understanding. In fact, it reveals how complicated life may appear to us in comparison with what models may tell or make us believe (Hayden 2010).

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In a similar way, we are witnessing the emergence of an archaeology that is reappraising and revitalizing experience, sensory perception, empirical observation and discovery. This could help archaeology develop into a discipline that is fascinated not so much with 'predicting' what people may have done in the past or could have been capable of doing (e.g. the counterfactual histories explored in the debate on early human cognition and evolution), but with what they actually did and performed under specific circumstances. These developments could also usher in an archaeology that is less interested in symbolic landscapes than it is in taskscapes (a term coined by Ingold, 1993), and less interested in the mirror game of semiotic reflection and discourse analysis than it is in real-world encounters with the (material) past.

Sketching the contours of a renewed empirical archaeology should not be confused with a plea for a positivist archaeology or narrow inductivism. In present-day philosophy and the sciences, 'new empiricism' covers a very wide range of perspectives, from the constructive empiricism and empirical logic of Bas van Fraassen (Van Fraassen 1980; Monton 2007) to the postmodern convictions of Gilles Deleuze (2001) and the relatively simple observations of everyday life. In all of these varieties, however, the ways in which we experience, perceive and observe the world are taken seriously as the starting point and basis for knowledge and understanding.

In light of recent developments within the discipline, whether in the context of academics, the market or the community, it seems that the time is ripe for such a broad empirical and experiential attitude, in its various expressions, to return to the archaeological agenda. Excavation should obviously be at the core of this project.

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Why excavate? A South African perspective

*Ndukuyakhe Ndlovu**

The subject of the round table is a sensitive one, depending on the interest one represents. Based on my own work experience in South African

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heritage management in both national and provincial heritage bodies, I tackle this subject from the heritage authority's point of view. I will argue that archaeological sites should be left *in situ* or excavated only partially. When excavation is necessary, stringent procedures are to be put in place.

As an undergraduate and future archaeologist I was told that the amateurs and professionals who excavated in the past did not have the best excavation techniques and, as a result, were responsible for the destruction of valuable archaeological data. Many believe that our latest technological means and the questions we ask are far superior to those of previous generations. Some will even go further and argue that old archaeological material kept at various museums is more or less useless, since in most cases the context was destroyed during its collection. This has, in some instances, necessitated the re-excavation of sites.

The significance of excavation in archaeology has been further highlighted by the perception of the discipline amongst some sections of our society. In my experience, the discipline has become synonymous with excavation, even though this may not have been the case historically (Carver, this issue). A number of African people who have shown an interest in what I do as an archaeologist routinely equate archaeology with excavation. This, I have found, is because of the media coverage that the Sterkfontein Caves – the cradle of humankind – have received over the years.

While excavation and archaeology have become synonymous, the question 'why excavate?' is still very relevant. In tackling that question, I propose that we not limit ourselves to the abstract value of the excavation process (Demoule, this issue; Kolen, this issue), but include in the discussion the whole chain of events that follows once the fieldwork has been completed. Furthermore, the environment in which the excavation takes place – academic or commercial – needs to be taken into account. The following five factors may be seen as having an important impact on present-day South African archaeological practice:

1. In the last two decades, but especially in the last 10 years, the role of commercial archaeology has grown in South Africa. This growth has been encouraged by a legal obligation to carry out impact assessments when particular kinds of development are planned. This has grown from strength to strength over time. Cultural resource management (CRM) firms have proved to be significant employers for archaeologists, as jobs in academia are limited. Based on my own experience, I argue that since commercially driven archaeologists have to create jobs for themselves, they tend to recommend a lot more excavations than necessary, which leads to museums accumulating the same kind of material over and over again.
2. The quality of excavation techniques used in the CRM sector and the lack of publications have been seriously criticized by those in the academic arena. These flaws may be explained by the speed at which excavations

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are conducted in the commercial sector and the nature of the business of having to run from one project to another. Commercial archaeologists are happy to fulfil administrative requirements set by heritage authorities to get the archaeological permit, but not so happy to ensure that post-excavation requirements are properly met too, i.e. submitting permit reports. Other areas of concern relate to the training and experience of those active in commercial archaeology.

3. Through commercial archaeology, museums around the world are fast accumulating many more artefacts and a number of problems arise with this scenario. How different from what we already have are the archaeological data we are accumulating? If we continue digging up the country for economic reasons relating to our own security of employment, we are running the risk of having a shortage of space and of having the same archaeological record dug up all the time. It is of even more concern when the archaeological material excavated and taking up space at the museum almost never forms part of any further study. The Western Cape Province is already facing this challenge and no solution has yet been found.
4. We often argue that the need for commercial archaeology arises because known archaeological sites are threatened by development. I argue that, in South Africa at least, we are not proactive enough in our efforts to safeguard sites, and have a culture of keeping the locality of archaeological sites secret, thinking this the best way to protect them. It would help, in my experience, if developers knew in advance just how archaeologically significant an area is, as opposed to the current practice.
5. A number of archaeologists I have come to know have made legacies in the discipline by being attached to particular archaeological sites they have excavated for many years. Through such actions, they create personal histories in the discipline and come to 'own' those particular sites they have excavated.

From the above, a number of issues can be identified, ranging from the value of excavation in mitigating the destruction faced by archaeological sites to the number of challenges the process of excavation has brought to the discipline of archaeology. These challenges cannot just be ignored because of the role excavation plays in our inquiries of the past. While I would not advocate a total ban on the excavation of archaeological sites, whether for commercial or academic purposes, I would like to see that stringent procedures are put in place to reduce the unnecessary proliferation of archaeological excavations. As the best alternative, archaeological sites should be left *in situ* or excavated only partially. Leaving some archaeological record *in situ* enables future researchers to ask a different set of questions that may interest them, and they may have different and advanced excavation techniques. Digging up everything, compelled by commercial operations, and filling up museums is not helping our discipline.

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Excavation as a ground of archaeological knowledge

*Matt Edgeworth**

In answering the question 'why excavate?', much of the discussion in this stimulating session was pitched at the level of managerial considerations (in commercial archaeology) or the pros and cons of excavation for the discipline as a whole (in academic archaeology), with some attention paid to issues of publication. While acknowledging the great importance of that debate, and the many interesting points put forward, I would like to suggest that excavation also has significance for archaeologists on a much deeper, existential, level.

Archaeology is, of course, a very broad profession which includes many different kinds of investigative technique, of which excavation is only one. Excavation, however, is what might be called a core method, the essential principles and rationales of which inform our approach to all the others. Thus in a landscape archaeology project, for example, archaeologists may make use of geophysical survey, earthwork survey, aerial photography, historical documentation and so on; indeed, it may not be necessary to carry out excavation. A good landscape archaeologist can tell a great deal about the development of the landscape just from walking over it. But the particular 'ways of seeing' and 'ways of thinking' that enable him or her to decipher the landscape, or even to perceive the layering and intercutting of landscape features in the first place, derive in large part from the craft tradition of excavation.

John Cherry gave a good example of why excavation is not always necessary when he described the intensive survey of Thespiai in Greece carried out by himself and John Bintliff. But the fact is that, being archaeologists, they were drawing their approach and perspective from disciplinary traditions that were heavily influenced by excavation. As a result, the survey of the city they produced was very different from one that would have been carried out by a geographer or building surveyor, or any other kind of non-archaeologist. Our rootedness in excavation gives us a particular and distinctive slant upon landscapes and material objects, whether or not we are actually digging. This is what I mean when I say that excavation is a core method.

As a core method, then, it is necessary for an archaeologist to gain some experience and mastery of it in order to 'be' an archaeologist. Something of the essence of archaeology really is bound up with excavation, and not just in terms of its image in popular culture. Excavation is to archaeology as ethnography is to cultural and social anthropology. It may well be, as Björn Nilsson suggests, a kind of institutionalized 'clearing of the ground' ritual that society carries out prior to development taking place, and thus a part

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of the construction of modernity. But it is also a crucial rite of passage for archaeologists to undergo in becoming archaeologists.

Archaeology is fortunate to have such a distinctive method at the heart of its discipline. Excavation affords an encounter with material remains that is qualitatively different from the encounter that occurs, for example, between historians and documents, geologists and rock strata, or geographers and land-/cityscapes. The excavation site is where archaeologists come into direct physical contact with unfolding material evidence that has the capacity to 'kick back' against applied ideas, models and theories. As any digger can testify, what is unearthed in the course of that engagement can often confound or surprise, forcing modification of schemes of interpretation. This is where theories can be tested against a touchstone of reality, and remoulded in a collaborative and creative act of interpretation that takes account of the resistance of emerging evidence. It is in an important sense the practical ground of archaeological knowledge. We lose touch with it at our peril!

A problem is that the very structure of the archaeological profession encourages us to do exactly that – to lose touch with excavation, impelling us on a career progression into management or teaching. We become project managers, research associates and professors, who rarely get the time to go out in the field, and mostly rely on others to excavate for us. The irony here is that as soon as we become good at the practice of excavating, achieving some sort of mastery of it, we are forced to leave it behind. That is, in my opinion, a great loss not only to the individuals concerned (though they themselves may not see it that way), but also to the craft of archaeological excavation itself, for much of the expertise entailed in excavating is embodied knowledge: there is a tacit dimension to it that cannot be taught in a classroom or put into a procedures manual. As in any craft, experienced practitioners are needed to pass on competencies through example and demonstration. Excavation is where a James Mellart or Ian Hodder (or indeed any skilled excavator, from site director to site assistant, whether well known or not) picked up their skills in the first place. It is also where they put themselves back into the practical craft tradition of excavation, passing on the benefit of their acquired experience of all the sites they have ever dug, and no doubt some of their accumulated quirks too, to subsequent generations. Without this mode of cultural transmission, the practice of excavation as a set of craft skills would quickly degenerate into mere enactment of procedures.

There is also the problem, brought about in part by the current economic downturn, that it is very difficult for students of archaeology to find work with archaeological units. The jobs available require experience which can only be acquired by getting a job – a classic catch-22. This means that, in so far as archaeology is a craft, many potential future archaeologists are missing out on an essential part of their craft apprenticeship. The traditional initiation or rite of passage of excavation on the path to becoming an archaeologist is partially blocked.

The asking of the question 'why excavate?' suggests that archaeology has momentarily lost its footing in this remarkable fieldwork practice, which is so inextricably bound up with the historical development and identity of the discipline. But such moments of ontological doubt are actually opportunities

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to rediscover the grounds of our very being as archaeologists, to acknowledge the centrality of digging in the essential spirit of the archaeological enterprise, to redouble efforts in helping students get the experience of digging they need, and perhaps even to find our own way back – to make a return to excavation, one of the principal sites of the production and reproduction of knowledge about the past.

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Why excavate? Triaging the excavation of archaeological sites

*Ezra B.W. Zubrow**

The issue is not 'why excavate?', nor is it whether or not to excavate sites. Nor is it the numerous ancillary considerations mentioned at the round table and in the papers – too many sites, too few resources, too large a backlog of unpublished sites, or saving sites for future techniques. All – excavators, archaeologists, curators and cultural heritage managers – would agree. If there is a unique world-class site that will be destroyed in a few weeks, it should be excavated. One needs to excavate to preserve the heritage, information, artefacts and context.

The issue is which specific sites should be excavated and which should not. How does one prioritize particular sites for excavation? Furthermore, what criteria determine these priorities? In short, archaeologists must rationalize the decision process for determining site excavation. A diagnostic system for making the decision is required.

Given a surplus of sites and limited resources to excavate, a methodology similar to the triaging system that was developed for emergency care is appropriate. Battlefield medics and hospital emergency rooms have an analogous surplus of patients and limited set of resources to apply to saving lives.

Triaging creates four categories – one category of no priority and three categories of diminishing priority. Hence the name triage. Although there are different scales, the system essentially divides patients into lost (dying, dead and no-priority), cannot wait and needs immediate treatment, has to wait but needs treatment, and minor injuries for which treatment is not necessary.

Thus archaeological sites would similarly be divided into four groupings.

There are those sites that are in such bad shape or in such impossible situations that no matter what you do they are lost. Next, there are those sites that need immediate excavation. These, in turn, are followed by sites where excavations may be delayed. Finally, excavation may not be necessary at all for some sites.

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From this 'rationalizing process' some corollaries become clear:

a) Triage criteria should be objective, transparent, equitably applied and publicly disclosed. Their ethical implications need to be explored.
b) Triage criteria need to reflect scale. The criteria that apply to a single site, a group of sites as a unit or an entire prehistoric culture are different.
c) Incident-management systems that exercise authority and direction over excavation resources are necessary.
d) A triage committee or officer is necessary to apply the inclusion or exclusion criteria. This role must be separated from the excavator or the archaeological administration in order to prevent conflicts of interest.
e) In some cases (usually exclusion decisions), self-triaging is appropriate and the decisions of the researcher, cultural heritage manager, and the excavator not to put their sites into the higher-priority categories are honoured.
f) There are a number of balancing issues. For example, how does one balance the competing claims of saving the emergently important versus the presently important? Or what are the interests of one iconic site, a type-site, versus the variability of multiple sites showing the distribution and diversity of artefactual material?
g) Triage systems need to be locally specific but also need to conform to provincial, national and international standards.

This rationalization process also provides the data for evidence-based appraisal. One collects comparative data on a wide variety of measures to evaluate the triaging process and its effectiveness. For example, the average time to excavation (*tte*); the time to complete excavation (*ttce*); ratio of expected pre-triage results to actual post-triage results (the *er/ar* ratio); and comparative data among facilities, provinces and nations provide meaningful evaluations. As in the case of other triaging systems, a variety of scoring systems are available for assessing the appropriateness of excavation of sites. The different scoring systems will need to be tested for predictive accuracy and efficiency.

Given this scenario one must train specialists to do excavation triage. They will be the gatekeepers. 'Interrateability' is desired. When faced with similar sets of sites, the inclusion and exclusion decisions should be the same independent of the decision-maker. Although training is necessary to use the right diagnostic tools to make the right diagnosis, it need not be done on actual sites for it has been shown that simulations work remarkably well for triaging health, fire and disaster. As in case of doctors, others (nurses and medical corpsmen) when appropriately trained are able to make the triage decision. Similarly, well-trained non-archaeologists should be able to make these decisions.

Finally, there are risks to such a system. For example, one may overtriage or undertriage. Undertriage is the result of underestimating the severity of the need to excavate a site. An example of this would be categorizing a site as not needing excavation when it actually needs excavation but can wait. In the medical fields historically acceptable undertriage rates have been as high as 5 per cent. Overtriage is the process of overestimating the category. Not

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surprisingly, overtriage rates frequently are much higher than undertriage rates. This is the result of making an effort to avoid undertriaging.

Today, as one looks across the archaeological landscape, one sees a range of archaeologists. At one extreme there are 'hyper-'excavators. Their *raison d'être* is to excavate. They travel from one site to another and every intellectual and training problem is solved by excavation. No summer is complete without at least one excavation. At the other extreme are the infrequent excavators. They may excavate once in a lifetime or a decade. For all, the two extremes and those between, judicious planning and adoption of protocols for excavation triage are necessary to optimize outcomes during the site-discovery pandemic in which archaeologists find themselves.

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'Haven't we dug enough now?' Excavation in the light of intergenerational equity

*Rick Bonnie**

In western Europe, cultural resource management agencies have enforced, through treaties and legislation, the principle that archaeological sites endangered by development are protected. Excavation has played – and still plays – a major role in this: thousands of archaeological sites that are threatened by destruction have been 'rescued' through excavations. While treaties (e.g. Malta 1992, 4.2) and legislations (e.g. Planning Policy Statement 5, A.13; *Wet op de archeologische monumentenzorg*, 2007) stipulate that rescue excavation stands equal to protection, they also acknowledge that there are better ways – like *in situ* preservation – to protect our heritage.[1]

Many archaeologists, however, are sceptical about *in situ* preservation and fear that there are improper, 'developer-friendly' motives lying behind it (e.g. Lucas 2001, 37; Holtorf and Ortman 2008, 82). According to Willems (2009, 97), for instance, 'assuming that preservation *in situ* is the best option, is a largely unproven and mostly untested hypothesis'. The result is that excavation remains *the* predominant 'means of rescue' in archaeology (see Kristiansen 2008, 9).[2] I, for one, would like to question the effectiveness of excavation for the protection of endangered sites. While I do not want to advocate a complete ban on excavation, as it remains archaeology's primary research method, I want to go back to the question, why do we protect?

Intergenerational equity

The question 'why do we protect?' is closely bound up with the debate on whether the archaeological record may be considered a finite, non-renewable resource. While cultural resource management agencies imported the notion of archaeology as a finite resource from the ongoing discussion on sustainable

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development (World Commission on Environment and Development 1987), archaeologists still question the validity of the comparison between the archaeological record and natural commodities. In particular, the intention to preserve archaeological resources for the future is seen as unreliable, unfair and even unethical (e.g. Lucas 2001). Holtorf and Ortman (2008, 82) ask themselves, for instance, 'whether it is right . . . to spend scarce public resource[s]' on 'unknown needs of unspecified future generations'.

A tendency thus still exists to argue that preservation for the future should never be a goal in itself. Yet artefacts have become archaeological remains only by the human characterization of them as such (Lucas 2001, 38). For this reason, one should not question the pertinence of preserving for the future from a 'remains-oriented' viewpoint, but rather from a 'human' perspective. By constantly making choices about what to protect, archaeologists seem to claim ownership of the archaeological record, not the responsibility and privilege of stewardship. Preservation is not only about the future well-being of the material remains themselves, but rather concerns the equal right of every generation to interact with the archaeological record in its own way. In that sense, it is addressing the moral principle of intergenerational equity (World Commission on Environment and Development 1987; Roemer and Suzumura 2007).

The disadvantages of excavation

Ultimately, anything constructed or altered by humans can be encompassed in the archaeological record and arguably becomes worth protecting. Yet because excavating extensively is for many reasons unfeasible, selection seems inevitable. As selection can only be based on present needs and interests, it implies that other endangered sites whose 'value' is presently not recognized remain unprotected and will likely be irrevocably altered by construction development. The danger lurks in a systematic application of this selection based on *current* knowledge, resulting in a conscious over- or underrepresentation of the original.

A similar issue holds for the excavation itself. As an excavation is always (but sometimes only implicitly) based on a hypothesis, it implies that during fieldwork choices and selections are made on the grounds of testing that hypothesis and interpreting the site, not on grounds of protecting it (Lucas 2001; Holtorf and Ortman 2008). Excavation seems to be a research rather than a protection method. However, despite excavation's scientific purpose of enlarging our knowledge of the past, in many western European countries archaeological sites are generally not being excavated according to this goal, but by developer-led necessity. This process works in opposition to the generally applied research process, where one starts from a hypothesis that will be tested using a specific site. Because of this opposing process, such excavations deprive future generations of the opportunity to use these sites for more suitable hypotheses. It takes away a site's unique research potential. Moreover, because of a growing commercialization in archaeology, current routinized excavation processes leave insufficient space for scientific creativity, which leads to homogenization and obscures the material potentials of sites (see Lucas 2001).

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After fieldwork, only the documentation holds the fragmented context of a site together. Yet 'when the primary source has gone, the secondary source can be but a faint reflection of this' (De Grooth and Stoepker 1997, 299). The constant flow of fieldwork means also a growing pressure on available storage facilities for the materials and documentation. Insufficient storage space can by definition only lead to more degradation and decontextualization of the excavated site, as future selection seems inevitable (Merriman and Swain 1999). As just one example, De Grooth and Stoepker (1997, 303–7) show how in only 30 years after excavation a site can be almost completely decontextualized and lost. For the medieval pottery kilns from Schinveld (the Netherlands), which are important for the production, typochronology and distribution of medieval pottery in western Europe, it is no longer possible to establish any link between the finds and their exact stratigraphic location.

The excavation report binds together the two aspects of an excavated site, i.e. material and documentation. Yet despite the importance of such reports, they often remain neglected after fieldwork has ended. Fagan (1995) has even called this 'archaeology's dirty secret'. For instance, in the Netherlands around 4,000–6,000 excavations have not been drawn up into reports. This is more than half of the total number of excavations carried out before the Malta Treaty became implemented in Dutch legislation, first through an interim regulation and then by the adoption of new legislation in 2007 (Goudswaard 2006). Despite the fact that this legislation has set a maximum term of two years for publishing an excavation report, still many excavations do not make this deadline, the quality of the reports is in many cases low and accessibility remains problematic (e.g. Erfgoedinspectie 2010).

An alternative

Considering these problems, I argue that the alternative protection method of physical preservation *in situ* seems to come closer to the goal of intergenerational equity than excavation does. This alternative, which is gradually developing in British and Dutch archaeology, among others, consists in setting certain norms and regulations for construction development in order to enhance the protection of the underlying archaeological remains. Minimal norms and regulations, as well as innovative engineering solutions, make it possible to keep alteration rates of the site in almost every case below 10 per cent (see Goudswaard 2006; Williams, Sidel and Painter 2008). When norms and regulations are maximized, however, even rates of 1–2 per cent will be possible. Recent research has shown, for instance, that the destructive effect of piling through archaeological remains has been overrated (e.g. Williams, Sidel and Painter 2008). Therefore physical preservation *in situ* seems a more effective method to protect sites, as it is able to protect almost any archaeological site, disregarding current interests. Furthermore, while selection through excavation results in a protected archive that always forms a conscious over- or underrepresentation of the original, physical preservation *in situ* does not, as its alteration is non-selective and subconscious.

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Conclusion

If we want to allow future generations the privilege of having their own say in archaeology, we should abandon the present 'fear' of protecting archaeological sites for the unforeseeable future. Just as past generations have been exploiting the archaeological record for their own purposes, we keep doing so in the present and hopefully will still be able to do so in the future. We in the present should thus not claim ownership but responsibility over this record, as it is not the protection of the record for the future that is the goal but the protection of intergenerational equity. In light of this goal, excavation may often be a rather ineffective method.

Notes

[1] For PPS 5 see www.communities.gov.uk/publications/planningandbuilding/pps5; for the *Wet op de Archeologische Monumentenzorg* (Dutch Legislation on the preservation of archaeological monuments) see http://wetten.overheid.nl/BWBR0021162.

[2] No hard data can be given for this statement, as to my knowledge – in contrast to sites 'rescued' by excavation – no figures are available for the number of archaeological sites under threat that are 'rescued' by preservation *in situ*. It thus remains impossible to compare the use of excavation and preservation *in situ*. I would argue, however, that the lack of data is a sign of archaeological agencies' hesitation towards preservation *in situ* and their preference for excavation.

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