Stunted 'visual competence' in archaeology: a problem hiding in plain sight

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This paper is dedicated to the memory of Peter Connolly FSA (1935-2012), illustrator, author, experimental archaeologist and inspiration.

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It is a truism that archaeology is a profoundly visual discipline; it is paradoxical, then, that so much of its output exhibits a poor level of what here I opt to call visual competence. There are, of course, many glorious exceptions to the picture I will sketch out here (pun probably intended). Yet as someone who returned to the UK university sector to teach archaeology after a decade as a jobbing illustrator and then museum educator and writer working closely with designers, I am as often dismayed as thrilled by the quality of images in many new archaeological publications, and other documents and presentations created by archaeologists for specialist or public consumption. This is an international issue. What follows draws largely on UK experience as the central case study, but I have encountered the same phenomenon, and apparent causes, in teaching undergraduate and graduate students from a variety of Anglophone, continental European and other university systems, and in working on a range of projects in other countries. While I have not conducted systematic research, I have sought to cross-check my impression that these problems are due to shortcomings in training, through canvassing the experiences of archaeologists around the world. As will be seen, their responses generally supported the picture presented here.

For obvious reasons I must avoid citing specific egregious examples of bad practice, but the reader will not have to look through many publications to encounter such common

phenomena as: poorly-drawn, incomprehensible location maps and site plans; object or site photographs without scales, perhaps reproduced as muddy halftones generated from colour photos without the necessary editing for contrast; and these often in publications or presentations which generally look carelessly produced. As will be seen, this is just the tip of an iceberg. Certainly, such shortcomings are in part down to slipshod publishers, but also reflect widespread neglect of visual matters among archaeologists, often extending to the very basics of document design. Some seem completely clueless about how to make, for example, the simplest poster or report visually effective or professional-looking.

It is of course hard to compare chalk and cheese, but in my view serious failings in creation, use and presentation of visuals are more common, and deeper, than would ever be tolerated by, say, archaeological examiners or editors encountering equivalent defects in writing and editing text. All this matters. It is not simply about 'superficial' issues of presentation: it is about fundamentals of effective practice in academic research which are far from superficial, and is equally important for wider communication of our discipline. Such visual deficiencies shout 'amateurs' to savvier outsiders accustomed to slick commercially-designed presentations—the people on whom most graduates will depend for employment, and from whom archaeologists in post must increasingly seek funding.

I argue, then, that archaeology as a discipline and profession has a real problem with what in a wider sense might be termed 'visuality' (Mirzoeff 2006, 2011), more precisely 'visual competence' (Müller 2008; Pauwels 2008) or 'visual literacy' (e.g. Hug 2012; Hattwig *et al.* 2013). It is telling in itself that archaeology (and indeed wider scholarship) lacks an agreed term for this matter. It is doubly telling that 'visual literacy' relies on analogy with, and implicitly cedes priority to, skills required to handle text. As stated at the outset, I opt for the shorthand 'visual competence', employing 'competence' in the sense of the *Oxford English Dictionary* definition, 'sufficiency of qualification; capacity to deal adequately with a subject'. I would more closely define visual competence as comprising the abilities to critically interrogate and evaluate images and visual media productions—something requiring at least some reflexive experience of image (re)use and deployment—and indeed to create new visual images. I argue that active experience of deploying images, and of creating imagery and layouts, are vitally important to developing skills in visual critique, and also to understanding how to work with visual-media professionals.

In my view, widespread shortcomings in visual competence comprise a significant but largely unrecognised weakness in archaeological training and practice, which stands in urgent need of addressing. There are of course also crucial theoretical and historiographical strands to this: why do we do what we do, and how did we arrive at the present situation? These have been the subject of pioneering work by others: I have myself benefited enormously from the work and expertise of Stephanie Moser, Sam Smiles and Sara Perry in particular. However, while I will briefly consider what seem to me to be the origins and causes of present problems, my primary focus is on contemporary practice, and university-level training for practice—or lack of it. I then make some suggestions for how we might address present shortcomings.

Much archaeological evidence is perceived by the eye, and recorded through visual means. Data are then represented, and interpretations presented, in visual as well as textual form. Archaeological documents, from student essays to fieldwork reports, popular books and web pages, are commonly punctuated with tables, graphs, maps, plans, object drawings, site photographs, and perhaps reconstructions. In recent decades field projects have increasingly used video for recording, and research presentations may use CGI animations, but here my concern is with still-dominant static 2D media. A further key but under-appreciated point is that visual representations are no mere passive media of record and transmission which just need to be appended to the real deal: text. Much more than this, they have other active roles deeply woven into the process of archaeology. Creating, manipulating, interrogating and deploying images are often parts of the process of research itself, as fundamental as verbal discussions, writing working notes and drafting the publication texts with which such visuals are inextricably entangled (James 1997; McFadyen 2011). Entwining of image-making in the research process is exemplified in the work of illustrator-turned-archaeologist, the late Peter Connolly, whose visualisation skills with the pen formed the basis of full-size reconstructions, recovering the forgotten design of stirrupless Roman-era saddles, and revealing the unsuspected effectiveness of this fundamental of ancient transportation and warfare (Figure 1: Connolly 1986; Connolly and Van Driel-Murray 1991).

In recent decades, developments in Information Technology have led to proliferating ways of visualising data and ideas, from simple page-layout features of word processing programs to magnetometry plots, GIS and LiDAR imagery and 3D Virtual Reality. These developments derive from archaeology's embedding in the world of contemporary high-tech culture. Along

with everybody else, archaeologists—and especially students who have never known any different—are immersed in a world saturated in flickering full-colour imagery, on smart phones and tablet computers, across the internet and teeming digital TV channels, on advertising screens and in 3D movies. In the face of this visual onslaught, mere text might seem generally to be in retreat in western culture. With so much technology and such a plethora of media available to us, we might expect to find ourselves in a Golden Age of archaeological imagery and visualisation. In many ways we are. Fine new imagery has continued to be generated in traditional media like ink and paint (e.g. the artworks by Danish illustrator Flemming Bau weaving together *Spuren der Jahrtausende*, a huge volume on German archaeology: von Freeden and von Schnurbein 2002). We also now enjoy stunning VR creations, including reconstructions or (better) simulations of past artefacts, buildings, people, places and landscapes.

An example of fine contemporary visual practice in archaeological publication is provided by a new volume I bought for other research while drafting this paper, on the Roman forts at Newstead, Scotland (Hunter and Keppie 2012). In both academic and physical weight a worthy sequel to Curle's classic 1911 volume on Newstead (Curle 1911), the new book exhibits elegant layout, framing many excellent illustrations, some of which were selected substantially for aesthetic reasons. The images are highly varied in nature and style, even including something long unfashionable: attractive hand-lettered sketch maps. To be sure, this work was produced with substantial sponsorship unavailable to most archaeological publications, but shows what can currently be achieved in conventional print media.

Further, in recent years, as part of a wider 'visual turn' in at least some areas of academic scholarship, theorised study of archaeological visualisation has been established as a new area of research in its own right (e.g. Moser 1992, 2001; Smiles and Moser 2005; Moser forthcoming 2014). However, archaeological visualisation studies remain a tiny specialist niche, while current unprecedented technical virtuosity in archaeological image-making is confined to a talented but (in Britain at least) shrinking group of graphics specialists and a handful of practising archaeologists also possessing the specialist skills. I argue that, paradoxically, across the discipline of archaeology as a whole, general levels of visual competence have not improved in recent decades, but have actually declined, to the point where many practitioners seem barely aware of this as a distinct subject, let alone something requiring serious attention. The results can be depressing, a catalogue of lost opportunities.

A repeatedly encountered manifestation of the problem is provision of an elaborate and clearly expensive reconstruction of past life on an excavated site commissioned from a professional illustrator, used simply as a pretty frontispiece or shoved on the cover to sell copies, yet remaining undiscussed in the text. A golden opportunity for interpretative discourse (James 1997: 46–7) is thrown away as mere eye candy.

Conferences often witness dire Powerpoint presentations offering images too small or poor to convey the intended point, amidst masses of illegibly tiny text, or ignoring the software's vast graphical possibilities, just reproducing an old 35mm slide show.

Similarly, conference posters often exhibit incomprehensible visual layout, with huge slabs of text, far too much to take in, arranged in lines far too long to follow; newspapers use multiple columns for good reasons.

In student coursework it is routine to encounter drawings and photos reduced to the size of postage stamps or stretched or squeezed out of proportion, often fuzzy phone-camera shots from books. Or handfuls of images are tacked onto an essay with no explanation. Worse still, even in coursework on topics which clearly cry out them, no images may be provided at all.

I am not criticising students who fall into these traps, many of whom remain blissfully unaware there is an issue; the blame lies with lack of training in document design or employing imagery appropriately and effectively, even in how to reuse existing images generated by others, let alone how to create new ones of their own. In my experience of the UK university sector, teachers marking archaeological coursework are intensely (and rightly) focused on critique of text, but vastly more variable in the degree of attention they pay to visual matters. It seems similar patterns prevail across the Anglophone world and in many continental European countries as well (below).

Yet abilities to critically interpret visual sources, and to (re)deploy them as evidence and effective arguments in combination with text or speech, remain vital to the discipline— besides comprising valuable transferable skills in themselves. Everyone needs to learn to critique the visual messages, in news and marketing media especially, which constantly bombard us; and at times many of us need to generate our own, for audiences outside our profession as well as within.

Why do these problems exist? In the UK at least, I suggest a combination of factors has been responsible. In the middle decades of the twentieth century, when typography and document layout were preserves of professional printers and typesetters, there was certainly much poor visual practice in publications. Nevertheless competence with drawing pen and camera were highly valued in academic archaeology, not least in the UK where such artisanal skills in visual presentation were widely seen as integral to the intellectual enterprise. The small number of departments teaching archaeology employed specialist illustrators and photographers, some on teaching contracts, others as technicians. Some Western archaeological expeditions also employed professional artists and architects for visual recording. For example, Henry Pearson, who trained at the Yale School of Fine Arts, served on the Franco-American project at Dura-Europos, Syria, in the 1930s, becoming a considerable field archaeologist while making exquisite drawings of the architectural discoveries (Figure 2: Hopkins 1979: 77–80). During the same era, many academic archaeologists developed their own image-making skills, some to very high levels. Famously, Wheeler's development of technical conventions for illustrations was integral to his field method, something encapsulated in a now-famous drawing of 1922, of the section through the *sacellum* cellar in the HQ building of the Roman fort of Segontium (Wheeler 1922: fig. 11; Piggott 1965 : 175, fig. 5; Adkins and Adkins 2009 : 5, fig. 1.4). Other notable archaeologists such as Stuart Piggott and Brian Hope-Taylor also produced technically sophisticated and aesthetically accomplished line art with their own hands (Figure 3: Piggott 1958: fig. 1; Hope-Taylor 1977), and both published on archaeological draughtsmanship as a topic in its own right, in this journal (Piggott 1965; Hope-Taylor 1966, 1967). However, in the latter part of the century, the disciplinary dynamics changed radically.

Major expansion of UK university education from the 1970s resulted in a fundamental shift in the purpose of archaeology degrees, from vocational courses towards archaeology-themed general degrees. Those wanting to enter the profession were now also expected also to undertake postgraduate training. And in a climate of pressure to drive down costs, larger student cohorts made it increasingly difficult to maintain labour-intensive studio-based drawing and photography teaching. Further, growth of joint degrees has made it ever harder to fit things into curricula. Development of undergraduate archaeology courses by Distance Learning offers global reach but creates additional challenges in provision of practical skills training.

These trends have been exacerbated by resurgent academic bias against 'mere craft skills'. Historical primacy (or tyranny) of the written word over the image may be traced to the roots of modern academia during the often-iconoclastic Protestant Reformation, arguably encapsulated in the continuing centrality of the essay in pedagogy. It is ironic that the ostensibly radical post-processual theoretical turn of the 1980s, for all its exhilarating critique of what had gone before, actually served to deepen these entrenched prejudices, through obsession with the metaphor of the past as text, and its focus on matters cerebral and symbolic. Both for the pasts we study, and for modern archaeological discourse, this implicitly devalued practical matters—such as studying craft skills in antiquity, let alone developing contemporary equivalents for ourselves in areas like visual media. The work of leading post-processualist Mike Shanks on photography, referred to below, might be deemed an exception here, although this tends to take a strongly theorising and intellectualising approach, paying much less attention to accompanying practical skills *per se*.

Meanwhile, developments in Information Technology were expanding that world of visual media far beyond traditional drawing and photography, to include graphics and image manipulation programs, document design packages, and advanced word processors with increasingly sophisticated layout capacities. These developments increasingly blurred the boundaries between hitherto distinct visual media, and facilitated closer integration of image and text. Such software became ever more affordable and accessible to students. However, as these major developments unfolded, UK archaeology departments generally did not revise their existing staffing and training provision to embrace them.

Where they might have evolved traditional drawing and photography provision towards more comprehensive and integrated graphics training, rather archaeology departments generally took the opposite tack, opting to shed existing specialist staff posts, reducing and perhaps outsourcing training in graphical techniques. I attempted to roughly quantify the actual current situation through a snapshot survey of graphics staffing and training provision in UK university archaeology departments in the summer of 2013, circulating a questionnaire with the help of the Subject Committee for Archaeology (SCFA). However, this did not elicit enough responses to be useful, although indicating considerable variation in practice. While there are clearly exceptions, my qualitative impression is that—with honourable exceptions— the general situation continues to deteriorate. To be sure, in some places advanced visual tuition is available, but as specialist options. Yet many UK archaeology graduates today

might receive little or no formal training in drawing or photography except for shooting a digital site photo or two and creating a pencil section and plan during their field school, with perhaps some limited guidance in other graphical matters.

A straw poll of other nations' students and teachers suggests that this is a common pattern globally. Germany seems to do relatively well, as a German PhD reports: '… graphics training starts already for the BA, but most of the students get their real experiences while they are preparing their MA thesis…. ". Italy may perhaps buck the trend: 'I graduated [from] the University of Rome in 2003, and thanks to my professors I got the basis of archaeological drawing and design. Later on, … experience at excavations and in the lab have done the rest.'

However, generally, the picture resembles that for the UK. An Australian university archaeologist reports: 'I was trained … in both prehistoric and classical archaeology in the 1980s. In neither of these departments did we, as undergraduates, get any formal training in the craft of archaeological illustration. … there was a compulsory field school for 4 days, and … we did some training in section drawing.'

From a US university archaeologist: 'my [archaeological] colleagues here… did degrees in Anthro programs …. They did not receive training as… undergrad[s] in these skills from their departments, but picked them up [elsewhere] (technical illustration from Biology, photography from Art) or just worked them out on their own.' Another American university teacher commented: 'I received very little training in the classroom in visual studies…. [for] specific training in, e.g. artifact drawing, if I desired, and would have needed to go to the art department…. It is my impression that friends and colleagues in other US PhD programs were in a similar boat. The only people I know that had extensive training with images were those that happened to fall into various roles on an excavation.'

A Canadian who graduated in 2001 experienced much the same: 'we only got compulsory drawing training as part of the field school, and that was site recording not small finds. We certainly weren't allowed anywhere near the cameras!'

From Denmark a 2002 graduate wrote: 'there was no formal training in archaeological drawing … However, some of us … were encouraged to follow the course in archaeological / technical drawing at the School [of] Conservation …. We had a sort of ad hoc training in photography when we participated in excavations. Nothing in terms of document design, reconstruction drawings etc.' A French respondent reported similarly patchy coverage.

Several Spanish graduates all responded on similar lines: 'My own impression is that we lack any training in visual techniques in Spanish universities, or at least we did when I as an undergraduate'; 'In my opinion, Spain lacks basic training in archaeological drawing and photography because … researchers at university only focus on texts …'; 'During my undergrad years [graduated 2005] … We saw very briefly some aspects of field photography … As for archaeological drawing …nothing at all… What I could learn about these issues… has been through field work… I have always thought this is knowledge that no one offers you at university.'

While far from systematic, my informal survey indicates the existence of a global issue.

This situation is a consequence of the kinds of factors already outlined plus, I suspect, the erroneous but widespread general assumption that simple access to versatile graphics-capable software for everyone is enough, without need for formal training. It seems we have not learned the lesson of the initial 'desktop publishing revolution' of the 1980s that, in the hands of the untrained, powerful software gives enormous power—to make a terrible mess. Equally unsatisfactorily, such vast potential often just languishes on hard disks, unknown and unused.

Both the scale and nature of the problems, and ideas about their likely causes and possible solutions, were crystallised for me during the course of the workshops and international conference of the Visualisation in Archaeology project led by Stephanie Moser at the University of Southampton (2008–11). In particular, I was prompted to scrutinise the then-current UK Quality Assurance Agency's benchmarking document which set standards for university courses in archaeology, published in 2000 and subsequently revised (QAA 2007). This document which, in its two editions, framed training of half a generation of UK archaeologists, seemed to me to be profoundly significant in what it said, and equally what it did not say, about the visual aspect of archaeological training.

Its spirit was notably 'logocentric', e.g. section 2.10: '…archaeology is, in essence, a unique way of *writing* about the past' (my emphasis). Similarly section 2.3 stated that: '…archaeology must engage adequately with *other* disciplines studying the same cultures through *other* sources of evidence such as art, architecture, and *visual culture…*' (my emphases); here visual culture is external, not integral, to archaeology. The most explicit statement relating to visual competence was at 4.3: 'Generic Skills', '…includ[e]… mak[ing] effective and appropriate forms of visual presentation', but did that imply anything beyond

using Powerpoint? Perhaps not, since 'visualisation' was apparently something confined to IT (2.16). Otherwise engagement with matters visual involved no more than '*familiarity* with the diverse sources of evidence used by archaeologists (including excavated, documentary, *representational*, observational, artefactual, environmental and scientific)…' (3.1: my emphases). Beyond this, visual competence was at best entirely implicit—or potentially overlooked completely; for example 5.3: 'Given the importance for archaeology graduates of the development of *technical skills* in a variety of areas of archaeological practice, institutions *should* facilitate access to the equipment and technical resources for the pursuit of these within the archaeology programmes they manage' (my emphases). This urged, rather than required, departments to provide training which might or might not encompass visual skills.

Yet students now need wider *basic* training in visual competence than ever before, even if advanced image production and design reasonably remain the preserve of specialist professionals. However, whatever the exact causes, recent decades saw widespread loss of practical graphics teaching and teachers in UK archaeology departments with, it seems, concomitant decline in training provision, without contravening the tenets of the benchmarking document.

I believe that substantial action is needed to address the shortcomings in visual competence in archaeology, in the UK and elsewhere as well. At the time of writing the UK's national benchmarking document is undergoing revision; how far the new edition will facilitate and foster visual skills training currently remains to be seen.

However, the present situation is likely to take time to address in any country, and there are hopeful signs elsewhere. Recently new generic guidelines setting 'competency standards' for teaching 'visual literacy' in Higher Education have been published in the USA by the Association of College and Research Libraries (Hattwig *et al.* 2011; Hattwig *et al.* 2013). These offer a potentially valuable template for discussing ways forward for training the next generation of archaeologists (Figure 4).

What training in visual skills, then, should we provide to archaeology students? Given the bureaucratic and inquisitorial pressures under which university teachers now labour, I hesitate to suggest any additional burden of work to my colleagues and their peers in other departments. But indeed, much could be achieved by quite modest measures, through shifting

emphases in what we already do. Nevertheless, I believe that truly effective change over the longer term is likely to require strategic reprioritisation and investment.

Clearly we cannot, and do not need to, train all archaeology graduates to be able to produce publication-quality technical illustrations, or prize-winning magazine cover designs—although we must maintain pathways to ensure these artistic, craft and technical skills can thrive within the discipline, for those with the talents and desire to pursue them. As a minimum, I suggest we need to ensure general inculcation of skills required for critically viewing ('reading') extant images, and selecting and reusing them in an informed manner. We should also be providing graduates with basic understandings of how to design documents. These are quite modest and achievable goals.

Where not already formally instigated, training in the practical skills, and rudimentary principles, of basic document design can be easily and cheaply delivered through online tutorials, accessible both to campus-based and Distance Learning students. Useful examples may already be found on the Web, so this could simply be a matter of ensuring students actually use them by getting them to create documents (e.g. a poster) for discussion in workshops, with formal assessment to ensure they take all this seriously. Ensuring that such presentational skills become embedded also requires scrutiny, with requirements written into marking schemes—then consistently applied by markers.

Fostering development of the intellectual skills involved in critically analysing images and visual presentations clearly requires pedagogical approaches different to those delivering document design training, and is an aspect to which some teaching departments already pay considerable attention. This may be delivered through asking students to try to deconstruct extant archaeological imagery, to understand its overt messages, unconscious or smuggled-in assumptions, and possible hidden agenda about people and cultures. This approach builds on pioneering work, such as Moser's in this journal on rival early representations of Neanderthals as visual encapsulations of archaeological interpretations, themselves embedded in wider contemporary socio-political and ideological discourses (Moser 1992). Again, we already well know how to deliver this dimension of training, e.g. through classes and illustrated written assignments, and it is fairly straightforward to see how this could be extended to Distance Learning.

However, such training is inherently passive in nature; it comprises more or less speculative discussion of existing images. At undergraduate level it would seem to be rare to pursue this through to formal tuition in *active* engagement with visuals: at its most basic, this involves learning how to select or deploy images most effectively in one's own work. Still less do many students, except those lucky enough to have access to specialist option courses, get taught how to create effective new visuals *ab initio*. Yet, I argue, students will learn how to critique others' visual arguments most effectively precisely through learning to create them for themselves.

Of course the most directly accessible means of visual creation is instant image capture through photography, of archaeological landscapes and locales, sites, artefacts and activities; almost all students own a digital camera, even if only one embedded in their mobile phone. However, for reasons explained below, rather than pursuing photography here I want to concentrate on the widely unappreciated value of image creation through drawing and related means, with pencil or technical pen—even if paintbrush or graphics tablet, let alone rendering software, will reasonably always remain mainly the preserves of the specialist.

It actually doesn't matter that many individuals 'can't draw' and will never be able to generate publishable images themselves; that isn't the point. The basic experience of drawing things by hand, accurately, to scale—plans, sections, elevations, perhaps above all some artefacts—offers something unique and invaluable which I became aware of through practicing these activities myself. Drawing makes you examine the subject much more closely than simply pointing a phone camera at it, or even just handling it and inspecting it by eye. Of course a top-quality archaeological photograph also requires such scrutiny, involving careful attention to viewpoint, focal length and depth of field, framing, lighting and shadow etc. (Cookson 1954). More recently Shanks has also published on archaeological photography or 'archaeography' (Shanks 1997; Shanks & Svabo 2013), but this highly sophisticated and rather abstruse work is not itself a basis for initial practical training, which few undergraduates get anyway. Without such tuition, it is all too easy to short-circuit the process through just 'bashing off some record shots', i.e. crude image capture with minimal attention to content or technique. It is much harder to cut corners like this with drawing. Manipulating and looking closely at ancient artefacts, or exploring archaeological spaces and other data patterns, as part of the act of drawing them, obliges the observer to analyse the subtleties of their conformation, of shape and spatial interrelation of elements.

Further, attempting something more ambitious, like an archaeological reconstruction drawing, especially a figural scene—even if only a sketch with matchstick people—can offer profound insights into the kinds of assumptions, choices and necessary compromises which go into creating more complex archaeological images. Actually having to try out these things offers a deep, visceral learning experience in creation, use and impact of imagery which simply cannot be acquired through passive scrutiny of examples created by others. There really is no substitute for trying it yourself.

Much more than just a medium of representation, visual image creation—above all, drawing—constitutes a multi-sensory means of both exploration and interpretation. In much archaeological endeavour generating, manipulating and analysing visual imagery—from beer-mat sketches to reconstructions, and from site photographs to plots of point data in representations of geographical or mathematical space—constitutes an intimate, integral, indispensable, yet underappreciated dimension of how primary research is done, something every bit as powerful as the spoken or written word.

Image creation in general, I suggest, and the *process* of drawing in particular, comprise fundamental archaeological experiences which all serious students of the discipline should be required to practice as a basic element of their training, alongside honing their writing and speaking skills. However, I would reiterate that whether or not they ever develop image-creation skills to publication standard simply doesn't matter. They will anyway gain deeper intuitive as well as discursive understanding of how images work.

This offers substantial long-term benefits, even if graduates never again pick up a drawing pen, take a site photo, or (surely implausible) ever have to lay out a formal document for themselves. They will have acquired a basic understanding of the practices and requirements of the professional illustrators, graphic designers and publishers they may one day need to work with, whether in archaeology or a range of other careers. Conversely, a more visually aware archaeological community would also form a securer basis for sustaining a body of visualisation specialists. Generally, visual competence—especially being critically image-savvy—constitutes a generic transferable skill of value to the graduate in any profession, and in everyday life.

But how can we deliver universal hands-on training in image creation? It may mean seeking to partially reverse the trend of recent decades to shed specialist technical staff in university

departments. It is likely at least to mean a shift in investment priorities. We could make a positive virtue of such a shift towards emphasising the visual in archaeological education and practice. Besides anticipated benefits to research and the quality of publications, playing the visual skills card could provide special, visible, added value to archaeology degrees, at a time when the discipline is having to compete ever harder to recruit students; something different, valuable and, almost literally, eye-catching.
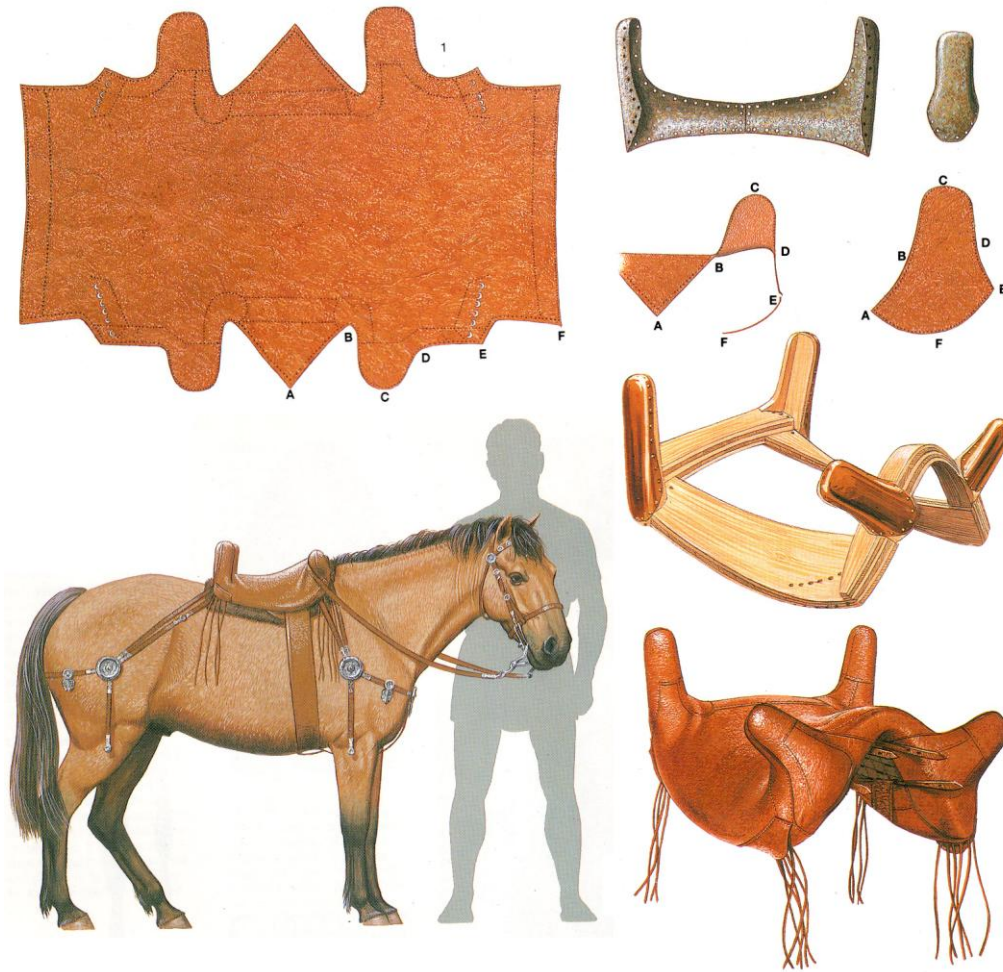
Figures

Figure 1: Technical illustration as research process as well as medium of communication. Peter Connolly, working closely with Carol Van Driel-Murray, created drawings of the archaeological and iconographic evidence, then working sketches of how the elements articulated, to develop full-size working reconstructions of the stirrupless Roman saddle. This work transformed understanding of a fundamental piece of ancient transport and military technology (collage of images originally published in Connolly 1988 pp. 30-31, reproduced with the kind permission of the Estate of Peter Connolly).
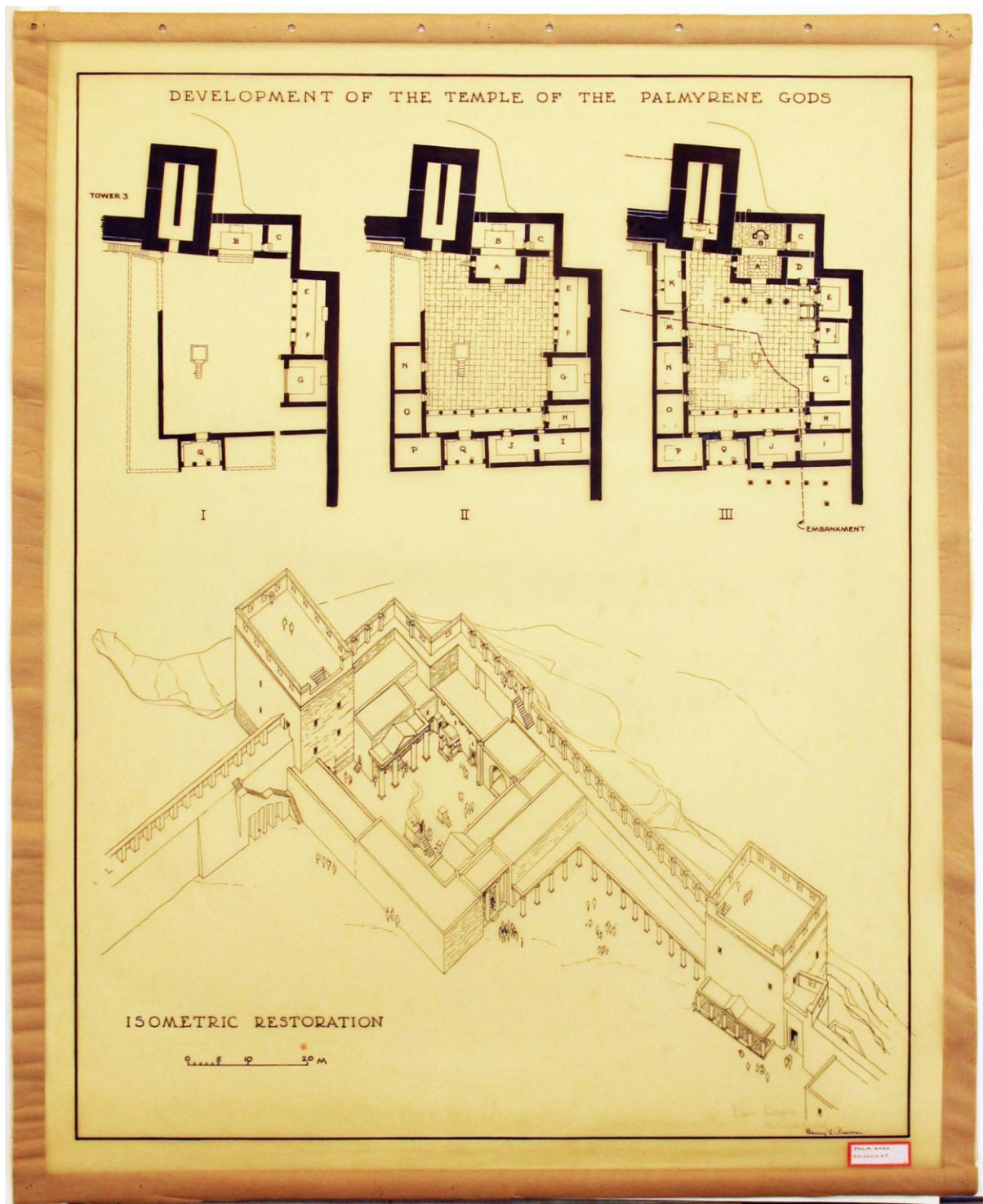
Figure 2: Archaeological artwork: original drawing created on site at Dura-Europos, Syria, by Henry Pearson, architect turned archaeologist. Published in Rostovtzeff 1938: plate VI: reproduced by permission of Yale University Art Gallery.
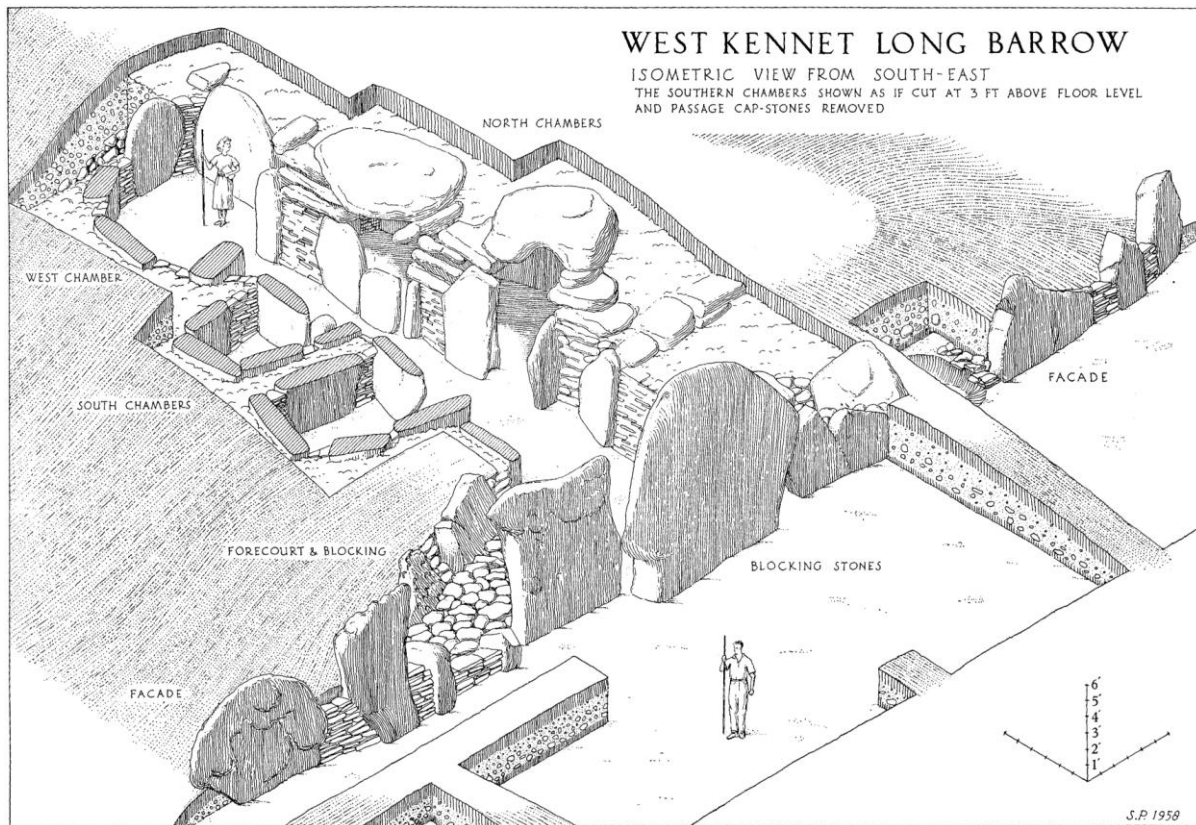
Figure 3: Proficiency in technical projection and exquisite penmanship by an academic archaeologist who loved to draw. Stuart Piggott's beautiful hand-lettered rendering of the east end of West Kennet long barrow from this journal (Piggott 1958: fig. 1), reproduced by permission of *****note to editor: please add Antiquity copyright acknowledgement**
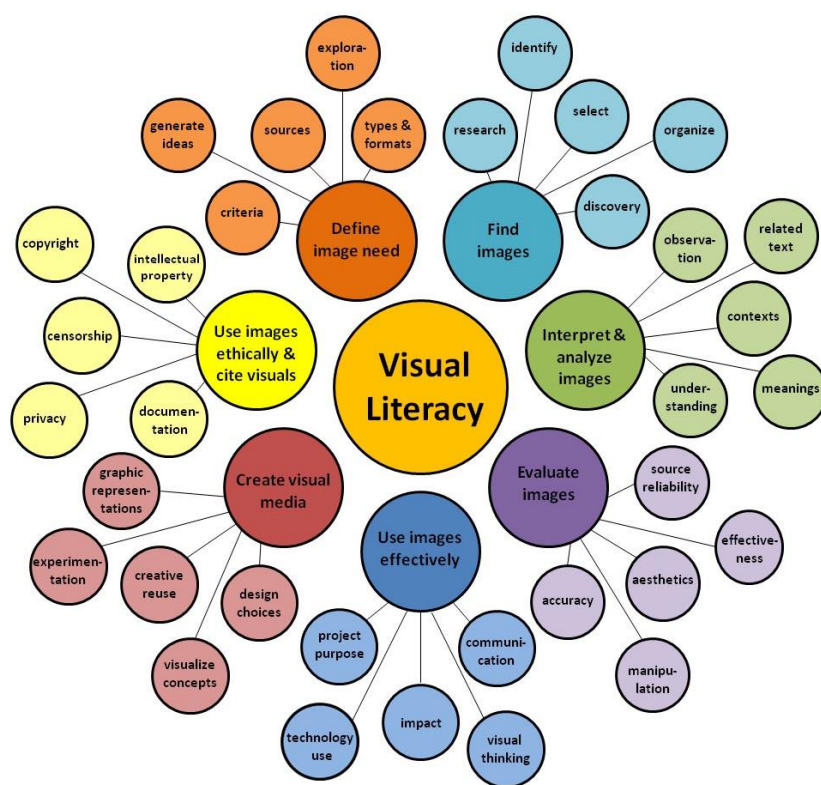
Figure 4: 'Visual literacy array', diagram presenting concepts and structures underpinning ACRL's recent Visual Literacy Competency Standards for Higher Education (Hattwig *et al.* 2013: fig. 1: Visual Literacy Array based on ACRL's Visual Literacy Standards by D. Hattwig, K. Bussert, and A. Medaille. Copyright 2013 The Johns Hopkins University Press. This image first appeared in PORTAL: LIBRARIES AND THE ACADEMY, Volume 13, Issue 1, January 2013, p. 75.

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