



# Authenticity and cultural heritage in the age of 3D digital reproductions

Edited by Paola Di Giuseppantonio Di Franco,  
Fabrizio Galeazzi and Valentina Vassallo



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McDONALD INSTITUTE CONVERSATIONS

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Edited by Paola Di Giuseppantonio Di Franco,  
Fabrizio Galeazzi and Valentina Vassallo

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# CONTENTS

Contributors	vii
Figures	ix
Foreword	xi
<i>Introduction: Why authenticity still matters today</i>	1
PAOLA DI GIUSEPPANTONIO DI FRANCO, FABRIZIO GALEAZZI AND VALENTINA VASSALLO	
Defining authenticity	1
Materiality vs constructivism	2
Object biographies	3
Authority and power	3
Experience and performance	4
Structure of the book	5
<b>Part 1 Histories</b>	11
<i>Chapter 1 Cast aside or cast in a new light? The Maudslay replica Maya casts at the Museum of Archaeology and Anthropology, Cambridge</i>	13
JODY JOY AND MARK ELLIOTT	
The Maudslay casts	14
Changing meanings	22
Contemporary role of replicas	22
Conclusions	23
<i>Chapter 2 Authenticity and realism: virtual vs physical restoration</i>	25
LOLA VICO LOPEZ	
Concepts and terminology	25
Principles and norms used in physical restoration and their relevance to the virtual environment	27
Towards a method for virtual restoration	29
Case studies	30
Concluding remarks	32
<b>Part 2 Definitions</b>	35
<i>Chapter 3 Digital Authenticity and the London Charter</i>	37
SORIN HERMON AND FRANCO NICCOLUCCI	
The London Charter – preamble and current situation	38
The London Charter principles	39
Summary and conclusions	44
<i>Chapter 4 Digital heritage objects, authorship, ownership and engagement</i>	49
STUART JEFFREY	
Authorship and ownership	49
Transience	53
Future recording	54
Conclusion	54
<b>Part 3 Practices</b>	57
<i>Chapter 5 Evaluating authenticity: the authenticity of 3D models in archaeological field documentation</i>	59
PETER JENSEN	
Observation and interpretation in archaeology	60
Conceptualized authenticity in archaeological documentation	64
Conclusion	72

<i>Chapter 6</i>	Virtual authority and the expanding role of 3D digital artefacts	75
	KEVIN GARSTKI	
	Photography and its similarities to 3D scanning	75
	Case study 1	77
	Case study 2	78
	Discussion	79
<i>Chapter 7</i>	Volatile images: authenticity and representation and multi-vocality in digital archaeology	83
	GARETH BEALE	
	Mediating authenticity	83
	Case study 1: Basing House zine printing	85
	Case study 2: Microlith	88
	Case study 3: Re-reading the British Memorial	90
	Conclusion	92
<b>Part 4</b>	<b>Uses</b>	95
<i>Chapter 8</i>	Ektypa and 3D models of Ektypa: the reality(ies) of a digital object	97
	ELENI BOZIA	
	Thoughts on authenticity	98
	Digital epigraphy: a new version of epigraphy or a new-found authenticity	100
	Copy vs. original: how a copy verifies the original	102
	Conclusion	108
<i>Chapter 9</i>	Theorizing authenticity – practising reality: the 3D replica of the Kazaphani boat	111
	NICOLA AMICO, P. RONZINO, V. VASSALLO, N. MILTIADOUS, S. HERMON AND F. NICCOLUCCI	
	The 3D replica of the Kazaphani boat. A case study of a fragile archaeological artefact	112
	Visitor’s experience: ‘A wonderful deception!’	118
	Conclusions	120
<i>Chapter 10</i>	Pitoti Prometheus, virtual reality 360: Valcamonica rock art between naturalism and alienation	123
	FREDERICK BAKER	
	Digital vs virtual	123
	Naturalism – recording rock art	125
	Naturalism and authenticity – the fourth dimension, time	127
	Alienation	128
	Arts-based research	129
	Conclusion	132
Index		135

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## Figures

1.1	<i>Stela E from Quirigua; old MAA, Little St Mary's Lane, Cambridge, 1885.</i>	15
1.2	<i>The Maudslay Hall, MAA, c. 1970, showing the Winchester Cathedral choir screen and the Maudslay casts including Zoomorph P</i>	16
1.3	<i>Casts, Maudslay Gallery, either side of the Haida totem pole.</i>	16
1.4	<i>Zoomorph B from Quirigua; entrance corridor to the Babington Gallery.</i>	18
1.5	<i>Dismantling the cast of Zoomorph P for transport to London. Summer 1979.</i>	19
1.6	<i>Dismantling the cast of Zoomorph P for transport to London. Summer 1979.</i>	19
1.7	<i>New display, Andrew's Gallery of World Archaeology; cast of Stela E from Quirigua.</i>	20
1.8	<i>Casts from lintel 16 of House F at Yaxchilan, Mexico; now on the wall of the Clarke Gallery.</i>	21
2.1	<i>Outline detail of the method of analysis for hypothesis elements in architectural 3D restoration.</i>	29
2.2	<i>Triclinium after the restoration work, 1937; drawing by Cacchiatelli-Cleter 1865.</i>	30
2.3	<i>MidasGen, stresses sig. Z-Z, X-X; structural analysis; virtual restoration.</i>	31
3.1	<i>The church of the Christ Antiphonitis, Kyrenia, from outside.</i>	39
3.2	<i>Some of the repatriated frescoes.</i>	40
3.3	<i>Documenting the fresco fragments.</i>	41
3.4	<i>3D point cloud of the interior.</i>	41
3.5	<i>Last judgement (northern wall). 36 fragments virtually re-located (72 per cent of the scene).</i>	42
3.6	<i>Tree of Jesse (southern wall). 32 fragments virtually re-located (77 per cent of the scene).</i>	42
3.7	<i>Last Judgement. Preserved in-situ frescoes in red, areas with missing frescoes in green.</i>	43
5.1	<i>Skelhøj. Rectification, mosaicking and vectorization of turf structures in a Bronze Age barrow.</i>	62
5.2	<i>Composite of 3D Structure from Motion documentation of human bones, alongside geological section in Alken Enge.</i>	63
5.3	<i>The Jelling Complex. Levels of uncertainty indicated by varying transparency.</i>	65
5.4	<i>The Jelling Complex. Excavated areas shown in white.</i>	66
5.5	<i>Plan drawings of postholes show the architectural similarities between viking age buildings.</i>	67
5.6	<i>Photos of the reconstructed houses at Trelleborg and Fyrkat.</i>	68
5.7	<i>Archaeo online database.</i>	69
5.8	<i>3D model of the planned physical palisade reconstruction and exhibition wall backdrop.</i>	70
5.9	<i>DR News online depicting the Borgring visualization.</i>	71
6.1	<i>Three digital 3D models of a Herakles head from Athienou-Malloura.</i>	78
6.2	<i>3D model of a Roman lamp reproduction, photogrammetry.</i>	79
6.3	<i>The initial 3D model of a Roman lamp reproduction; the altered 3D model using Adobe Photoshop.</i>	79
7.1	<i>GCI rendering of a room interior from Basing House; one of the digital image types to be included in the zines.</i>	85
7.2	<i>The zines.</i>	86
7.3	<i>Centrefold layout of prints and drawings by Peter Driver and students displayed in Volume 4 of the Basing House pamphlets.</i>	87
7.4	<i>Games and things to find on site.</i>	88
7.5	<i>The microlith.</i>	89
7.6	<i>RTI of an incised stone captured during a Re-Reading the British Memorial church survey.</i>	90
7.7	<i>Normal map; one of several imaging modes available easily to the viewer of an RTI file.</i>	91
8.1	<i>Scriptorium monk at work.</i>	98
8.2	<i>Court of Casts in the Victoria and Albert Museum.</i>	99
8.3	<i>Illustration of the Digital Epigraphy Toolbox's 3D digitization process.</i>	102
8.4	<i>Illustration of the analysis of lettering techniques.</i>	102
8.5	<i>1907 Cornell expedition making an ektypon at Quru Bel, Arslan Tash.</i>	103
8.6	<i>Ektypa of the Res Gestae of the emperor Augustus.</i>	103
8.7	<i>Ektypa of the Res Gestae of the emperor Augustus.</i>	104
8.8	<i>Photograph of the Res Gestae inscribed on the Monumentum Ancyranum, Ankara, Turkey, 1883.</i>	105
8.9	<i>Res Gestae of the emperor Augustus: 3D model of the Ektypa.</i>	106
8.10	<i>Visualization of the 3D ektypon with the original ektypon surface.</i>	107
9.1	<i>From the real artefact to the 3D physical replica.</i>	112

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9.2	<i>The 3D scanning of the Kazaphani model boat.</i>	113
9.3	<i>Creation of the 3D digital model.</i>	114
9.4	<i>The replica of the Kazaphani model boat in two pieces.</i>	115
9.5	<i>The completed assembly of the two pieces.</i>	115
9.6	<i>Engraving the marks of the joints from previous conservation.</i>	116
9.7	<i>Application of the binder agent.</i>	116
9.8	<i>The colouring of the replica.</i>	117
9.9	<i>Details of the 3D replica.</i>	118
9.10	<i>The 3D replica exhibited at the Smithsonian behind glass.</i>	119
10.1	<i>Prometheus on Seradina 12a. Still from 'Pitoti Prometheus' Dir. Baker 2016.</i>	124
10.2	<i>Sunset on Seradina 12a with ploughing scene.</i>	126
10.3	<i>Baker Illus 3 'The Hunt' Dir. Kren 2012.</i>	129
10.4	<i>'The Gladiators' Animation Production still for 'Pitoti Prometheus' Dir. Baker 2016</i>	131
10.5	<i>Baker Illus 4 The Plough. Animated preproduction still from 'Pitoto Prometheus' Dir. Baker 2016.</i>	131

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## Chapter 7

# Volatile images: authenticity and representation and multi-vocality in digital archaeology

Gareth Beale

The diversification of archaeological communities of practice has created a need for multi-vocality within archaeological discourse (Hodder 2008; Yellowhorn 2015). A growing acknowledgement of the need to encourage participation in the interpretation of the past within commercial and academic archaeology has been re-enforced by moves from the cultural heritage sector and government to increase the role of communities in the management and interpretation of the material past (Department for Culture, Media and Sport 2016; Smith 2006). The challenges involved in forging new and more inclusive forms of archaeological discourse and narrative are significant and have led to considerable disruption to traditional assumptions about processes of knowledge generation within archaeological practice (Moser et al. 2002). These changing dynamics have had a considerable impact on the use of digital imaging within archaeology (Jeffrey et al. 2015). Technological developments have created new opportunities for image making and archaeology has become increasingly involved in dialogue with image making practice outside of the discipline. Perhaps most notably, collaborations between artists and archaeologists have led to the creation of novel, experimental forms of archaeological visualization which incorporate ideas of practice-led-research (Beale et al. 2013; Perry 2015) and which challenge established definitions of knowledge.

The proliferation of new forms of image making practice has called into question many of the epistemological assumptions which traditionally underpinned the use of computer graphics as an archaeological medium. Notions of accuracy and authenticity which were conceived within the relatively narrow frame of academic research and communication do not necessarily transpose easily onto different cultures or contexts of image making. Circumstances of production, display and reception of images are increasingly

likely to differ in significant ways. This chapter will consider whether notions of authenticity which have developed around the use computer graphics in an academic archaeological setting are adequate as we move to describe and to understand the role of digital image making in an era of plurality, methodological diversity and shifting power relations. It will discuss and chart some of the diverse uses of image making within archaeological practice and will consider processes through which we might negotiate new forms of authenticity which reflect the diverse character of contemporary archaeology. The case studies featured within this paper describe work which I have been involved in producing. In each instance these were collaborative undertakings which incorporated, in various ways, the work of others. These collaborative undertakings describe a wide variety of archaeological research models including interdisciplinary collaborations, community archaeology projects and public art projects.

### Mediating authenticity

Considerations of authenticity have been instrumental in negotiating the value and meaning of computer generated images in archaeology (Miller & Richards 1995; Frischer et al. 2000; Frankland & Earl et al. 2011). Images have played an important role as communicators of archaeological knowledge and understandings of authenticity in relation to archaeological computer graphics have tended to emphasize the representation of empirical data derived from conventional modes of archaeological research. As Frischer states ‘...accuracy and authenticity are two sides of the same coin. Accuracy pertains to the data and metadata; authenticity to the user’s experience of the data and metadata.’ (Frischer et al. 2000, 8). These words are representative of a tendency in the literature of archaeological

computer graphics to conceptualize authenticity as being something which is an empirically defined and stable property of an image.

Initiatives such as the London Charter (Chapter 3 in this volume; Denard 2012) have encouraged archaeological image makers to codify and to express the relationship between representation and knowledge using formal systems of metadata and paradata. As a mechanism and as a set of guiding principles these ideas have been highly significant. They have helped to highlight the significance of practice as a central component of the archaeological image and have promoted the need for transparency (Bentkowska-Kafel et al. 2012). The formalized representation of elements of this process enables a subset of intellectual, physical and technological processes to be made visible. However, these formalized modes of notation were not designed to fully describe or define the limits of authenticity. There is far more to an image than that which can be defined using formal methods of notation. As definitions of meaningful knowledge diversify (Yellowhorn 2015) and as image making itself becomes recognized as a meaningful form of knowledge creation it becomes necessary to reconsider what we mean by authenticity. Smith and Dean (2009) argue that in an era of practice led research 'knowledge is itself often unstable, ambiguous and multi-dimensional, can be emotionally or affectively charged, and cannot necessarily be conveyed with the precision of a mathematical proof.' (Smith & Dean 2009, 3). These arguments are particularly pertinent as archaeological communities of practice diversify and seek to express varied meanings in new ways.

What might a more subjective understanding of authenticity mean for 3D computer graphics, a technological field which so rooted in ideas of realism, accuracy and the authentic? It is clear that definitions of authenticity must be expanded in order that they are able to describe new forms of archaeological media and the forms of knowledge which they seek to express. The relationship between authenticity and media has been explored in other disciplinary settings. Funk et al.'s critique of authenticity and literary aesthetics (2012) provides several useful insights into other ways in which we might conceptualize the authentic within archaeological image making. They suggest that in order for the authenticity of a representation to be established it must attempt to be both 'subjective and collective, personal and communal; it is an attempt to understand and transcend the purely symbolic and thus penetrate the space in between experience and representation' (Funk et al. 2012,13). Authenticity is not, they argue, an inherent property of the aesthetic object (in our case the digital image) and

it is not necessarily something which can be agreed upon. The idea of authenticity as something which must be enacted, performed and negotiated has, as I shall explore below in the case studies, important implications for archaeological computer graphics, as does the idea that authenticity is socially situated and discursive.

Funk et al.'s descriptions of authenticity resonate with arguments from History that narrative and representational modes used within the discipline must evolve in order to ensure the continuation of a meaningful and comprehensible dialogue between the researcher and the audience (Holly 1996, 66). These arguments acknowledge the responsibility of the researcher not just to move beyond passive transparency and towards the proactive and narration of the past in ways which are both meaningful and contextually specific (Burke 1991). The led to a broader questioning of the primacy of text in the representation of the past (White 1978) which echoes contemporary developments in practice led research (Smith & Dean 2009). There has been an increasing acknowledgement across the Arts and Humanities of the role which diverse forms of practice, media and aesthetic forms can have in generating, as well as communicating, knowledge (Smiles & Moser 2005). Ideas of craft practice have been particularly prominent in archaeology (Bradley 1997) and are relevant to the creation of archaeological images (Perry 2015). Bunnell characterizes craft as being a 'continuous internal dialogue between maker and technology while being both consciously and subconsciously influenced by the external forces of the cultures of craft, design and beyond.' (Bunnell 2004, 5). Bunnell's description encourages us to consider image making as a process intertwined with other forms of archaeological practice and life more broadly and emphasizes the interplay between images, archaeology and audience. There is a long tradition of the use of craft and fine art skills in the production of archaeological imagery (Smiles & Moser 2005) but the importance of these skills in digital image making has yet to be fully recognized (Perry 2015).

As archaeological communities of practice diversify there is an increasing pressure across the discipline to recognize the diversity and instability of some forms of archaeological knowledge and to recognize the manifestation of this knowledge through different forms of practice and in different media. These changes create an impetus and a space for experimental practice in archaeological image making. The creation of digital images which communicate not just the positivistic but also the effective and emotional dimensions of archaeological knowledge represents a considerable

challenge and has the capacity to become an enormously productive area of research. The subjective character of this work and the fact that the dynamics of image making and consumption are so dependent on social and cultural factors mean that this field of research must (in order to be productive and successful) recognize and have roots in diverse and multi-vocal communities of practice and be informed by image making traditions which extend beyond the current (assumed) limits of the discipline. It is also essential that we are self-critical and recognize the range aesthetic, creative and technological assumptions which have digital image making within archaeology to this point.

The rest of this chapter will present a series of image making case studies and will examine the different ways in which authenticity has been created and maintained within a range of archaeological representations. In each case the role of images and the mode of production differs as does the combination of actors involved in the image making process. In each case, I was involved in the production process in some way but was by no means the sole producer. As such, these accounts represent my personal reflections on the work undertaken. The examples cover a spectrum of archaeological practice ranging from the artistic interpretation and re-curation of archaeological images through to the production of images for scientific analysis. A common thread running through all of the case studies in the collaborative nature of the image making process and the negotiated character of the resulting images.

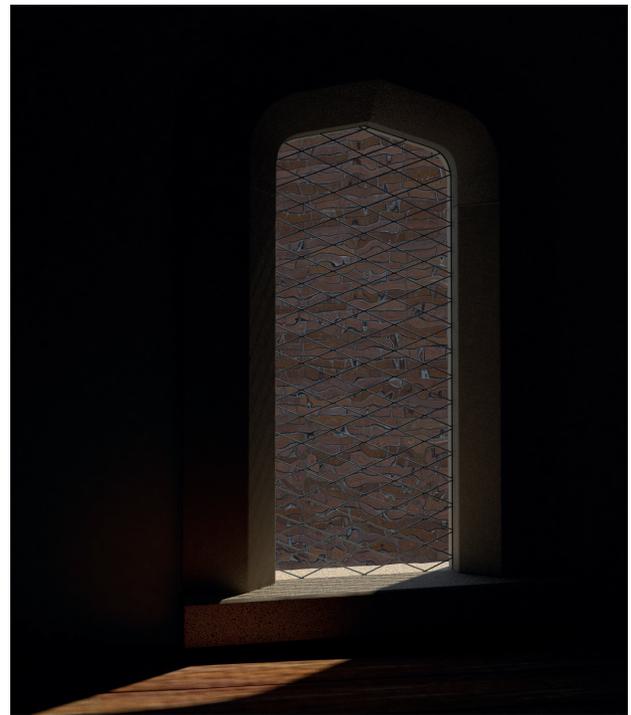
### Case study 1: Basing House zine printing

The first case study will focus on the production of images for the Basing House Project, a community orientated fieldwork project led by the University of York and University of Southampton. The project is based around an annual field season in which a team of students and community members conduct an excavation at Basing House in Hampshire. The research project focusses on the excavation of a country house which was largely destroyed during and soon after the English Civil Wars of the seventeenth century. The house was primarily built during the sixteenth century but incorporated earlier elements including a twelfth-century ringwork and bailey which helped to ensure that the house was defensible against siege for much of the Civil War (Allen & Anderson 1999).

The project has been running since 2013 and has made consistent use of digital imaging techniques throughout this period. This has included the production of digital drawings for on-site documentation and building survey as well as the regular production of

images based upon 3D and 2D data produced during the excavations using techniques ranging from 3D modelling, laser scanning and photogrammetry to drone photography and reflectance transformation imaging. The project is committed to being public facing and as transparent as possible as fieldwork proceeds. This process has been made easier by being situated on a publically accessible site. Students from the University of Southampton who have attended the excavation have received training not just in excavation and digital recording techniques but also in the production of on-site digital exhibitions which help to communicate on-going research to the public. The public presentation of knowledge derived from the excavations has been co-supervised by artists based at Winchester School of Art. This case study will describe one instance of public exhibition which was led by artist Peter Driver. Peter worked with volunteers and students from the University of Southampton Archaeology Department to produce a series of zines which were inspired by the political and religious pamphlets of seventeenth-century Britain (Fig. 7.1).

Peter and the excavation directors saw this as an opportunity for students and volunteers to engage with the visual culture of the seventeenth century while also exploring themes ranging from



**Figure 7.1.** GCI rendering of a room interior from Basing House; just one of the digital image types to be included in the zines.

print technology to politics and religion. The production of the pamphlets also provided students with a vehicle through which to explore the possibilities of image production based upon a wide range of digital data. The format of the zine provided a contrast to formalized methods of archaeological recording and image making which are predominant on an archaeological excavation and in which participants had been trained. In contrast to the production of site plans or context sheets the zines were an opportunity to present a more personal reflection on the archaeological process and evolving understandings (and frustrations!) which are an inherent part of the excavation process (Fig. 7.2).

The zines were produced using a digital photocopier but were based upon a wide range of imagery produced during the course of the project. This included digital images produced for documentation purposes (digitized section drawings, screen grabs of photogrammetric data, renderings of 3D models, digital photographs) but also artistic responses produced by students during print and drawing workshops which were held by Peter throughout the project. The

goal of these workshops was to enable participants to develop their visual acuity using media which are not commonly employed within archaeology (such as monoprinting) or using conventional media in new ways (including sketching and photography).

The resulting zines were composite objects which deliberately juxtaposed a variety of images and text in order to produce coherent and highly compelling visual outputs. The paper based analogue medium in which the zines were produced and re-produced does not diminish the extent to which these are inherently digital artefacts. Without digital imaging these publications could not have been produced and they effectively curate and give context to a wide variety of archaeological data. The implicit knowledge claims made by the zines are quite different to those which are implied by the use of other media. For example, presenting a digitized site drawing within the zine with the caption 'Painstaking section drawing by Jamie' (Fig. 7.3) emphasized the effort and care which had been put into the creation of this image, sentiments which are generally absent from the formal publication record.



Figure 7.2. The zines.

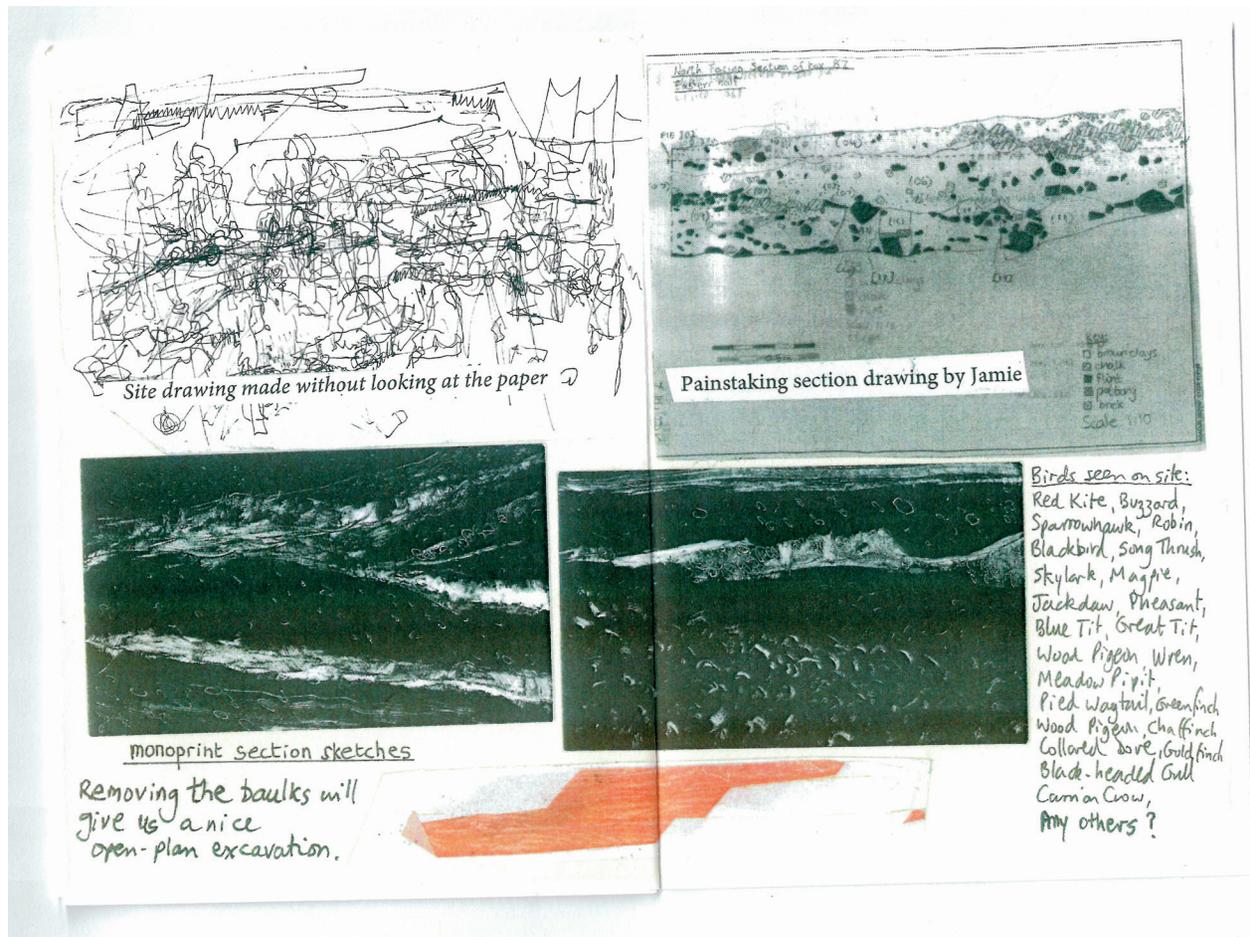


Figure 7.3. A centrefold layout of prints and drawings by Peter Driver and students displayed in Volume 4 of the *Basing House* pamphlets.

The zines augment the conventional archaeological record by providing a personal, emotive description of archaeological research. The format (including the associations of playful, satirical and anarchic content) provided a space within which the makers could articulate associations and ideas which would be excluded from conventional archaeological discourse and publication but which provide valuable insights into the archaeological process and the practice of knowledge building. The zines also provide a useful point of entry for visitors to the site by including games and things which the visitor can look out for during a visit (Fig. 7.4). Their playful presentation helps to ensure that there is no requirement for the site visitor to take the zines seriously but, none the less, they contain a wealth of valuable information and provide context to the work being undertaken. They are particularly effective at providing social and cultural context to the seventeenth-century wars which were so instrumental in creating the site as it exists today. Presentation

of seventeenth-century lyrics and poetry alongside contemporary the contemporary images described above help to situate the archaeological work within a broader social and cultural milieu.

The zines described here are an effective demonstration of the importance and the value of multi-vocality and also of the use of alternative media. The zine provided a format for collaborative visualization and interpretation and enabled different voices and ideas to come to the fore. The zine format can be seen both as a medium and (in some senses) as a venue for the expression of ideas. As objects they are anarchic and playful, as such, they set an epistemological tone which is independent of the context within which they are distributed or found. Put in simple terms, they leave the viewer with a strong sense that the content within is to be enjoyed, they are not intended to be and (we hope) cannot be misconstrued as being a formal or definitive statement. The authenticity of these objects does not reside in tightly defined relationships to

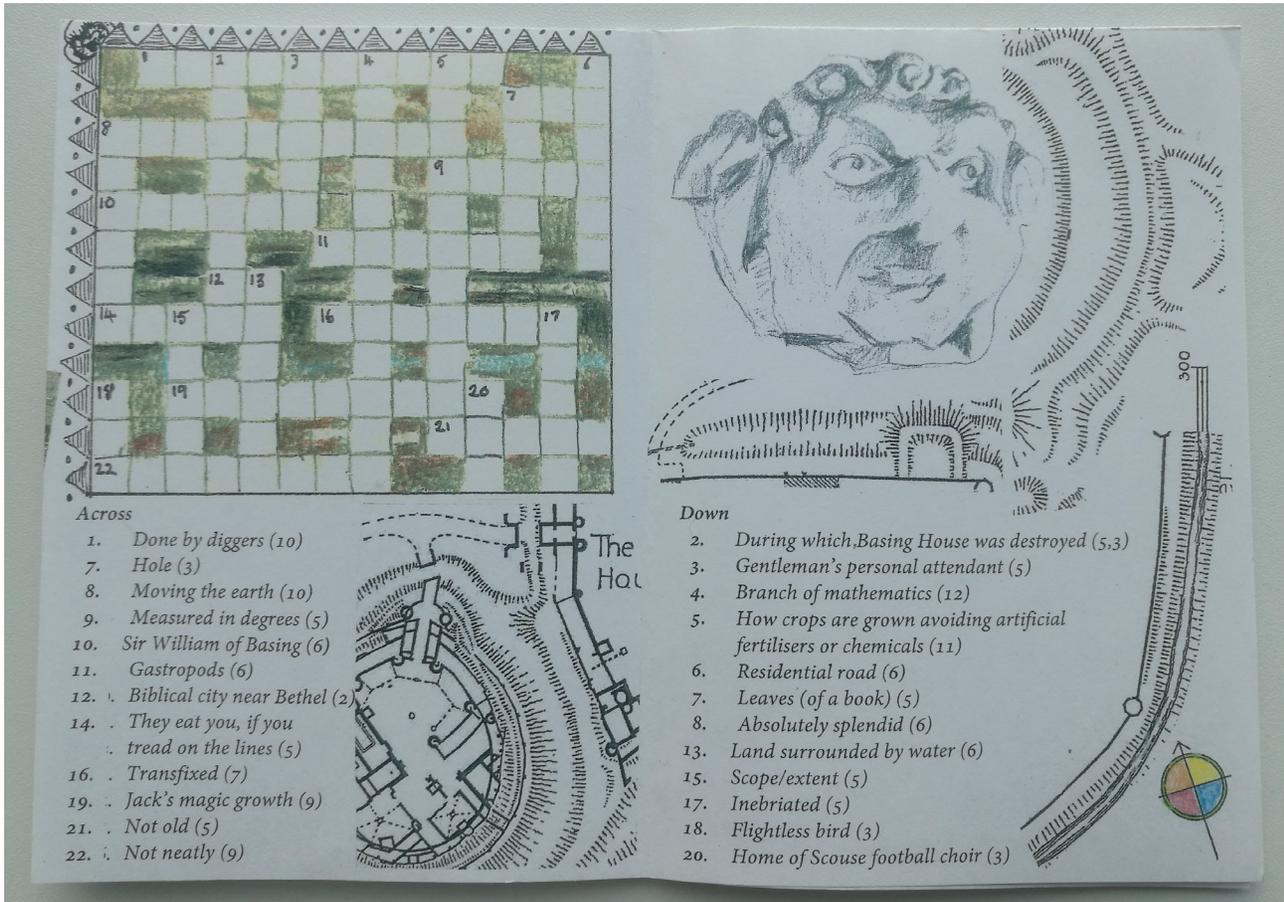


Figure 7.4. Games and things to find on site.

underlying data but in the use of style, medium and aesthetics to communicate subtle concepts of subjectivity, uncertainty and playfulness; as objects they speak for themselves.

### Case study 2: Microlith

As part of the Cultural Olympiad accompanying the London 2012 Olympics a series of exhibitions and installations were held along the Jurassic Coast in Devon and Dorset. These exhibitions were built out of collaborations between artists and scientists and represented creative responses to the landscape and culture of this region. This case study will discuss a single image which produced for Simon Ryder to sit within his exhibition *A Natural History of Pseudomorphs* housed at the Coastwatch Station on Portland in Dorset.

The image depicts a Mesolithic chert microlith excavated at Thorncombe Beacon on the Dorset coast and lent to us by the National Trust (Fig. 7.5). The microlith is around 1 cm long and has been

heavily re-touched meaning that, despite its size, a great deal of very fine detail is present. Having been commissioned by Simon to produce an image for the exhibition I decided to produce an image which was informed by traditions of archaeological artefact illustration with which I am familiar. The image of the microlith was intended to build upon these traditions but also to incorporate the possibilities offered by physically accurate rendering approaches in 3D computer graphics.

Images produced for conventional archaeological publications and venues are governed by particular aesthetic norms which allow them to be interpreted by an audience who have been trained to understand them (McIver Lopes 2009). The illustration of lithics is highly specialist and requires the image maker to develop an intimate understanding of an object in order to effectively represent it. The process of knapping by which Lithics are produced involves the systematic removal of flakes of stone using a tool. The traces of this process are revealed to the specialist through the examination of the contours of the object. Specialist

illustrators become adept, not just in reading these objects but in rendering these details in line drawing. The images which result have developed in order to serve a specific purpose. They describe the process by which the lithic was made as well as providing an image of the object.

The tradition of lithic illustration has much in common with other forms of archaeological illustration and places great emphasis on simplicity of line and on the selective representation of specific features or characteristics. This editorial process sits in contrast to prevailing traditions in archaeological computer graphics which have tended towards the naturalistic representation of the subject including photo-realistic shaders and textures to simulate materials as well as the apparently accurate reproduction of object geometry. I became interested in exploring this tension between these approaches and in producing an image which would juxtapose different styles of archaeological visualization; borrowing tropes and techniques from from each and combining them within a single image.

It was only as the process of image making unfolded that I began to know what the final image would look like. The 3D data (captured using a CT scanner) was extremely high resolution and I became very interested while processing and playing with this data in the level of detail which was visible on the surface of the object. When subjected to raking light it was possible to see fine surface details which I

had not noticed while examining the original object. Processes of playful investigation and discovery were instrumental in formulating an understanding of the object. The very high resolution of the data transformed my perception of scale; marks and lines in the surface which were not obvious even while handling the microlith took on a new significance. Working within the context of the arts gave me the impetus and space to think differently about these observations. A theme running through Simon's exhibition was negative space and the significance of fissures, cavities and missing material in helping archaeologists and geologists to understand and interpret the environment. I became very interested in whether an image of the microlith could convey the fact that it had been produced through the skilled removal of material and that through a process of retouching (the continual removal of material through the use-life of a stone tool in order to maintain its sharpness and usefulness) the form of the object had evolved over time.

To Simon, the incorporation of archaeological ways of seeing the object was an important reason for including the image in the exhibition. He commented that he 'is often startled and amazed at how differently different disciplines can see the same thing, how each places its own emphasis. Priorities which might occupy you about the microlith such as how it was produced or provenance, to me I take as part of the authenticity associated with the object...' (Ryder 2016, pers. comm.). To Simon then, disciplinary traditions of thought and practice were important in defining the relationship between the object and the image. It might be argued that archaeological thought and practice (or at least the thought and practice of this archaeologist) were as much 'on show' as the microlith itself when seen within the context of an exhibition.

The image was produced using workflows which would be familiar to any digital image maker working within archaeology but in applying these approaches within a different setting (the arts), with a different venue (improvised gallery space) and with a different anticipated audience I thought differently about my practice. Knowledge of the object was acquired in the process of image making, subjective decisions relating to the mediation of the object (lighting, texture, composition) enabled and required me to become intimately familiar with the object. This familiarity went onto inform the image which I produced. The desire to highlight and accentuate the characteristics which I had observed through various stages of working with the object dictated the form which the final image took. This is precisely the kind of *dialogue between technology and maker* that Bunnell (2004) identifies as defining craft practice.

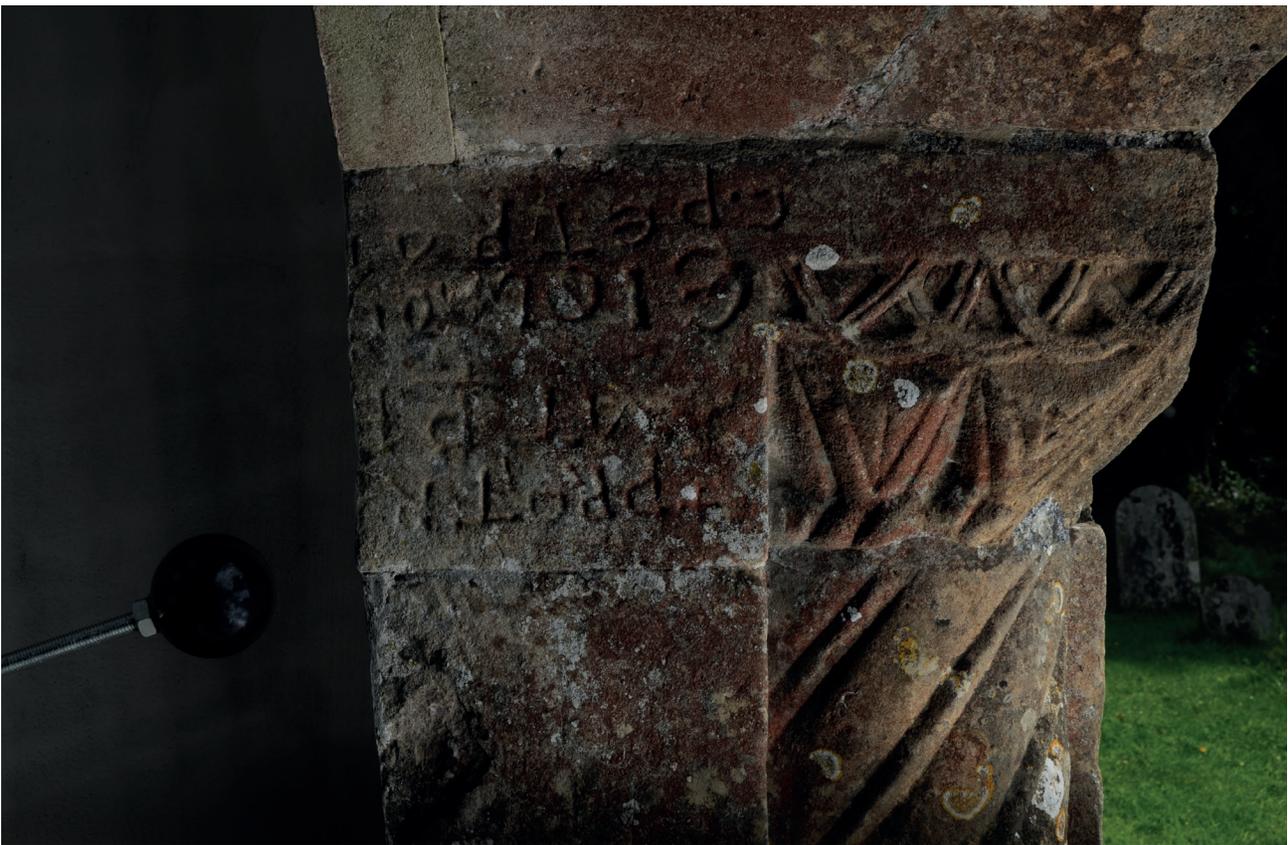


Figure 7.5. *The microlith.*

The context of display is also key to understanding biography of this image. Simon explained his attitude to the curation of *A Natural History of Pseudomorphs* in the following way; ‘You can use the word image or perhaps exhibition, or show, or context, but I would put it more encompassingly as ‘encounter’. When I was putting the show together I was consciously working with everything from the weather (the idea that you come in from the blustery, rainy, windswept, or perhaps sunny, becalmed world of the Bill into a quiet, pristine, idealized space) down to the presentation of the individual exhibits’ (Ryder 2016, pers. comm.). It was possible then in making and in curating to anticipate the context within which the image would be seen and to incorporate this into the creative process. Ultimately though, the context in which the image was encountered was volatile and subject to change, as were the responses of the viewer. The purpose of this image was not to solely to communicate information to the audience but also to engender a response. In this instance, the authenticity of the image was deeply rooted in the perception of the viewer and the ability of the image to function effectively within a given setting.

### Case study 3: Re-Reading the British Memorial

The third case study describes the co-creation of a series of images of memorials in churchyards and cemeteries using Reflectance Transformation Imaging (RTI) (Duffy et al. 2013). The images were produced in collaboration with a variety of community groups as part of the Re-Reading the British Memorial project (Beale & Beale 2015). The images shown here in non-interactive form were produced as in order to enable locally based researchers to document and study memorials in churchyards and cemeteries. They were captured as to enhance the ability of the viewer to observe fine details such as tool marking, erosion and residual traces of paint and pigment. Reflectance transformation imaging (RTI) is a multi-light imaging technique which allows the user to re-light a photograph after it has been taken. By photographing an object (in this case a memorial inscription) from multiple angles it is possible to generate a digital model of the surface topography of an object (Fig 7.6). Interactive images are derived from this model which allow the user to move the light and to alter the apparent reflective characteristics of the object using image processing algorithms.



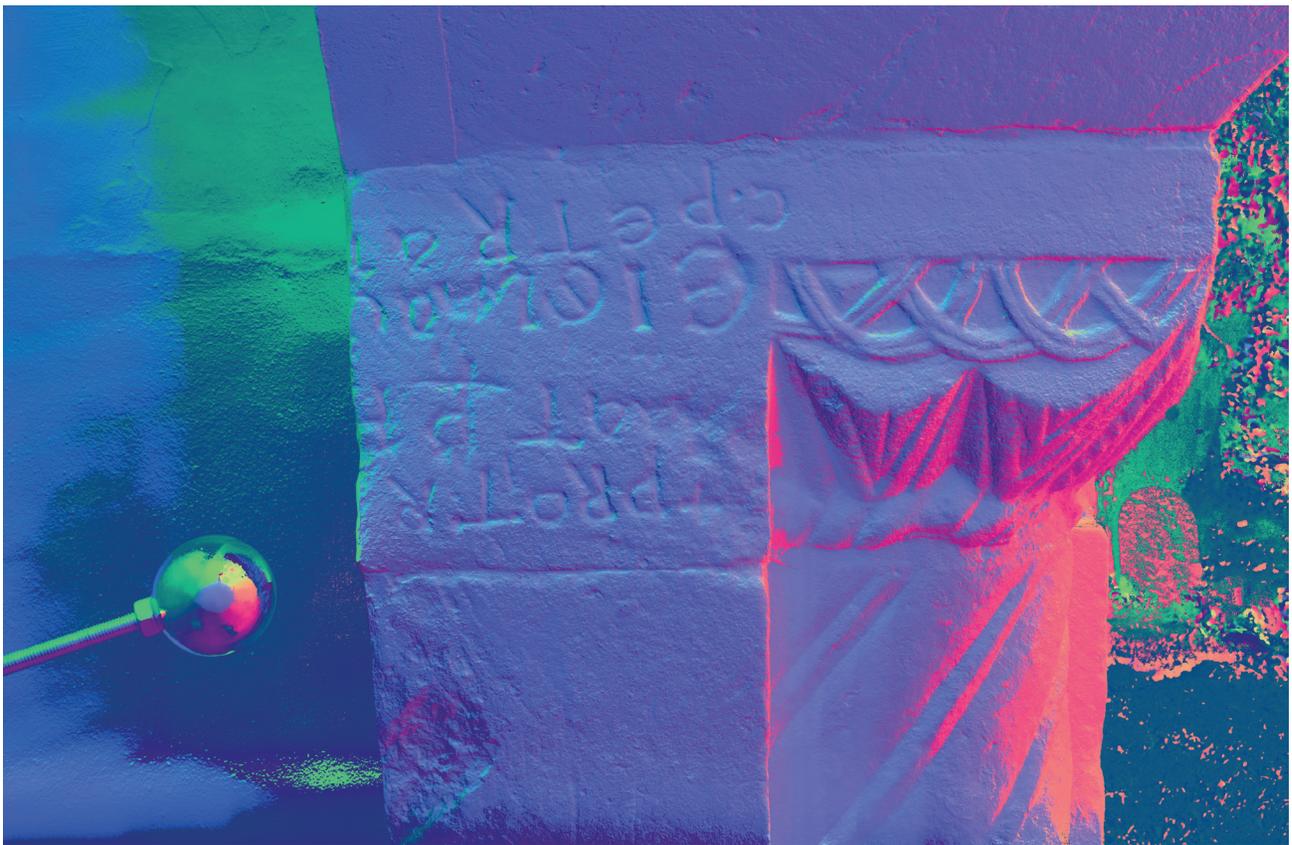
**Figure 7.6.** An RTI of an incised stone captured during a Re-Reading the British Memorial church survey.

Ostensibly, the images produced are empirical in nature. They provide a representation of the object which can be effectively described using metadata and paradata and the work is repeatable with allowance for slight variation resulting from the inherent inaccuracies of field recording. The creation of the images was standardized to as great an extent as possible with identical camera settings used throughout and camera position remaining as constant in relation to the memorial as was possible under fieldwork conditions. The apparent objectivity of the images is further reinforced by the format used; RTI images through being interactive defer many of the activities traditionally reserved for the image maker to the viewer. Although the camera position cannot be altered the viewer can re-compose the lighting and alter the appearance of the object, transforming colour, contrast and surface texture (Fig. 7.7).

However, the images are very far from being reliable surrogates for the objects themselves and they certainly don't provide the viewer with the contextual information which would be available to them if they visited the churchyard themselves. The agency of the image makers (the survey teams assisted by a team of

University of York archaeologists including myself) is evident throughout this collection of images, both in terms of the editorial decisions (which memorials are included and which are excluded) but also in terms of how the images were composed (which parts of the memorials are captured). The resulting record is, in common with all archaeological data sets, incomplete and incorporates considerable subjectivity. The images clearly represent the priorities of the image makers and researchers and have been driven by the desire to address specific research questions as well as by individual interests and enthusiasms.

This dissonance between the explicit-empirical and the implicit-subjective marks a line between that which is ordinarily recorded (and which frameworks such as the London Charter are designed to describe) and that which is omitted from the formal archaeological record. Mechanically reproduced images have a hybrid character in the sense that they have a tangible, empirical and knowable relationship with the material world but are, having been wielded by human hands, profoundly subjective in acknowledged and unacknowledged ways. The images, taken collectively or as a set, reflect definite attitudes to the



**Figure 7.7.** A normal map; one of several imaging modes available easily to the viewer of an RTI file.

perceived significance of place and the manner by which meanings are located and identified within the environment. Whether we choose to record the graves of well known people, monuments in particular styles or those of particular religious communities reflects deeper under-acknowledged subjectivities which run through the entire research process. Through documenting and recording we reveal our priorities and interests and made statements about what we perceive to be significant about places and the people who have inhabited them.

These difficulties are compounded by the fact that the objective and knowable elements of the relationship between image and subject are often so mathematically complex as to be obscure to any user without a specialism in mathematics or imaging science. Even where these specialisms exist, the ability describe this relationship does not necessarily enable the user to apply this knowledge meaningfully and in real time as they engage with images through a user interface. This black boxing of technology (Huggett 2015) is problematic but does not negate the value of this technology. Techniques such as RTI can be argued to have a performative dimension (Jones & Smith in press). By moving around the subject and by, literally in the case of RTI, shining a light onto an object, the image maker becomes uniquely acquainted with facets and details which may not be apparent to the casual observer or to viewers of resulting images. Thought of in this way the process of image making itself leads to the creation of new knowledge for the image maker. The idea that image making is a productive activity is not new (Bradley 1997) but the idea that scientific imaging techniques can be instrumental in forming new understandings of objects which extend beyond the limits of what would traditionally have been thought of as scientific knowledge has profound implications for future practice and for the role of creativity therein.

## Conclusion

In each of these examples it is clear that authenticity cannot be said to reside within the image itself as has often been assumed in discourse around archaeological computer graphics. However accurate an image might be (each of the images described above might be considered to be accurate in different ways) its authenticity is always contingent on the perception of the viewer. Within the context of scientific image making authenticity has often been conflated with or closely aligned to accuracy and the clear and transparent communication of knowledge in visual form. In truth, as has been widely acknowledged in relation to conventional photography (Shanks 1997; Morgan

2015), this apparent transparency masks the inherently subjective character of the digital image and of all images. Shared visual and aesthetic cultures are a pre-requisite for anything approaching unambiguous visual communication and it is under these conditions that specialist forms of image making (resonant of specialist forms of professional language) have developed. As archaeological communities of practice diversify (and aspire to become more inclusive) it is important that we recognize authenticity as a dynamic concept which is to be re-negotiated as required. In order to achieve this is necessary that we nurture and champion emergent forms of visual expression as well as those which are more firmly established.

Any re-negotiation of authenticity must begin with detailed consideration of the image itself. The role of images has frequently been assumed (within the literature of archaeological computer graphics) to relate in some tangible way to the real. Whether 'realism' this is a positive or negative characteristic of the medium has been the subject of much discussion (Gillings 2005). The pervasive idea that computer graphics are (threateningly or promisingly) close to reality has left very little space for the positive discussion of craft, skill or creativity in digital image making. The case studies outlined above describe work in a wide variety of media including the DIY re-use of digital assets (The Basing House Zines), the creation of a single image using 3D computer graphics (the Microlith) and the use of computational photography to document archaeological material (RTI and the Re-Reading the British Memorial project). In each instance the image makers have helped to shape the resulting image through a series of decisions and actions. They have, both consciously and subconsciously, drawn upon a personal store of skills, knowledge and assumptions in order to produce something new. Even where these images might be considered to be fairly unproblematic in their depiction of archaeological material or data, there are subjective elements to the work and elements which remain poorly understood by the image maker and by the audience. In each case these personal responses to the process of image making have helped to enrich the image and have led to the creation of something entirely unique. This lack of uniformity and the presence of discretion and skill in the mediation of the past is redolent of the need, described by Burke (1991), for historical disciplines to experiment with new representational forms in order to meaningfully engage with audiences and to communicate effectively. The presence of an enormous variety of image makers and forms of image making practice within archaeology means that we have a very strong basis upon which to build diverse traditions of archaeological computer graphics.

The purpose of this chapter has been to explore some of the dynamics of digital image making practice as it occurs within archaeology. Practices described all revolve around 3D computer graphics but, as is very often the case, utilize a range of technologies and processes. These depictions of applied digital image making are consciously distinct from the kinds of ‘methodological’ accounts of image making which have tended to emphasize technological descriptions and formalized notation above the subjective craft of image making. The examples described here all illustrate the reflexive character of the image making process applied interweaving of knowledge and skill. The intention of these descriptions was to show how these processes can sit alongside and exist within academically rigorous image making practice.

Archaeological computer graphics have tended to underplay the importance of image making as a form of archaeological practice and have emphasizing instead the link between images and data. The influence of the image maker has been underplayed within archaeological computing literature despite having an enormous impact on the character of the archaeological image. Metadata and paradata can help us to unpick this process in limited ways but it is not possible to describe, least of all in narrow formal terms, the full breadth and subjectivity which accompanies the production of archaeological visualizations. As Earl (2005) has previously suggested, digital archaeological image making would benefit enormously from engaging in more extensive discussions of style, aesthetics and media and must acknowledge the impact of aesthetic influences communicated through technology and through emerging conventions and formalized styles of digital image making practice. Earl’s fears that externally conceived aesthetic forms might crush innovation in digital image making seem not to have been realized but there is a very real risk, as we become an increasingly digital discipline, that in failing to acknowledge our debt to and place within a broader visual and aesthetic culture we might place archaeology’s creative traditions at risk.

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