‘LATE ANTIQUE FIELD ARCHAEOLOGY’:

A LEGITIMATE AIM?

STEVE ROSKAMS

Abstract

This paper discusses some issues raised by Lavan *et al*. (2007) in relation to the study of everyday life: that is, do we need a distinctive set of fieldwork practices to investigate late antique sites. This paper argues that such an objective is both unnecessary and unhelpful. Instead, we should invest in reconnaissance and evaluation by using non-invasive techniques in advance of destructive excavation, then develop a more focused strategy by enhanced deposit modelling, involving a consideration of preservation levels, degrees of disturbance and deposit status. Thishas already been done successfully on several late antique sites, which I consider here. The above argument has important implications for the role of ‘interpretation at the point of the trowel’ in fieldwork practice. Counter to most recent commentators, I contend that, if we are to fully understand complex late antique archaeology, it is essential to retain a distinction between data gathered during excavation and interpretations reached as a result of their subsequent analysis.

INTRODUCTION

This paper arises from a question posed by the series editor, Luke Lavan, at an earlier conference in this series: is it desirable, or indeed even feasible, to develop a specifically late antique field archaeology?[[1]](#footnote-1) The reason for his raising this possibility derives from the suggestion that late antique sites are characterised by special features, that is: unusual types of site formation processes, for example occupation debris preserved by destruction or abandonment events, or undisturbed rubbish dumped in new settings; specific settlement types, for example artefact-rich ecclesiastical complexes in Egypt; or particular production sites with unique potentials, for example the mining operations at Mons Porphyrites, backfilled with refuse at the end of their useful life.[[2]](#footnote-2)

The notion that these situations require particular fieldwork strategies in turn raises further questions: should we proceed in different ways when investigating a production context, such as the above quarry site, as compared to excavating a political context, for example when examining urban monuments? More generally, does working in documented periods change fundamentally how we approach archaeological fieldwork? And, for that matter, do strategies differ when one is dealing with a small research project compared to a much larger, rescue one?[[3]](#footnote-3) My essential answer to each question, developed more fully in what follows, is ‘no’; ultimately, these differences do not, and should not, matter. I do accept, however, that the investigation of many late antique sites requires us to confront certain challenges. Four of the most important are discussed below.

*The Challenges of Late Antique Archaeology*

Firstly, a key aspect of the ‘Late Antiquity project’ concerns the investigation of trajectories of change between it and foregoing ‘classical’ developments. Thus, the sites most relevant to this research will be, by definition, transitional, with a long history of development. Most will involve sequences of superimposed structures, many of which will have undergone complex processes of expansion and demise.[[4]](#footnote-4) Furthermore, the buildings critical to the late antique period will lie nearer the top of these sequences, and thus, one might expect, are more likely to have been disturbed at the end of their life, making it difficult to reconstruct superstructure and stratigraphic relationships, and sometimes even plan form. The fact that robbing may have happened at one time, and yet the features being robbed will be a product of complex processes of successive structural developments, only adds to the difficulties.

Next, linking stratigraphy across sites may be more difficult in later periods. The aforementioned robbing can create separate ‘islands’ of strata. These then have to be connected on the basis of the character of the layers themselves, rather than using proven relationships. In addition, the strata being correlated may comprise less robust and diagnostic materials: the earth floor, rather than the mosaic pavement. This makes it difficult to put the excavated evidence into a coherent order afterwards; it is much easier to reconnect two fragments of that symmetrically-patterned and exactly level flooring comprised of distinctive tesserae, than to link sequences by analysing the character of the small, inconsistent clay layers which once made up a single earth surface.

Thirdly, later structures commonly employ recycled material culture, especially building materials, in their subsequent development. This not only makes them more difficult to date, but also results in less consistent structural development. Hence, tying together walls across a site on the basis of a distinctive form of construction becomes inherently more uncertain. In addition, ‘opportunistic’ recycling of building materials may be difficult to distinguish from situations where finds were intentionally employed after several centuries: is the use of *spolia* in a late antique building simply evidence for a lack of alternative stone sources at the time? Or is it rather an attempt by one society to incorporate the monumental power of a forerunner into its fabric, either to triumph over that past or in an attempt to revive it?

Finally, and in some ways most intractable of all, finds can become redeposited from lower to higher levels in the course of subsequent activity, and thus continue to appear in stratified assemblages well after they have fallen out of use. Where material has no easily defined date attached to it, as with animal bones or carbonised grain, it may be difficult to be aware of even the fact of redeposition, let alone its degree. Indeed, even when an approximate date range is known, for example for a type of ceramic coarse ware, it may still be difficult to decide between final, active use and terminal residuality, especially when this ‘approximate date range’ is itself established on the basis of just this sort of problematic stratigraphic evidence. [[5]](#footnote-5) How, for example, is one to distinguish between a situation where old coins still actively circulated as currency because no replacements have arrived, from another where the same coins were just being churned up in newer strata, having long been irrelevant to the society in question?[[6]](#footnote-6)

When taken together, these limitations―long structural sequences and wall robbing, indeterminate stratigraphic correlations, recycled materials, and finds residuality―mean that, despite our best endeavours, the creation of a truly accurate picture of site development may be beyond our grasp. Period boundaries or other stratigraphic groupings might remain, at best, ‘fuzzy’. Hence, *inter alia*, matching archaeological evidence with documented events can be extremely difficult. In short, late antique sites can be challenging, even at the level of telling a basic story about their structural and topographical development, let alone in terms of higher-order interpretations.

*The Typicality of Late Antique Archaeology*

Having said that, the characteristics listed above are by no means confined to this period. Long, complex sequences of development are, by definition, the norm in towns occupied over an extended period of time. In such sequences, late antique levels may impact on their predecessors just as severely as they themselves are disturbed by later medieval or modern agencies.

Next, concerning that commonplace of urban archaeology, correlating stratigraphy between discrete islands, the extensive mosaic pavement mentioned previously can usually be linked together in any analysis, even when later activity has split it into many separate parts. Yet, some of the best examples of such floors were laid in late antique contexts. Conversely, ephemeral floorings, whose fragmented remains are difficult to connect, can be laid in early contexts. My impression is that the only reason late antique fieldworkers may find themselves dealing more often with the more demanding correlation tasks is that they have tackled a greater range of settlement types; those investigating earlier levels have tended to focus more on centralised monumentality, a simpler context in which to link sequences together.

Thirdly, intentional recycling of building and other materials is common on late antique sites: as noted above, *spolia* might be employed either for pragmatic or ideological reasons. Once this reuse is recognised in the field, such stonework will demand the employment of a more detailed record in order to wring as much information out of a site as possible. Yet the same, enhanced recording level is needed whatever the chronological context for such recycling might be.[[7]](#footnote-7)

Finally, finds residuality can occur in all periods of site development: even the very first occupation may bring in earlier material from beyond a new settlement as part of that initial development. Understanding such processes is complex, not least because the way in which different categories of find enter the archaeological record and then move within it can vary considerably. In reality, however, the methods needed to meet this challenge―comparing site formation processes with wear indices on coins, levels of fragmentation in pottery or animal bones etc.―will be essentially the same, whatever the specific processes involved.[[8]](#footnote-8)

In short, therefore, some of the factors listed above may be morelikely to occur in later periods than earlier ones, yet all are, at most, only connected contingently with late antique sites, and are not defining characteristics. Countering such problems requires broadly similar strategic responses in the field, whatever the period under investigation. Thus, we do not need a specific ‘late antique field archaeology’, as Luke Lavan has proposed:[[9]](#footnote-9) existing field methods, when applied consistently and programmatically, are already good enough to unlock the full potential of our sites.

In the rest of this article, I will use a range of late antique projects to outline strategies which, in my view, will allow us to understand a great deal more about the period than we can at present: I am fortunate here that examples of novel approaches and innovative techniques are readily available in such contexts, and some at least will be familiar to the readers of this series. In developing this approach, I would not wish to imply that these case studies can be combined to create a form of ‘best practice’ in fieldwork. Rather, they provide ideas which project directors might usefully bear in mind when approaching the specific demands and potentials of their own sites. What I *would* wish to argue, however, is that any strategy must flow directly from explicit research aims—not be taken off-the-shelf as an exciting ‘new technique on the block’—and then be deployed in a coherent way.

In the following, I first consider the processes by which sites are discovered and evaluated, under the heading: ‘Reconnaissance and Evaluation’; I then turn to how such information can be deployed to model deposits and define excavation strategies: ‘Deposit Modelling and Excavation Strategy’; finally, in drawing out some conclusions, I consider recent critiques of these conventional approaches to fieldwork, which argue for ‘interpretation at the trowel’s edge’. Here I wish to argue for retaining a distinction between data gathering and data analysis, especially on our many late antique sites with complex site formation processes and fragmented stratigraphy: ‘Implications and Conclusions’.

RECONNAISSANCE AND EVALUATION

In order to implement a well-rounded research project on a complex site, it is vital to put significant resources into full reconnaissance and evaluation. Furthermore, an effective evaluation process will require the deployment of various techniques, used iteratively and interactively, in order to provide a meaningful basis for full-scale, destructive intervention by excavation: the real challenge is not merely to carry out sub-routines effectively, but to bring them together logically in order to understand their full implications. These methods are discussed below in the usual order that they are used in current fieldwork, from the general and least destructive to the more focused and interventionist.

Naturally, some exceptions to this ordering can be necessary in specific circumstances. At Sagalassos, for example, virtually nothing was known of the site in the first instance. Carrying out test soundings at the core of the settlement *before* developing wider surveys recovered architectural fragments and ceramic groups that provided an outline chronological framework, alongside providing some understanding of the depth and stratigraphic complexity at this point. Such knowledge was essential to the creation of a more developed research agenda, generating wider surveys and then focussed excavation at later stages.[[10]](#footnote-10) Nonetheless, below, I consider aerial photographic recording, followed by fieldwalking/artefact collection, and finally topographic then geophysical survey.

The potential of *aerial photography* to identify and characterise human activity in the landscape is well-known and widely exploited. The difficulties are equally familiar, for instance the inaccessibility of some regions for overflying.[[11]](#footnote-11) There are also the problems of mistaking natural or modern features for ancient ones; the seasonal impacts on site visibility; and the fact that, where features are evident as a result of modern ploughing, it is the least well-preserved sites that become visible. Nonetheless, one cannot doubt the importance of aerial survey in finding and characterising different parts of the landscape, and then elucidating matters such as the spatial organisation and structural development of particular settlement areas.

Recent work in modern Romania, for example, showed both the potentials and problems of such work. After recording in unpromising conditions for two field seasons, aerial photography in a third year provided evidence of both negative features such as pits and ditches, and positive ones such as walls. This allowed, *inter alia*, understanding of the plan form of buildings and property boundaries within Apulum (*Alba Iulia*) and proposed villa sites to the south and west of that *municipium*.[[12]](#footnote-12) Equally the multi-period project concerned with settlement and landscape development in the Homs Region in Syria has discovered a vast number of sites on both marl landscapes and basaltic terrains, classified morphologically. Fieldwalking has shown many of these to be of late antique date. Worryingly, comparison of early ‘Corona’ satellite images with their later ‘Ikonos’ counterparts demonstrates how quickly they are disappearing, as bulldozers are used to modify the modern landscape.[[13]](#footnote-13)

The relationship between *surface survey* and excavation has had a longer, and more chequered, history than the latter and aerial reconnaissance. Collecting artefacts in fieldwalking was once used simply as a device to find sites for future excavation. In a reaction to this limited, and limiting, role, surface collection subsequently developed in its own right, in part because excavation’s more complex recording procedures may have made digging appear too ‘sluggish’.[[14]](#footnote-14) Today the data generated in different surveys pose many problems for comparisons across regions, and even the interpretation of common patterning across projects can be contested. Yet, the impact of such projects remains huge, especially around the Mediterranean.[[15]](#footnote-15)

Indeed, fieldwalking can have considerable significance for our understanding of Late Antiquity in its own right. Thus, archaeological evidence has been deployed to suggest an intensification of activity and economic prosperity at this date in the region of Corinth, in contrast to the picture of decay suggested by documented earthquakes, plagues, invasions and oppressive taxation. Yet the upturn implied by these high concentrations of ceramics may be due, in part, to such pottery surviving better and having a greater number of type fossils to aid recognition. Thus, the proposed success of the region at this time may at least be more complex than has been recognised, and perhaps less distinct from earlier economic activity.[[16]](#footnote-16)

Artefact collection has tended to concentrate on rural landscapes and broad trends, avoiding detailed consideration of settlement sites, especially towns.[[17]](#footnote-17) Perhaps this is due to the understandable desire of the sub-discipline to establish itself as something more than the handmaiden of destructive digging. Yet the division has never been total. Bintliff and Snodgrass, then Alcock, used surface surveys to investigate several Greek towns of different size and complexity, providing more detailed chronological information and evidence of changing foci of activity within the settlements surveyed. [[18]](#footnote-18)

This raises the problematic issue of how such fieldwork might aid the development of excavation strategies. Work at Sagalassos, a complex environment for fieldwalking due to its steeply-sloping setting and vegetation cover, suggests one way forward here. A nested approach to gathering surface materials in relation to a dedicated understanding of formation processes, once set beside geophysical survey and test pits, has characterised general urban development into the late antique period and elucidated functional differences across the townscape.[[19]](#footnote-19)

*Topographic survey* is necessary to make sense of any distributions generated by artefacts collected from the surface of the landscape. Until recently, this was carried out at a local level using conventional equipment such as the Total Station Theodolite or Ground Positioning Systems. Recent developments suggest that, once the problems of spatial resolution and looking through encumbrances, such as woodland canopies, are solved completely, general digital elevation models will be produced increasingly by airborne Light Detection and Ranging (LiDAR) systems.[[20]](#footnote-20)These techniques will provide comprehensive surveys for use as both a research and a management tool.[[21]](#footnote-21)

*Geophysical prospection* is deployed on many projects as the next step of the journey moving from broad reconnaissance to the more detailed understanding of the sub-surface. These techniques are readily accessible in general literature and have been used in their own right in various ways, for example to confirm and elaborate evidence mentioned in documentary sources or to elucidate the plan form of forts and towns.[[22]](#footnote-22) Geophysics is at its most powerful, however, when several techniques are deployed in conjunction with each other.[[23]](#footnote-23)

In some cases, the resulting level of resolution is remarkable. Thus the integration of resistivity and magnetometry surveys with Ground Penetrating Radar (GPR) and aerial photographic evidence allowed detailed understanding of a building complex beside the forum at Carnutum, including structural details such as the position of drains and staircases. Sometimes such surveys are of sufficient clarity to carry out spatial analysis of the settlement. Thus, work at Dura-Europos, in modern Syria, investigated room size in relation to apparent function, on a scale that could not otherwise have occurred without very extensive (and expensive) excavation.[[24]](#footnote-24)

These remote sensing techniques, whilst clearly capable of producing new insights in their own right, are much more useful when the patterning in their data is drawn together, something best achieved by fusing them all into at Geographical Information System (GIS).[[25]](#footnote-25)This also allows the differential visibility of various methods to be understood. Crop marks at Potentia on the Adriatic coast, for example, which were not susceptible to magnetic survey became eminently visible in oblique aerial photographs. [[26]](#footnote-26)

For reconnaissance data to create an effective strategy for more interventionist digging aiming to understand the full range of social and economic dynamics, we will need surveys of whole settlements, particularly urban contexts, where research agendas need to move beyond a concentration on monumental centres to consider residential, commercial and productive zones.[[27]](#footnote-27) Thus, at Butrint, landscape reconnaissance, geophysics and focused survey, plus archival research, allowed a well-rounded understanding of the whole settlement to emerge. Gradiometry and resistivity here demonstrated the minimum extent of an adjacent suburb covered with marsh clays in the mid 7th c., making the point that ‘the whole settlement’ may well include zones beyond any walled area.[[28]](#footnote-28)

The final, and most pressing, need is to move beyond two-dimensional information to consider deposit depth. Until recently, this has tended to take the form of identifying finds concentrations or geophysical anomalies, then testing their meaning below-ground by means of small-scale sondages or pits, plus, perhaps, borehole data. Thus, for example, the strategy created for excavation in the centre of Beirut involved setting the pressures of modern development there beside an understanding of the character of 7 m depth of deposits as indicated by bore-hole data, then prioritising places where imminent threat was matched by deposit quality.[[29]](#footnote-29)

However, the increased use of Electrical Resistance Tomography (ERT) has added a more sophisticated intermediary to the process.[[30]](#footnote-30) Such prospection at Zeugma, for example, demonstrated the existence of archaeological structures lying close to the surface, allowing limited trial trenching to uncover a range of distinctive features of the military settlement.[[31]](#footnote-31) Similar work at Europos in northern Greece recorded resistivity data along dense profiles to assist the interpretation of anomalous zones identified by conventional resistivity prospection.[[32]](#footnote-32) When such techniques are employed in unison across whole settlement sites, the level of detail which can be delivered can be vital in planning any excavation. Three examples are discussed next to make this point more fully: Sikyon in Greece, Portus then *Forum Novum*, both in Italy.

Investigations at Sikyon gathered ceramic assemblages from across the town and subjected the whole settlement to geophysical prospection, in each case recording the nature of current land use as a control for differential visibility.[[33]](#footnote-33) As a result, ceramic densities for different periods could be calculated and discrete functions put forward for various parts of the townscape, for example to define pottery production areas by plotting concentrations of wasters. Such patterning was then compared to geophysical evidence—for example magnetic anomalies suggesting kiln sites—and to information on clay and stone sources to identify where raw materials for building and pottery vessels came from: here, pottery utilised sources beyond the settlement; stone was quarried nearby.[[34]](#footnote-34) Finally, ERT and GPR were carried out to augment earlier general geophysical prospection, with the whole data set fused into a single GIS platform.[[35]](#footnote-35)

Analogous work at Portus was able to define a contrast between early monumental development and later, more ephemeral structures on new alignments on the basis of information from cartographic, topographic and geophysical sources, backed up by surface collection and limited aerial survey.[[36]](#footnote-36)The detailed geophysical work here explicitly acknowledged the need to integrate different techniques to allow full understanding, and to cover large areas to interpret patterning.[[37]](#footnote-37) 220 ha of magnetometry survey was therefore carried out, followed by more intensive prospection of selected areas by the same method, plus GPR, ERT transects, micro-topographic and auger survey, and then small-scale trenching. Such deposit definition allowed large-scale, focused excavation to proceed on a coherent basis, the results of the latter work then being tested, reciprocally, against geophysics signatures.

Finally, pioneering work has used geophysics and surface survey to investigate the late antique and early medieval periods at *Forum Novum*, as an example of a specific settlement type in the Tiber valley.[[38]](#footnote-38) Data from magnetic, electrical resistance and GPR surveys, when combined in a GIS, allowed greater understanding of the level of building preservation below the surface, and thus enabled the researchers to define, then investigate, key areas of the town using various forms of excavation, from ‘strip and map’ to deeper, more interventionist techniques.[[39]](#footnote-39)

It is clear, therefore, that some of the most innovative projects investigating late antique levels have employed remote sensing techniques as a necessary preliminary to developing a coherent excavation strategy. Their application can elucidate the spatial configuration of upstanding or intrusive features, estimate the height/depth to which they survive, and give a general idea of the extent of activities across a site and possible variations of function within it.

Understanding the approximate date, extent and depth of the surviving deposits in the ways outlined above may be perfectly satisfactory where research interests are defined in broad terms. Yet these methods cannot, by themselves, define the exact nature and degree of that survival. In particular, such techniques will find it virtually impossible to distinguish between remains which survive only as below-ground foundations inserted in natural strata from those that comprise standing walls and associated floors, external surfaces etc. Thus, for example, the position of a villa at *Forum Novum* was identified using geophysics, allowing its general plan form and approximate date to be suggested. Selective excavation then showed that it survived only as a platform with associated foundations but no floor levels.[[40]](#footnote-40) Clearly, a site lacking any contemporary ground surfaces can answer a much more restricted range of questions that one where they survive intact.

To design a fully-fledged strategy aimed at responding to more detailed objectives, we have to move beyond general information and create a more detailed deposit model. This requires the additional approaches discussed next.

DEPOSIT MODELLING AND EXCAVATION STRATEGY

A more focused approach to excavation has to be based on something more than overall date and depth of deposit; we must understand the full repertoire of deposit types, for example occupation, abandonment and rubbish episodes, and their respective legibility.[[41]](#footnote-41) As Carver has argued, characterising the sequence is best done in relation to three criteria: level of preservation, degree of disturbance and deposit status (fig. 1). [[42]](#footnote-42) Each is considered in turn next.

*Deposit Modelling*

Preservation levels fundamentally influence the research potential of the contents of any deposit. Porous acidic conditions can reduce bone to mere stains, though the same conditions can lead to better pollen preservation. Very dry conditions, held constant over time, can allow papyrus and other fragile materials to survive.[[43]](#footnote-43) At the same time, very wet, thus anoxic, conditions will mean that leather and wood artefacts, and even vegetation, can remain intact. On the other hand, such conditions can be a barrier to further work, as with the problems of a high water table at Butrint and the limitations which this placed on subsequent investigations. In either case, therefore, it will be vital to map waterlogging.[[44]](#footnote-44)

One problem for modelling such conditions is that they may change over time.[[45]](#footnote-45) A more intractable issue is that preservation conditions can vary over small distances: organic survival may be high at the centre of a zone but minimal at its edges due to modern intrusions, such as roadside drains and culverts, affecting the nature of the peripheral burial environment. When these differences become *very* local, for example water-logged strata encountered exclusively in the base of a deep well, then the only strategy may be to ‘expect the unexpected’ and be prepared to react accordingly, rather than hope that pre-excavation modelling will predict every such context.

Defining ‘degree of disturbance’is a little more straightforward, best calculated by assessing the density of intrusive features. An informal perusal of geophysical data and limited test pits may flag up zones that have been used intensively, for example activity along property boundaries or occupation immediately adjacent to street frontages. Equally, it can indicate areas with reduced activity, for example a limited number of discrete accumulations in the middle of a well-kept public space, or a limited formation of deposits towards the rear of a backyard.[[46]](#footnote-46) A more systematic approach to assessing feature density is to count interfaces from section evidence, then plot out these quantities to produce contours of concentrations. This gives an indication of where more and less activity occurs (fig. 2).[[47]](#footnote-47)

Modelling ‘deposit status’, the third factor, raises a further series of issues, some more conceptual than methodological. Schiffer’s pioneering work on site formation processes has resulted in much greater awareness of the ways in which deposits are created on sites, and of the implications this has for how we interpret assemblages derived from such contexts.[[48]](#footnote-48) One important consequence is the realisation that terms such as ‘dump’, ‘occupation debris’ and ‘abandonment event’, though seemingly unproblematic, need precise definition and then consistent use.[[49]](#footnote-49) Even the concept of ‘rubbish’, and the associated ‘rubbish pit’, need careful handling when using assemblages from such features to interpret original on-site activities.[[50]](#footnote-50)

Beneath these higher-order classifications of deposit types, fieldworkers have usually fallen back on the apparently more secure division between primary and secondary contexts to categorise formation processes.[[51]](#footnote-51) The basis on which these classes are assigned on site can, however, vary a lot between individuals. Further, even when they are allocated consistently in relation to the macroscopically-determined description of each stratum― for example saying: all thin, charcoal-flecked horizontal layers of grey silt and fine sand, in whatever proportions, will be called ‘trodden occupation debris’ on this project―such determinations are rarely then checked against other types of evidence. For example, ‘trodden occupation debris’ might be expected to yield more fragmented pottery, bone and carbonised grain than ‘midden material’, dumped in one action and then not moved around again: but does it? It is even more unusual to test interpretations against the micro-stratigraphic signatures generated by geo-archaeological analysis of the sediments themselves.[[52]](#footnote-52)

In addition, the notion of primary or secondary ‘deposits’ embodies a basic misconception about the relationship between a layer and any find derived from it. Attaching a ‘status’ category to a whole stratum, implying that all associated assemblages should be allocated that classification, can lead to mistakes; materials such as bones and ceramics can enter the archaeological record in quite different ways. Indeed, even a single artefact type can have different types of status with respect to the same archaeological layer, depending on the specifics of that relationship. Consider, for example, a stratigraphic unit such as a wall and the fragments of plaster associated with it. Plaster applied as a primary finishing will have an entirely different status, and thus interpretative meaning, from exactly the same type of plaster reused in the mortar of the wall. Thus ‘status’ should be defined as a relational property of a layer and a find, not a property of either element.[[53]](#footnote-53) It then becomes an empirical matter to decide how particular types of find, and their associated assemblage signatures, relate to particular types of deposits, and to develop a fuller set of status-type categories to populate deposit models.[[54]](#footnote-54)

*Excavation Strategy*

Having enhanced a deposit model in terms of preservation, disturbance and status, some issues arise in using it to define an excavation strategy. Carver suggests that information value in fieldwork will be optimised when one maximises preservation, has a modicum of spacing, and aims for primary over secondary deposits (i.e. when one follows the arrows indicated in fig.1).[[55]](#footnote-55) Many projects may indeed end up taking his preferred route as, in most circumstances, it makes sense to aim for more preservation over less: for example, to conserve parchments recovered from a cave, or leather shoes from a waterlogged dump. Yet things are less obvious when considering the second measure, stratigraphic density. Consider if one’s research aim was to examine the complex relationships between successive road metallings, adjacent street frontages, and the boundary features between contiguous properties; here one would try to choose zones which maximised intercutting features. Conversely, if the objective was to recover discrete, ‘clean’ bone assemblages of roughly the same date from complete features, one would prioritise a lack of such density. In the latter case, selecting a couple of discrete, intact rubbish pits from the rear of adjacent properties for excavation may be the best strategy, especially if each can be dated accurately enough by associated coins and ceramics, rather than stratigraphic relationships.

Thirdly, concerning deposit status, it is common to prioritise assemblages which formed at the place where they were recovered, that is, those having a ‘primary’ relationship with their associated deposit. This is based on the notion that such finds will give greater insight into what was happening at a particular place and point in time, and thus get closer to the specific human action behind the recovered material; metal-working residues directly associated with a hearth would have priority over the same material recycled in a road metalling.

Yet different research objectives might sometimes dictate otherwise. What if we are trying to understand the import trade in Early Roman marble cladding at an urban settlement? The small proportion of this material remaining *in situ* on the walls of a few, possibly unrepresentative, examples of early building (i.e. in ‘primary’ contexts) might provide a very insecure basis on which to estimate the overall relative importance of different sources; a single, particularly well-preserved building complex could completely bias our interpretations. Suppose, however, that early cladding can be distinguished from its later counterpart on the basis of its width, the nature of its finishing etc. In this case, early material found across the townscape in layers known to be of a later date (i.e. probably redeposited or reused cladding) may provide not only a lot more evidence to work with, but also a rather more accurate answer to the question posed; it would make sense to deliberately prioritise the analysis of secondary contexts.

In short, whilst it is vital to create sophisticated, wide-ranging and detailed deposit models, such models must also be set beside equally explicit research agendas. Only then can we identify what constitutes a ‘good site’ for further investigation and define a meaningful scheme of excavation. Any such strategy will need to decide the position, extent and form of any trench array, to define the nature of the spatial, stratigraphic and descriptive record, and to create explicit sampling strategies for gathering assemblage evidence. Thus, for example, excavators of Late Roman Dichin decided to gather 40-60 litres of soil from *every* sealed context. This policy not only allowed convincing interpretations of general crop processing to emerge, but also the study of spatial concentrations of plant materials to take place, elucidating possible room functions. Without such a consistent policy, it would be very difficult to assess the validity of any patterning in environmental remains which emerged from subsequent analysis.[[56]](#footnote-56)

A fundamental issue will then arise concerning the position, extent and form of any intervention; will work proceed by spit excavation, by digging within ‘Wheelerian boxes’, or by ‘open area’ techniques?[[57]](#footnote-57) Obviously, there is no right way here, only the need to match approach with intended outcomes. Examples of box excavation abound on late antique sites, for instance at Petra; my impression is that exposing larger areas remains less common. Unfortunately, few projects are explicit on what their system comprises, and fewer still explain their choices in relation to specified research objectives.

Work at Sepphoris is one exception, where the project clearly specifies the use of 1 m by 2 m probes to define the position of wider, 5 m by 5 m ‘boxes’. My own and Hurst’s work at Carthage provide a counterpart for our use of ‘open areas’. Exploration of research questions concerning processes of environmental, economic and political change in this city between the 5th and 8th c. could only be achieved by seeing how they manifested themselves, and interacted, in its physical fabric. This meant investigating an area including housing, roads and defences on a sufficient scale and in relation to each other.[[58]](#footnote-58)

In addition to the position and extent of any excavation, one must decide whether a ‘flat’ or ‘hierarchical’ recording system will be used. The first, describing the basic character, position and chronology of every layer, will produce basic information on each unit of stratigraphy but leave further interpretation until later. The second will require not only the above decisions but also suggestions on how these units combine into higher–order ones, for example by recording both layers and features in separate numbering systems. The choice of approach affects fundamentally how the data are manipulated in subsequent analysis, and thus how preferred interpretations are defined.

The final requirement is to make strategic decisions about the energy, and therefore resources, which will go into strata definition, deposit removal and assemblage collection. All projects will employ a variety of techniques here, even if this merely comprises first removing topsoil with pick and shovel and gathering finds by eye, then using a trowel and sieving for all subsequent work. Lavan *et al*. (2007) put forward a more systematic approach, suggesting one procedure for stratigraphic recording operating at a basic level, but a more refined methodology for “very rich or ‘essential’ deposits”.[[59]](#footnote-59) Indeed, it is possible to deploy a whole series of such ‘recovery levels’. Work at the famous burial site of Sutton Hoo, for example, defined different recording procedures of increasing levels of resolution: from machining the general area; to removing topsoil from above particular burial mounds by hand; treating more carefully the dumped material which made up those mounds; excavating with still more caution the upper fills from grave pits on the site; and finally recording grave goods at the base of each pit in considerable detail, where the accompanying inhumations survived only as stains in the ground.[[60]](#footnote-60)

The creation of a system of recovery levels comes at a price however, especially with the complexity deployed at Sutton Hoo. Firstly, it requires a dedicated, and often long-term, investment in detailed site evaluation before implementation. Only then is it possible to be sure that these different levels of resolution will cover all eventualities encountered during full excavation, and to be clear on when such ‘changes of gear’ will be necessary. Secondly, gathering data at different recovery levels limits, automatically, the degree to which any data set generated at one level can be compared to that from another. Thus, in the above example, it will be possible to compare artefact concentrations between different Sutton Hoo graves, or between different mounds, but far more difficult between a mound and associated graves.

Such lack of comparability can have significant impacts. In studying Beirut, for example, separate projects had different ways of establishing stratigraphic distinctions, as well as diverse sieving systems, retrieval biases and discard policies. This now prevents the meaningful comparison of assemblage characteristics, and thus site signatures, across the late antique city.[[61]](#footnote-61) The question here becomes: what defines ‘the project’ and ‘the site’? Whatever one’s answer, recovery levels must be designed to serve the research agendas of each project, not simply taken ‘off the shelf’.[[62]](#footnote-62)

The same point even applies to the foundations of systematic excavation: the recognition and recording of basic units of stratification. Single context recording has been criticised recently as being “unsuitable for complex urban excavations with major structural remains”, based on the assumption that this approach requires that every wall is dissected into its smallest components, something thought impossible with the building phases found on sites in the eastern Mediterranean.[[63]](#footnote-63) Yet, the very definition of a ‘single context’ depends on one’s objectives.

Consider a project which merely wishes to know whether a documented temple was present on a site. Here, assuming that the physical characteristics of the category ‘temple’ can be made explicit, this entity becomes the unit of record and analysis: a temple either exists or it does not. If the research aim is to understand this monument’s chronological relationship with an adjacent main road then, again assuming that ‘temple’ and ‘road’ are defined in advance, the record should comprise, at most, two stratigraphic units and one stratigraphic relationship: temple is later than road, road is later than temple, or the two are possibly contemporary. If, however, an investigation wanted to disentangle the complex way in which the temple was constructed, used, repaired, modified, destroyed and robbed, and to understand how this sequence of development related to successive metallings, repairs, encroachments and changes of alignment of the road, then different types of unit, sub-dividing the monument and thoroughfare, would have to be defined into existence and recorded in their own right. In each case, it is not a question of whether single context recording is unsuitable, rather a matter of what one wants to know; what constitutes the ‘stratigraphic unit’ of record, and thus analysis, is a product of one’s research agenda.[[64]](#footnote-64) Naturally, there is a tension here between the notion that any fieldwork project should be designed to answer questions, and the fact that it might also be expected to produce a set of records which can be used to address issues not yet articulated, let alone made explicit. The latter ‘archive objective’ of the Rescue Movement in Britain was, after all, the context in which single context recording, *inter alia*, was developed.[[65]](#footnote-65)

Two points need to be made here. First, it is desirable for a project to generate data relevant to objectives beyond its own concerns, but this does not mean that such a data set will be relevant to *all* future agendas. Recent work, for example, shows the potential of micromorphological analyses to elucidate midden processes.[[66]](#footnote-66) Yet, it would not be legitimate to criticise an earlier project which failed to record and sample its deposits in sufficient detail to allow such analysis to take place subsequently. The most that one can ask is that its recording systems are made explicit and then consistently applied, so that future research can decide whether the data it generated might be relevant to other objectives.

Second, the real issue is not the methods used but the definition of research objectives. In the above case of investigating road and temple as single entities, recording is explicitly linked to expected outcomes, yet the aims themselves are clearly banal. We should be setting out to tell a much fuller and wide-ranging story, for example the processes of temple construction, use, repair, modification, destruction and robbing listed there. In doing so, we will create a record which can be interrogated later to elucidate a much wider range of issues than those driving the initial project itself. In essence, whilst we cannot expect to be all things to all people, we should be sophisticated enough in our aims to please some of the other people some of the time, and indeed as many of them as we can.

IMPLICATIONS AND CONCLUSIONS

This paper has argued that we have no need to create a distinctive set of fieldwork practices in order to investigate late antique sites but that, given the complexity that they often embody, it is imperative to approach them in a systematic and consistent way. Fortunately, innovative and exciting examples of how this might be done abound for the period. The best way forward will involve a considerable investment in reconnaissance and non-destructive evaluation in advance of putting any trowel in the ground. The use of aerial photographic records, surface artefact collection, plus topographic and geophysical survey, especially when deployed in combination, will allow sites to be recognised and their approximate limits to be defined, plus possible functional variations across the area to be flagged up. Spatial configurations of structures and intrusive features, plus deposit depth and date range, should become clear, at least in outline, thus allowing broad areas of research interest to be defined.

Moving from here to a more focused excavation strategy will require more detailed deposit modelling. This stage in the fieldwork cycle, involving characterising the full repertoire of deposit types and their legibility, can be achieved by quantifying the level of preservation, degree of disturbance and deposit status, although measuring each of these criteria brings its own problems. Once such an enhanced deposit model has been produced, it must be set beside explicit, project-specific research objectives in order to decide what combination of preservation levels, feature density and context type it might be most desirable to investigate. If done successfully, this process of matching site characteristics with research agenda should result in an excavation strategy which defines where and how to dig, and the recovery levels and sampling strategies which will be needed to generate data of a quality and scale relevant to that agenda.

Yet this systematic, some might say mechanistic, conception of excavation practice has been under attack from various quarters in recent years, based on the supposed need to heal a rift between current fieldwork practice and recent developments in archaeological theory, notably the post-processualist critique of functionalist interpretation. The alternative perspective portrays existing approaches as too hierarchical and compartmentalised, accusing them of being based on the misguided pretence that we can create an objective record in the field―a ‘one size fits all’ concept, expressed in the universal pro forma recording sheet―and then leave interpretation to post-excavation analysis.

A new, more reflexive stance is needed in our fieldwork, it is maintained. This should create innovative mechanisms to contextualise and critically question the excavation process; examine the assumptions and categories which structure our actions in the field; break down the distinction between data gathering and analysis in order to generate more immediate and vibrant interpretation; and broaden participation in the fieldwork process. Such a critique raises important questions concerning who should interpret excavation data, when and to what end. Each of these aspects has a particular importance for the analysis of the fragmentary and complex stratigraphic sequences generated by the investigation of late antique sites.[[67]](#footnote-67)

In reality, many of these suggestions are not new: self-criticism has always featured in good ‘positivist’ methodologies, notably in debates about layer and feature schema vs. the single context approach and, more broadly, on whether we need an ‘industry standard’ recording system.[[68]](#footnote-68) Equally, excavators’ diaries and space in the site record for interpretative ‘free text’ have been common since the 1970s, and most fieldworkers accept that ideas developed during an excavation should be recorded. Yet the critique goes further than this, arguing that we should collapse the whole distinction between data gathering and data analysis. This is often encapsulated in the notion that interpretations made ‘at the point of the trowel’ must have some sort of logical primacy when trying to understand a site in the round. I find this stance much more problematic.

Some of the complexities which arise in defining different site formation processes and strata types, for example ‘dump’ and ‘occupation debris’, have already noted above. These are magnified if one attempts to do so in the course of excavation, with only a partial view, at best, of the whole range of activities taking place there. The same applies to the creation of higher order categories, for example grouping familiar items such as walls, floors and pits into entities such as a building. Linking across sequences can be equally problematic: does a destruction horizon in one area correlate with another in an adjacent sequence, which happens to be exposed at the same time, or with a lower stratum not yet reached?

However, the most intractable and contentious issue revolves around linking artefact to layer, a fundamental objective of controlled excavation. This has allowed us to move significantly beyond the use of finds simply for dating and look at whole assemblages, not just ‘star’ finds and to question, for example, the interpretation of Byzantine-period ‘shops’ at Sardis.[[69]](#footnote-69) We can then take another significant step forward by integrating whole assemblages with stratigraphic evidence. Thus Putzeys, in one of the most concerted, and effective, pieces of research in this sphere, examined recurring patterns in different functional categories of artefact found in ‘destruction deposits’ at Sagalassos to elucidate diversity of response to household organisation.[[70]](#footnote-70)

Because finds enter the archaeological record in different ways, each assemblage must be considered first in its own right, then viewed in relation to other material, and finally related to a range of complex site formation processes [[71]](#footnote-71) This is why analysts at Dichin and Nicopolis argue, in my opinion correctly, the need for a *second* stage of work to wring out every last drop of what can be said about the relationship between the stratigraphic sequences and the finds assemblages.[[72]](#footnote-72) On-site interpretations may be profoundly misleading in carrying out such a programme: an *impression* of how the site fits together and some subjective notion about, for example, the degree of brokenness of the ceramic assemblage one has just recovered will never be sufficient.[[73]](#footnote-73) Yet full knowledge of assemblages is not possible in the process of their recovery on site, and a detailed grasp of associated site formation processes is best undertaken in the light of a rounded understanding of the whole sequence of development.

These levels of complexity become abundantly clear when one considers a specific example: the humble pit, pictured here in the course of excavation (fig. 3). After detailed analysis, the fills of the feature were interpreted as embodying four distinct horizons. Deposit (A), at the base, probably evidenced its initial use, although very little remained, either because the pit was regularly cleaned or because that function involved only limited accumulations. Above this ‘primary’ material, a dump of soil (B) contained a relative profusion of finds broadly contemporary with most occupation in the vicinity, suggesting that the feature was used for general refuse disposal at the end of its original life. Stony material (C) above the second stratum contained no datable material and is best interpreted as weathering from the sides of the feature. Given the soil lensing within this horizon, this process may have occurred on successive occasions, although whether this related to consecutive storms over a single week or was deposited over many decades is entirely unclear. A final series of soil deposits (D) turned out to contain a high proportion of finds, but of markedly later date than those in (B), and indeed later than anything else found in the vicinity. This is best interpreted as a once-horizontal stratum once sealing the pit, which slumped into it as underlying fills consolidated and subsided. It thus survived the later truncation (probably modern ploughing) which removed any corresponding deposits elsewhere on the site.

It is difficult to see how such complexity could have been properly wrestled with, let alone fully understood, in the course of excavation. Yet such understanding is essential when integrating assemblage and stratigraphic analyses into a coherent whole: material from Horizon A might tell us about contemporary activity in this specific part of the site (although in this case, as so often, none of its contents were diagnostic of a specific function); that from B relates to general rubbish being generated hereabouts, though without any real spatial precision; from Horizon C we might learn about occupation of the area *before* the pit was dug (i.e. ‘inverted stratigraphy); and from D about activities taking place after it had been sealed and long forgotten. Even these interpretations are merely our most reasonable suggestions: any might be disproven in the light of other analyses, for example soil micromorphology.

This issue of the role of on-site interpretation is particularly important when creating meaningful narratives on late antique sites, especially in understanding the final parts of sequences. Here assemblages from within structures, for example, may evidence only ephemeral, ‘post-building’ activity, with domestic rubbish, if dropped during earlier, vibrant occupation, was then cleaned up.[[74]](#footnote-74) Indeed, even when one pays close attention to the form and date of the latest activity, evidence may remain equivocal. At one site on the edge of Carthage, for example, we, as stratigraphic analysts, concluded that the latest layers here were of 7th c. A.D. date and indicated a radical change in the character of the Late Byzantine city.[[75]](#footnote-75) The ceramic specialists, in contrast, argued on the basis of sherd size that these layers could be modern, and thus that the latest ‘ancient’ levels had been truncated.[[76]](#footnote-76) The difference is no small matter for those interested in the fate of Carthage in the century before the Arab conquest; was this part of the city run-down and deserted many decades before A.D. 698? Or is its situation at this date simply unknown archaeologically, as all relevant evidence has been removed by later activity?

Such sites also pose challenges when making our proposed interpretations accessible to wider audiences, especially anyone wishing to ‘drill down’ to the lower-order data in order to assess the validity or strength of any such readings of the evidence. The complexity of the arguments from stratigraphy and assemblages, plus the sheer amount of detail sometimes involved, means that we must develop better methods to create routes into that primary data. Non-excavation projects have shown the way here, for example in enhancing the visibility of interpreted geophysical patterning at Butrint, or in clarifying the basis on which surface survey data were gathered and manipulated at Leptiminus.[[77]](#footnote-77) Yet, I see far fewer attempts to make interpretative decisions on complicated late antique stratigraphy accessible to a variety of audiences.[[78]](#footnote-78)

Allowing others to test interpretations of complex site developments was the key rationale for why, and how, lots of ‘boring detail’ was published for one site in Carthage. Illustrations of the full stratigraphic sequence and the groupings into which this had been moulded for textual presentation were an explicit attempt to form a bridge to the highly-interpretative summary diagram which opens that account. The wider use of ‘land use diagrams’, as seen with the complex sequences at Norwich and Lincoln, could have an important role here (one is reproduced as an example: fig. 4). [[79]](#footnote-79)

In addition, by adding in documented dates to such diagrams,[[80]](#footnote-80) we can illustrate the degree to which archaeological evidence at specific places correlates with particular events such as fires or earthquakes.[[81]](#footnote-81) Here, when assessing their significance, it may be just as important to flag up any *lack* of correlation. Detailed contextual analysis of an urban mansion at Sagalassos, for example, revealed a scarcity of objects, and rooms being stripped of their floor and wall coveringsbefore an earthquake completely destroyed the site in the middle of the 7th c. A.D.; i.e. a housing unit abandoned and largely depleted *in advance* of a documented impact.[[82]](#footnote-82) The same comparisons need to be facilitated in relation to more general processes such as military and political takeover, for example the Byzantine and Arab conquests of Carthage mentioned above.[[83]](#footnote-83) By adopting such techniques, we will make our results, and the complex reasoning that underpins them, accessible to other experts, thus broadening the audience for late antique archaeology.

Such representations of sequence show the true complexity of site development, rather than breaking it into simplistic overarching divisions of the ‘period-feature-layer’ variety. They then allow us to step beyond purely unilinear accounts of site sequences set against chronological divisions derived from culture-historical frameworks (e.g. the impact of dated invasions or migrations) and to formulate in their place, narratives embodying the diverse ways in which different parts of any site developed, or failed to develop. Yet, as noted above, eliding excavation recording and post-excavation analysis prevents us from clearly distinguishing these separate interpretative levels. Such clarity is essential if we are to create meaningful archaeological knowledge of late antique sites.

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List of Figures

Figure 1: classifying deposits by preservation, spacing and status.

Figure 2: contours of stratigraphic complexity.

Figure 3: complex site formation in an early medieval pit.

Figure 4: a ‘landuse diagram’ for the site of Brayford Wharf East, Lincoln.

1. In the same way that, he believes, Early Medieval archaeology developed its special sensitivities and methods in the 1970s. This question was explicitly articulated in a recent consideration of material spatiality in Late Antiquity, which put forward ways of ‘Improving field practice’ (Lavan *et al*. (2007) 27ff.). This article might be seen as an extended, and sometimes critical, evaluation of the ideas outlined there. [↑](#footnote-ref-1)
2. See Lavan *et al*. (2007) 5ff. for the division between these different types of urban deposits, and for references to the other site types. [↑](#footnote-ref-2)
3. For example, that undertaken during the development of the central business district of Beirut, and costing over $1 million: Perring (1997-98) and (2003). [↑](#footnote-ref-3)
4. Especially the new relationship between private and public spheres. See, for example, the shops at Scythopolis encroaching onto adjacent thoroughfares: Khamis (2007). [↑](#footnote-ref-4)
5. See Carver (1985) for the illustration of finds seriation in relation to stratigraphy, and Carver (2009) 288ff. for further discussion. [↑](#footnote-ref-5)
6. See Butcher(2003) for an attempt to tackle such issues when considering the ‘small change’ circulating in Berytus over an extended period of time. [↑](#footnote-ref-6)
7. See further below, n.60, on ‘recovery levels’. A specific example, from my experience, concerns the dissection of decorated masonry reused in a late-17th c. merchant’s house in London. This required documenting the exact position and orientation of each *ex-situ* moulded stone incorporated into its fabric (the rest of the building’s stonework was recorded in more conventional, rudimentary ways). Later analysis allowed us to understand the architecture of the underlying church (the original source of the moulded stones), the order in which the latter was dismantled after the Great Fire of London, and how the resulting stonework was then employed in the replacement mercantile building; this is exactly the same processes of recording and analysis that might be followed in late antique contexts. [↑](#footnote-ref-7)
8. See Berry (2009) and below n.54 for faunal and ceramic redeposition. [↑](#footnote-ref-8)
9. See above, n.1 [↑](#footnote-ref-9)
10. Putzeys (2007) 24. [↑](#footnote-ref-10)
11. A problem now increasingly overcome by satellite imagery being available for much of the globe. See Kennedy (2002) for the problems of gathering such information, especially by military sources. Hritz and Wilkinson (2006) provides an example of using the Shuttle Radar Topography Mission to produce a digital elevation model of most of the world’s surface. See further below on LiDAR for more detail. [↑](#footnote-ref-11)
12. Hanson and Oltean (2004). [↑](#footnote-ref-12)
13. See Philip *et al*. (2002) and Beck *et al*. (2007). [↑](#footnote-ref-13)
14. Ammerman (1981) 64. Paradoxically, as the spatial resolution of surface surveys has itself become more focussed, and the recording of assemblages more detailed, this method is now seen in certain quarters as similarly sluggish; in trying to provide more detailed, social interpretation of particular spheres, it may have lost sight of the ‘big picture’ and accompanying big questions: Cherry (2003) and (2004). [↑](#footnote-ref-14)
15. See Alcock and Cherry (2004) on regional comparisons. [↑](#footnote-ref-15)
16. See Pettigrew (2007). [↑](#footnote-ref-16)
17. Whether rural in the past or rural in terms of current landuse. One exception to this general lack of integration can occur when settlements are encountered accidentally while undertaking more general survey work: see, for example: Perkins and Walker (1990) at La Doganella, Italy. In addition, of course, rural surveys may still need the excavation of deeply stratified sites to establish the ceramic dating needed to define chronological change across the landscape: Vroom (2004) 376. [↑](#footnote-ref-17)
18. Bintliff and Snodgrass (1988); Alcock (1991). [↑](#footnote-ref-18)
19. Martens (2005). See also Ben Lazreg and Mattingly (1992) for corresponding work at Leptiminus. [↑](#footnote-ref-19)
20. Spatial matters: Crutchley (2006). Tree cover: Devereux *et al.* (2005). [↑](#footnote-ref-20)
21. Devereux *et al*. (2008) discuss comprehensiveness and Challis *et al.* (2008) curatorial applications. [↑](#footnote-ref-21)
22. General literature: Gaffney and Gater (2003) for a fairly up-to-date summary. Evidence from documents: for example, to find a road mentioned by Pausanias in association with the classical site of Helike: Tsokasi *et al*. (2009) or to contextualise seismic events in the 6th and 7th centuries at Sagalassos: Similox-Tohon *et al*. (2004). Plan forms: Military camp at *Zeugma*: Drahor *et al.* (2008). *Venta Icenorum*: Bescoby *et al*. (2009). *Wroxeter*: Gaffney and Gaffney (2000). [↑](#footnote-ref-22)
23. Jordan (2009) provides a comparison of the effectiveness of different techniques in a British context, and attempts to relate these findings to other countries. [↑](#footnote-ref-23)
24. Neubauer *et al*. (2002) at Carnutum; Benech (2007) at Europos. See also Putzeys (2007) 33ff. for the application of access analysis to more conventional types of spatial data. [↑](#footnote-ref-24)
25. See Kvamme (2006) for GIS in general. [↑](#footnote-ref-25)
26. Vermeulen *et al*. (2006). [↑](#footnote-ref-26)
27. Lavan *et al*. (2007) 28. [↑](#footnote-ref-27)
28. Bowden *et al*. (2002), Hounslow and Chroston (2002), Hodges *et al*. (2004) 15. [↑](#footnote-ref-28)
29. Perring (2003). [↑](#footnote-ref-29)
30. See Papadopoulos *et al*. (2006) plus references for an explanation of the technique, together with a discussion of data processing. [↑](#footnote-ref-30)
31. Drahor *et al*. (2008). [↑](#footnote-ref-31)
32. Diamanti *et al*. (2005). [↑](#footnote-ref-32)
33. Lolos *et al*. (2007). [↑](#footnote-ref-33)
34. Lolos *et al*. (2008). [↑](#footnote-ref-34)
35. Sarris *et al*. (2008). [↑](#footnote-ref-35)
36. Keay *et al*. (2005) 61ff. [↑](#footnote-ref-36)
37. Keay *et al*. (2009). [↑](#footnote-ref-37)
38. Gaffney *et al*. (2001). [↑](#footnote-ref-38)
39. Gaffney *et al*. (2004) 202. See also work at Butrint (above, n.28) for another example of preliminary reconnaissance work influencing a number of excavation approaches: Chroston and Hounslow (2004). [↑](#footnote-ref-39)
40. Gaffney *et al*. (2001). [↑](#footnote-ref-40)
41. Lavan *et al.* (2007) 5ff. See Putzeys (2007) 46ff. for more detailed discussion of such classifications. [↑](#footnote-ref-41)
42. Carver (2009) 347. [↑](#footnote-ref-42)
43. As can a brief intensive fire: Fiema (2007). [↑](#footnote-ref-43)
44. Hodges *et al*. (2004) 16. [↑](#footnote-ref-44)
45. Thus creating considerable challenges to curatorial practices. A modern development, for example, may impact not only on the area below the building’s foot print, but also dewater a wider area, and thus alter preservation conditions elsewhere: Oxley (1998). [↑](#footnote-ref-45)
46. This depends on refuse disposal mechanisms, of course. At other times the end of the backyard may be just the zone where successive, inter-cutting rubbish pits are clustered. [↑](#footnote-ref-46)
47. Emery (1993). [↑](#footnote-ref-47)
48. Schiffer (1987). [↑](#footnote-ref-48)
49. See various papers in: Cameron and Tomkin (1993), for how we can use ethnoarchaeology to get a better understanding here, and: Morris (2000), for an example tied explicitly to stratigraphic analysis. [↑](#footnote-ref-49)
50. See Gidlow (2000) on how rubbish and dirt have different cultural associations. Buteux and Jackson (2000) show how highly abraided finds from some features can lead us to question their on-site interpretation as ‘rubbish pits’. [↑](#footnote-ref-50)
51. Or, for some, divisions between primary (e.g. articulated human bone in the base of a grave), secondary (e.g. human teeth disturbed to a later level in the upper fill of a grave) and tertiary contexts (e.g. disarticulated human bone removed from a cemetery and dumped on an adjacent site). See Carver (2009) fig. 11.4 for further examples of this threefold division. [↑](#footnote-ref-51)
52. See, as an exception: Shillito *et al*. (2011) on the investigation of the microstratigraphy of rubbish middens at the Neolithic site of Çatalhöyük, Turkey. [↑](#footnote-ref-52)
53. Roskams (1992). [↑](#footnote-ref-53)
54. See Berry (2009) for a systematic attempt to do just this, using a combination of different deposit types, set against ceramic and faunal assemblages. [↑](#footnote-ref-54)
55. Carver (2003) 61ff. [↑](#footnote-ref-55)
56. Grinter (2007) 707. [↑](#footnote-ref-56)
57. Carver (2009) 27-35, 117-124 and fig. 6.5. [↑](#footnote-ref-57)
58. Petra: Frösen and Fiema (2002). Sepphoris: Strange (2006) chapt. 1 (an abbreviated discussion: my thanks go to the USF team for passing on further, detailed information about their approach). Carthage: Hurst and Roskams (1984) and Hurst (1994). [↑](#footnote-ref-58)
59. Lavan *et al*. (2007) 33. [↑](#footnote-ref-59)
60. See Carver (2009) 124ff. on the concept of recovery levels, and his chapt. 3 for details of this approach at the Sutton Hoo site. [↑](#footnote-ref-60)
61. Perring (1997-98) [↑](#footnote-ref-61)
62. As Carver (2009), an explicit advocate of diverse recovery levels, explicitly acknowledges: caption to Fig. 6.10. [↑](#footnote-ref-62)
63. Lavan *et al*. (2007) 33. [↑](#footnote-ref-63)
64. See Jones (2000) fig. 13.3 for an example of how, depending on one’s aims, different stratigraphic units may be defined in relation to the structural components of a timber-framed building: here timber vs. truss vs. whole roof and, correspondingly, brick vs. course vs. whole wall. [↑](#footnote-ref-64)
65. Jones (1984) [↑](#footnote-ref-65)
66. Shillito *et al*. (2011). [↑](#footnote-ref-66)
67. Hodder (1997), (2000) is a main protagonist. See also: Andrews *et al*. (2000) on interpretation, not record, being the objective of the exercise; Lucas (2001) for the wider context. The whole of a recent volume of *Archaeological Dialogues* comprised articles advocating greater reflexivity: see McAnany and Hodder (2009) for an introduction. For a more specific, late antique, commentary: Lavan *et al*. (2007) 34: condemns the “wholly ill-conceived desire for ‘objective recording’, requiring the archaeologist in the field to focus on detail without keeping the larger picture in mind”. [↑](#footnote-ref-67)
68. Lavan *et al*. (2007) 32. [↑](#footnote-ref-68)
69. Harris (2004), questioning the interpretations originally put forward by Crawford (1990). See also: Shops at Scythopolis: Agady *et al*. (2002) and Khamis (2007). Dura-Europos: Baird (2007). [↑](#footnote-ref-69)
70. Putzeys (2007) 5ff. and 282ff. [↑](#footnote-ref-70)
71. Hence a ‘bone signature’ may be quite different from a ‘pot signature’, and any resulting ‘bone story’ may be different, in its thrust, chapter divisions and wider implications, from the ‘pot story’: Berry (2009) esp. 31ff., for an example. [↑](#footnote-ref-71)
72. Poulter (2007). It is also why we need database systems to allow finds to be investigated by contextand assemblage: For example the Integrated Archaeological DataBase developed in York: <http://www.yorkarchaeology.co.uk/specialist/it.htm>. See Lavan *et al*. (2007) 36 and references for the main arguments. [↑](#footnote-ref-72)
73. See Orton and Tyers (1990) for how calculation of Estimated Vessel Equivalent (EVES) can be used to calculate brokenness/completeness. Putzeys (2007) 70ff. gives a specific application of such quantified material. Borgia (2007) at Elaiussa Sebaste provides an equally necessary element: a way of linking the two elements, here a dedicated GIS to allow intrasite comparisons, created using layer number as the key link in the system. [↑](#footnote-ref-73)
74. Lavan *et al*. (2007) 6; Poulter (2007) 686ff. [↑](#footnote-ref-74)
75. Hurst and Roskams (1984) 46ff. [↑](#footnote-ref-75)
76. Fulford and Peacock (1984) 43ff. [↑](#footnote-ref-76)
77. Butrint: Bescoby *et al*. (2004). Leptiminus: Ben Lazreg and Mattingly (1992) 89ff. [↑](#footnote-ref-77)
78. For example the equivalent of those employed for a medieval site in Durham, in Britain: Carver (2009) fig. 8.16. [↑](#footnote-ref-78)
79. Carthage: Hurst and Roskams (1984), Figs. 57/24, 15/25 and 3 respectively. Norwich: Shepherd (1993). Lincoln: Steane (1993). [↑](#footnote-ref-79)
80. Saunders (2000) and Roskams (2000b). [↑](#footnote-ref-80)
81. The earthquake which effected Pella in A.D. 749, for example: Walmsley (2007). [↑](#footnote-ref-81)
82. Putzeys (2007) 212. Wider sequence diagrams could then allow one to examine whether there were corresponding changes elsewhere in the townscape, for example in the various porticos of the Upper Agora: Putzeys (2007) 384. [↑](#footnote-ref-82)
83. Hurst and Roskams (1984) fig. 3. [↑](#footnote-ref-83)