

# **PUBLIC ARCHAEOLOGY IN A DIGITAL AGE**

**By Lorna-Jane Richardson**

**UCL**

**Thesis submitted in fulfilment of the degree of  
Ph.D. in Information Studies**

I, Lorna-Jane Richardson, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

.....

.....

## **ABSTRACT**

This thesis examines the impact of the democratic promises of Internet communication technologies, social, and participatory media on the practice of public archaeology. It is focused on work within archaeological organisations in the UK working in commercial archaeology, higher education, local authority planning departments and community settings, as well the voluntary archaeology sector. This work has taken an innovative approach to the subject matter through its use of a Grounded Theory method for data collection and analysis, and the use of a combination of online surveys, case studies and email questionnaires in order to address the following issues: the provision of authoritative archaeological information online; barriers to participation; policy and organisational approaches to evaluating success and archiving; community formation and activism, and the impact of digital inequalities and literacies.

This thesis is the first overarching study into the use of participatory media in archaeology. It is an important exploration of where and how the profession is creating and managing digital platforms, and the expanding opportunities for networking and sharing information within the discipline, against a backdrop of rapid advancement in the use of Internet technologies within society. This work has made significant contributions to debates on the practice and impact of public archaeology. It has shown that archaeologists do not yet fully understand the complexities of Internet use and issues of digital literacy, the impact of audience demographics or disposition towards participation in online projects.

It has shown that whilst recognition of democratic participation is not, on the whole, undertaken through a process of actively acknowledging responses to archaeological information, there remains potential for participatory media to support and accommodate these ideals.

This work documents a period of great change within the practice of archaeology in the UK, and concludes with the observation that it is vital that the discipline undertake research into online audiences for archaeological information if we are to create sustainable digital public archaeologies.

## TABLE OF CONTENTS

<b>Declaration</b>	<b>2</b>
<b>Abstract</b>	<b>3</b>
<b>Table of Contents</b>	<b>4</b>
<b>Acknowledgements</b>	<b>8</b>
<b>List of Appendices</b>	<b>9</b>
<b>List of Figures</b>	<b>10</b>
<b>List of Tables</b>	<b>12</b>
<b>Chapter 1: Introduction</b>	<b>13</b>
1.1 Introduction	13
1.2 Thematic Structure of this Thesis	18
<b>Chapter 2: Researching Public Archaeology</b>	<b>21</b>
2.1 A Background History of Public Archaeology	22
2.1.1 Meanings and Contexts of ‘Public Archaeology’	24
2.1.2 Understanding the Audience for Public Archaeology	25
2.2 Social Inclusion and Public Archaeology	27
2.3 A Model for Public Archaeology	28
2.4 Community Archaeology	33
2.5 Managing Archaeological Authority	42
2.6 Public Access to Archaeology	47
2.7 Towards a Definition of Digital Public Archaeology	50
2.7.1 Contextualising Public Archaeology Online	55
2.8 Discussion	64
<b>Chapter 3: Research Methods and Data Collection</b>	<b>66</b>
3.1 Ethical Considerations for Data Collection Online	68
3.1.2 Data Collection Parameters & Other Issues	72
3.2 Literature Review of Research Using Online Surveys	74

3.2.1 Research Design: Coverage and Sampling	76
3.2.2 Surveys Undertaken	78
3.3. Netnography	81
3.4 Email Questionnaires	83
3.4.1 Archaeosoup Productions	84
3.4.2. Big Heritage	84
3.4.3. British Archaeological Jobs and Resources	85
3.4.4. Council for British Archaeology	85
3.4.5. English Heritage Archaeology section	86
3.4.6. Portable Antiquities Scheme	86
3.4.7. RESCUE - The British Archaeological Trust	87
3.4.8. The Royal Commission on Ancient and Historical Monuments of Scotland	87
3.5 Quantitative Data Collection	89
3.6 Qualitative Research and Grounded Theory	93
3.7 Scope and Discussion	95
<b>Chapter 4: The Impact of Digital Inequalities on Public Archaeology Online</b>	<b>100</b>
4.1 The Growth of Internet Technologies	101
4.2 The Potential Application of Internet Technologies in Public Archaeology	103
4.3 The Internet and Techno-Utopianism	105
4.4 Digital Exclusion and Digital Divides	107
4.4.1 Internet Access – Connectivity	109
4.4.2 Case Study - The Cosmeston Archaeology Project	112
4.4.3 Challenging Digital Inequalities in the UK	114
4.5 Information Retrieval and the Impact of ‘Search’	118
4.6 Demographics and Internet Use in the UK	120
4.7 Demographics of Participation in Online Archaeology	122

4.8 Trolling, Privacy Concerns and Online Abuse	126
4.9 Dispositional Barriers to Participation Online	131
4.10 Discussion	135
<b>Chapter 5: Participation, Evaluation and Policy</b>	<b>138</b>
5.1 Engagement, Participation and Co-Production	139
5.2 Digital Public Archaeologies in Practice	145
5.2.1 Data Results From 2010 to 2011	147
5.2.2 Data Results From 2011 to 2012	148
5.2.3 Data Results From 2012 to 2013	149
5.3 Evaluating the Success of Digital Public Archaeology	151
5.4 Organisational Funding and Attitudes to Public Engagement Online	155
5.5 Managing Social Media Use Through Policy	156
5.6 Archiving Material Generated by Digital Public Archaeology	164
5.7 Discussion	167
<b>Chapter 6: Online Communities in Archaeology</b>	<b>171</b>
6.1 What is an Online ‘Community’?	172
6.2 Social Capital and Weak Ties	179
6.3 The Impact of Social Capital, Weak Ties and Online Activism on Archaeology	184
6.3.1 Cherrywood Crannog and Social Media-Based Activism	187
6.3.2 RESCUE - Difficulties Harnessing Social Media Activism	194
6.4 Twitter as Archaeological Community	197
6.4.1 The Use of Twitter at Archaeological Conferences	203
6.5 Leveraging Online Communities: Crowdsourcing in Archaeology	208
6.6 Discussion	217
<b>Chapter 7: Case Study - The <i>Day of Archaeology</i></b>	<b>220</b>
7.1 Founding the Project	220

7.2 Project Structure	223
7.3 Participation in the <i>Day of Archaeology</i>	225
7.4 Exploring Use and Contributions	228
7.5 The <i>Day of Archaeology</i> as Archaeological Community	230
7.5.1 Analysis of the #dayofarch Twitter Hashtag	232
7.5.2 Online Survey	233
7.5.3 Analysis of Website Content	236
7.6 The <i>Day of Archaeology</i> as an Educational Resource	240
7.7 Archiving the <i>Day of Archaeology</i>	242
7.8 Discussion	243
<b>Chapter 8: Understanding Archaeological Authority in a Digital Context</b>	<b>246</b>
8.1 What is ‘Authority’? What is Archaeological Authority?	248
8.2 Multi-Vocality and Opening the Field of Discourse	254
8.3 Information Literacy and Information-Seeking Behaviour	256
8.4 Alternative Archaeologies and the Internet	268
8.5 Locating Archaeological Authority Online: Case Studies from the Twitter Platform	270
8.6 Email Questionnaire Case Studies	277
8.7 Discussion	281
<b>Chapter 9: Conclusion</b>	<b>286</b>
9.1 Overview of Chapter Conclusions	287
9.2 Future Research Directions	292
9.3 Conclusion	293
<b>Bibliography</b>	<b>298</b>

## ACKNOWLEDGEMENTS

This research has been generously supported by the Arts and Humanities Research Council.

I would like to thank my supervisors; Melissa Terras, Tim Schadla-Hall and Dan Pett for all their kindness, motivation, help, guidance and support.

I am very grateful to Spencer Carter, James Dixon, Jan Freeman, Don Henson, Gabe Moshenska, David Osbourne, Matt Pope, Andrew Reinhard and Ethan Watrall for reading and commenting on parts of this thesis as it took shape. I would also like to thank all those who agreed to take part in my surveys, case studies and interviews for their time, and their kindness, in sharing their data, thoughts and observations. Huge thanks to the members of the *Day of Archaeology* collective; Jaime Almanza-Sanchez, Monty Dobson, Andy Dufton, Stu Eve, Tom Goskar, Pat Hadley, Matt Law, Jess Ogden, and Dan Pett.

I would also like to thank the following people for their conversation, support and assistance: Marc Barkman-Astles, Andy Bevan, Chiara Bonacchi, Helen Bristol, Andy Burnham, Spencer Carter, Robert Chapple, Alison Clark, David Connolly, Hugh Corley, Adam Corsini, Chris Cumberpatch, Jim Dixon, Arlo Fitzgerald, Jill Goddard, Shawn Graham, Sam Hardy, Sue Harrington, Mike Heyworth, Guy Hunt, Peter Insole, Stuart Jeffrey, Gary Lock, Andrew Macdonald, Rena Maguire, Ben Marwick, Sarah May, Carol McDavid, Sarah McLean, Colleen Morgan, Martin Newman, David McOmish, Adrian Olivier, Hilary Orange, David Osbourne, Dean Paton, Sara Perry, Angela Piccini, Ashley Pooley, Clare Richardson, Doug Rocks-Macqueen, Henry Rothwell, Jane Ruffino, Anthea Seles, Caroline Smith, Dave Standing, Roy Stephenson, Suzie Thomas, Gerry Wait, Mike Webber and Brian Wilkinson. If I have forgotten anyone, please accept my apologies.

For Ellie. For her loyal friendship, and accompanying need for regular fresh air and exercise.



## LIST OF APPENDICES

The appendices for this thesis are included on the accompanying CD-ROM, which can be found attached to the rear cover of this thesis. The contents are:

Appendix A: Survey 1: Archaeology & Twitter 2011

Appendix B: Survey 2: Archaeology & Social Media Policy

Appendix C: Survey 3: Archaeology & Twitter 2012

Appendix D: Survey 4: Preserving Public Archaeology Content Created Online

Appendix E: Survey 5: Measuring the Success of Your Digital Project

Appendix F: Survey 6: Understanding Barriers to Public Engagement with Archaeology Online

Appendix G: Survey 7: Live-tweeting at Archaeology Conferences

Appendix H: Survey 8: Archaeology & Twitter 2013

Appendix I: Survey 9: Using the Internet for Archaeology

Appendix J: Email Questionnaire Results

Appendix K: UK Archaeology Online Spreadsheets

Appendix L: *Day of Archaeology* survey results

Appendix M: List of Conference Papers Presented

## LIST OF FIGURES

Fig. 2.1: Approaches to archaeology suggested by Merriman, Holtorf and Matsuda & Okamura.	29
Fig. 2.2: Screenshot of the Heritage Gateway website.	57
Fig. 2.3: Screenshot from Oxford Archaeology East's <i>Romans of Fane Road</i> community heritage project.	60
Fig. 3.1: The opening statement from the Twitter & Archaeology survey 2013	70
Fig. 3.2: Screenshot of a call for participation in the Twitter & Archaeology survey 2012.	78
Fig. 4.1: Screenshot of the Cosmeston Archaeology Project website	113
Fig. 4.2: Screenshot of the Bere Island Archaeology Project blog	125
Fig. 5.1: Arnstein's ladder of citizen participation	142
Fig. 6.1: The dimensions of social capital defined by Narayan and Cassidy (2001).	181
Fig. 6.2: Screenshot of the Old Oswestry Hillfort Facebook Page.	186
Fig. 6.3: Drumclay Crannog during the excavation in 2012.	189
Fig. 6.4: Screenshot of Robert Chapple's blog post. 30 July 2012.	191
Fig. 6.5: Screenshot of the RESCUE website.	195
Fig. 6.6: Screenshot demonstrating the use of the hashtag #archaeology	202
Fig. 6.7: Example of the hashtag #CALive2014	207
Fig. 6.8: Screenshot of the <i>Know Your Place</i> web interface.	211
Fig. 6.9: Screenshot of the RCAHMS Canmore website.	213

Fig. 6.10: Screenshot of the <i>Hillforts Atlas Project</i> website.	215
Fig. 6.11: Screenshot of the UrCrowdsource project website.	216
Fig. 7.1: Screenshot of the Day of Archaeology website from 2013.	221
Fig. 7.2: Screenshot of the original Twitter conversation founding the <i>Day of Archaeology</i> .	222
Fig. 7.3: Traffic sources for the <i>Day of Archaeology</i> 2013.	225
Fig. 7.4: Screenshot of the <i>Day of Archaeology</i> Facebook Page.	226
Fig. 7.5: <i>Day of Archaeology</i> Twitter timeline showing the posting frequency of tweets from 26 July - 1 August 2013.	232
Fig. 7.6: Screenshot of the <i>Day of Archaeology</i> website search facilities.	237
Fig. 7.7: Cluster dendrogram of topics from the <i>Day of Archaeology</i> created by Ben Marwick.	239
Fig. 7.8: Screenshot of the Coursera/Brown University MOOC ‘Archaeology’s Dirty Little Secrets’.	242
Fig. 8.1: Screenshot of the Megalithic Portal website.	266
Fig. 8.2: Screenshot of the Megalithic Portal discussion forum “Sacred Sites and Megalithic Mysteries”.	267
Fig. 8.3: Screenshot of Twitter UK trending topics.	272
Fig. 8.4: Screenshot from the <i>Daily Telegraph</i> .	276

## LIST OF TABLES

Table 2.1: Illustration of the costs of accessing journal subscriptions or articles relevant to the public archaeology literature.	46
Table 3.1: List of online surveys undertaken as part of this doctoral research from 2011 to 2013.	79
Table 4.1: An initial unified Media-User Typology - MUT and the four criteria for defining types by media behaviour by P. B. Brandtzæg (2010).	133
Table 5.1: The types of metrics/analytics data collected from organisational websites.	153
Table 5.2: The types of data collected from social media platforms.	153
Table 5.3: “Do you have funding ring-fenced for digital public archaeology projects?”	156
Table 5.4: “Do you keep backup copies of both your own social media and online content, and any public contributions?”	165
Table 7.1: Number of posts and images uploaded to the Day of Archaeology website, 2011 to 2013.	227
Table 7.2: Top Tweeters by volume and retweet for the <i>Day of Archaeology</i> 2013.	232
Table 7.3: Topics gathered from Graham’s work on the <i>Day of Archaeology</i> .	238
Table 8.1: Summary of the issues for the case-study organisations relating to sharing news items from third-party sources.	279
Table 8.2: Summary of the issues for the case-study organisations with the presentation of expertise and authority as part of public archaeology.	279

# CHAPTER 1: INTRODUCTION

## 1.1 Introduction

This thesis will examine the impact of Internet technologies on the practice of public archaeology within professional archaeological communities working in commercial archaeology, higher education, local authority planning departments and community settings, as well the voluntary archaeology sector in the UK. To explore this issue, it examines the role and activities of archaeological organisations using Internet platforms for public engagement; audiences, participation and communities in online archaeology, and the impact of digital inequalities on the audiences for archaeological information. It will assess relationships within archaeological social networks that are theoretically linked with social capital and weak ties (Loury 1977; Loury 1981; Bourdieu 1984; Bourdieu 1986; Coleman 1988; Bourdieu & Wacquant 1992; Putman 1995; Putman 2001). It uses the social media platform of Twitter<sup>1</sup> as a testing ground, as well as the online public archaeology blogging project, the *Day of Archaeology*.<sup>2</sup> It will explore, both theoretically and empirically, how the impact of online interactions and online communities affect the concept of archaeological expertise and authority (Kojan 2008; Pyburn 2009; Rassool 2010). It will discuss current attitudes within the professional and voluntary archaeological sectors towards participation and public engagement through digital technologies, and critically examine the relative importance of social media technologies for the practice of public archaeology in the UK.

The advances made within the technologies that power the Internet over the past two decades have fundamentally and irrevocably changed the landscape and format of information sharing and of human interaction (Lievrouw 2004; Haddon 2006; Silverstone 2006; Thomas-Jones 2010; Lievrouw 2012; Thumin 2012). There has been a critical cultural shift in Internet use (Lievrouw 2012;

---

<sup>1</sup> Twitter website: <https://twitter.com/>

<sup>2</sup> Day of Archaeology project website: <http://www.dayofarchaeology.com/>

Thumim 2012). From being dominated by static websites reached by search engines facilitating information-seeking behaviour, the Internet has developed to encompass community-building, public participation and information sharing and creation - what has been termed “Web 2.0”, or social networking (O’Reilly 2005; Flew 2008; Shirkey 2008; Hogan & Quann-Hasse 2010; Thumim 2012). These participatory platforms can challenge the conventional models of information sharing, knowledge ownership and distribution through traditional broadcast media such as print newspapers, radio and television. Access to participatory platforms has also supported and encouraged citizen journalism, facilitated new forms and locations for political dissent, supported community discussion, and promoted self-representation, as well as eased interactions between institutions and the public (Bennett & Segerburg 2011; Bennett & Segerburg 2012; Castells 2012).

Though inequalities of access to Internet technologies exist and radical technological evangelism has, it has been argued, run its course (O’Neil 2009; Lanier 2010; Morozov 2011; Juel 2012; Lievrouw 2012), the rapid evolution of digital technologies has transformed the nature of information exchange. The expansion of the World Wide Web and the advent of participatory media have accompanied a decrease in the price of computer equipment and mobile smartphones, the increasing ubiquity of mobile devices to access the Internet through mobile broadband and public Wi-Fi, and the development of free and open source software (Naughton 2000; Shirkey 2008; Lovnik 2011; Lievrouw 2012; Elton & Carey 2013; Fuchs 2013). New social media platforms and methods through which to communicate online are constantly in development (Lovnik 2011; Naughton 2012; Rainie & Wellman 2012). Expectations of, and opportunities for, democratic, social, collaborative and individual participation and interaction with cultural heritage have grown accordingly (Missikoff 2006; Joyce & Tringham 2007; Waterton 2010a; Colwell-Chanthaphonh *et al* 2011; Bonacchi 2012; Richardson 2013). However, through a lack of access to computers, socio-economic inequalities, a lack of skills or experience with Information Technology, geographical location in areas without fast broadband

infrastructure, a significant number of people in the UK are marginalised from access to the Internet (Office for National Statistics 2012b; Oxford Internet Institute 2012). It is naïve to imagine that the Internet will reach the “economically and technologically disenfranchised” (McDavid 2004, 164) until the price of equipment and software, alongside fast cheap Internet access, is within reach of the majority of the population.

As Watson and Waterton have noted, a heritage sector that understands the benefits of engagement with the public will be better able to influence and direct public support for their own roles and “arcane” interests (2010, 1). As a broad subject, archaeology has enjoyed an increased popular interest through many media and as a volunteer activity. There is a greater public demand for participation in amateur archaeology as a hobby, and the Council for British Archaeology has recorded over 215,000 people in the UK who are active in heritage, history or archaeology volunteer groups - a figure which has more than doubled since the last CBA survey of community archaeology in 1985-6, when 100,000 people were judged to be involved in community archaeology groups in the UK (Council for British Archaeology 2010, 12). Professional archaeological organisations are increasingly encouraged, if not required, to disseminate their grey literature reports through organisations such as the Archaeological Data Service (ADS) (2014), as well as through online publications, educational resources, data-sets, images and other archaeological informatics via the Internet. This work often takes place as part of mandatory outputs for grant funding, impact assessment and public accountability (Department for Communities and Local Government 2012; Heritage Lottery Fund 2013a; Institute for Archaeologists 2014a).

Although advances in scholarly study of public archaeology, both as practice and theory, have been made in recent years (Schadla-Hall *et al* 2010; Matsuda & Okamura 2011; Skeates *et al* 2012; The Public Archaeology Group 2013), there remains an open question as to the form and function of digital methods of presenting and creating public archaeology, in theory and in practice. This area of public archaeology has been the subject of a growing amount of research

(McDavid 1997; McDavid 1998; McDavid 2004; Joyce & Tringham 2007; Richardson 2009; García-Raso 2011; Kansa *et al* 2011; Beale 2012; Dufton & Eve 2012; Bonacchi 2012; Harris 2012; Morgan & Eve 2012; Pett & Bonacchi 2012; Purser 2012; Richardson 2012a; Bauer 2013; Richardson 2013), and this thesis aims to further illuminate the current state and future direction of digital public archaeology projects and practice, with a specific focus on the work of archaeological organisations in the UK.

This thesis offers an original contribution to knowledge through the examination of the current use of Internet-enabled technologies as part of a toolkit for knowledge-sharing and participation in online archaeology. It is a unique examination of the current use of these social media platforms for the encouragement and support of intra-disciplinary networking and community building, and as a method and methodology for engaging the general public, with wider archaeological and heritage issues. The contributions made through this research to the existing literature are congruent with the sorts of questions it was possible to ask as a qualitative researcher using web surveys and Internet communications as the primary means of data collection. This thesis significantly extends the debate surrounding the theory and practice of public archaeology online, and draws on concepts and practice from other associated disciplines. It provides practical information for current users and future adopters of digital technologies in public and community archaeology, as well as the wider heritage sector, on best practice for undertaking public archaeology online.

This thesis has focused on five distinct sub-sections of the archaeological sector, chosen because they represent the only disciplinary areas where public archaeology work is undertaken in the UK. These are: commercial, development-driven, archaeological companies (some of which are also registered as educational trusts); the voluntary sector, which encompasses community, local and regional archaeology and heritage groups and societies; public engagement projects organised and run by the archaeology departments in universities and other higher education institutions; public archaeology projects within local government archaeology provision (as part of the local government curatorial



role, or as part of local authority community archaeology projects), Historic Environment Records (HER),<sup>3</sup> archives or museums provision; and Heritage Lottery Funded (HLF) projects (which may often be embedded within one of the above organisational settings, but will be considered separately for the purposes of this research). This research also considers the practice of digital public archaeology within the context of the national public engagement and widening participation agenda supported by the current coalition government, the work of the National Co-ordinating Centre for Public Engagement (NCCPE),<sup>4</sup> and the HLF,<sup>5</sup> as well as other UK-based funding bodies for heritage.

The source material for this thesis includes the use of websites, blogs, online discussion forums and email lists, Facebook groups and pages, Twitter, online photo management and sharing sites such as Picasa and Flickr, online video sites, and tools for sharing text, publications, and presentations. It will also briefly explore the use of mobile phone applications and the impact of public access to online archaeological databases, such as HER and the Portable Antiquities Scheme (PAS).<sup>6</sup> It will consider issues within the archaeological profession relating to Open Access and open publishing enabled through Internet technologies. As a result of the rapid pace of the development of Internet technologies and growing interest in the impact of these technologies on archaeology, a truly comprehensive and up-to-date review of current digital activity within the British archaeological sector is impossible, and certainly

---

<sup>3</sup> Historic Environment Records (also known as Sites and Monuments Records) may be held by Local Authorities, including County Councils, District Councils and Unitary Authorities. These records can be accessed online through the Heritage Gateway website:  
<http://www.heritagegateway.org.uk/gateway/default.aspx>

<sup>4</sup> The NCCPE is funded by the four UK Funding Councils, Research Councils UK, and the Wellcome Trust, and supports universities to engage with the public. website:  
<http://www.publicengagement.ac.uk/>

<sup>5</sup> The Heritage Lottery Fund (HLF) was founded in the United Kingdom in 1994 by Parliament as part of the National Lottery etc. Act 1992, as a 'non-departmental public body' giving grants to projects involving UK heritage for public benefit. The Secretary of State for Culture, Media and Sport is responsible for the financial and policy direction of the HLF, and the organisation reports to Parliament through the department. Decisions about individual applications and policies are entirely independent of the Government (HLF 2013b). Website:  
<http://www.hlf.org.uk/Pages/Home.aspx>

<sup>6</sup> The Portable Antiquities Scheme is a Department for Culture, Media and Sport funded project which encourages the voluntary recording of archaeological objects found by members of the public in England and Wales, including metal detector finds. The website and online database can be accessed from: <http://finds.org.uk/>

beyond the scope of this thesis. However, this thesis has undertaken the first overarching study into the use of participatory media for public archaeology, which identifies and discusses the many technical and socio-economic issues that surround adoption and practice of these technologies, and examines the forms of communication through Internet media in the main institutional settings where public archaeology is practised today.

## **1.2 Thematic Structure of this Thesis**

This thesis is divided into nine chapters:

**Chapter 2** examines the foundation and theoretical background of public archaeology as a discipline, explores the concept of community archaeology and situates the thesis topic within the current landscape of UK archaeology, both voluntary and professional.

**Chapter 3** outlines the research methods and data collected used in this thesis, exploring the use of web surveys and email questionnaires, and the use of a Grounded Theory approach (Glaser & Strauss 1967; Strauss & Corbin 1998; Charmaz 2006) to interpret the results.

**Chapter 4** discusses the wider issues of digital inequalities and user behaviour from the literature of sociology and Internet Studies. It focuses on the inherent inequalities and non-participation in digital public archaeology from the perspective of both audiences for archaeological media, as well as that of archaeological organisations, and between individual professionals and volunteers. The issues discussed may arise from problems as diverse as inequality of access to digital resources, lack of access to hardware/software, high-speed connection, and cultural differences within communities, to issues of digital literacy and user behaviour.

**Chapter 5** reviews the existence of contemporary digital outreach projects and methods in the UK. It explores how archaeological organisations are raising

public awareness of archaeological activities through digital outreach and engagement, and considers the opportunities for greater participation in digital and social media within public archaeology programmes. It will ask: what kinds of digital public archaeologies have been practised in the UK to date? What current projects can be found online, and what platforms do these projects exploit? Which organisations support these projects, and how are these funded? This chapter also assesses how organisations measure the impact of these projects on their intended audience, and considers organisational media policies and archiving online communications.

**Chapter 6** explores the implications of the sociological concepts of social capital and weak ties for the creation of archaeological networks online. It investigates whether the concept of an online archaeological ‘community’ is experienced and actively pursued within archaeological activism and campaigns; whether a sense of archaeological community is experienced by Twitter users (based on a series of three online surveys of archaeologists on the platform, undertaken each year from 2011 to 2013, and a survey of the use of Twitter at archaeological conferences). It also explores the opportunities for community building and leveraging social capital through crowd-sourced archaeology projects.

**Chapter 7** is a shorter case study of the *Day of Archaeology* project, which discusses the benefits and disadvantages of creating an online public engagement project. It also evaluates the effectiveness of the *Day of Archaeology* for the creation of an online archaeological community as a resource for archaeological education and public outreach, and identifies areas of best practice for the creation and management of digital public archaeology projects.

**Chapter 8** considers the issues of archaeological authority, expertise and organisational reputation in an online context, and questions whether the participatory promise of social media technologies can, and should, challenge archaeological authority within a UK context. It explores how these issues are approached and mediated online, and the approaches used by archaeological organisations to address the challenges of digital public archaeology. It discusses

how archaeological authority and expertise is demonstrated and practised online, using data from four of the online surveys undertaken from 2011 to 2013, and the results of email questionnaires from eight archaeological organisations in the UK. This chapter questions if the presence of websites dedicated to the promulgation of alternative archaeologies on the Internet threatens UK-based archaeological organisations and their expertise, and how organisations monitor and respond to alternative archaeological interpretations and challenges to their archaeological authority.

**Chapter 9** provides a summary of the findings of this research, and suggestions for the development of future work in the area of digital public archaeology, as well as drawing conclusions based on the analysis presented in this thesis.

Digital public archaeology is a developing contemporary practice, and as such has inevitably been subject to a limited amount of theoretical examination (Richardson 2013). Public attitudes to archaeology as a discipline are often shaped by the media. The practices of archaeological communication online are increasingly becoming the means by which we create communality with non-archaeologists and, as with all media, we must ask: what are these media doing? Whose interests are being served? What are these communication platforms being used for? (Hearn 2011). The impact of government austerity measures on the UK archaeology sector (Aitchison & Macqueen 2013; Institute of Historic Building Conservation 2013) places archaeology as a discipline at a time of great change, and great precariousness, both in its ability react to technological advances in online communications and communicate with the public. This calls for some sober reflection on the methods at our disposal with which to reinvent and strengthen the value of archaeology to the society that funds it. This thesis is the first overarching study into the use of participatory media in archaeology, and an important exploration of where and how the profession is creating and managing digital platforms, and expanding opportunities for networking and sharing information within the discipline, against a backdrop of rapid advancement in the use of Internet technologies within society.

## CHAPTER 2: RESEARCHING PUBLIC ARCHAEOLOGY

Even though the superscription of archaeology still generally takes the form of a dedication to the long-dead, it was now perceived to be an activity conducted by the living among the living and even on the living... archaeology was a profession bearing all the obligations and rights of any other social actor in the present. It was at least as political as banking, civil engineering or commercial publishing. Often, in fact, it was more sharply and immediately political than any of them (Ascherson 2000, 1).

This chapter locates the central research question for this thesis “what is the impact of Internet technologies on the practice of public archaeology” within the wider context of archaeological practice in the UK. Section 2.1 presents an overview of the background and history of public archaeology as a discipline in the UK, and defines the boundaries of the discipline, as it is currently understood from the literature. Section 2.2 introduces the concept of archaeology as a tool for social cohesion, locating this in community policies within the UK political system. Section 2.3 contains a theoretically informed discussion of the various models for public archaeology available in the literature, and defines public archaeology within a UK context. Section 2.4 contains a discussion of community archaeology, and non-professional participation in archaeology in the UK. Section 2.5 explores the concept of archaeological expertise and authority. Section 2.6 discusses the barriers that exist in professional archaeology that may have obscured public insight into archaeological methods, processes and practice. Section 2.7 extends the definition of public archaeology within the digital realm, and seeks to examine the paradigm of digital public archaeology. The chapter ends with section 2.8, which contains a discussion and summary of the chapter contents.

## 2.1 A Background History of Public Archaeology

For the purposes of this thesis, I have chosen to define public archaeology as both a disciplinary practice and theoretical position, which can be practised through the democratisation of archaeological communication, activity or administration; through communication with the public; involvement of the public, or the preservation and administration of archaeological resources for public benefit by voluntary or statutory organisations. Public archaeology is a very broad sub-discipline of archaeology, as much an activity as a theoretical concept, and operates in a wide variety of societal, social and academic contexts (Schadla-Hall *et al* 2010; Matsuda & Okamura 2011; Skeates *et al* 2012). The application of the label 'public archaeology' has been applied in a wide variety of disparate contexts - to the intersection of archaeology, politics and policy (Ucko 1995; Ucko 1997; Little & Shackel 2007; McGuire 2008; Matthews 2009); cultural heritage management and museums (Liddle 1989; Merriman & Swain 1999; Merriman 2000); indigenous rights and nationalism (Trigger 1984; Fawcett *et al* 2008; Rassool 2010); reconstruction and re-enactment (Anderson 1984; Anderson 1985; Benson *et al* 1986); the representation of the past in interpretation (Walsh 1992; Jameson 1997; Merriman 2002); the historiography of archaeology (Rahtz 1974; Hudson 1981; Jones 1984); heritage tourism (Ashworth 1994; Johnson & Thomas 1995; Robinson & Picard 2006); heritage education and curriculum design (Smardz & Smith 2000; Henson *et al* 2004; Corbishley 2011); public engagement and outreach (Smardz 1997; Moser *et al* 2002; Jensen 2010); archaeological ethics and the law (Faulkner 2000; Schadla-Hall 2004; Carman 2006); archaeological journalism and archaeology in the media (Fagan 2005; Kulik 2006; Piccini 2006; Piccini 2010); archaeology in popular culture (Russell 2002; Holtorf 2005a; Holtorf 2005b; Holtorf 2006; Holtorf 2007); and 'heritage' - tangible and intangible (Carman 2002; Waterton & Smith 2009; Waterton 2010b). This wide remit for the subject can lead to confusion - the description of what a public archaeologist actually does, and whether the public archaeologist is concerned with theory, research or practice

continues to be the subject of ongoing debate (Matsuda & Okamura 2011; The Public Archaeology Group 2013).

It is over sixty years since Sir Mortimer Wheeler wrote that archaeologists are obliged to disseminate their findings to the public; “It is the duty of the archaeologist, as of the scientist, to reach and impress the public, and to mould his words in the common clay of its forthright understanding” (Wheeler 1956, 234). The development of an academic discourse that was deliberately obscure and elitist in the mid-twentieth century had rendered archaeology inaccessible to the general public. As Hawkes wrote in *Antiquity*:

Some discussions of archaeology have seemed to me so esoteric, so overburdened with unhelpful jargon, so grossly inflated in relation to the significance of the matters involved, that they might emanate from a secret society, an introverted group of specialists enjoying their often rather squalid intellectual spells and ritual at the expense of an outside world to which they will contribute nothing that is enjoyable, generally interesting or of historical importance (1968, 256).

As the American archaeologists Fritz and Plog wrote in *American Antiquity* in 1970 “...unless archaeologists find ways to make their research increasingly relevant to the modern world, the modern world will find itself increasingly capable of getting along without archaeologists” (1970, 412).

The tradition of post-processual archaeological theory grew in popularity within academic archaeology during the late 1970s and early 1980s, and drew inspiration from the social sciences, Marxism, interpretive anthropology, structuralism, post-structuralism, gender studies and critical theory, to propose that there was no single paradigm of archaeological interpretation (Hodder 1985; Tilley 1991; Ucko 1995; Johnson 1999). Post-processualism as a theoretical concept emphasises the subjectivity of archaeological interpretations, the importance of locating material culture contextually within archaeological interpretation, the importance of personal agency, and that the act of interpretation of the past possesses political resonance in the present.

Influenced by these post-processual attitudes towards archaeological interpretation, the subsequent decades have seen the topic of communication between archaeology as a discipline and the wider public move beyond a “technical exercise of dissemination” (Merriman 2002, 541) to become a subject that is an accepted part of academic study within archaeology. Ironically, this has been supported by the increasing professionalisation of the discipline in the UK, especially amongst fieldwork practitioners, from the 1970s onwards, with the establishment in 1973 of the Council for British Archaeology working party on Professionalism in Archaeology, which considered the establishment of a “British Archaeological Institution” on a par with other professional bodies (Addyman 1989, 303), and the establishment of the Association for the Promotion of an Institute of Field Archaeologists in 1979 (Addyman 1989, 304).

### **2.1.1 Meanings and Contexts of ‘Public Archaeology’**

This section will examine the diverse meanings and contexts of public archaeology in the academic literature. The term 'public archaeology' has been in use since the publication of C.R McGimsey's book *Public Archaeology* in the United States - a term used in his book within the context of publicly funded and supported excavation and preservation of archaeological sites threatened by redevelopment (McGimsey 1972). In the United States, this term is still applied within a discipline heavily focused on public-benefit cultural resource management (CRM) (McManamon 2000; Jameson 2004; Crass 2010; McDavid & McGhee 2010; Matsuda & Okamura 2011). The foundation of the World Archaeological Congress in 1986 was an early manifestation of a publicly responsible archaeology, established to;

...promote: the exchange of results from archaeological research; professional training and public education for disadvantaged nations, groups and communities; the empowerment and support of Indigenous groups and First Nations peoples; and the conservation of archaeological sites (World Archaeological Congress 2013).



Much of the European-focused literature on the subject defines public archaeology as an examination of the relationship between archaeology and the public, where the public of public archaeology is represented both by the state, working in the public interest to protect, excavate and investigate society's archaeology on their behalf, and by the notional 'general public', meaning those who are not professional archaeologists (Davis 1997; Schadla-Hall 1999; Ascherson 2000; Matsuda 2004; Merriman 2004). In the UK, Belford has written that the historic environment is a “contested” landscape, with an academically-dominated interpretative ideology, which presents the past to the non-specialist public, supported by the ownership of requisite expert authority (2011, 50). The authoritative definition of what constitutes archaeology is placed in the hands of the educated, trained and experienced archaeologist. This real, or perceived, concept of archaeological authority has been further legitimised by the development of a professionally skilled and educated workforce, government legislation protecting archaeological monuments and material, and, until recently, the routine employment of public sector archaeologists within the local authority developmental planning process.

### **2.1.2 Understanding the Audience for Public Archaeology**

Central to an understanding of public archaeology as practice must be an understanding of its audiences and an understanding of what archaeology is or what it does, and what it is for. In the academic literature, the greatest entanglements of concepts and theories of public archaeology are around issues of definition and application of the terms ‘public’ and ‘community’. Who are the ‘publics’ of public archaeology? Are these audiences for the production and consumption of archaeological information simply local communities, or is the archaeological description and interpretation transmitted to tourist organisations, construction companies, housing developers, local newspapers, consumers of historical television programmes, dealers in antiquities, nationalists and politicians? It is essential to acknowledge the impossibility of

considering a general, single, and homogeneous public archaeology, especially when the concept of 'public' and 'archaeology' are socially, culturally and geographically situated.

Archaeology is also underpinned with different theoretical approaches in different countries, depending on the history of the foundation of the national disciplinary tradition. These approaches have developed alongside the socio-economic and political circumstances under which publicly accessible and publicly understandable archaeology takes place, and is subject to policy, which varies nation to nation (Carman 2002; McGuire 2008; Matsuda & Okamura 2011). The UK has a strong tradition of undertaking research and practice that examines and supports the relationship between archaeology and contemporary society, examined further in section 2.2. UK-based archaeologists need to keep considering who their audiences and communities are, using a range of scales, attempt to understand the different audiences that are receptive to their archaeological information and discussion, and whether they, as professionals, can understand the requirements of these diverse groups that would support and encourage them to connect with archaeological heritage, in real life or through digital means (Angelo 2013). These issues will be further explored in Chapters 5 and 6.

One of the roles of public archaeology as a theoretically-driven discipline is the examination of the relationship between the many interpretations of past human activities and contemporary society, in the light of the gathering, processing and re-examination of old and new archaeological data. Copeland (2004), Hodder (1992; 1999; 2000; 2004; 2008) and Smith (2006) place emphasis on the need for, and ethical responsibility of, archaeologists involved in the presentation of their work in the public realm to understand, respect and value the interpretations of the past by non-professionals, without the imposition of their 'correct' interpretational methods. The tension between multi-vocality and disciplinary authority is not only a matter of elitist hierarchy and post-modernist hyper-relativism (Evans 1997, 205). An acceptance of multi-vocal responses to archaeological evidence also offers opportunities for the misuse of archaeological

evidence in the service of political, ethnic, religious or nationalist agendas. These issues of 'bad' archaeology, co-creation, and a multi-vocal approach to the discipline, and its public outputs, will be explored in Chapter 8.

## **2.2 Social Inclusion and Public Archaeology**

The prevailing government social policy agendas of the past seventeen years in the UK, under both Labour and coalition administrations, have focused on the elimination of social exclusion, community regeneration and the support of community-based participation, assisted in part by involvement in activities relating to cultural heritage (Emerick 2009, 94). The assimilation of these wider policy directives within the cultural sector has been aided by increasing numbers of heritage and archaeology projects that are funded by the HLF. From a critical perspective, a social inclusion agenda could be seen as a prerequisite of any organisation that wishes to attract funding (Newman & McLean 1998, 143). Publicly funded heritage projects, such as those funded through the HLF, are expected to meet targets for community involvement, representative inclusion and 'widening participation', with evaluated and measured outcomes, often by external evaluators (Heritage Lottery Fund 2013a).

The absorption of the heritage sector, including most public archaeological projects, into an institutional and community-centred political campaign against social exclusion and for social cohesion and change, has rendered almost invisible the causation and process of social inequalities that create the need for inclusion and cohesion in the first place, whether these were ever part of the heritage sector's remit or not (Waterton 2010b, 113). Smith argues that encouraging social inclusion policies within heritage organisations does much to 'engage' the public with what she considers to be authorised versions of historical and archaeological narratives, which reflect the class, ethnic and socio-economic interests of the professional experts entrusted with the stewardship of these valuable resources (2009, 2). But these policies do little to encourage acceptance, value, and encouragement of diverse, often intangible cultural

traditions and values, locally and regionally, that reflect national contemporary interests in the past (Smith 2009, 2).

The expansion and growth of museums, county archaeology societies and the birth of the National Trust in 1884 were all part of the development of national identity and social cohesion through the proper appreciation of the shared national heritage (Smith 2009). Despite a change of government and apparent ideological differences, the role of heritage in the Conservative Party-led ‘Big Society’<sup>7</sup> is fundamentally similar. The rhetoric of heritage participation remains the same: the adoption of middle-class recreational pursuits by the masses to build social capital, encourage localism and bring communities together (Smith 2009, 1). The HLF has pursued similar policy aims since its launch in 1993 (Heritage Lottery Fund 2013b). An emphasis on the role of archaeology, and archaeological practice, in encouraging social cohesion, social inclusion and supporting narratives of national identity is not a late-20th century phenomenon, exclusive to government policies. These issues will be discussed further in Chapter 5.1 and Chapter 8, in relationship to the history of participation in archaeological activities and the concept of archaeological authority.

### **2.3 A Model for Public Archaeology**

This section will discuss the various approaches to public archaeology presented by archaeologists working in the discipline, which are drawn from discussions on the epistemological understandings of the communication of scientific knowledge (Matsuda & Okamura 2011, 6), illustrated in Fig. 2.1.

---

<sup>7</sup> The Big Society was the flagship domestic policy idea of the 2010 UK Conservative Party general election manifesto, which aims to aim to “create a climate that empowers local people and communities, building a big society that will “take power away from politicians and give it to people”...giving communities more power and encouraging people to take an active role in their communities” (Cabinet Office 2010)

Four approaches to public archaeology	More practice-oriented		More theory-oriented	
	Educational approach	Public relations approach	Critical approach	Multivoical Approach
Corresponding models suggested by Merriman (2004a)	Deficit model		Multiple perspective model	
Corresponding models suggested by Holtorf (2007)	Education model	Public relations model	Democratic model	

*Fig. 2.1: Approaches to archaeology suggested by Merriman, Holtorf and Matsuda & Okamura.*

*(Matsuda & Okamura 2011, 6). Reproduced with kind permission from Springer Science and Business Media.*

Merriman (2004) offers two models for public archaeology and its importance in society; the “deficit model”, derived from the discipline of science communications, which emphasises the importance of experts encouraging a better public understanding of science, for both its economic value and benefits for citizenship (Irwin 1995; Irwin & Wynne 1996; MacDonald 2002). Merriman locates the application of this scientific “deficit model” in the area of public archaeology practice where the archaeological discipline attempts to promote the need for professional, expert archaeologists to educate the (amorphous) public on how to appreciate archaeology “correctly” (Merriman 2004, 6). Merriman notes the flaws in this “deficit model” for public archaeology, and offers the “multiple perspectives model” in the light of challenges to the deficit approach in science communications (Wynne 1992; Bell *et al* 2008; Holliman *et al* 2009a; Holliman *et al* 2009b). This is especially important as it acknowledges the importance of agency in public encounters with archaeological data and archaeological sites, alongside the need for an understanding of certain core public values regarding archaeology (Thomas 1995; Merriman 2004). The multiple perspectives model suggests that archaeologists should engage with the public on archaeological issues from a desire to enrich people’s lives, and stimulate thought, emotion and creativity, although Merriman urges caution around what Schadla-Hall terms “alternative” public archaeologies in a western context (Merriman 2004, 7; Schadla-Hall 2004, 255).

Holtorf (2007) offers three models for the practice of public archaeology; the “education model”, the “public relations model” and the “democratic model”. The “education model” suggests that archaeologists need to support the public to “come to see both the past and the occupation of the archaeologist in the same terms as the professional archaeologists themselves” (Holtorf 2007, 109). The “public relations model” suggests that an increase in social, economic, and political support for the professional archaeological sector will only arrive if archaeologists can improve the public image of the discipline (Holtorf 2007, 119). As a contrast to these models, which see the public as passive recipients of professional archaeological advice, education or lobbying, the “democratic model” proposes that everyone, regardless of education, profession or training be supported to “develop their own enthusiasm and ‘grassroots’ interest in archaeology” (Holtorf 2007, 119).

Moshenska defines public archaeology as part of the discipline of archaeology that studies and critiques the political, social, cultural and ethical areas of archaeology, as well as “the processes of production and consumption of archaeological commodities” (2010, 47). If the remit and value of public archaeology is to provide a method of understanding the public demand for Moshenska’s archaeological “commodities” - be these archaeological artefacts and sites, archaeological experiences, or archaeological knowledge - then public archaeology has to provide data for the archaeological “industry” on public consumption of archaeological information (Burtenshaw 2010, 49). However, as Grima emphasises, we cannot ignore the impact of archaeological ethics, power relationships and co-creation and reduce the paradigm of public archaeology to one that simply returns to a deficit model of archaeological knowledge (Grima 2004; Grima 2010).

Matsuda and Okamura (2011, 6) propose four different theoretical approaches to public archaeology, reflecting the work of Merriman and Holtorf; “educational”, “public relations”, “critical” and “multi-vocal”. The “educational” approach lends the expert voice to the communication of archaeological information to non-archaeologists. This “public relations” approach is that

formulated by Holtorf (2007). Matsuda and Okamura's work extends these models by distinguishing between the "critical and multi-vocal approach in Merriman's multi-perspective and Holtorf's democratic model" with a nuance added from an application of "critical and hermeneutic epistemologies in archaeological theory" (2011, 5). Matsuda and Okamura's "critical" (2011, 5) approach focuses on the examination of socio-political power relationships in the negotiation, implementation and management of interpretations of archaeological material and practice (Shanks & Tilley 1987; Ucko 1990; Hodder 2002; Shackel & Chambers 2004). It examines the subjectivity involved in these differing interactions and power relations between material culture, groups and individuals that are both historically situated and in the present. This critical approach firmly emphasizes the importance of broader dialogue between the socio-economically and politically marginalised and archaeological knowledge and resources, as part of the achievement of wider cultural meaning. (Leone *et al* 1987; Faulkner 2000; McDavid 2004; Shackel & Chambers 2004).

Matsuda and Okamura's "multi-vocal" approach to public archaeology acknowledges the diversity of and differences in the interactions between humans and the material culture of the past "based on a hermeneutic epistemology" (2011, 6). Their interpretation of the concept of a multi-vocal approach to archaeology seeks to recognise, understand and acknowledge the broad view of the "various interpretations of archaeological materials made by different social groups and individuals in various contexts of contemporary society" (2011, 6). This is in nuanced contrast to their understanding of the critical approach "which is to highlight a *specific* meaning of the past, sometimes to socially privileged groups to counter their socio-political domination (Faulkner 2000), and at other times to socially marginalized groups to help them achieve due socio-political recognition (Bender 1998; McDavid 2004)" (Matsuda & Okamura 2011, 6).

All of these archaeological models for public involvement with archaeology intend to have a profound and transformative impact on the discipline, and the

social practice of communication and representation (Giaccardi 2012), which we can understand as both the formal representation of knowledge, the representation of the interests and ideas of communities and participants, as well the representation of the *practice* of archaeological expertise. These models for public archaeology support access by non-experts to archaeological resources and data - some without including the direction and leadership of professional archaeologists. I agree with Matsuda and Okamura, who wrote that the choice of approach is a political act, and results in “a distinctive form of public archaeology in each context” (2011, 6). One of the central conceptual and ethical paradigms for public archaeology includes, for Holtorf, Merriman, Matsuda and Okamura, the examination of socio-political relationships between archaeology and contemporary society, and the renegotiation of power and control through participation, communication, and dialogue between archaeological professionals and non-professional members of the general public. These are also the key issues for an understanding of the role of digital technologies in public archaeology, and central to the research for this thesis.

However, as Evans argues, whilst these post-modernist (and post-processual) approaches to the past should compel us to rethink the “categories and assumptions” within which we work, “we really can, if we are very scrupulous and careful and self-critical, find out how it (history) happened and reach some tenable though always less than final conclusions about what it all meant” (Evans 1997, 252-253). As a discipline, archaeology has to be politically engaged in order to explore the policies to which it is subject, understand the history, foundation and application of associated academic theory, and explore and analyse public archaeology in practice. Since archaeology is a subject that is in a constant state of dialogue with itself, and the past, the relationship between the present and past is situated, complex and subjective - equally applicable from the perspective of professional archaeologist or non-professional member of the public.



One of the roles of public archaeology is to critique the process and means through which the archaeological sector influences, facilitates, limits and exposes these relationships between the past, present and future. However, without robust statistical evidence to gauge the level of public support and interest in archaeology, the discipline becomes vulnerable (Schadla-Hall 1999). In the current era of global economic austerity, and increasing cuts to public funding for archaeological work in both the UK and overseas, there is greater need than ever before for research that can examine “both the economic and cultural values and impacts of archaeological resources” (Schadla-Hall *et al* 2010, 62).

## **2.4 Community Archaeology**

Over the past two decades, the academic literature that covers the practice of public archaeology has seen a semantic shift when using the term *community* archaeology for the point of engagement with the public. The term *community* has multiple meanings, and academic research within the social sciences has tended to focus on the conceptualisation of communities situated around shared places, interests and identities. Further developments in the academic literature (Willmott 1986; Blackshaw 2010) sought to understand community as a concept for “theory, method, place, identity/belonging, ideology, and policy and practice” (Crow & Mah 2012, 3). These concepts will be further explored in Chapter 6.

As Walkerdine and Studdart have noted, “one of the most important distinctions made is between community as an object and community as action, activity, process” (2012, 3). Community archaeology is seen by many academics and practitioners to be the coalface of public archaeology, where issues of power relations, participation, individual agency and social inequalities are explored in practice (Marshall 2002; Tully 2007; Reid 2008; Isherwood 2009; Belford 2010; Simpson 2010; Isherwood 2012; Neal & Roskams 2013). But what is community archaeology? Where did it come from, and what part does it play in public

archaeology? As an approach to archaeological fieldwork, archival research and social practice, community archaeology is a growth area of archaeology in the UK, with volunteer groups (Council for British Archaeology 2010), conferences and a growing professional interest in this as a distinct disciplinary area, through job titles, training, academic courses and a journal (Institute for Archaeologists 2014b; Bishops Grosseteste College 2014; Journal of Community Archaeology & Heritage 2014). The Council for Independent Archaeology encourages amateur involvement with archaeological fieldwork, and actively campaigns for “citizen archaeologists” to undertake excavations led by, and involving amateurs, and for this work to be considered on an equal footing to professional archaeological work (Council for Independent Archaeology 2013).

Community archaeology offers a unique process through which anyone can engage with the historic environment (Belford 2011), and the UK has a long history of non-professional amateur archaeological activity (Hudson 1981). Community archaeology - in the sense of archaeology undertaken primarily by volunteer, non-professional archaeologists in settings local to community members - takes place in a number of situations and archaeological sectors including local authority curatorial planning services, commercial companies, educational trusts and HLF-funded projects, voluntary organisations, museums, archives, and extra-mural educational institutions such as the Workers Educational Association.<sup>8</sup> The concept and term is understood, discussed and applied in a variety of ways in these many differing contexts, not all democratic and inclusive. The Labour government, in power in the UK from 1997 until 2010, saw community archaeology often not as an end in itself, but as part of a wider cultural political vehicle with which to achieve other social policy objectives, such as the encouragement of 'social cohesion', participation or heightened community identity (Simpson 2010, 34). As Simpson (2010, 44) argues, community archaeology has become the term of choice for most activities and projects that could be considered to be part of a wider paradigm of public archaeology.

---

<sup>8</sup> <http://www.wea.org.uk/>

Individuals and groups from local communities drive community archaeology, with diverse motivations for engagement with heritage and differing local, historical, political and geographical interests (Simpson 2010; Isherwood 2012). The term community however, is too often identified with local residents, whether there are bonds and bridges between these individuals or not. More recently the idea of community has been extended to cover non-geographical groupings situated around interests, ethnicities or languages. This concept of community will be further explored in Chapters 6 and 7 in the context of the relevance of the term for online communities, using the *Day of Archaeology* project as a case study. The definitions of what constitutes a community group are contested (Cooper 2008; Blackshaw 2010; Crow & Mah 2012), and some unpicking of the profile of members in UK-based community archaeology groups and other heritage organisations is a worthwhile exercise for future research, an approach pursued further in Chapter 4.

Far too often community is conceptualised as a fixed structure, an ideal way of life, inhabiting specific and tangible geographical space and common ideology, threatened by modernity and in desperate need of shoring against the travails of fragmenting society (Cohen 1985; Cohen 1986; Fremeaux 2005; Simpson 2010; Crow & Mah 2012; Isherwood 2012). The sociological definitions of community will be discussed further in Chapter 6. Yet we can see that the concept of community is subject to human agency - membership of a community group is simply an expression of social realities at a point in time, and the negotiation of human relationships on an ongoing basis - a process rather than an object (Burkett 2001, 237). My own experiences and observations, made when founding a community archaeology group in the Waveney Valley on the Norfolk/Suffolk border in 2013, is illustrative of the process of community creation. The age, ethnicity, gender, disability, socio-economic status, class and educational profile of the community group members may not be representative of the majority of the local demographic nor reflect the local community identity - an interest in archaeology is all that is required for membership and

participation, yet there are, in my experience, more subtle factors at work that encourage or discourage participation.

In my experience of discussion with the community group members, engagement with long-established lay archaeological communities may not be the most desirable context for archaeological experience if there are obstacles in identifying with that group, or if it is felt that the individual does not have 'enough' archaeological experience and could appear unknowledgeable or stupid. A community archaeology group defines itself by its members as much as by who is not a member, and intra-group relationships can be transitory or long lasting, and may have grounding in previous community affiliations, such as membership of local history societies, previous archaeological excavations or even membership of Rotary Clubs and similar voluntary groups. Status and gender inequality exist within community groups as much as between expert and amateur. For the Waveney Valley Community Archaeology Group (WVCAG), the simple issue of who does the washing up after meetings, and who introduces the speakers, highlights entrenched gender roles - women serve refreshments and clean dishes, and men set up electrical equipment and manage the speakers. Community archaeology group members face social and psychological pressures - they may have their relationships and experiences within their group defined through their archaeological experience, length of 'service' in the organisation, their relationships with existing members, or the depth of their archaeological education. All of these issues can engender dissonance. Members or prospective members may experience feelings of exclusion as much as inclusion and membership of a group is not always a positive experience. These issues were also highlighted as a concern of a number of other community archaeology groups in the 2010 Council for British Archaeology Community Archaeology report (Council for British Archaeology 2010, 57).

As Crooke (2010, 19) notes, membership of a local, situated community is an interaction that takes place within a self-defined identity framework, and involves some form of community hierarchy. Organisational membership has multi-layered motivation. These can be based on established interests, personal

affinity with geographical location or local ancestry and the acting out of cultural identity and interests (Isherwood 2009). Membership of a community based on geographical location, for example, has to be renegotiated in an era of greater urbanisation, population mobility and transience, alongside demographic, linguistic and socio-economic differences (Isherwood 2009; Crooke 2010). Community groups may have distinct expectations of the demographic of their membership, especially in areas with contested or controversial community identities (Crooke 2010). For those of us working within the archaeology sector, it is important not to forget that, for most community volunteers and avocational enthusiasts, archaeology and heritage is a recreational leisure pursuit. It is an important cultural and social activity, but recreational nevertheless. As Waterton (2005, 315) has observed, the attempt by professionals to encourage community cohesion or a “sense of place” through cultural heritage often ignores existing community relationships and interactions between residents and their local heritage landscape, that may not be manifest when judged against an archaeological expert's scale.

The extent to which expert-led methodologies and interpretations of archaeological practice within 'community' settings can support broad, counter-hierarchical participation and the degree to which these methodologies and interpretations support diverse perspectives must be questioned against the backdrop of the available demographic statistics regarding membership of both professional and voluntary sector organisations. According to research undertaken in 2013 on behalf of the Institute for Archaeologists (Aitchison & Macqueen 2013), the demographic profile of professional archaeologists is predominantly white (99 per cent) which contrasts with the entire UK workforce of whom 13 per cent were of Black, Asian or Minority Ethnic origins. This research also shows that 54 percent of the archaeological workforce is male; 1 in 5 professional archaeologists are in possession of a Ph.D., 47 per cent hold a Master's level qualification, and 93 per cent hold a Bachelor's degree or higher. The CBA Community Archaeology Report (2010) appears to indicate that the average age of a voluntary-sector archaeological society member is around 55

years old, whilst a history society member is typically over 60 years old. The impact of this demographic information will be discussed further in Chapter 4.

How far do the interests of local communities reflect that of the wider public as a whole? Can community archaeology become a “living narrative involving local people” (Reid 2008, 21) or has community archaeology been rebranded and re-professionalised, and steered back into the control of trained and paid archaeologists? The variety of archaeological and historical pasts that are chosen by community archaeology groups and projects for exploration are selected from a number of available 'pasts', and many other histories will not be examined (Ashworth 1994). Specific heritage communities may have been selected to authorise the redevelopment of urban and rural landscapes, or to reinforce fragile community identities in the light of dispersed populations (Belford 2011). Underlying the application of the term 'community archaeology' to a group or project is an assumption that the term 'community' can be described as a defined and homogeneous static entity, with members that share common experiences and values. However, social relationships are rarely straightforward, and the “rhetoric of community” (Waterton & Smith 2010, 8), especially at policy level, glosses over nuanced interactions and relationships between an individual with an interest in archaeology, and the functions of civic and volunteer-led society at local, regional and national levels.

Questioning the dominant position of the heritage professional can be an uncomfortable business for those working in the profession. It should be highlighted that those who comment on the practice, meaning and outcomes of community archaeology are rarely active members of those communities themselves. According to Holtorf and Högberg (2005, 80) there are two essential areas of knowledge that community archaeology requires its practitioners to acquire: an understanding of archaeological resources, including the creation of archaeological interpretations based on scientifically-obtained archaeological evidence - and an understanding of contemporary society and its interaction with the past. Any negotiation between archaeological professional and community volunteer around issues of expert knowledge and the ownership and

control of community-led or community-focused projects are meaningless unless these communities are actively engaged with the process of managing the projects, rather than simply being involved as passive recipients of outreach work, or receiving an explanation of the work undertaken by the professionals as an end product (Waterton 2005; Emerick 2009).

Unpacking some of the assumptions that professional archaeologists make about the meaning of participation is essential, and raises the question of whether we need a conclusive definition of community archaeology at all - if it is more of a process rather than a method. What kind of engagement with the past do we, as archaeological experts, expect the public to have? Are we offering nothing more than a balm to a “passive, grateful audience”? (Rassool 2010, 81). Do we expect them to engage with the past through a theoretical lens of our expert scientific deduction, or is an emotional response to an archaeological past that has personal meaning acceptable to us, as it is to the “uneducated” public? (Henson 2010, 2).

Organisations undertaking work under the banner of community archaeology are disparate, often grant-funded, and therefore short-term, and bring their own sub-disciplinary theories, traditions and practice to the community table. Academic models and approaches to the issue of practice, or how to manage community archaeology projects, tend to adopt one of two methodological orientations. Marshall (2002), Moser *et al* (2002) and Tully (2007) see community archaeology as a carefully managed collaboration led by professional archaeological experts, with amateur participants. Tully (2007) defined the practice of this approach as public participation in archaeological work with the aim, methods and work overseen and controlled by the expert archaeologists. In this setting, when professionals undertake archaeological work within the context of a community archaeology project context, for example during an excavation supported by voluntary, amateur assistance, the professional archaeological expert is ultimately responsible for the identification of the archaeological contexts and artefacts, overseeing data collection, processing these data and formulating the final interpretations. Belford (2011, 64) argues

that the 'top-down' approach to community archaeology maintains the expert status of the professional archaeologist, who gives voice to the opinions and interpretations of the community participants, only when the archaeological experts validate these.

Whilst this approach to community involvement in archaeological work promotes an element of carefully controlled non-professional participation, simply allowing non-professional parties to be involved in something labelled a 'community archaeology' project does not mean that its practice is truly participatory and inclusive, although Belford (2011) makes a strong case that this approach only excludes those individuals and community groups that choose to be excluded from the projects and process. As Waterton (2005) and Kenny (2009) acknowledge, the prevailing political agendas of the past two governments - combating social exclusion, supporting social cohesion, creating a 'Big Society' and supporting equality of access - have inevitably driven resources and funding for community archaeology projects along this 'top-down' model. This has often taken place out of financial and administrative necessity, and is complicit with political policy, for any institution or organisation in receipt of public money, and this brings with it a relatively passive role for the non-expert public. As an example, the HLF (through their many funding streams ranging from grants of £3000 to £5 million)<sup>9</sup> explicitly require local community and organisational involvement, from the beginning of the application process to the delivery of the project (Heritage Lottery Fund 2014).

Perkin (2010, 117) has argued that local heritage, including history and archaeology "must be contributed to, contested and explored by the wider community and not kept within an enclave of heritage enthusiasts" if it is to be interpreted, preserved and disseminated effectively. Liddle (1989), Faulkner (2000), Crosby (2002), Moshenska (2008) and Kenny (2009) have all written of the benefits of a 'bottom-up' approach to community archaeology. This approach places the agenda, content and practice of community projects in the hands of

---

<sup>9</sup>

[http://www.hlf.org.uk/HOWTOAPPLY/PROGRAMMES/Pages/programmes.aspx#.UwYxmYV\\_BnA](http://www.hlf.org.uk/HOWTOAPPLY/PROGRAMMES/Pages/programmes.aspx#.UwYxmYV_BnA)



the non-professionals, led by the needs of communities themselves, supported by professional archaeologists at the invitation of the community members. The personal and social skills required for this kind of engagement with the public needs training and experience that many archaeologists may have little experience of and are uncomfortable with, although there are now specialist university courses in Public, Social and Community Archaeology in the UK at University College London (UCL),<sup>10</sup> Bishop Grosseteste University College Lincoln<sup>11</sup> and Southampton University,<sup>12</sup> as well as a variety of cultural and digital heritage studies courses throughout the UK that teach similar elements of community heritage and digital participation.<sup>13 14 15 16</sup>

However, as Belford (2011, 52) highlights, the multi-vocal approach to community archaeology is often “fatally compromised” by internecine conflict amongst the professional archaeologists involved, illustrated by events at the Sedgeford Historical and Archaeological Research Project (SHARP)<sup>17</sup> with disputes between volunteers and professional archaeologists involved in the project (Faulkner 2009). The extent to which “mainstream cultural interpreters” (Habu & Fawcett 2008, 93), or professional community archaeologists, are actually actively promoting and supporting multi-vocal inclusive practice rather than co-opting a semblance of community involvement to disguise decision-making by the archaeological hierarchy has been explored in a wider global context by Habu & Fawcett (2008) and Silberman (2008). The issues of participation and engagement in the context of digital participation, barriers to use and digital inequalities will be fully explored in Chapters 4 and 5. The issues of multi-vocality and community participation in archaeology online are explored further in Chapter 8.

---

<sup>10</sup> [http://www.ucl.ac.uk/archaeology/studying/masters/degrees/ma\\_public\\_archaeology](http://www.ucl.ac.uk/archaeology/studying/masters/degrees/ma_public_archaeology)

<sup>11</sup> [http://www.bishopg.ac.uk/?\\_id=10513](http://www.bishopg.ac.uk/?_id=10513)

<sup>12</sup>

[https://www.southampton.ac.uk/humanities/postgraduate/taught\\_courses/taught\\_courses/archaeology/v400\\_ma\\_social\\_archaeology.page](https://www.southampton.ac.uk/humanities/postgraduate/taught_courses/taught_courses/archaeology/v400_ma_social_archaeology.page)

<sup>13</sup> <http://www.york.ac.uk/digital-heritage/>

<sup>14</sup> <http://www2.le.ac.uk/departments/museumstudies/postgraduate-study/digital-heritage>

<sup>15</sup> <http://www.ucl.ac.uk/dh/courses/mamsc>

<sup>16</sup> <http://www.uel.ac.uk/postgraduate/specs/heritage-studies/>

<sup>17</sup> <http://www.sharp.org.uk/>

Certainly in the UK, how far community archaeology projects are orientated towards the archaeological interests and needs of the non-professional in reality is questionable, although this is inherent in the nature of conducting effective, safe fieldwork. Funding applications to support fieldwork require professional input; specialised equipment is expensive; understanding where and how to undertake archaeological work, and how to report it correctly afterwards, relies heavily on the professional advice of local authority Historic Environment Record (HER) staff, and other professional archaeologists; specialist support is usually necessary at some stage of the community archaeology process to deal with training, survey or post-excavation and storage, and regional research agendas tend to be aligned to academic research frameworks (Hale 2011, 7). The research of Simpson and Williams (2008), Isherwood (2009), Simpson (2010), Moshenska *et al* (2011) and Royal Commission on Ancient and Historical Monuments of Scotland (RCAHMS) (2011) into community archaeology in the UK and the work of Wahlgren and Svanberg (2008), in the context of Swedish archaeological museums, provide further depth of debate on this subject.

## **2.5 Managing Archaeological Authority**

Archaeological data can be used to create conceptual narratives that are not sanctioned by the profession, especially where local heritage issues are in conflict with planning and development, local identity or used to stake claims to legitimacy within politicised communities (Crooke 2010, 25). However, the opportunities for collaborative relationships with public audiences who are interested in archaeology are not always taken on board within the archaeological profession. The top-down approach is simpler to manage and deliver, and power and control remains with the professional. Participatory promises are often contained and managed, and difficult dialogue about archaeological interpretation can be carefully avoided. Unlike the museums

sector, for example, commercial archaeology in the UK does not, on the whole, claim to value multiple perspectives and voices in the interpretation of the past.

Developer-funded archaeology is also established across the European Union through the EU Environmental Impact Directive and the Council of Europe's 1992 *European Convention on the Protection of the Archaeological Heritage*, known more commonly as the Malta or Valletta Convention (Council of Europe 1992). The Valetta Convention promotes high standards for all archaeological work, which should be authorised and should be carried out by suitably qualified people according to Article 3 of the treaty. Professional membership of organisations that oversee archaeological practice, such as the Institute for Archaeologists (IfA), require archaeological experience, evidence of Continuing Professional Development, and a scaled fee that may be a cost-barrier for membership. There are similar issues in the museums sector, where membership of the Museums Association and individual professional development through the Associateship of the Museums Association Scheme represents a serious financial commitment on tightening personal budgets (Museums Association 2013).

It is possible for interested members of the public to join the IfA as a non-Corporate Affiliate Member (i.e. without voting rights within the organisation), or a Student Member (if in higher education), or as a Corporate Member (if the volunteer has enough archaeological experience). Corporate grades of membership require professional references, the maintenance of a Continuous Personal Development log and a Statement of Competence. As of March 2014, there are 3146 members of the IfA, of which 548 are affiliate, non-corporate members and 414 are students (Institute for Archaeologists eBulletin 2014). There is also a financial cost - fees are levied by the IfA for membership at a corporate grade, and annual membership at any grade is set on a sliding scale dependent on income levels. Whilst individual membership charges are related to salary, and therefore affordability, it may prove a barrier for wider public participation in membership. For organisations seeking IfA institutional membership, there is a significant cost and a long set of regulations to which to

conform. Corporate grade applications are presented before the IfA Validation Committee, which meets once every eight weeks. This is an intimidating prospect for non-professionals without the “category entitlement” (Kenny 2009, 221) of specialist language, knowledge and experience that enables the volunteer to access and occupy professional space.

Volunteers or community group members may also apply to join the IfA Voluntary and Community Archaeology Group, without being a full member of the IfA, on the payment of a small annual fee (Institute for Archaeologists 2014b). The aims of this group are: to provide a recognised voice for furthering the interests of voluntary and community archaeology within the IfA; to promote the adoption and implementation of IfA Standards by voluntary and community archaeologists (and the organisations to which they belong); to advise the Council and its committees on issues relating to voluntary and community archaeology, both within the context of the IfA and within the discipline of archaeology as a whole; to provide guidance and assistance to ensure that voluntary and community archaeologists (and the organisations to which they belong) have the necessary and recognised competence to carry out archaeological research to the highest possible standards; and to promote discussion between voluntary and community archaeologists and other archaeologists in order to foster a greater understanding and improvement of relations, to further the overall pursuance of archaeological knowledge and research (Institute for Archaeologists 2014b). Whilst this initiative is very important for professional archaeologists, in order to manage the work, format and data produced by community groups undertaking archaeological work in the UK, it could be argued that it seems to reflect a ‘top-down’ approach to archaeological work undertaken by those in the voluntary sector, and ensures the hegemony of archaeological expertise and authority is managed and performed through the simple act of membership and affiliation of volunteers and non-professionals with the Institute for Archaeologists.

As Henson (2009) and Waterton and Smith (2010) acknowledge, archaeology is inherently elitist (evolving from its roots in gentlemanly antiquarianism to its

current status as an academic subject taught at universities), and a mutual sense of archaeological community exists within the sector itself: professional archaeologists define and delineate archaeology through policy and professional, expert practice. These factors are of crucial importance as a background to my research. Despite the rise of community and collaborative archaeological projects and funding paradigms, archaeology in the English-speaking world does not belong to everyone, nor does it open itself to participation by the public as much as it could, *contra* Carman (2010, 151).

The democratic ideal of the Internet is subverted, with scholarly archaeological literature frequently found behind paywalls, and with academic library access required or significant fees charged for online access to articles. For example, the main academic journals relating to the study of the theory and practice of public and community archaeology, *Public Archaeology* by Maney Publishing, the *International Journal of Heritage Studies* by Taylor & Francis and the *Journal of Community Archaeology and Heritage*, also by Maney Publishing, are all subscription-only. Thus access to articles can be very expensive - although issues from the archives of Maney Publishing that are more than 10 years old have a significantly reduced rate, and reduced rates or free articles are also available for special issues and supplements (Maney Publishing 2014). The costs of individual subscriptions, organisational subscriptions and access to a single article from each journal from these three examples of public archaeology literature, for those without an academic library affiliation, are outlined in Table 2.1 below. The online-only preference has been included where possible since these are the cheapest options for access to these journals. As this table demonstrates, access to information is expensive and precludes projects, organisations and individuals without a budget for journal and library access from the latest research and debate on topics relevant to best practice and experience. A full examination of the issue of Open Access in archaeology is unfortunately beyond the remit of this thesis, although the subject of access to archaeological information has been covered extensively elsewhere (Beck & Neylon 2012; Hole 2012; Lake 2012).

	<i>International Journal of Heritage Studies</i>	<i>Journal of Community Archaeology &amp; Heritage</i>	<i>Public Archaeology</i>
<b>Issues per year</b>	8	3	4
<b>Individual subscription per year</b>	£205 (print only)	£43 (online only)	£68 (online only)
<b>Institutional subscription per year</b>	£565 (online only)	£182 (online only)	£230 (online only)
<b>Single article purchase (not including articles from special or older issues)</b>	£24	24 hour access = £24	24 hour access = £24

*Table 2.1: Illustration of the costs of accessing journal subscriptions or articles relevant to the public archaeology literature*

I suggest that professional archaeological communities - which can be subdivided into field staff, academics, museum professionals or finds specialists, for example - possess a professional interest in regulating, maintaining and asserting their authority over the wider archaeological narratives at local and national levels. Yet these archaeological communities, as with the practice of archaeology itself, contain deep intra-disciplinary divisions alongside social stratification and, as Henson (2009, 118) has argued, it is a porous subject, with a wide variety of disciplinary “leakage” along the edges, working with theory and practice from disciplines such as sociology, anthropology, forensic science, geography and geology, amongst others. The emphasis within this elitist discipline is, as Henson interprets it, “on exclusive rights to validate, conserve and study the archaeological resource” (Henson 2009, 119). Many academic disciplines have a long record of active amateur involvement in knowledge production, and scholarship (Dyson 2002; Lievrouw 2010; Lievrouw 2012). How this 'expert-amateur' discourse is constructed and legitimised and if, when, and how the practice of community archaeology can challenge this hierarchy and sense of entitlement are important questions. A further exploration of the concept of communities of practice within archaeology in the UK can be found in Chapter 6.

## 2.6 Public Access to Archaeology

This section will explore the factors that have obscured public insight into the full archaeological process from excavation to post-excavation, especially since the introduction of Planning Policy Guidance Note 16 (PPG16), and will consider the literature on archaeology's public appeal. PPG16 was introduced in November 1990 and was replaced twenty years later by Planning Policy Statement 5: Planning and the Historic Environment of 2010. The National Planning Policy Framework (NPPF) superseded PPS5 in March 2012 (Department for Communities and Local Government 2012). Complex health and safety legislation, commercial sensitivities, standardisation of practice, curatorial responsibilities, equipment and archiving costs, the heavily-guarded status of the archaeologist, hierarchies and professional elitism has restricted access to the majority of archaeological work, especially excavations, undertaken in the UK (Moshenska 2009). 90 per cent of all archaeological work practised in the UK since 1990 has taken place within the commercial archaeological sector, mostly as part of the planning and development process (Fulford 2011, 33). Within the NPPF, there is a presumption in favour of preservation in situ of heritage assets as the first option in advance of commercial development, followed by preservation by record where destruction of the archaeological remains is unavoidable (Flatman & Perring 2013, 6). This maintains the somewhat vague notion that future generations will develop better techniques for excavation and analysis of archaeological remains left in situ, or that the preservation by record of archaeological sites can be undertaken through swift mitigation work, in order that an accurate snapshot of the past can be held in perpetuity.

There are a number of flaws in this plan. Preservation for posterity, which requires archiving space, assumes that future generations will find archaeology relevant, interesting and fundable. Preservation in situ also assumes that individual sites of archaeological interest within which development has occurred and have been subject to archaeological mitigation will ever be available for further archaeological investigation should the sites be redeveloped

in the future. According to Fulford's research into the commercial archaeology sector only 6 per cent of all archaeological investigations that took place between 1990 and 1994 had been fully published by 2006 (2011, 33). Generally, a significant quantity of the written output from commercial archaeological interventions may be invisible to the wider archaeological community and the general public (Fulford 2011, 49). Reports from professional archaeological interventions and activities may be unpublished and not accessible, although in many cases, the information gleaned from archaeological interventions may be negligible, or incomprehensible without an understanding of archaeological terminology. The number of archaeological interventions undertaken by both professional archaeological organisations and volunteer groups each year runs into many hundreds across the UK and there is no complete nationally accessible record of all of these interventions, although the OASIS project<sup>18</sup> collates a significant number of these interventions and makes them publicly available online through the ADS grey literature library (OASIS Project 2013). A copy of evaluation and excavation reports are usually submitted by the commercial archaeology company to the local authority as part of the planning process and a record of each intervention is deposited in the local HER (Brown 2007; Institute for Archaeologists 2013; ISGAP 2014). Many interventions that are made by commercial archaeological organisations are only reported in detail to the developer-clients, which are rarely circulated in public due to reasons of economy and client confidentiality (Bournemouth University 2014). As Lock has asked “Are we comfortable with archaeological information being treated as a commodity to which developers control access?” (2008, 37). This reflects the sentiment of Moshenska’s public archaeology model of archaeology-as-commodity (2010). The 2008 report from the English Heritage-funded project *Assessing the Research Potential of Grey Literature in the study of Roman England* concludes that;

...there seems little point in listing and indexing grey literature if the interested researcher cannot easily access the reports. It is essential for the health of the discipline that access to grey literature reports

---

<sup>18</sup> <http://oasis.ac.uk/pages/wiki/Main>



becomes easier, and copies in PDF format which can be downloaded from internet sites seem the most effective way forward (Holbrook & Morton 2008).

With this in mind, a growing number of research projects have highlighted the importance and usefulness of these grey literature reports to local communities and researchers, and there is increasing availability of grey literature online through the ADS and Bournemouth University's Archaeological Investigations Project, although this is by no means exhaustive (Bradley 2006; Holbrook & Morton 2008; Tudhope *et al* 2011; Archaeology Data Service 2013; Bournemouth University 2014).

Smardz (1997) and Holtorf (2005a; 2006) have both argued that it is the mystery and romance of the unknown, rather than data and results that draw people towards involvement and interest in the discipline of archaeology - Holtorf's "archaeo-appeal" of detection, mystery and discovery - although we must also consider the public interest in treasure, death, burial, bodily functions, sex, magic and ritual. Merriman & Swain (1999, 262) believe that there is too much emphasis on excavation and the moment of discovery; this is especially acute when there are archives across the UK at full capacity with archaeological finds gathering dust, which cost local authorities and museums millions of pounds per year to maintain. If Fulford's research on the impact of commercial archaeology on UK heritage (2011, 49) is correct, then millions of pounds have been spent on archaeological work that is not easily accessible to either researchers or the general public. The general assumption that public-sector archaeology is worthy of continued funding (during a period of global economic turmoil and austerity across Europe), that access to publicly funded storage space is a necessity for its archives, and that the support of a professional workforce as part of planning departments has to be questioned by those in charge of government budgets - and the discipline has suffered as a result (Aitchison & Macqueen 2013; Institute of Historic Building Conservation 2013; RESCUE: The British Archaeological Trust 2014).

As Faulkner has argued, the public archaeology of the heritage establishment - the power-brokers, policy makers, commercial archaeological organisations and information gatekeepers - needs only the public to be passive consumers of a ready-packaged and cherry-picked heritage product, “where the officially-approved version of the past can be delivered in easily-absorbed gobbets” (2000, 29). Holtorf (2007) strongly suggests that archaeology must engage with popular culture if it is to survive, and we must ask if it is to Faulkner’s “gobbets” (2000, 29) that we must turn in order to elicit public support. The central question must be how to engage with popular cultural activities and how do we make ourselves relevant and valued in society? The use of social and participatory media in archaeological work, as part of a process of knowledge exchange, could perhaps offer new ways for the Internet-using public to explore and experience representations of the past in greater depth. As Lievrouw (2012) has observed, Internet technologies are now a culturally and socially embedded popular phenomenon. Access to archaeological data, archaeological news and narratives, and Internet-enabled interactions between interested members of the public and archaeological professionals, as well as community volunteers, could take place across a longer period of time, and with increased nuance, than that provided by the real-life visits to sites, museums and monuments of the heritage industry. The Internet could be a valuable tool for public engagement with the past, against a backdrop of what has become a competitive and diverse leisure market for attention during our free time (Merriman 2004, 4).

## **2.7 Towards a Definition of Digital Public Archaeology**

What has been termed digital public archaeology is a very new label for a contemporary practice in archaeology, and has not yet been subject to much academic criticism (Richardson 2013). There have been numerous workshops and conference papers in recent years that have explored the subject of social media and websites through case studies, including workshops and conference sessions led by organisations such as UCL’s Centre for Audio Visual Study and

Practice in Archaeology (CASPAR),<sup>19</sup> the Institute for Archaeologists,<sup>20</sup> the University of Cambridge<sup>21</sup> and the European Association of Archaeologists (The Public Archaeology Group 2013). This gathering pace of interest in and examination of, archaeological engagement beyond the discipline through the use of Internet, mobile and social media technologies highlights the urgent need to rethink how we as heritage professionals conceptualise community and audience (Waterton 2010a). For those working in the cultural heritage field, this has been triggered by the adoption of the 2003 *Charter on the Preservation of the Digital Heritage* at the 32nd General Conference of UNESCO “which marks the significant development of national and international interest around issues of ‘digital’ or ‘virtual’ heritage” (Waterton 2010a, 5). The rapid growth and adoption of participatory Internet platforms and mobile technologies has significantly expanded the paradigm of, and potential for, a ‘digital’ form of public archaeology communication. The concept and definition of this ‘digital public archaeology’ is understood here to be the methods and strategies used to engage with archaeology in all sectors, through web and mobile technologies, alongside the use of social media applications, as well as the understanding of the communicative process through which this engagement is mediated online.

This form of digitally presented public archaeology offers numerous opportunities for archaeologists to provide a highly personal interaction with the past for a worldwide and diverse audience. The distance between the “trowel’s-edge” (Hodder 1999, 83) find and public awareness can be made smaller. Participatory media offers platforms for instant comment, dialogue and sharing online and via mobile technologies. These can replace lengthy waits for publication and wider real-life dissemination through conference papers or journal reports, which may not be accessible to a wide audience. Curating a website that contains pages of hyper-linked text is no longer enough if an organisation is to take full advantage of society’s interest and participation in social networking, and encourage public interaction with the past as it is

---

<sup>19</sup> <http://www.ucl.ac.uk/archaeology/research/projects/caspar>

<sup>20</sup> <http://www.archaeologists.net/2013socialmedia>

<sup>21</sup> <http://www.smke.org/cambridge-workshop-social-media-and-public-archaeology/>

presented online, with up-to-the-minute discoveries made available through digital means.

Social networking platforms exist that allow anyone to personally experience or witness archaeological work undertaken by others through all stages of the process, from field work through post-excavation to archiving and publication, in a multitude of formats and timescales. The most common and popular of these commercial social media platforms are diverse in their appearance, format, content, opportunities for participation, storage and privacy policies, terms and conditions and the ascription of ownership of content (Jeffrey 2012). These media services are also subject to drifting public popularity and occasional withdrawal by the company that owns them - a definitive list of up-to-date social media platforms is difficult to produce, without risking obsolescence once these are committed to paper - and this in itself is an obstacle to the dissemination of archaeological information. The list below outlines the best-known types of tool currently available that are used in archaeological organisations (see Chapter 5 for further discussion), and these can be roughly grouped together as tools and platforms for collaboration, communication and sharing media, after Jeffrey (2012) and Cann *et al* (2011). Communication platforms include tools for blogging, such as Blogger,<sup>22</sup> WordPress<sup>23</sup> or Tumblr;<sup>24</sup> tools for micro-blogging, such as Twitter;<sup>25</sup> tools for location-based sharing and gamification, such as Foursquare;<sup>26</sup> tools to support social and professional relationships and messaging, such as Facebook,<sup>27</sup> Google +<sup>28</sup>, or LinkedIn<sup>29</sup> and tools for sharing academic papers, e-books and PDFs, such as Academia.edu,<sup>30</sup> Slideshare<sup>31</sup> or Scribd.<sup>32</sup> Collaborative social media platforms include tools for face-to-face

---

<sup>22</sup> <http://www.blogger.com/>

<sup>23</sup> <http://wordpress.com/>

<sup>24</sup> <https://www.tumblr.com/>

<sup>25</sup> <https://twitter.com/>

<sup>26</sup> <https://foursquare.com/>

<sup>27</sup> <https://www.facebook.com/>

<sup>28</sup> <https://plus.google.com/>

<sup>29</sup> <https://uk.linkedin.com/>

<sup>30</sup> <http://www.academia.edu/>

<sup>31</sup> <http://www.slideshare.net/>

<sup>32</sup> <http://www.scribd.com/>

online discussion and conferencing, such as Skype<sup>33</sup> or Google Hangouts;<sup>34</sup> tools for storing, sharing and elaborating on documents, such as Basecamp,<sup>35</sup> Google Drive<sup>36</sup> or Dropbox;<sup>37</sup> wikis and Wikipedia.<sup>38</sup> Media sharing platforms include YouTube<sup>39</sup> and Vimeo,<sup>40</sup> Flickr,<sup>41</sup> Picasa,<sup>42</sup> and Pinterest.<sup>43</sup> Through these social media platforms, if the individual Internet user can accept the terms and conditions of participation in each site, anyone with access to a computer can begin to converse with the archaeological sector through these channels if the archaeological sector has chosen to embrace these platforms. From there, these channels allow participants to create their own contributed content; explore, interpret and reuse open data; upload their own images or discuss their own thoughts and theories on archaeological material available online.

The growth of the Internet has created space for digital cultural heritage resources that can be accessible, sustainable and diverse in content (Missikoff 2006). Corbishley (2011, 16) notes the importance of an Internet presence when accessing archaeological information, or organising the practical arrangements for visiting heritage sites. For the archaeological sector in the UK, the use of the Internet has grown both in terms of the number of data-led online resources, and public participatory opportunities, although academic research on the subject has not been common within the discipline. The use of online media as a tool for data-sharing, collaborative working and the active involvement of the non-specialist general public are widespread in the museums, libraries and archives sector and have been undergoing rapid development in this area since the mid-1990s. Waterton observes that despite the rise of the use of technologies that offer the opportunity for interaction and co-creation within the process, practice and research of the museums, galleries and archives sector, there

---

<sup>33</sup> <http://www.skype.com/>

<sup>34</sup> <http://www.google.com/+learnmore/hangouts/>

<sup>35</sup> <https://basecamp.com/>

<sup>36</sup> <https://drive.google.com/>

<sup>37</sup> <https://www.dropbox.com/>

<sup>38</sup> <http://en.wikipedia.org/>

<sup>39</sup> <http://www.youtube.com/>

<sup>40</sup> <https://vimeo.com/>

<sup>41</sup> <http://www.flickr.com/>

<sup>42</sup> <http://picasa.google.co.uk/>

<sup>43</sup> <https://www.pinterest.com/>

remains a reluctance to incorporate a critique of these technologies within the heritage literature canon, and “actively incorporate the Internet into its remit” (2010a, 5).

For those archaeologists and researchers who embraced the 'democratising' and barrier-quashing qualities of Internet technologies, such as McDavid (2004), Joyce & Tringham (2007), Newman (2009), Richardson (2009), Colwell-Chanthaphonh *et al* (2011), Beale (2012), Harris (2012), Morgan & Eve (2012) and Bauer (2013), the advent of participatory media within archaeology brought with it the potential to link people with similar interests to research, collaborate, discuss and enjoy the past, regardless of the participants' location, education or social status. This cyber-Utopianism has claimed that, through online discourse and communications, the Internet and social media technologies are able to foster new dialogue, present new interpretations, explore the domination of cultural heritage by experts, underpin new power relations and support representations of community-constructed archaeological knowledge, all whilst subverting archaeological data from structural control and redistributing access to cultural resources. Chapter 6 will discuss how the Internet has the potential to guide and support individuals and communities in finding their own archaeological 'voice' as well as communicate within the discipline. Further exploration of the concept of multi-vocality, archaeological authority and the position and action of participatory technologies within the paradigm of multiple perspectives will take place in Chapter 8.

Over a decade ago, Merriman wrote “a publicly oriented archaeology requires that archaeologists understand the public more fully” (2002, 563). Twelve years later, archaeologists still need to understand and explore further public consumption and interpretation of archaeology in the media, especially when difficult choices are being made for the long-term investment of public funding in heritage within central and local government. Technologies and staff time are being employed and allocated, organisational policies are being adjusted and created, and the problems of long-term multimedia storage are being considered. We need to base our understanding of how the public uses archaeology on the

Internet on more than improvisation and chance. We need to understand how issues of access to Internet technologies and social media can affect the impact and presentation of archaeology. There needs to be a critical exploration of technical issues, navigation, online authority, authenticity, ownership and trust. An awareness of the possibilities of information technology must be merged with careful consideration of the specialist nature of digital media in archaeology. We must consider that, if we, as professional 'digital archaeologists', are actively promoting and engaging the discipline with digitisation, data-sharing, social media and straight-to-web publication, are we then creating ghettos of specialism within the archaeological workforce where non-experts fear to tread, which simply recycles archaeological elitism in a 21st century context? How 'open' is our data and how accessible are our publications? How do we balance academic rigour against user-generated content, computer games, and non-traditional, non-linear learning? Do individual and organisational aspirations to liberate data and engage with the Internet public match technical skills, expertise and significant financial and time commitments in under-resourced archaeological organisations across the discipline? (Lock 2003, 265).

### **2.7.1 Contextualising Public Archaeology Online**

For the purposes of the research for this thesis, the scope for an analysis of UK-based digital projects has been restricted to discrete areas of operation within the archaeological sector. These areas are: within local authority Historic Environment Records, community archaeology or planning departments;<sup>44</sup>

---

<sup>44</sup> The primary national policy framework for the management of archaeology and the wider historic environment has been in place since the advent of the 1990 Planning Policy Guidance Note 16 (PPG16). This was superseded by the Planning Policy Statement 5 (PPS5) in March 2010, and current planning legislation that affects the archaeological record operated as part of the National Planning Policy Framework (NPPF) from 2012 (Lincolnshire County Council 2010). This legislation gives comprehensive advice on the management of the historic environment within the planning process and has shaped how archaeological interventions, including to some extent public and community archaeology projects, are undertaken in the UK. The NPPF works on the assumption that the historic environment is best preserved in situ - that is, preserved where it is currently located. Archaeological investigations are most frequently undertaken as part of the planning and development control process under the auspices of the NPPF which regulates land use, development and planning permission at local government level. Local

development-led commercial archaeology organisations;<sup>45</sup> UK universities and the higher education sector; community archaeology groups and the voluntary sector; and HLF-funded projects. These sectors frequently overlap in practice and a number of the digital projects explored throughout this thesis fall into more than one of these broad categories.

Local government archaeologists are responsible for the appraisal of the archaeological potential of applications, assessment of these proposed developments in the light of current planning legislation, and the imposition of planning conditions and a mitigation strategy for proposed developments where these may impact upon known or potential archaeological remains and historical buildings. Local authority archaeologists are also responsible for the development and maintenance of a comprehensive and publicly accessible HER, previously known as a Sites and Monuments Record.<sup>46</sup> Each local authority HER maintains a comprehensive database of all known archaeological finds, excavations, historical buildings, Scheduled Ancient Monuments, Listed buildings, archaeological interventions and aerial photographs in the area (ALGAO: Association of Local Government Archaeological Officers UK 2014). According to the ALGAO website, in 2014, there are 88 local government archaeology departments in England, 15 in Scotland, 8 in Wales, 1 in Northern Ireland and 1 on the Isle of Man. Currently, 50 of the HER are available online as part of the Heritage Gateway, (Fig. 2.2) a website that enables anyone to make cross-county searches for archaeological information (Heritage Gateway

---

authority councils are the planning authority, employing archaeological curators who provide specialist archaeological advice within local government planning departments.

<sup>45</sup> In the UK, the term 'commercial archaeology' refers to contracted archaeological work undertaken by commercial archaeological companies or 'units' on behalf of a developer as part of the planning process outlined above in 1.5. There are three main roles for archaeologists within development-led archaeology, the first two of which are relevant within the context of this research: local authority planning or curatorial archaeology, contracting or commercial archaeology and consultant archaeologists who work on behalf of developers and other commercial clients.

<sup>46</sup> Local government is responsible for most of the decisions regarding heritage assets and "every local planning authority is obliged to ensure that they have evidence about the historic environment and heritage assets in their area and that this is publicly documented. Each should maintain or have access to a historic environment record" (English Heritage 2014a). However, it is not a statutory duty for local authorities to have this evidence or expertise within their departments to meet the requirements of the National Planning Policy Framework, and so may use external consultants or share a HER with another authority (English Heritage 2014a).



2014). A decreasing number of local authority curatorial departments also maintain a mandate to undertake community archaeology and outreach projects.<sup>47</sup> Discrete public and community archaeology projects often take place within local authority curatorial archaeology departments, both as part of the public work undertaken by the HER and in combination with grant-awarding bodies such as the HLF.

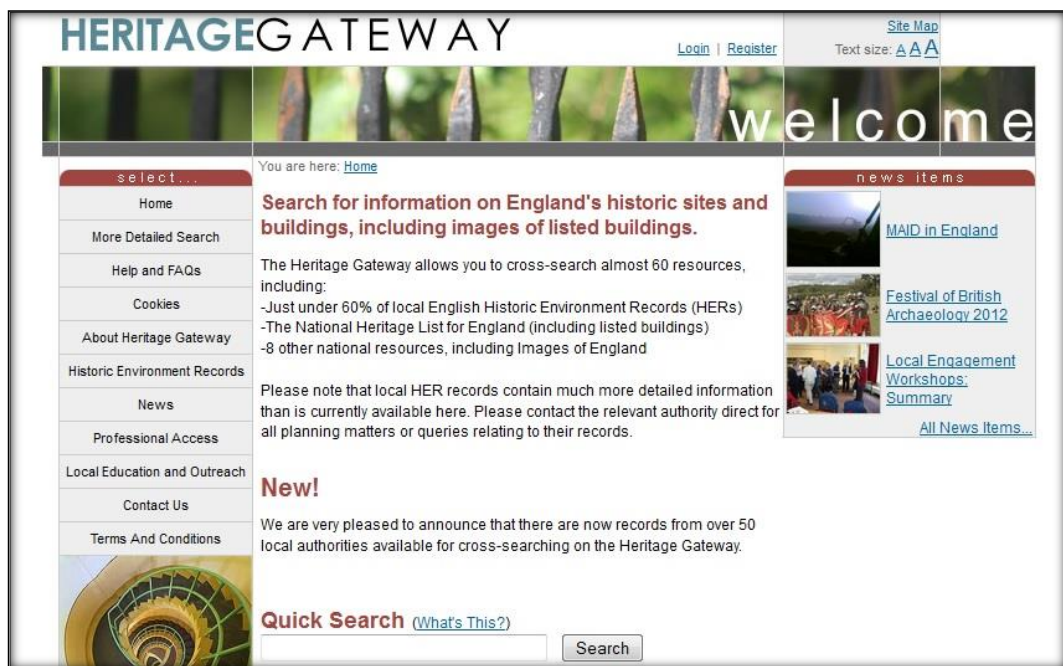


Fig. 2.2: Screenshot of the Heritage Gateway website. 28 February 2014. Retrieved from: <http://www.heritagegateway.org.uk/gateway/>

If desktop studies of documentary sources and previous archaeological interventions identify that there is a potential for the presence of archaeological deposits, consent for planning applications will include a requirement for archaeological investigations to take place in advance of any developments on the site in question. Commercial archaeological work is undertaken in a variety of contexts and can include pre-planning consultations with developers, environmental impact assessments, historic building assessment and recording,

<sup>47</sup> [http://www.algao.org.uk/localgov/community/case\\_studies](http://www.algao.org.uk/localgov/community/case_studies)

desktop assessment of archaeological potential, and watching briefs, fieldwork, geophysical survey, site evaluation, full archaeological excavation and post-excavation processing and report-writing. This type of archaeological work is usually submitted for tender by the developers in advance, and different stages of archaeological work may be subject to separate tenders. Companies are chosen by the developer to undertake the necessary archaeological mitigation through competitive tendering, often from a list of recommended companies that are frequently, although not necessarily, members of the Institute for Archaeologists (Lincolnshire County Council 2012).

There were approximately 250 active commercial archaeological organisations, including sole traders, working in the commercial sector in the UK in 2013 (Aitchison & Macqueen 2013), although how the economic crisis and subsequent downturn in the UK construction industry will affect the existence of these organisations remains to be seen. Between 2007/08 and 2012/13, there was a 30 per cent decrease in the number of archaeologists working in the UK (Aitchison & Macqueen 2013). Commercial archaeological companies are varied in size and staff capacity, and most are small-to-medium-sized businesses with some registered companies, educational trusts or self-employed sole traders. There is a single professional organisation for archaeologists, the Institute for Archaeologists (IfA). Membership of the IfA is encouraged at organisational level by the requirements of local planning authorities for tenders to come from IfA 'Registered Organisations', who commit to a set of guidelines and professional standards through their membership (Institute for Archaeologists 2014c). A growing number of these Registered Organisations require their employees to be members of the IfA at individual level, which requires members to adhere to a Code of Conduct and undertake Continued Professional Development (Institute for Archaeologists 2014c). However, membership at organisational or individual level is not compulsory for practice as an archaeologist. The IfA currently represents 3146 members, of which 2167 are Corporate grade members and so likely to be members of the projected archaeological workforce, which Aitchison and Macqueen estimates as a total of 5,940 people, in both archaeological and

support roles (Aitchison & Macqueen 2013; Institute for Archaeologists 2013; Institute for Archaeologists eBulletin 2014). A number of the IfA members will also be non-practitioners, students and affiliates.

A number of commercial archaeological organisations include public and community archaeology projects or activities at certain stages of their archaeological investigations - recent examples include Museum of London Archaeology's *Walbrook Discovery Programme*,<sup>48</sup> Oxford Archaeology East's *Romans of Fane Road* project<sup>49</sup> (Fig. 2.3) or Trent and Peak Archaeology's *Pre-1750 Vernacular Buildings of Southwell* project.<sup>50</sup> However, this type of work depends heavily on the suitability for public access of sites undergoing excavation, the availability of financial and institutional support for public engagement, the availability of staff to undertake this type of work, and the support of the developers, who are funding the archaeological work.

A number of UK Universities undertake public and community archaeology projects. According to research by the Higher Education Academy Subject Centre for History, Classics and Archaeology (Everill & Nicholls 2011) there were 44 universities in the UK listed on the Universities and Colleges Admission Service which offer undergraduate single and joint honours degree programmes in Archaeology, or in allied subjects, such as Ancient History or Heritage Studies, which have significant archaeological content. In the academic year of the survey, there were approximately 4,718 undergraduate students registered on archaeology and archaeology-related degree programmes in the UK (Everill & Nicolls 2011, 1).

---

<sup>48</sup> <http://walbrookdiscovery.wordpress.com/>

<sup>49</sup> <http://oxfordarchaeology.com/community-projects/the-romans-of-fane-road>

<sup>50</sup> <http://tparchaeology.co.uk/news.htm>



Fig. 2.3: Screenshot from Oxford Archaeology East's Romans of Fane Road community heritage project. 1 March 2014. Retrieved from: <http://oxfordarchaeology.com/community-projects/257-the-romans-of-fane-road>

The most pertinent area of university activity for research into the presentation of public archaeology projects online is through university-led fieldwork and excavations undertaken in the UK. Of the universities and higher education institutions that replied to the 2011 Higher Education Academy survey, 32 per cent undertook fieldwork in the UK, 30 per cent within their local region (Everill & Nicholls 2011). Examples include the *Southwell Archaeology Project* by the University of Nottingham,<sup>51</sup> and the *Lyminge Archaeological Project* by the University of Reading,<sup>52</sup> both of which involved students, local community archaeology groups and volunteers. It is important to acknowledge that academic archaeological fieldwork undertaken in the higher education sector and funded as research projects are motivated and valued for their potential research outputs in terms of the Research Excellence Framework (REF) (Research Excellence Framework 2013). As part of its evaluation of university

<sup>51</sup> <http://www.nottingham.ac.uk/archaeology/research/historic/southwell/index.aspx>

<sup>52</sup> <http://www.lymingearchaeology.org/>

research outputs, the REF also places a 20 per cent emphasis on 'impact'<sup>53</sup> which foregrounds the issue of public connections with the research community and the wider social and economic benefits of research, and should encourage greater efforts to engage with the public by those working in academia. This emphasis on research excellence alongside public engagement will in turn impact on the inclusion of members of the public in archaeological activities undertaken by universities, and the forms and methods of public engagement in these projects (Sinclair 2010).

The full impact of the economic and immigration policies of the coalition government, and the accompanying changes to funding for the Arts, Humanities and Social Sciences that have been implemented since 2010, have yet to make their full impact on the academic sector in the UK. These will, no doubt, adversely affect archaeology departments, as the estimated drop in government support for universities will be up to 40 per cent by 2014 (Vasagar 2011). This will affect many forms of public archaeology and public engagement projects that universities are able to undertake, although partnership and collaboration with local community organisations, such as the joint University of Salford and *Dig Greater Manchester* community archaeology project, are increasingly likely (University of Salford 2013). University-led community-focused projects can also seek funding from streams such as the Higher Education Funding Council for England's Widening Participation budget<sup>54</sup> or the National Co-ordinating Centre for Public Engagement,<sup>55</sup> so such activities may be affected differently. It is interesting to note in the context of this discussion that Sinclair emphasised the need for higher education archaeology departments to ensure that their graduates are sufficiently equipped with "transferable skills in IT, data handling and numerical literacy, and team-working, as well as business and customer awareness" to ensure their employability on graduation (2010, 43). All of these skills are part of the practice of public archaeology online.

---

<sup>53</sup> <http://www.hefce.ac.uk/news/newsarchive/2011/news62310.html>

<sup>54</sup> <http://www.hefce.ac.uk/whatwedo/wp/>

<sup>55</sup> <https://www.publicengagement.ac.uk/>

The vast majority of digital public archaeology projects and points of engagement explored during this research have come from the community archaeology and voluntary sector of the discipline. As discussed in section 2.1 above, community archaeology is not a new concept, nor is it a new social phenomenon, and community archaeology groups are frequently organised and run by non-professionals. As Chapter 5 will demonstrate, many community archaeology projects are time-limited projects funded by bodies such as the HLF, or organised and undertaken through collaboration with local authority archaeologists or university departments. Some of these community-facing projects are orchestrated by commercial archaeological units and attached to specific developer-led excavations, often as part of the developer's community liaison, and take the form of open days, site tours and handling sessions such as the *Prescot Street Dig*<sup>56</sup> and the *Walbrook Discovery Programme*.<sup>57</sup> The variety of projects that can be included under the umbrella term 'community archaeology' may or may not evolve into long-term and sustainable community-led projects, which are capable of surviving without full-time professional archaeological guidance.

As Perkin notes, archaeological organisations often create and organise community-based archaeology projects in order to fulfil their own requirements for public outreach (2010, 107). Many of these community-focused projects are created with preconceived ideas of what type of engagement the public may want, and prescribed ideas for the forms and function of this outreach work. Such models can be highly successful but without caution can also result in “tokenistic and unsustainable projects which erode the trust of communities and result in lack of support for future initiatives...” (Perkin 2010). This thesis will explore the concept of participation and knowledge “ventriloquism” in archaeology (Rassool 2010, 81) in Chapter 5, which considers public participation in Internet-based archaeological projects, and Chapter 8 which discusses the concept and impact of archaeological authority online.

---

<sup>56</sup> <http://www.lparcology.com/prescot/about/national-archaeology-week-2008>

<sup>57</sup> <http://www.thamesdiscovery.org/events/walbrook-site-tour>

As of February 2013, there were 154 community archaeology and heritage projects funded by the HLF, which operate in a variety of contexts throughout the UK (G Hylton, 2013, pers. comm., 5 February). The management and direction of these projects are undertaken by a range of organisations including commercial archaeology companies, stand-alone projects created specifically with the aid of Lottery funding and led by professional archaeologists, collaborative university projects, and those instigated by, and on behalf of, community archaeology groups. Many of these HLF projects are using the Internet and social media platforms in some form for public engagement through the creation of a dedicated website, project blog and social media such as a Facebook page or Twitter feed. Examples of stand-alone HLF-funded community projects include the *Thames Discovery Programme*,<sup>58</sup> *Viking Unst*<sup>59</sup> and the *St Piran's Oratory* project.<sup>60</sup>

It is essential to observe that, at the time of writing, local government budgets for planning and community archaeology services, local museums, higher and further education institutions, and commercial archaeology companies have yet to feel the full impact of national government austerity measures. Exactly how the closure or downsizing of many of these organisations will impact on the production and sustainability of archaeology projects that include digital elements is, as yet, unclear. Since local authority archaeological services (including HER) are not statutorily protected, these are extremely vulnerable to budget cuts. Unfortunately, with the current record of museum closures and cuts to staffing and resources for HER officers in local authority settings, alongside a year-on-year reduction in staffing within commercial archaeology companies (Institute of Historic Building Conservation 2013; Aitchison & Macqueen 2013), they are likely to have a significant impact on the long-term sustainability and planning of inclusive digital projects during the present government's term of office and beyond, as expertise and professional connections are lost in the process of redundancy.

---

<sup>58</sup> <http://www.thamesdiscovery.org/>

<sup>59</sup> <http://www.shetlandamenity.org/viking-unst>

<sup>60</sup> <http://www.stpiran.org/>

The importance of an inclusive society, community values and a 'Big Society' continues to frame public and policy engagement with cultural heritage; this has been a part of political and policy strategy in the UK under all governments since New Labour came to power in 1997. The concept of social cohesion, participation and community regeneration has been high on the political agenda in the UK since the late 1990s, and the current coalition government has appropriated the concept for its rhetoric. This will be further explored in Chapter 5 and 6 below. Although the subject of heritage and politics is somewhat beyond the scope of this research, and has been better discussed elsewhere (Smith & Waterton 2009; Waterton 2010b; Dixon 2013), it has some poignancy when understood in the wider context of the participatory ideals of the social web, and its potential for supporting public involvement in archaeology.

## **2.8 Discussion**

Archaeology has, as Merriman (2002, 547) has argued, long communicated blindly to an audience it does not understand without being able to assess the effectiveness of this broadcast, or discover whether the 'message' has been successfully received. In the twelve years since Merriman's comment, little appears to have changed. The presentation of archaeology to the public within the realm of the non-linear hyper-linked and now, participatory web requires new skills and strategies for the creation of accessible archaeological information online. Archaeology's relationship with the public needs to improve its awareness of the different audiences for archaeological information, as well as embrace the many new opportunities offered by Internet technologies for the instigations and participation in a meaningful dialogue with these audiences. That the archaeological sector has embraced the use of social media platforms and Internet technologies at all is to be lauded and it is a testament to the innovation of archaeologists practising public archaeology in the UK that these media have been adopted at all (Jeffery 2012). However, there has been a distinct lack of critical observation of the extent and use of web technologies in



the archaeological sector, both professional and voluntary, and especially within the academic literature. Engaging in dialogue and greater information sharing online has to begin with an understanding of how information about the past is sought and processed, received, interpreted, associated, subverted and recycled through the Internet. Instant access to information can support fresh connections in thought, new interpretations and refinements of data.

We need to understand, as a discipline, how best to converse through the Internet with non-archaeologists relevantly to all and in a language that we can all understand. The practice and discussion of archaeological fieldwork and finds can take place on contemporary platforms with diverse audiences. This means new methods and scales are required to measure our impact. Well-worn paths in methods of outreach and public engagement need to be rethought and re-examined in this light. The “rhetoric of community” (Waterton & Smith 2010, 8) in relationship to Internet technology needs to be unpicked. There are new priorities and obstacles to consider for practitioners of online public archaeology, both within professional archaeological spheres and unaffiliated others.

The following chapter will discuss the research approach and data collection methods used within this thesis, and will outline the Grounded Theory approach used to decode and explore the collated data. It will reflect on appropriate methods with which to capture a snapshot of digital public archaeology activity within the UK archaeology sector, and consolidate the exploration of these modern phenomena through quantitative and qualitative methods.

## CHAPTER 3: RESEARCH METHODS AND DATA COLLECTION

Your Grounded Theory journey relies on interaction - emanating from your worldview, standpoints and situations, arising in the research sites, developing between you and your data, emerging with your ideas...To interact with it all we make sense of our situations, appraise what occurs in them, and draw on language and culture to create meanings and frame actions. In short, interaction is interpretive (Charmaz 2006, 179).

Chapter 1 outlined the central research question for this thesis: to examine the impact of Internet technologies on the practice of public archaeology within professional archaeological communities working in commercial archaeology, higher education, local authority planning departments and community settings, as well the voluntary archaeology sector in the UK. The first step in answering this research question was the exploration of the background literature for public archaeology, and the contexts within which it is practised in the UK, contained in Chapter 2. This chapter will begin with a reflective discussion of the context within which this research was undertaken; the research process for this thesis was iterative, since an understanding of human experience, and the ephemeral context for these experiences, was the overarching subject of research. A qualitative approach to the majority of the data collection was chosen as the most appropriate method for the research aims, as the ultimate aim was an exploratory and descriptive study of the phenomenon of digital public archaeology, rather than to test a hypothesis (Maykut & Morehouse 1994; Gorman & Clayton 2005; Pickard 2013), although there was an element of quantitative data collection (discussed further in section 3.5). The range and scope of the data collection undertaken was varied to accommodate as much of the participants' impressions, activities and perspectives as possible, and to gather a snapshot of the development of Internet technologies within the field of public archaeology practice in the UK from 2010-2013.

This chapter introduces the research methods used for this study and how these methods guided data collection, data analysis and development of associated theory, using a Grounded Theory approach to these data (Glaser & Strauss 1967; Strauss & Corbin 1998; Strauss 1987; Charmaz 2006; Pickard 2013). The first three sections of this chapter describe the literature background and data collection techniques used. Section 3.1.1 will outline the ethical considerations necessary for the mixed methods strategy, which consisted of a series of web-based surveys, email interviews with representatives from archaeological organisations in the UK, an element of ethnographic study of online contexts, and a quantitative analysis of archaeological projects using Internet technologies for communication, alongside an analysis of relevant data obtained from other archaeological and heritage organisations. Section 3.1.2 explores data collection parameters and describes several issues that arose during this collection with the use of proprietary social media platforms. Section 3.2 is a literature review of the use of online surveys. Section 3.2.1 covers the research design, survey coverage and sampling, and 3.2.2 outlines the details and dates of the surveys undertaken. Section 3.3 examines the use of online ethnography, or 'netnography' as part of the data collection for this research (Kozinets 1998; Kozinets 2010; Bengry-Howell *et al* 2011). Section 3.4 discusses the use of email questionnaires and the organisations involved as case studies for the research undertaken for Chapter 8 on archaeological authority and participatory media. Section 3.5 contains a discussion of the parameters and method used for the quantitative data collection. Section 3.6 explores the essential background and fundamental guidelines common in different approaches to Grounded Theory methodology, which was the guiding process to code, process and analyse the qualitative data produced by the surveys and email interviews. Finally, section 3.7 discusses the issues arising from these methods of research, some information on the type and location of data collection that did not prove successful, and reflects on the process of undertaking a mixed methods approach to ephemeral, reflexive and subjective digital data capture, as well as the use of a Grounded Theory perspective in a discipline where it has not been used before.

This thesis is the product of three years of online and offline experience; a literature search; my attendance at various conferences and workshops, and participation in conference sessions; online discussions on the subject of social media, archaeology and Internet technologies; observation of activities and conversations that have taken place in online archaeological communities; and my participation in digital public archaeology, as a professional digital heritage practitioner engaged in paid employment, and as a Ph.D. researcher. The creation of this thesis has been a reflective journey through data collection, online and offline discussions, observation, participation and practice. There were a number of practical implications for my own professional involvement with digital public archaeology prior to commencing this research, during employment as a professional community archaeologist working primarily on Internet-based heritage projects from 2007 - present, and throughout the three years of the creation of this thesis. A number of factors have contributed to this; my sustained use of social media in three contexts, as a private individual, on behalf of a variety of organisations as a volunteer and as a paid member of staff; the regular organisation of, and attendance and presentation at, pertinent conferences throughout the UK and beyond (a full list of presentations and papers emanating from this thesis is included in the appendix), and personal involvement with archaeological campaigning organisations using social media.

### **3.1 Ethical Considerations for Data Collection Online**

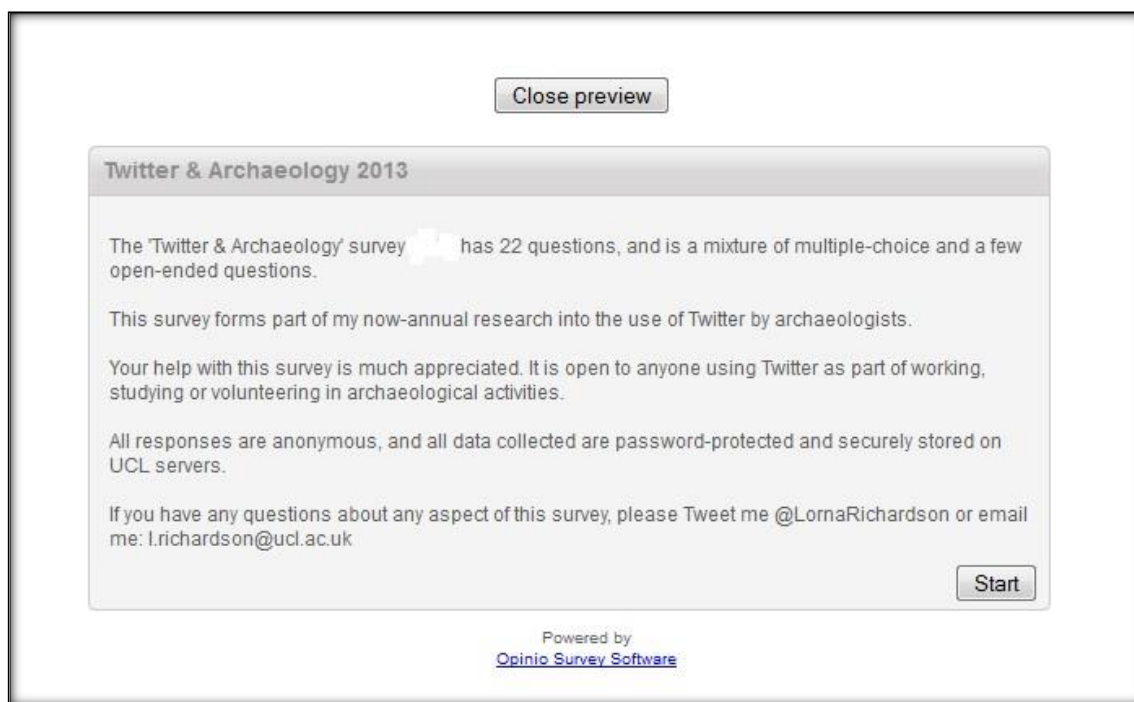
As the Internet becomes an integral part of economic, social and cultural life, Internet survey methods present new opportunities to generate new data about online activities and community practises. However, Internet methods raise some concerns for researchers, such as ethical research practices and avoiding bias. Surveys and interviews undertaken online pose similar ethical considerations to offline research, but there are also issues to consider inherent within the method used to elicit data from the participants. The two overarching ethical considerations are obtaining informed consent for research participation

and the maintenance of confidentiality for the participants (King 1996; Couper 1998; Frankel & Siang 1999; Sharf 1999; Walther 2002; Buchanan & Hvizdak 2009; Singer & Couper 2010). Whilst undertaking and participating in Internet surveys, privacy is a key issue. Although rare, there is potential that online survey data can be vulnerable to hackers. To prevent malicious interference, these data collected must be stored on secure servers, with access appropriately limited - although all systems have vulnerabilities (Seastrom *et al* 2008; Singer & Couper 2010; Association of Internet Researchers 2013). Reducing the amount of identifying data transmitted to the servers during the response to surveys will also prevent the identification of survey data and individuals, as will ensuring that publicly accessible computers such as those in libraries are not used to complete the surveys, so subsequent users cannot access the information. Using temporary cookies offers greater security and prevents unauthorised parties accessing the survey (Eynon *et al* 2008; Thiele & Kaczmirek 2010; Singer & Couper 2010; Couper 2013).

Despite these considerations, the design and construction of the surveys undertaken as part of this research did not require that these data collected included personal or sensitive information that would allow the responses to be identified with individuals. Participation in the email interviews and online surveys undertaken as part of this research was completely optional. All participants were fully informed about the background to the data collection and what would be asked of them at the beginning of the process, following the guidelines of the UCL Research Ethics Committee.<sup>61</sup> This consisted of a statement at the beginning of each online survey (Fig. 3.1) that the study involved research for this thesis, a description of the format and procedure of the

---

<sup>61</sup> <http://ethics.grad.ucl.ac.uk/>



*Fig. 3.1: The opening statement from the Twitter & Archaeology survey 2013. 1 March 2014. Retrieved from: <https://opinio.ucl.ac.uk/admin/previewSurvey>*

survey, a description of the benefits and elective participation, a statement that the research was confidential and individuals would not be identifiable, my contact details in case of questions about the research, as well as an undertaking that the survey results would be stored on a secure server and that the collated results would be made available on completion of this doctorate and subsequent deposition of the final version within the UCL online open access archive, UCL Discovery.<sup>62</sup>

After a telephone discussion with the UCL Research Ethics Coordinator in February 2011, it was confirmed by UCL that formal ethical approval for this data collection of this type was not required as because of the reasons outlined above (UCL Research Ethics Committee 2013). Ethical considerations for Internet research are collated under the Association for Internet Researchers Ethics Guide (Association of Internet Researchers 2013) and these guidelines were carefully considered in conjunction with UCL's policies. The most serious

---

<sup>62</sup> <http://discovery.ucl.ac.uk/>

issue that was likely to be of direct relevance to the method of data collection undertaken for this research was the location of data once it had been collected. These are stored on the secure UCL servers, and this information will be held for a period of one year after the submission of this thesis. These data collected in the course of the surveys cannot be linked back to an individual by means of an Internet search, as the information is not accessible without my UCL password, and the content of a subject's communication is anonymised. Participants were selected to avoid potential conflicts of interest, and no incentives were offered for participating in any of these data collection exercises.

Email questionnaires were also undertaken as part of the research into the concept of archaeological authority online; the results of these questionnaires will be fully examined in Chapter 8. The questionnaire structure adheres to the guidelines of the UCL Ethics Committee, and after consultation with the committee administrator, it was agreed that this also did not require formal ethical approval from the UCL Ethics Committee, or registration with the UCL Data Protection Team, since no personal data were being collected, and the participants were not referred to directly by name. All participants were fully informed of the purpose of the research, and of the specific area of investigation, and this was made clear as part of the initial contact made with the representative of each organisation by email or in person, as well as when the survey was distributed. As a significant proportion of the people invited to take part were my existing professional acquaintances, the participants were explicitly informed that they were under no obligation to take part, and it was made clear that they were free to decline to participate. The participants were informed that they could take part in the survey anonymously as an individual or on behalf of an organisation, although no one specifically asked not to be associated with their answers. All participants gave their full written consent to the use of their responses in this Ph.D. thesis. The data collected is stored on a secure server at UCL, and in hard copy kept in a secure location.

There are many online contexts in which a nuanced understanding of ethics is needed when preparing to undertake the collection of observational data, and

these may need to change depending on the form of the interaction (for example, individually uploaded tweets, audio or video) or the online environment under scrutiny (for example, an online community forum, Twitter feed, or interactions with blog posts): all require different approaches (McKee & Porter 2009; Krotoski 2010). The collection of observational data from the Internet, for instance the collection of tweets, observation of the use of hashtags, comments on archaeological online forums and contributions and comments submitted to the *Day of Archaeology* website, raises similar ethical questions to those with observational research and the subject of online ethnographic research or 'netnography' (Kozinets 1998; Kozinets 2010; Bengry-Howell *et al* 2011) as well as the considerations for the use of online surveys outlined above (Frankel & Siang 1999; Sharf 1999; Grimes *et al* 2009; Walther 2002; Singer & Couper 2010). An outline of the netnographic approach used in this research will be detailed further in section 3.2.1 below. Internet users' perceptions of what constitutes public and private spheres on the Internet may not correspond with their actions online, and as such careful approaches must be made to ensure that participants are fully aware of the researchers intentions to collect their activities and use them as data in the netnographic process. All participants were asked by email for permission to use their images of Tweets, Facebook pages, and blogs that appear in this thesis.

### **3.1.2 Data Collection Parameters & Other Issues**

The approach to data collection used for this thesis aimed to gather qualitative information from as many participants as possible with an active participation in digital public archaeology. The use of social media platforms in archaeological organisations for public archaeology is, as outlined in Chapter 2, a process subject to change, and reliant on staffing, financial support and wider sectorial trends set against a backdrop of fiscal austerity in the UK which impacts on funding for archaeological projects. It must be acknowledged that the collection and mining of data from certain social media platforms is problematic for a



number of reasons. The amount of information transmitted through social media platforms is enormous and growing rapidly year-on-year. A global data snapshot created by social media agency *We Are Social* in January 2014 suggested that there are almost 2.5 billion Internet users globally, representing a 35 per cent global population penetration, with over 1.85 billion active social network users, representing a 26 per cent social network penetration of the total global population (Kemp 2014). According to research published in January 2014, there are 1.15 billion Facebook users worldwide; 23 per cent of Facebook users login at least 5 times per day; Google+ had 359 million monthly active users; Twitter had over 550 million registered users, with 215 million active each month; Pinterest<sup>63</sup> had 20 million active monthly users and Instagram<sup>64</sup> had 150 million active monthly users. Within the UK, Internet users spend an average of 13 minutes on social media sites for every hour spent online (Bullas 2014).

Capturing the archaeological elements of these digital ephemera, and understanding the uses and impacts of these media in the archaeological sector presents a methodological challenge, especially given the scale of participation in social media enumerated above (Burgess & Brun 2012). Additionally, access to some information from social media platforms is restricted by privacy policies, and availability of free-to-access data from these platforms for research purposes is often limited (Adedoyin-Olowe *et al* 2013, 4). These issues will be discussed further in section 3.7.

As these platforms become a prevalent and important part of communications, marketing and branding, accessing data sets and statistics has become expensive as platforms create monopolies on access to this data. This has seriously limited the form of research that I was able to undertake. For example, it was difficult to use data from Facebook because the security and privacy settings sometimes denied access to relevant groups, pages and discussions. Information about public archaeology projects on other platforms, such as blogs and Twitter, proved simpler to access and analyse, and as a result this research is heavily

---

<sup>63</sup> <https://gb.pinterest.com/>

<sup>64</sup> <http://instagram.com/>

weighted towards these. However, issues arose with the use of Twitter (which will be discussed in section 3.7), and these are important to consider for future research not only in the field of Digital Humanities but also in other disciplines where access to large data sets from proprietary platforms would be necessary.

Time and budgetary constraints affected the decision to use qualitative online survey as the main form of data collection. Given the wide distribution of digital projects undertaken by archaeology organisations throughout the UK, travelling to undertake face-to-face surveys and interviews was impractical and financially unviable. Email questionnaires and online surveys proved to be the most practical method of collecting data; they are easy to set up, and could be targeted directly to specific individuals or organisations, or disseminated widely via social media and email lists to gather a wider sample of participants. There have been a number of studies of the self-selection phenomenon in the survey research literature (Churchill 1999; Rosen *et al* 1999; Couper 2000; Chisnall 2001; Bosnjak & Batinic 2002; Grandcolas *et al* 2003; Hudson *et al* 2004; Hoonakker & Carayon 2009) from which it is apparent that reliance upon an online survey or questionnaire introduces the risk that the survey will be biased towards individuals who work in predominantly desk-based occupations. Consequently these individuals are able to spend more time online, may be more inclined to fill out an online survey or email questionnaire and also are perhaps more inclined toward higher rates of participation on the social media sites under review.

### **3.2 Literature Review of Research Using Online Surveys**

The use of electronic surveys, either as a means of collecting data or as a subject of research in itself, has increased significantly as the Internet has developed into a ubiquitous means of communication in society (Couper 2000; Barrios *et al* 2011; Groves *et al* 2013). The impact of advances in Internet technologies, widespread adoption of email and increase in the use of social media, has significantly expanded the capabilities of Internet surveys as a method of research data collection, since computer-assisted person interviewing and email

surveys were first used during the late 1980s (Dillman 2000; Grossnickle & Raskin 2001; Schonlau *et al* 2001; Fricker & Schonlau 2002; Couper 2005; Smyth & Pearson 2011). Their use for data collection has many advantages, not least convenience and cost: once a survey has been created in the requisite survey software, further expenses such as postage, printing, recording equipment and interviewer salary and travel costs are eliminated (Dillman & Bowker 2001; Evans & Mathur 2005; Smyth & Pearson 2011). There are numerous additional advantages that have been examined at length in the literature on the use of online surveys: the facilitation of complex question branching within contemporary online survey software; the ability to embed visual stimulus material; the automatic collection of paradata<sup>65</sup> and metadata through online survey software; ease of access to free online survey software such as SurveyMonkey<sup>66</sup> and mobile survey apps. The literature outlines the benefits of the self-administration of surveys online, including the lowering of costs associated with face-to-face interviews, interviewer effects, and surveys can be taken at a time convenient to the participant, and the speed of generating reports (Dillman & Bowker 2001; Hogg 2003; Couper 2005; Christian *et al* 2009; Lin & Van Ryzin 2012).

An online survey was chosen because it was the fastest way to produce an easily distributed survey for immediate use, and was the simplest method for collecting and processing data elicited from active Twitter users in the archaeological community. There are also a number of issues to consider with the use of online surveys and the form of survey software to use, given the widespread availability of free survey software such as SurveyMonkey, SurveyPlanet<sup>67</sup> or PollDaddy.<sup>68</sup> Other considerations were the possibility of over-surveying, declining response rates and “survey exhaustion”: a mistrust of online survey requests and surveys

---

<sup>65</sup> The term ‘paradata’ refers to the types of data collected about the process of collecting survey data such as mode of communication, time of survey, interviewer records, and length of survey, keystroke data, interviewer characteristics and so forth (Couper 1998; Kreuter *et al* 2010; Nicolaas 2011).

<sup>66</sup> <https://www.surveymonkey.com/>

<sup>67</sup> <https://www.surveyplanet.com/>

<sup>68</sup> <http://polldaddy.com/>

incorrectly identified as spam and consequently either deleted or ignored (Couper 2005, 494).

### **3.2.1 Research Design: Coverage and Sampling**

The literature relating to Internet survey methodology explores a number of methods by which survey researchers have addressed the problems associated with Internet coverage and the resulting limitations for sampling (Smyth & Pearson 2011, 18). The development of Internet panels - survey participants willing to respond to more than one survey over a period of time - has been examined in a number of academic articles (Schouten *et al* 2009; Christian *et al* 2009; Scherpenzeel & Das 2011). The target audience within the archaeological sector was broad and included anyone working or volunteering in an archaeological organisation in the UK using any form of digital technology specifically for public engagement. Quantifying this target audience is somewhat difficult, although rough estimates of the population of professional and amateur archaeologists have been made. According to the research undertaken by Landward Research in 2013 (Aitchison & Macqueen 2013), there was an estimated archaeological workforce of 4,792 in 2012-13 (the latest year for which data are available), and another 1,148 people working as dedicated support staff within archaeological organisations.

Research by the Council for British Archaeology demonstrated that volunteer activity within the UK heritage sector was represented by approximately 2,030 voluntary groups, undertaking some form of archaeology or heritage-and-history-based activity related to archaeology (2010, 5). These represent around a quarter of a million people actively participating in heritage issues as a hobby or leisure interest. Given that the CBA research report indicates a significant number of these volunteer groups do not use Internet technologies for communications, an issue explored in Chapter 5, it is unlikely that the majority of responses to these surveys come from the voluntary sector, and the qualitative data supplied by these surveys certainly indicates that the majority of responses

were made by professional archaeologists working in the commercial sector or academia, or by archaeology students.

For each survey, a similar audience was approached with the survey link, advertised through the following platforms and methods: Twitter, Facebook pages, and emails to individual archaeological organisations and community groups. Statistical analysis was not the main objective, since the research process concentrated on an understanding of the phenomena of social media and digital technologies, from the perspective of the participants, and develops a theory based on these observations (Gorman & Clayton 2005, 7). Therefore, although some questions within the surveys were closed questions, the majority were open-ended, with the intention of attracting comments and opinion that could be analysed qualitatively.

An in-depth exploration of the issues of unequal access to the Internet are discussed in Chapter 4, but the impact of Internet coverage for general population surveys is an important factor that must be considered when exploring the reach of the online surveys undertaken during the research for this thesis. Overall, the online surveys undertaken for the data collection for this thesis were not administered in hard copy, although there were two instances where a hard copy was requested and sent by post. Therefore, there is likely to be a bias against archaeologists and volunteers who may be less likely to spend time online, who feel less comfortable with using the Internet, and who may have limited access to the Internet in the workplace, or at their local library or Internet café.

These surveys were publicised in as many areas as possible, both through digital links on forums, websites and social media platforms (Fig. 3.2), as well as appearing in *British Archaeology* magazine, in an attempt to achieve representation from all areas of digital public archaeology in the UK and ensure representation of all contexts and activities referred to in my research design. However, it must also be acknowledged that there are contextual influences in particular organisations or cases - for example, organisations with a longer

history of working with digital technologies, or with staff experienced in the use of public engagement tools and techniques - and there is no guarantee that these informants' views are typical (Maxwell 2005, 88).

I deliberately chose to examine the five specific areas of the archaeological sector in the UK outlined in Chapter 2, since these organisations are key players in online public archaeology and are therefore critical actors within the establishment of digital public archaeology practice.



*Fig. 3.2: Screenshot of a request for participation in the Twitter & Archaeology survey 2011 to a follower, sent through my Twitter profile on 3 April 2014.*

Retrieved from: <https://twitter.com/lornarichardson/status/54635646681235456>.

### **3.2.2 Surveys Undertaken**

The platform for data collection through online survey for this thesis was the UCL-supported Opinio survey software designed by ObjectPlanet Inc.

(ObjectPlanet Inc. 2014). The survey software is a web-based survey tool, which is available free of charge to UCL staff and postgraduate researchers. The Opinio survey software facilitates a range of survey and poll question types, and a variety of reporting mechanisms (UCL Information Services Division 2014). This form of online survey was chosen over the available free online survey tools mentioned in 3.2.1, because its academic associations would provide more reassurance to potential users that they were taking part in a robust and professional research project, and the data would be very secure as it is stored

on the UCL servers. The service is supported by UCL Information Systems and the Opinio server is backed up to tape every evening for disaster recovery purposes (UCL Information Services Division 2014).

Each of the eight surveys was targeted at an archaeological audience using social media technologies and email from the initial phase of data collection, which began on 1 April 2011 with the launch of the first “Archaeology and Twitter” survey. Table 3.1 contains information about each of the online surveys undertaken during the period of this research, the dates they were available, the response rate, and the number of questions in each.

<i>Survey No.</i>	<i>Survey Title</i>	<i>Dates Open</i>	<i>Questions</i>	<i>Responses</i>	<i>100% Completed</i>
1	Archaeology & Twitter 2011	01/04/11– 15/04/11	27	167	85
2	Archaeology & Social Media Policy	06/10/11– 31/01/12	15	293	189
3	Archaeology & Twitter 2012	01/02/12– 15/02/12	22	331	191
4	Preserving Public Archaeology Content Created Online	22/07/12– 29/08/12	17	104	62
5	Measuring the Success of Your Digital Project	12/11/12– 12/01/13	12	287	136
6	Understanding Barriers to Public Engagement with Archaeology Online	02/10/12– 31/01/13	19	248	123
7	Live-tweeting at Archaeology Conferences	21/01/13– 28/01/13	11	187	142
8	Archaeology & Twitter 2013	11/04/13– 24/04/13	22	155	111
9	Using the Internet for Archaeology	07/02/13– 07/04/13	24	577	428

*Table 3.1: List of online surveys undertaken as part of this doctoral research from 2011 to 2013*

The survey subjects covered a wide variety of topics, based on the research aims outlined in Chapter 1. The survey topics and questions were the result of consultation with the supervisors for this thesis in the Centre for Digital Humanities and Institute of Archaeology at UCL. Each survey contained a mixture of open and closed questions covering the use of different aspects of social media, websites in archaeology both for work related and personal

reasons, as well as questions about online community and networking within the sector through digital means. The complete archive of questions and results from all nine surveys can be found in the appendices A - I on the CD-ROM accompanying this thesis.

During the winter of 2010 at the outset of my research scoping, and during my increasingly frequent use of Twitter during research into archaeological communities online, it became apparent that Twitter was being used by archaeologists across the globe as a conduit for information sharing, co-operation and discussion. These activities were taking place on Twitter in a very unstructured and informal manner, and the platform was also being used as a means of transmitting archaeological news amongst archaeological peers and the public. The potential use of Twitter as a means of disseminating information about public archaeology projects and excavations was exciting - but how did the platform work with and for archaeologists now? No research has been undertaken in the use of Twitter in the archaeological world, and investigation into the use of the platform would provide useful data in the exploration of a number of the research questions outlined in this thesis, including concepts of archaeological authority and the use of participatory media for discussion with the public, online archaeological community-creation and work on the *Day of Archaeology* project.

For example, with the three Twitter surveys, only those archaeologists using Twitter have been targeted, and the questions reflect positively the use of Twitter, rather than the reasons for not using Twitter. Questions were developed from my research aims covering a variety of related themes, concentrated on these central topics:

1. What type of archaeological information is currently being shared via Twitter?
2. Can the use of Twitter by archaeologists be considered a useful addition to widening public involvement with archaeology?
3. Who exactly is using Twitter within the archaeological sector?



4. What exactly do they use it for?
5. How does, and how could, Twitter encourage the development of a useful archaeological online social network for public engagement and information exchange?

I decided that an online survey of current archaeological participants would elicit the necessary preliminary data before further research into its application for public and community archaeology could take place.

The data for the Twitter surveys was first initiated by searching for and following 1000 Twitter users that had described themselves as academic, professional or active amateur archaeologists somewhere within their user profile biography as discovered through the Twitter search facility, and the use of archaeology-related lists belonging to existing contacts. I also spent time tweeting about the research plans and discussing the survey questions, aims and possible outcomes with a number of familiar followers in the archaeological sector on Twitter. I used the hashtags #archaeology and #pubarch in the tweets relating to this survey in order to maximise new follows, retweets and greater awareness of the forthcoming research amongst existing followers. The first survey was open for contributors from 9.30am BST on the 1 April 2011 to 9.30am BST on 15 April 2011; the second from 11am GMT on 1 February 2012 to 1pm GMT on 15 February 2012; the third from 1pm BST on 11 April 2013 to 1pm BST on 24 April 2013. The differences in dates for 2012 were due to my differing availability to administer the survey in April 2012. A request for participation with the survey was tweeted, and subsequently retweeted by my followers, on a daily basis between these dates. The tweeted request for participation contained a link to the survey and a request to forward the survey via Twitter to interested parties was included in the tweet.

### 3.3. Netnography

There have been a number of publications on the subject of online ethnography from the late 1990s onwards and is an accepted, albeit innovative, method of research, included in various research methods textbooks (Hine 2000; Hine 2005; Given 2008; Hesse-Biber & Leavy 2008; Xenitidou & Gilbert 2009; Wiles *et al* 2011). Netnography is a form of ethnographic research undertaken in online environments, and is an increasingly common approach to business, management, consumer and market research to investigate user behaviour and online activity (Kozinets 1998; Kozinets 2010; Bengry-Howell *et al* 2011). Kozinets originally created this type of research method as a new approach to online marketing research techniques, in order to examine the activities and preferences of online communities (Kozinets 2002). The Canadian founder of the approach, Robert Kozinets, defined netnography as;

...a written account resulting from fieldwork studying the cultures and communities that emerge from on-line, computer mediated, or Internet-based communications, where both the field work and the textual account are methodologically informed by the traditions and techniques of cultural anthropology (1998, 366).

There is no single accepted method by which netnography should be conducted, although generally this approach favours the observation of online forum, blogs, tweets and interactions within online communities and may also involve data collection offline (Hine 2005; Bengry-Howell *et al* 2011). The process of netnographic research always begins with a formal introduction by the researcher into the field of the research subject community or platform, known as an *entrée*. Data was collected in the form of screenshots, email interviews, reflective and observational field notes and text drawn from online interactions (Kozinets 2010). A netnographic approach to data collection has been used for research in a small number of disciplines; the majority of research has taken place within the disciplines of marketing research, economics, management, communications and sociology and is dominated by work from the USA and the UK (Bengry-Howell *et al* 2011, 14). Examples of the use of netnography in

academic journals include work into the presentation of 'self' online (Schau & Gilly 2003); an exploration of consumer response to advertising and gaming (Nelson 2005); anthropological research (Trappers 2008), or an investigation of migrant identity online (Davis 2010).

This thesis used some of the approaches from the netnographic discipline, using a hybrid of a netnographic approach to the research into crowdsourced projects and the use of Twitter amongst archaeologists on the platform, explored in Chapter 6, an examination of the comments and interactions on the *Day of Archaeology* website, Facebook page and Twitter feed on the *Day of Archaeology* in 2011, 2012 and 2013 for the case study in Chapter 7, and also briefly as part of the work on the quantitative data collection for Chapter 5, capturing screenshots of archaeological websites and social media platforms. The aim of this hybrid work was to support the survey data from the archaeology and Twitter surveys each year by studying the way that archaeology and archaeologists use and interact online and on Twitter, and reflect this material in the analysis of the survey results (Richardson 2011). A formal netnographic entrée was made through my blog on 4 April 2011, with an introduction to the research aims and parameters (Richardson 2011), and the results will be explored below in Chapters 5, 6 and 7.3.4.

### **3.4 Email Questionnaires**

An email questionnaire was also used as a method of eliciting organisational feedback on the subject of archaeological authority for Chapter 8, and the full transcripts of these can be found in Appendix J. A focused approach to the sources of data collection was chosen for the information used in Chapter 8, which examines the concepts of professionalism, expertise and archaeological authority relating to the use of social media and participatory technologies, including an examination of the issues of organisational reputation. The organisations that participated in the email questionnaires were specifically targeted, and a small number of leading UK archaeological organisations were

approached to take part in this area of data collection. Eight organisations were chosen, because of their high profile within UK archaeology both online and offline; their regular involvement with archaeological news-sharing through their Internet presence; their recognised archaeological reputation; for the majority, their national significance; and the quantity of followers and interactions that these organisations demonstrated on their social media platforms. An overview of the respondents amongst the invited organisations is outlined below.

### **3.4.1 Archaeosoup Productions**

Archaeosoup Productions<sup>69</sup> is a privately owned educational enterprise based in the north of England, “which seeks to increase public awareness of archaeology and our remarkable shared heritage” (Archaeosoup Productions 2012). The company offers a range of online services, including videos, educational downloads, and an archaeological news website, as well as 'real-life' educational activities and a digital media production and outreach consultancy. Archaeosoup is an active user of social media platforms, and, apart from the main website, has an active Facebook page, a Twitter account, and a dedicated YouTube channel with over 1000 subscribers and a blog. All of the Archaeosoup social media platforms are branded and linked to and from their main website.

### **3.4.2. Big Heritage**

Big Heritage is a heritage social enterprise based in the Wirral, Merseyside, and works with a number of different organisations. These include schools and universities, museums and heritage sites or history and archaeology societies. Big Heritage provide a range of activities and services, including primary school workshops tailored for the UK national curriculum, public outreach projects,

---

<sup>69</sup> <http://archaeosoup.com/>

community archaeology projects, support for grant applications for heritage organisations, and heritage-themed corporate training. The organisation is an active user of social media platforms, has an active Facebook page, Twitter account, blog, Pinterest site, and has created films for their Vimeo and YouTube accounts (Big Heritage 2014).

### **3.4.3. British Archaeological Jobs and Resources**

British Archaeological Jobs and Resources,<sup>70</sup> known to most archaeologists as BAJR (pronounced ‘badger’), is a privately run archaeological organisation, providing a variety of information, advocacy and support services to the archaeological community and members of the public. The website states that the organisation is, “an independent voice for the workers in archaeology and heritage, providing advice and protection on an informal basis, empowering the workers with facts and data concerning all aspects from Health and Safety to Employee Rights” (British Archaeological Jobs and Resources 2014). The organisation is active across two websites. The main BAJR website has job listings, links and resources, and an active discussion forum. The Past Horizons website<sup>71</sup> is an online magazine-style project, with a web shop for archaeological tools, and this magazine is the main vehicle for the organisation to share the latest archaeological news. Both brands have an active Facebook page and Twitter account.

### **3.4.4. Council for British Archaeology**

The Council for British Archaeology (CBA)<sup>72</sup> is a UK-based educational charity, founded in 1944. The charity aims to provide opportunities for people to get involved in archaeology and to “promote the appreciation and care of the historic environment for the benefit of present and future generations” (Council for British Archaeology 2012). It is the largest voluntary archaeology

---

<sup>70</sup> <http://www.bajr.org/>

<sup>71</sup> <http://www.pasthorizons.com/>

<sup>72</sup> <http://new.archaeologyuk.org/>

organisation in the UK, with a network of local and regional groups and a staff team of 19. It operates in a number of areas: coordinating the annual national Festival of Archaeology in July; coordinating the Young Archaeologists Club network for 8-17 year olds; publishing the popular magazine *British Archaeology*; advocacy, championing public and community archaeology projects throughout the UK; and it also publishes books and guides. The organisation has an official Twitter account, and Facebook page, and the CBA director also has a popular, albeit unofficial, Twitter account.

### **3.4.5. English Heritage Archaeology section**

The English Heritage (EH) Archaeology section is part of English Heritage, the Historic Buildings and Monuments Commission for England, an executive non-departmental body funded through the Department for Culture, Media and Sport (English Heritage 2014b). Established in 1983, it has responsibility for over 400 significant historical and archaeological sites in England taken into state guardianship. EH is responsible for giving advice on conservation, registering and protecting the historic environment and maintaining a public archive of archaeological and architectural records and associated photographs, the EH Archive, formerly known as the National Monuments Record (English Heritage 2014b). The EH Archaeology section has its own dedicated Twitter feed, managed by the Archaeological Information Systems Department.

### **3.4.6. Portable Antiquities Scheme**

The PAS<sup>73</sup> was established in 1997 by the then Department for National Heritage - now the Department for Culture, Media and Sport - and is currently run as part of the British Museum Department of Portable Antiquities and Treasure. The Scheme operates in England and Wales, and describes itself as a “partnership

---

<sup>73</sup> <http://finds.org.uk/>

project which records archaeological objects found by the public in order to advance our understanding of the past” (Portable Antiquities Scheme 2013). The project records archaeological objects - 'portable antiquities' - found by members of the public, most often through metal detecting, and makes the information available on a national online database accessible through the Scheme website.<sup>74</sup> The PAS also undertakes outreach work through the project team of Finds Liaison Officers, and facilitates academic research into the recorded finds. The Scheme has a dedicated ICT Adviser (who was one of the supervisors for this doctoral research), and the organisation is active on a number of social media platforms linked to the main website, including accounts on Twitter, Facebook, Flickr, YouTube and Pinterest.

### **3.4.7. RESCUE - The British Archaeological Trust**

RESCUE<sup>75</sup> is a British charitable organisation founded in 1971, “committed to the protection, conservation, recording and interpretation of archaeological evidence - often the only evidence - of all our pasts” (RESCUE: The British Archaeological Trust 2014). RESCUE campaigns and advocates on a variety of heritage issues, most recently the closure of local and regional museums, and the impact of local government austerity measures on Historic Environment Records. The organisation has an active Facebook account, and uses the Twitter platform.

### **3.4.8. The Royal Commission on Ancient and Historical Monuments of Scotland**

The Royal Commission on Ancient and Historical Monuments of Scotland (RCAHMS)<sup>76</sup> was founded in 1908, and is a non-departmental body of the Scottish Government, funded through public money. It is responsible for

---

<sup>74</sup> <http://finds.org.uk/database>

<sup>75</sup> <http://rescue-archaeology.org.uk/>

<sup>76</sup> <http://www.rcahms.gov.uk/>

strategic survey and recording of the historic and built environment of Scotland and the management and maintenance of a national collection of written records, manuscripts and photographs relating to Scotland's maritime history, industrial past, built environment and archaeology (Royal Commission on Ancient and Historical Monuments of Scotland 2014). The organisation makes much of this data available through its website in digital format via the Commission's interface, the Computer Application for National MONuments (*sic*) Record Enquiries, or Canmore.<sup>77</sup> Canmore also has facility for the public to contribute and upload information and images to the national collection, through 'MyCanmore', via the Flickr API.<sup>78</sup> The organisation also uses Facebook and Twitter accounts. The Commission's five-year plan includes commitments to "widen digital access to information on Scotland's places, making it more interactive and an integral part of the burgeoning world-wide network of cultural heritage data" (Royal Commission on Ancient and Historical Monuments of Scotland 2014b).

All organisations involved in the survey have ongoing real-life projects, and their web presences are active and thriving, although some are at different life-stages, as outlined in Chapter 8. These organisations are not directly comparable in terms of size, staffing levels or budgets. Some, such as Archaeosoup, and BAJR are one or two-person operations, privately funded, with limited roles and boundaries within the archaeological sector; others, such as the RCAHMS, EH and the CBA, are publicly funded and nationally recognised institutions with a large number of staff and broad participation in archaeological and heritage activities across the UK.

Data collection for this particular area of research was completed through a ten-question survey, emailed to each of the organisations, directly to a named correspondent with whom prior discussion had taken place about their participation in my research on this subject, either via email, or in person at conferences and workshops in the UK. These questionnaires also allowed an

---

<sup>77</sup> <http://canmore.rcahms.gov.uk/>

<sup>78</sup> The acronym "API" stands for "Application Programming Interface". An API is a defined way for a programme to accomplish a task, usually by retrieving or modifying data (Twitter 2014c).



element of clarification, as there could be a simple email exchange to clarify any points or queries afterwards. Because the main research aim for the subject of archaeological authority online was to understand how these issues are dealt with from an organisational perspective, the data-gathering process did not include formal or informal interviewing in the data collection methodology for this chapter. I was especially conscious of the limitations in time for participation in this research on the part of all participants. The data collection method was also limited by the geographic spread of the case studies, across the UK, with some members of staff that were not easy to tie down to one location in their busy schedules. The cost of travelling to each organisational location would also be prohibitive, and take up valuable time, both for myself and the organisations participating in the study.

The use of email and a written series of predetermined survey questions seemed the best data-gathering tool under these circumstances, for a variety of reasons. This method would elicit responses that would allow the participants to consider their responses over a period of time; further communication could take place at asynchronous times, rather than during one short interview period; the flexibility of an email survey would allow the participants to frame their responses in the way they saw fit, without direction by further questioning, which would be revelatory about their thoughts on the subject of archaeological authority in their work; and it would allow for an unlimited response, as the participants were informed that they could answer with as little or as much detail as they chose. Within a structured interview format, these freedoms would have been curtailed.

### **3.5 Quantitative Data Collection**

Research into the quantity and range of digital public archaeology projects for this thesis, outlined in Chapter 5, took place over the period of two months, October to December, each year, from 2010 to 2013, and built on information about community and voluntary archaeology projects in the UK initially provided by the CBA from their 2010 community archaeology report. This data-gathering

exercise was constructed in order to collate a list of the number of projects in each country within the United Kingdom, their funding status, the type of media represented by each project - i.e. blog, website, Twitter account, Facebook page and other social media platforms, and a snapshot of the number of followers or members on these sites on the day of assessment. This research deliberately adopted a broad approach to possible definitions and understandings of 'public' and 'community' archaeology, and indeed the definition of 'archaeology' itself. Following the example of the CBA research report (2010), and because of the difficulties and the deceptiveness, of imposing strict disciplinary boundaries, the study included in its remit any voluntary groups that have conducted research into the physical remains of the past, whether or not they specifically include the term 'archaeology' in their organisation's name. This included many groups whose primary interest is in specialist areas such as railway heritage, social history and community heritage. After discussion with the CBA Community Archaeology Support Officer in 2010 about the boundaries of their research framework, I opted to include any website, blog or social media presence that included information about public participation or community archaeology in any area of the archaeology sector. The first survey in 2010 took place at the very beginning of the research process for this thesis, and was intended to be a pilot. Therefore, this survey only included England and Wales, and omitted the Crown Dependencies, Northern Ireland and Scotland. The data were gathered with the help of the then CBA Community Archaeology Support Officer, Dr Suzie Thomas, who was able to assist in this research by contacting her database of 2030 known community archaeology and heritage projects in the UK, which had been collated during the production of their 2010 report and providing a list of community archaeology projects with websites.

The types of projects included in the survey were chosen because the organisation was involved with some form of public archaeology activity. This ranged from the provision of information about local and regional archaeology society lectures; site visits; schools sessions; community fieldwork, walkover surveys and excavation; using social media tools such as Twitter, Facebook or

Flickr photo management sites for outreach; excavation or project blogs; films; pod casts; downloadable reports written for a non-professional audience, or downloadable presentations. An online and offline search was undertaken for every known digital public archaeology project that could be found in community, local and regional archaeology societies, universities, local authority archaeology departments, HLF funded projects and UK-based commercial archaeology companies, including those registered as educational trusts and those registered as commercial enterprises. Online projects that did not include an element of public archaeology, did not offer public access to information about archaeological projects or did not present data online were not included in the collated survey. The collation did not include any websites from the commercial archaeology sector that only provided information about their commercial archaeology services. However, it did include those commercial archaeology organisations that provide online information about excavation diaries, excavation open-days, finds-handling sessions, professionally led schools sessions, adult education, outreach or specialist community heritage services.

This information was also supplemented with a spreadsheet database of public archaeology projects provided by David Connolly, the owner of the British Archaeological Jobs and Resources (BAJR) web resource. The BAJR resource is has a high profile amongst professional archaeologists, not least because it is the main place to find and post archaeological job vacancies, and it also acts as a central place for discussion and online networking through its online Federation Forum. The BAJR website provides a series of searchable online datasets that cover UK Community Archaeology projects, local archaeology societies, local authority archaeology curators, commercial archaeological contractors and other heritage organisations (British Archaeological Jobs and Resources 2014).

Alongside the information from BAJR, I also undertook an online search for Local History societies, through the website Local History Online (Local History Online 2014). The 2010 CBA research had suggested that a growing number of Local History societies were also involved in activities relating to archaeology, industrial heritage or standing buildings. The Local History Online (LHO)

website is owned and managed by the *Local History Magazine*, which maintains an online database of information and contact details for local and family history societies (Local History Online 2014). The LHO website defines Local History societies that are considered active in archaeological activities as any group or society that takes an active role in the provision of archaeological lectures, day trips or meetings; undertook archaeological geophysical survey work, field walking or excavation; undertook artefact processing, or undertook standing building recording or cemetery surveys. Where a website was not included in the data provided by BAJR, CBA and LHO, a final search was made by using the Google search engine with the organisation name found on the resources provided by the CBA and BAJR. The Google search engine was also used to search for public archaeology projects by county and region using the search terms “community”, “heritage” “archaeology”, “project” and “society”. This was supplemented by extensive web searches, using the contact information found on the websites belonging to; the CBA Regional Groups;<sup>79</sup> EH archaeology section;<sup>80</sup> the IfA;<sup>81</sup> the Association of Local Government Archaeology Officers (ALGAO);<sup>82</sup> the Royal Commission on Ancient and Historical Monuments for Wales (RCAHMW)<sup>83</sup> and Cadw,<sup>84</sup> the Welsh Government’s historic environment service.

Where organisations were using more than one platform, such as a website, a blog, and a Facebook page, these were recorded separately on the spreadsheet, but counted as one single existence of a 'web presence' in the final project count figure. If no evidence of use of social media platform was found on the main website, a second Google search was made with the addition of a social media category such as Twitter. The Unique Resource Locators (URLs), project names and locations were recorded, and screen shots were saved from each individual

---

<sup>79</sup> <http://new.archaeologyuk.org/join-a-cba-group>

<sup>80</sup> <http://www.english-heritage.org.uk/professional/research/archaeology/>

<sup>81</sup> <http://www.archaeologists.net/>

<sup>82</sup> <http://www.algao.org.uk/>

<sup>83</sup> <http://www.rcahmw.gov.uk/>

<sup>84</sup> <http://cadw.wales.gov.uk/?lang=en>

website, project and platform using the web browser research tool Zotero.<sup>85</sup> All the data were recorded on an Excel spreadsheet and was recorded by region, and sub-divided into counties where appropriate.

### 3.6 Qualitative Research and Grounded Theory

Qualitative research is an umbrella term that covers various approaches with different theoretical assumptions according to what is being studied and the methodology used. Glaser and Strauss first proposed Grounded Theory, a research method for the analysis of qualitative research, in 1967. According to them, Grounded Theory facilitates “the discovery of theory from data” (Glaser & Strauss, 1967, 1). The use of Grounded Theory is most appropriate when “the study of social interactions or experiences aims to explain a process, rather than to test or verify an existing theory” (Lingard *et al* 2008, 459). The overarching aims of using a Grounded Theory approach to data analysis for this thesis is not to answer specific research questions within the paradigm of an existing hypothesis (Pickard 2013, 181) but to engage in a process of discovery, reflection and observation of the activities, attitudes and areas of importance to participants in the provision of online public archaeology projects, as well as the consumption of these media as part of the activity of archaeological community formation within the context of social media (Charmaz 1995; Charmaz 2006). The Grounded Theory approach was selected for this research because of the flexibility the approach offers for the researcher to generate new concepts that would explain the behaviour of participants and organisations across a series of Internet platforms and online behaviours that would also acknowledge my own interactions within the field of online public archaeology.

The two founders of Grounded Theory have taken different and conflicting paths in the developments of their theoretical approaches to Grounded Theory since their publication of *The Discovery of Grounded Theory* in 1967. Glaser’s (1978;

---

<sup>85</sup> Zotero is a browser-based referencing tool that allows the capture of screenshots, citations etc. through a simple one-click interface. website: <http://www.zotero.org/>

1992; 1998) methodology focusses on the “emergence” of theory from the data collected (Glaser 1992, 122) and what Glaser termed “theoretical sensitivity” (1978). The approach of Strauss (1987) and Strauss and Corbin (1990; 1997; 1998) is a more systematic approach to constant data comparison and conceptual description (Strauss & Corbin 1997; Strauss & Corbin 1998; Pickard 2013)

Grounded Theory is based on discovering concepts and relationship in raw data and then organizing these into an explanatory scheme, which occurs as a simultaneous process in the “data collection and analysis phases of the research” (Charmaz 1995, 28). When using the Grounded Theory methodology the researcher starts with a very basic framework of the research question and a non-linear approach, moving through data collection and analysis as an iterative process, guides the sampling methods and data collection activities (Pickard 2013, 182). This is because, when using Grounded Theory approach, the researcher should aim to be free of preconceptions and focused solely on discovery of processes and conditions as they emerge from the data (Charmaz 2006; Pickard 2013). Clearly, some tacit knowledge is required by the researcher to sense what is important within the data that is being scrutinised. An initial focus, rather than a hypothesis, is therefore inevitable but this should neither direct nor constrain the research process (Guba & Lincoln 1989; Gorman & Clayton 2005; Pickard 2013). Theory development and conceptualisations emerge from interactions with the evidence, and are refined as the data is iteratively examined and analysed and theory emerges at the end, not the beginning, of the study (Eisenhardt 1989; Pickard 2013).

The coding scheme used to analyse the data collected for this thesis was developed with the qualitative text analysis software Nvivo<sup>86</sup> and followed a Grounded Theory approach to data analysis (Glaser & Strauss 1967; Pickard 2013). Nvivo is a computer software analysis package developed by Qualitative Solutions and Research Pty Ltd, designed to handle qualitative data for research, and process, code and analyse data, including that collected from social media

---

<sup>86</sup> [http://www.qsrinternational.com/products\\_nvivo.aspx](http://www.qsrinternational.com/products_nvivo.aspx)

platforms (QSR International 2014). The data were collated and compared, grouped according to themes arising from the results, and these were further refined in an iterative process until no further refinement or comparison was possible. This then produced the qualitative summaries of the data results discussed throughout this thesis.

### **3.7 Scope and Discussion**

The data collection method for this research was chosen to elicit as much data as possible from people actively engaged and working in the production of publicly consumed content and dialogue in the archaeological sector. The aim of the data collection process was to gather descriptive, exploratory information and analyse these from a Grounded Theory perspective, rather than test hypotheses or create an explicit theory. However, it is important to note that there are limitations to the methods chosen to answer the research questions. The continued growth and interest in participatory media, driven by the factors outlined in Chapter 2.6, within the UK archaeological sector, creates an immediate capacity issue. During a period of time in which there is a steady adoption of social media and Internet technologies for public engagement, the use of online surveys can only capture qualitative data accurate at a fixed point in time, and policies and provision of digital public archaeology projects are subject to rapid change. The data collected on the number and type of digital projects in the UK, discussed in Chapter 5, were subject to rapid change, as websites changed URLs, organisations adopted other social media platforms, and platforms were abandoned or deleted.

Some of the issues with the data collection and processing methods for this thesis are not simply a result of sample difficulties or method of data capture. Twitter should be a particularly useful source of social media data, since there is a large archive of public tweets concerned with archaeology topics, news or events. However, it is only possible to access data that Twitter's "proprietary and frequently changing API will provide" (Burgess & Bruns 2012). It was my

original intention to use data from the Twitter feed using third-party applications that used the Twitter API during the period of the three surveys in 2011, 2012 and 2013, in order to collect and analyse tweets that included the terms “archaeology”, “public archaeology”, “archeology” (the US spelling) and “heritage”. In 2011, for the first survey, I had hoped to use information collected in the Web Ecology Project's 140 Kit dataset to analyse the use of these terms on the Twitter platform. The Web Ecology Project and the 140 Kit were developed from collaboration at the Center for Internet and Society at Harvard Law School and was “one of the very first research efforts into the cultural and political influence as expressed via Twitter” (Watters 2011). 140 Kit offered researchers access to its own datasets of Twitter 'scrapes' free of charge, and had collected, analysed and distributed 85 million Tweets according to their website (Web Ecology Project 2011). However, because of changes to the Twitter API from February 2011, users of 140 Kit were no longer permitted to export Twitter data for any purpose, even for non-profit academic research (Web Ecology Project 2011).

In the subsequent years, Twitter has announced frequent changes to their terms of service and restrictions to their API, which governs how third parties interact with Twitter's servers (McNamara 2013; Twitter 2014a). This restricted the ability of third party data collection sites, such as 140 Kit,<sup>87</sup> Twit Cleaner<sup>88</sup> or Twapperkeeper<sup>89</sup> to maintain web apps or redistribute content to researchers (McNamara 2013). The motivation behind Twitter's change of direction for their API may be related to their desire to maintain direct control of their data, and exploit this for commercial gain. The result of these frequent changes to the Twitter API rules limits further development of API-based third-party tools which support “consumer engagement activities... in order to boost the use of its own end-user interfaces” (Burgess & Brun 2012). Conversely, this limitation supports the development of “consumer analytics” and “business analytics” as well as “business engagement” tools, and focuses further on the commercial potential of

---

<sup>87</sup> <https://github.com/WebEcologyProject/140kit>

<sup>88</sup> <http://thetwitcleaner.com/blog/>

<sup>89</sup> <http://twapperkeeper.com/index.html>



the platform (Twitter 2014a). In order to access this information now, Twitter requires researchers instead to subscribe to one of three official data resellers, Datasift,<sup>90</sup> Gnip<sup>91</sup> or NTT DATA<sup>92</sup> (which concentrates on the Japanese market) (Twitter 2014b). Of the two officially sanctioned Twitter data resellers that have global coverage, both aggregate social media data from a number of social media platforms, which includes Twitter. No clear information is available on their websites regarding prices for access to their commercially available Twitter data feeds for academic users (Datasift 2014; Gnip 2014). In 2011, it was reported that Gnip's charges for the full feed of 100 per cent of data streams relating to specific search requests costs approximately \$2000 per month with a levy of \$0.10 per 1000 Tweets delivered (Warden 2011). As of January 2014, Datasift reports that their pricing starts at \$0.20 per unit of data, rising to \$3000 per month for their business plan, which allows unlimited access to the full Twitter data stream (Datasift 2014). As of January 2014, Gnip is less specific about their pricing, offering custom quotes depending on usage, with prices starting at \$500 (Gnip 2014). In February 2014, Twitter announced they were providing data grants for non-commercial research in a pilot project, which may make future access to these data easier for academics, although at the point of writing, further information on the future direction of this project was unavailable.<sup>93</sup>

In an attempt to examine the reach of the tweets sent as part of the hashtags #pubarch, #archaeology, #archeology and #heritage, I also explored the use of the third-party application TweetReach.<sup>94</sup> TweetReach allows users to “to analyse tweets about your hashtag, brand name or URL; get in-depth social analytics on reach, exposure, tweets and contributors” (TweetReach 2014). Essentially, the application measures the impact of tweets by analysing the number of Twitter accounts that discuss and retweet information (TweetReach 2014). However, after obtaining a quote for a historical analysis of these

---

<sup>90</sup> <http://datasift.com/>

<sup>91</sup> <http://gnip.com/>

<sup>92</sup> <http://www.nttdata.com/uk>

<sup>93</sup> <https://engineering.twitter.com/research/data-grants>

<sup>94</sup> <http://tweetreach.com/>

hashtags, for use at student rates, it was found to cost \$4999 per year per report (B Rowden 2013, pers. comm. 6 November). The prices for access to the official data resellers or for TweetReach puts access to the official Twitter stream out of the reach of most researchers and institutions and certainly beyond the scope of this research. As a result, the data sources for this research were necessarily restricted to those that were free to use and easy to access. These included published material that related to the subject within archaeology, project websites and associated accessible social media platforms, and unpublished data from the HLF, which was kindly shared with me on request.

The research area of this thesis would have been a good opportunity to use social network analysis tools to explore and visualise the phenomena of professional archaeological networks, discussed in Chapters 6 and 7. However, it was difficult to find training on how to use the software to create these social network visualisations, and I have limited programming experience and dyscalculia (a form of number dyslexia), so it was only in the final months of the write-up of this thesis that I began to explore the use of these technologies. Unfortunately, this was too late to be included in this doctoral research, although this is an interesting and valuable area for future exploration of the subject of digital public archaeology.

Relevant findings and analysis from the entire series of surveys and questionnaires undertaken for this have been woven throughout the subsequent chapters. An archive of the full results of the surveys, email questionnaires, and spreadsheets containing the quantitative data collection has been provided in the appendices A to L that can be found on the accompanying CD-ROM. Chapter 4, “The Impact of Digital Inequalities on Public Archaeology Online”, presents a selection of evidence, using the research methods outlined in this chapter, as well as those from a number of other agencies and organisations. This chapter illustrates the impact of Internet and social media platforms for UK archaeological organisations, the issues of digital exclusion and digital literacies that are relevant for public archaeology projects, and the impact these issues

have on the development of online methods of communication about archaeological subjects.

## CHAPTER 4: THE IMPACT OF DIGITAL INEQUALITIES ON PUBLIC ARCHAEOLOGY ONLINE

...how ready is our collections information for the (information) super highway? I suspect the answer is that a lot of it is not ready for the mud track or even the occasionally trodden grassy path! (Schadla-Hall 1996).

This chapter explores the impact of inequalities in access and use of Internet and social media platforms in the UK. Section 4.1 discusses the impact of growth of the Internet from the 1970s on society and culture, and the evolution from what has been termed Web 1.0 to Web 2.0. Section 4.2 examines the potential application of participatory Internet technologies for public archaeology. Section 4.3 discusses the concept of techno-scepticism and techno-utopianism relating to public archaeology online. It will critique the claims for the transformative power of the Internet for public archaeology (McDavid 2004; Newman 2009; Richardson 2009; Colwell-Chanthaphonh *et al* 2011). Section 4.4 considers the importance of understanding the effect of these existing inequalities on the participants and audience for UK archaeological organisations that undertake public archaeology projects online. Section 4.5 examines the issues of information retrieval and the impact of search engines. Section 4.6 discusses the demographics of Internet use in the UK, and Section 4.7 examines the demographic profile of the audiences for archaeological information in the UK. Section 4.8 discusses the impact of trolling and online abuse, and Section 4.9 considers dispositional barriers to online participation. This chapter will examine the issues of digital exclusion that are specific to archaeology and, most importantly, impact on the development of an inclusive, stakeholder-driven public archaeology practice using online platforms and methods of communication. It will include the results from a series of online surveys and netnographic observations undertaken during this research and outlined in Chapter 3. I will explore the effects of wider issues related to network access, educational and Information and Communications Technology (ICT) literacies

and inequalities in the digital world, and discuss how these issues can and do have serious impact on the practice of a participatory public archaeology through online engagement.

#### **4.1 The Growth of Internet Technologies**

In the first decade of the 21st century, Internet and mobile technologies underwent many important technical, social and cultural developments and became culturally normalised, routine and socially embedded in Western societies (Lievrouw 2004; Haddon 2006; Silverstone 2006). The technological developments of the past forty years have fundamentally refocused the significance of digital communication in everyday social, cultural, economic and political life (Lievrouw 2012; Elton & Carey 2013). There has also been a critical cultural shift in the study and understanding of how and where we use the Internet, and what we use it for (Lievrouw 2012; Thumim 2012). The greatest impact of these technological developments for communications has been in the field of social relationships and social networking. The ongoing development of mass communications through Internet technologies has integrated both different modalities of communication (reciprocal interaction, broadcasting, individual reference-searching, group discussion, person/machine interaction) and different kinds of content (text, video, images, and audio) into a single medium (Rhinegold 1993; Turkle 1997; Lievrouw & Livingstone 2002; Shirky 2008; Thumim 2012).

Communal (if not community) activities and interactions have been an important development since even the earliest days of the Internet, from ARPANET to Usenet, email and social media (Naughton 2000; Banks 2008; Elton & Carey 2013). The critical shift in the use of these technologies can be seen in the evolution from what have been termed Web 1.0 technologies to Web 2.0 platforms and the accompanying social and cultural attitudes (DiNucci 1999; O'Reilly 2005; Flew 2008). Technologies and websites labelled as 'Web 1.0' are, and have been, typically dominated by the presentation of static web pages

containing hyperlinked content which are provided, curated and maintained by the website owner/owners, a 'top-down' approach to communication (O'Reilly 2005; Cormode & Krishnamurthy 2008; Flew 2008). These websites were created to facilitate information seeking, the consumption of site content and support a more passive involvement with the web (Cormode & Krishnamurthy 2008). The next stage of technical development to 'Web 2.0' and what have been termed social media or new media has been created through the development of an Internet of technologies created to enable community-building, participation, and sharing and information creation (O'Reilly 2005; Flew 2008). These technical developments have been supported by the growing ubiquity of mobile smartphones, tablet devices and laptops alongside public access to computers in libraries and other communal facilities, mobile and wireless technologies, as well as fast broadband connections in both the home and workplace.

By supporting and encouraging participation and community activities online, the use and availability of these Web 2.0 technologies seemed destined to transform the nature of access to, and exchange of, information (Barlow 1996; Surowiecki 2005; O'Reilly 2005; Brabham 2008; Oinas-Kukkonen 2008; Shirky 2008). The rapid evolution of digital technologies appeared to offer hope of eliminating inequalities in participation in society, politics and the economy, and further share the benefits of crowd-sourcing and crowd-funding, through the ability to harness the collective intelligence of the online 'crowd' - or at least their bank balance (Surowiecki 2005; DigVentures 2014). The rise of participatory media and instant communication through social media platforms would also have a deep and enduring effect on the conduct of politics and journalism, and a real and imagined impact on society and culture. If we were to believe the media hyperbole, real-time international communications by ordinary people, through social media platforms, were capable of bringing down rogue governments, exposing political corruption and ending state-sanctioned violence in North Africa, the Middle East and elsewhere (Ambinder 2009; Kaminsky 2009; Eltahawy 2010; Zia-Ebrahimi 2010; Bennett & Segerburg 2011; Orr 2011; Bennett & Segerburg 2012). The Internet of Web 2.0 technologies

have created both opportunities and space for discussion, comment and action on political events irrespective of geographic location or social status, and have facilitated interactions between institutions and the public. The versatility of these digital media may eventually render plausible the various popular claims that these technologies can and will be implicated in many kinds of social and cultural change, perhaps more deeply than the advent of television or radio, or even the printing press five hundred years ago (Dimaggio *et al* 2001; O'Reilly 2005; Shirky 2008; Coleman & Ross 2010).

## **4.2 The Potential Application of Internet Technologies in Public Archaeology**

Digital technologies appear to offer archaeological communities, individuals and organisations in the UK the potential to access, create and share a wide variety of previously privileged information. Although public participation has been integrated into UK planning policy and the planning process since the 1969 publication of the *Sheffington Committee on Public Participation in Planning* (Warburton 1997), there has been an increase in visible political commitment and statutory support for public involvement and the inclusion of lay people and communities in decisions on planning, sustainable development and local heritage since the coalition government took power in 2010 (Department for Communities and Local Government 2012). The wider impacts of public participation in heritage issues have both economic and social benefits, as previously discussed in Chapter 2. In a political and social culture which has nurtured opportunities for citizen participation in many public arenas for decades, there has been a growing need, and often a mandatory requirement of grant-funded project evaluation or membership of professional organisations, for the digital dissemination of information, publications, educational resources, datasets, and images (Archaeological Data Service 2010; Heritage Lottery Fund 2012; Institute of Archaeologists 2012a). This need is often as a result of compulsory requirements for grant funding and impact assessment, and an

increasing emphasis within these public bodies and professional archaeological organisations on being visibly accountable to the public, enabled through the use of Internet technologies.

Those archaeologists that have written from a 'techno-utopian' perspective (McDavid 1997; McDavid 1998; Wolle & Tringham 2000; McDavid 2004; Richardson 2009; Morgan & Eve 2012; Bauer 2013) have claimed that these technologies are able to foster multi-vocality in the support of new dialogue and understanding between the expert and the public in archaeology. These authors have argued that these technologies allow both the expert and non-professional to present and encourage new interpretations, establish and develop relationships through web-based communications and support representations of community-constructed archaeological knowledge whilst subverting the creation and sharing of archaeological data from structural control, and redistributing access to cultural resources. Yet, ironically, there have been few critical perspectives on the use of these technologies, not least in the field of archaeology, beyond critique of inequalities related to access to information technologies and academic resources for analysis and fieldwork (Hodder 1999; Chapman 2003) and specifically public archaeology, since the first academic approach to engagement with this subject in the late 1990s (McDavid 1997; McDavid 1998; McDavid 2004).

From the perspective of social inequalities, the rise of social media technologies initially appeared to offer communities and individuals the potential to improve the quality of their lives and expand their social networks, regardless of identity, location or education. Instead, this chapter will argue that technological utopianism has no place in public archaeology without an understanding of the audience for digital engagement. This chapter will argue that the impact of these techno-utopian ideals on the practice and perception of new methods for 'doing' public archaeology has created a number of distractions for those archaeological practitioners who wish to engage with the wider public through digital technologies. The digital inequalities outlined here are vital for all community-facing practitioners to consider, within or outside archaeology, and not least



when carried out under the umbrella of activities relating to co-curation, multi-vocality, or widening participation commitments, or by means of grant-funded projects to promote inclusive practice in public engagement with heritage issues.

### 4.3 The Internet and Techno-Utopianism

The perceptions of Internet use, digital communications and discourses about ‘new’ and ‘social’ media are slowly shifting from an “emphasis on possibility, novelty, adaptability and openness toward current preoccupations with risk, conflict, vulnerability, routinization, stability, and control” (Lievrout 2012, 617). Ascribing revolutionary, democratising and equalising qualities to the Internet is considered by many to be a misleading ideology and this has been called a useful smokescreen for “informational capitalism”, where “individual users can freely copy and distribute digitised corporate content, and corporations can freely copy and distribute digitised user-generated content” (O’Neil 2009, 23). At the most extreme end of this ‘techno-scepticism’, it has been argued that Web 2.0 technologies have smothered individual creativity at the expense of unpaid digital ‘serfs’ who upload their content and creative products for free (Lanier 2006; Lanier 2010). Consumers of Internet technologies are encouraged, and even expected, to provide publicly accessible content - ranging from citizen journalism via blogs, sharing films and photos via YouTube<sup>95</sup> or Flickr,<sup>96</sup> to updating personal information such as their geographic location via Foursquare,<sup>97</sup> Twitter<sup>98</sup> or Facebook.<sup>99</sup> Consumer-participants are encouraged to make ample personal information available to various Web 2.0 platform owners on a daily basis, which can then be used to tailor advertising and attract advertising revenue (Ritzer & Jurgenson 2010; Fuchs 2011; Lovnik 2011; Fuchs 2013). Consumers of social media keen to extend their interpersonal communications and respond to their social network can be used for “advancing

---

<sup>95</sup> <http://www.youtube.com/>

<sup>96</sup> <http://www.flickr.com/>

<sup>97</sup> <https://foursquare.com/>

<sup>98</sup> <https://twitter.com/>

<sup>99</sup> <https://www.facebook.com/>

the logic of capital accumulation” (O’Neil 2009, 21). This is often with the willing cooperation and endorsement of these consumers/producers/participants/audiences (Allen 2008, 7).

The powerful central argument of Morozov’s (2011) polemic *The Internet Delusion* is that Internet technologies are not pro-democracy; they are not inherently emancipatory; they do not create equality by the simple fact of their existence and availability. As Morozov has argued, a combination of utopianism and reluctance to delve deeper into the social mechanics behind Internet technologies have prevented us from shining a light into these darker corners of Internet technologies and critically assessing their impact on all aspects of culture and society. Although digital and mobile technologies do offer potential benefits and are actively used by billions of people worldwide, the various political, commercial and technical subtleties of these platforms and interactions do not necessarily act to promote the public interest. The Internet is dominated by capitalist, political, and commercial interests (Introna & Nissenbaum 2000; Segev 2008; Fuchs 2013). The appropriation of the Internet by commercial forces has re-territorialised potentially subversive anti-market user-generated content (Castells 1996; Petersen 2008; Fuchs 2013).

Archaeological organisations with staff that can write code and access their own server space can create, amend, adjust and generate truly original content. For example, the PAS and Digital Digging<sup>100</sup> are able to undertake their own digital projects led by ICT-experienced staff. Those organisations and individuals who cannot do this must instead manage their own content on platforms and in formats created and maintained by other people and organisations. The benefits of this information landscape are not available to all, and the effect of these technologies for promoting equality in society may indeed seem to be more of a “romantic's dream” (Juel 2012, 767). Internet and communication technologies also perpetuate social divides and generate and actively promote hierarchy and inequalities, and this is no less apparent than within the use of social and

---

<sup>100</sup> <http://digitaldigging.net/>

participatory media (Cammaerts 2008; O’Neil 2009; O’Neil 2010; Witte & Mannon 2010; Fuchs 2013).

#### **4.4 Digital Exclusion and Digital Divides**

The Internet itself, and the means through and by which people use it, has been the source of much debate about the implications of the Internet for social inequality (Hargittai 2002; Mossberger *et al* 2003; Nielsen 2006; Hargittai 2008; Hargittai & Hinnant 2008; Hargittai & Walejko 2008; Lewandowski 2008b; Mossberger *et al* 2008; Dobransky & Hargittai 2012; Oxford Internet Institute 2012; Fuchs 2013). The work of Coleman and Ross (2010) has re-emphasised the point made by sociologist Castells, who stated that the significance of the Internet is such that “exclusion from these networks is one of the most damaging forms of exclusion in our society and in our culture” (2001, 3). Although the democratisation of online communication and production, thanks to social media platforms and tools such as blogs and wikis, has stretched the boundaries of participation and belonging, the Internet remains a place for those who have access and know how to use it to the best effect. In the last quarter of 2012, over seven million people in the UK were still without an Internet connection at home (Office for National Statistics 2012b). The greatest benefits of the rapid growth of Internet and mobile technologies are felt by those rich in technical knowledge and access to stable Internet connections and who can exploit the economic, communicative and networking opportunities made available. Any analysis of digital media communications needs to consider the structural and social context of these media and the affordances that these technologies offer in real life as well as online (Christensen 2011b, 156). What people can and cannot find, use or do on the Internet dictates what these technologies mean to them and what economic and social capital affordances these technologies deliver.

Although the levels of digital exclusion have been in steady decline over the past decade, the number of people who are digitally excluded remains a significant concern (Champion for Digital Inclusion 2009; Clark 2012; Hargittai & Hsieh

2013). I would argue that any assumptions that the so-called digital divide is a simple matter of access to a computer with an Internet connection (or lack thereof) need careful unpicking - the inequalities propagated by the Internet are far more subtle and nuanced than a simple distinction between those that have access and those that do not. The inability to use the Internet results in exclusion from, for example, social relationships, the pursuit of leisure interests online, but most importantly it can be the cause of exclusion from participation in society, digital illiteracy and can lead to economic disadvantage. The digital divide is not just a case of not being on the Internet. As Mossberger *et al* (2003, 2) have made clear, to understand the so-called “digital divide,” we must first recognise the multi-dimensional aspects of technological exclusions that encompass “an access divide, a skills divide, an economic opportunity divide, and a democratic divide”.

The Internet itself is distorted in favour of those who speak a majority language used by the principal Internet platform and social media organisations. It places at an advantage those organisations that are wealthy in technical or economic resources through the mechanism of biased search engines. It benefits those members of the public who understand how to contribute to, and use, social media; those who are fluent in the unspoken rules of behaviour in online communities (both as communities of practice and of interest); those who know where and how to search for information efficiently; those who have access to information behind pay-walls; or those with an official academic identity that allows privileged access to the benefits of an institutional affiliation - digital libraries and journal subscriptions. Those who know how to use certain types of software; how to troubleshoot technical problems; how to protect personal privacy and remain safe online, and how to ascertain online credibility are all technically privileged. Those organisations and individuals in possession of this knowledge capital are also placed at an advantage by virtue of their ability to leverage these Internet technologies in promoting their own public archaeology activities, commercial expertise and scholarly opinions. The subject of archaeological ‘authority’ and its mediation online is explored further in Chapter 8.

For the archaeological sector, interest in exploiting the Internet and mobile communication platforms together with the wider issues and implications of the social inequalities inherent in Internet technologies need careful consideration, especially in the context of those projects funded by the HLF and other heritage grant-awarding bodies that expect evidence for widening participation and impact. These issues and barriers include: inequalities of access to technology including hardware, software and connection speed; variability in ICT skills, technical ability and confidence with technology; the ability to access institutional and social support networks online; and the freedom and capability to use Internet technologies on demand. There are many subtle yet important factors at work that create digital divides and, as Witte & Mannon (2010, 5) and the UK Department for Business Innovation and Skills *Skills for Life Survey* (2011, 4) have highlighted, there are also significant differences in digital literacies and Internet competencies even amongst populations with access to computers. According to this research, one in six adults have literacy and numeracy levels that are below Entry Level 3 (equivalent to the UK national curriculum attainment at aged 9-11 (ibid, 20; National Institute of Adult Continuing Education 2011). The impact of these technologies is such that a lack of ICT skills or Internet access will not just affect the reception and consumption of information - opportunities for knowledge creation and participation are also affected (Anderson 2007).

#### **4.4.1 Internet Access: Connectivity**

Digital inequalities are compounded by a number of other factors. The ability to access the Internet will depend on the type of device and location of use: work-based desktop PC, a tablet device or a laptop on the move, and whether one can access a reliable mobile broadband connection through a smartphone. An important factor in considering restraints on end-user activity is how fast and reliable their broadband speed is at home or work, the reliability of Wi-Fi reception in multiple locations and whether mobile broadband signals are steady

and consistent in the required location. According to Ofcom (Ofcom 2012a, 21), consumers with slower broadband speeds are being deterred from using services that require high-volume data usage such as high-definition Internet TV or large file downloads, and some services cannot be accessed at all on slow connections, such as HD video streaming. Downloading large files, using online TV services or voice-over-IP services such as Skype,<sup>101</sup> could be unacceptably slow on these connections. For archaeological organisations using the full range of multi-media digital technologies, this information is important to evaluate in light of the potential audience and will impact on the level and extent of public participation.

The increasing penetration of smartphones across society is indicated by Ofcom's market research in early 2012 where 40 per cent of mobile users stated that they had accessed the Internet on their smartphone, implying that "there were 32.6 million subscribers accessing the Internet on their mobile devices" (2012b, 318). Currently in the UK there are two predominant types of mobile network, 2G and 3G, with high-speed 4G mobile services under development by Ofcom and which are currently only available in selective cities (BBC 2013a). 2G networks use GSM technology and provide voice calls, messaging and low-speed data services whereas 3G networks can provide higher-speed data services. 4G services were launched in 2012 and provide increased capacity and speed for data services in those areas where infrastructure exists (Ofcom 2012a, 27).

Research by the BBC in 2013 indicated that 94 per cent of UK adults owned a mobile phone and that the ownership of smartphones is increasing (BBC 2013b). As the method through which people access the Internet is moving towards mobile, the ability to access websites through mobile devices will depend on signal strength, data transfer times and the affordability of access to data plans. With regards to broadband, the present UK government is committed to ensuring that by 2015 almost all premises in the UK will have access to a basic broadband Internet connection at 2Mbit/s through the Universal Service Commitment (Ofcom 2012, 1). According to this data, super-fast broadband is now available

---

<sup>101</sup> <http://www.skype.com/en/>

from commercial providers to 65 per cent of UK premises, although only one in ten broadband connections are currently using super-fast broadband and 19 per cent of premises in rural areas have access at all (Ofcom 2012a, 2). The average broadband speed now stands at 12.7Mbit/s, an increase of 69 per cent from the 7.5Mbit/s recorded in 2011 (Ofcom 2012a, 2).

Ofcom estimates that 12.8 per cent of the UK by land area and 0.3 per cent of premises are in locations with a total lack of 2G mobile coverage, and 6.1 per cent of premises, are in areas where the 3G connection depends on the mobile phone network service operator - although 24.3 per cent of UK by land area is without 3G coverage at all (Ofcom 2012b). As the Department for Culture, Media and Sport (DCMS) states, these “not-spots” are generally in rural areas where it is not commercially viable for mobile network operators to provide their services due to low population or difficulty placing communications infrastructure (Department for Culture, Media and Sport 2012b). BT reports that it will have access to fibre broadband available in two-thirds of homes and businesses by 2015, but not for the final third that live in rural areas “that are hard-to-reach, or simply not commercially viable with private funding alone” (BT 2014). The UK coalition government has committed £530 million towards capital expenditure costs through its Mobile Infrastructure Project to improve mobile coverage in these areas (Department for Culture, Media and Sport 2013). It remains to be seen whether this level of funding commitment remains in place, since further austerity measures within government departments are due to continue at least through to 2016 (HM Treasury 2013) and there have been accusations of central government mismanagement of the funding allocation process for this roll-out by both local government and telecoms companies in the UK.<sup>102</sup>

---

<sup>102</sup> <http://www.theguardian.com/technology/2013/sep/26/digital-britain-government-accused-rural-broadband>

#### 4.4.2 Case Study: The Cosmeston Archaeology Project

The issue of access to an Internet connection during fieldwork had significant impact during the Cosmeston Archaeology Project, an excavation at the Cosmeston Medieval Village in the Vale of Glamorgan organised and run by the University of Cardiff during the summer of 2011. As part of the university's public engagement programme, a number of undergraduate and postgraduate students from the Archaeology department took part in the *Cosmeston Digital Project* (Fig. 4.1).<sup>103</sup> The digital project aimed to support the physical outreach programme with a comprehensive digital presence using a daily blog, site films and photos tracking the excavation as it developed, and regular updates through Twitter and Facebook with the expectation that this would engage new audiences beyond the physical visitors to the site. Unfortunately for the project, there was no Internet access at Cosmeston Medieval Village and so regular updates to the site blog and other social media platforms had to be created on a laptop, saved to a USB stick and then uploaded to the relevant platform off-site at the university every evening. This solution to the lack of Internet connection allowed the excavation team to interact and post their thoughts and interpretations, with the team reporting that this compromise worked well. However, this situation lost the spontaneity of posting on an *ad hoc* basis whenever things of interest were uncovered. It also limited the ability of the site staff and members of the public to engage in real-time dialogue and interact through social media (Cosmeston Archaeology 2011).

---

<sup>103</sup> <http://cosmestonarchaeology.co.uk/>





*Fig. 4.1: Screenshot of the Cosmeston Archaeology Project website. 30 January 2014. Retrieved from: <http://cosmestonarchaeology.co.uk/>*

During October 2012 I undertook an online survey with archaeological organisations in the UK to examine their strategies, opinions and experiences of barriers to public engagement with their public archaeology projects and from the perspective of their provision rather than public consumption (the full set of survey questions and results can be found in Appendix F). Full details of the format and scope of data collection for these surveys can be found in Chapter 3. The results of the survey suggest that the issue of connection and mobile coverage has a significant impact on a number of organisations undertaking public archaeology projects throughout the UK, especially those with a wide catchment area that includes rural areas. The results indicated that 44 per cent of the 209 organisations that responded had good broadband connection speeds in the areas where they undertake outreach work; 22 per cent had good 3G mobile coverage although 16 per cent of the respondents did not know; 8 per cent were in areas with poor broadband speeds; and 11 per cent had poor mobile broadband coverage.

Most organisations work in areas where the quality and stability of broadband and mobile connections vary significantly - urban contexts were reported to be

generally very good and rural (especially upland) areas generally quite poorly covered. A couple of the respondents mentioned that this would create difficulties in situations where work took place across a large geographical area with mixed connectivity, such as North or West Wales, and that signal strength varied even within the small radius of working sites. This was not always in areas conducive to the use of digital technologies, especially if the strongest and most reliable signal was in a muddy, inaccessible field opposite the actual site of archaeological activity. The price of data connection through a mobile broadband connection was a significant barrier to use since data charges to upload film and photographs are potentially costly. This is a significant barrier for “trowel’s edge” (Hodder 1999, 83) public engagement if project budgets are tight, an important consideration for almost all archaeological organisations especially given the impact of the economic recession on the sector (Aitchison & Macqueen 2013; Institute of Historic Building Conservation 2013).

#### **4.4.3 Challenging Digital Inequalities in the UK**

Although the UK government has plans in place to increase public access to high-speed broadband, there are a number of important digital inequalities that still remain. Through a lack of access to equipment, socio-economic inequalities, lack of skills, geographical location or poor infrastructure, a significant proportion of the UK population still does not have the ability to access the Internet (Office for National Statistics 2012a). In the UK, however, there is an increasing expectation that the general public have access to, and use of, Internet technologies on a regular basis. The ‘Universal Jobmatch’ scheme, launched in January 2013 by the coalition government’s Work and Pensions Secretary, has made use of the Internet compulsory for job searches by all unemployed Job Seekers Allowance claimants, although there has been little discussion about the impact of digital exclusion and public library closures on the ability of the clientele to access the service (Rawlinson 2012; Wintour 2012). Age Concern UK have reported that there is a geographical divide between over-65s accessing the

Internet - with 63 per cent of over-65s accessing the Internet in Surrey, yet only 27.7 per cent in Tyne and Wear, an area of relative deprivation. The report states that “poorer people, those living alone and those in relatively poor health” were the least likely to access the Internet (BBC 2013b). While the use of Internet technologies to access public and private services becomes common currency in society, and their use appears to become the default option for delivering information, the Internet is reproducing the inequalities of wider society and creating, rather than challenging, its own form of social stratification and exclusion (Ritzer & Jurgenson 2010; Witte & Manon 2010; Lovnik 2011; Fuchs 2013). Without establishing some understanding of how to use these technologies, how to access relevant information and then manage that information, it is becoming impossible to participate fully and effectively in modern society, especially with the rise of e-government and the financial advantages of accessing online utilities or consumer goods and services (Witte & Manon 2010; Fuchs 2011; Lovnik 2011; Go ON UK 2012; Fuchs 2013).

To challenge this issue, there have been numerous initiatives in the UK to provide help for people to access online services, with projects organised both centrally by the government and by private organisations and charities both regionally and locally. The UK Online Centres Foundation<sup>104</sup> coordinates a network of community hubs with free or low-cost Internet access in libraries, community centres, housing associations, training organisations and even public houses across the UK (UK Online Centres 2012). Age Concern UK organises dedicated digital inclusion campaigns for older people, including ‘*Silver Surfer*’ events, training courses and dedicated ‘*I-tea and Biscuits*’ and ‘*MyFriendsOnline*’ weeks (Age Concern 2012). The charity Go ON UK<sup>105</sup> aims to “make the UK the most digitally capable nation in the world”. The project aims to do this by tackling the issues faced by the 16 million individuals in the UK without basic online skills, defined as the “basic knowledge to send an email, use Google search or buy their shopping online” and to develop ICT skills within organisations, businesses and charities who do not yet have a digital presence or

---

<sup>104</sup> <http://www.ukonlinecentres.com/>

<sup>105</sup> <http://www.go-on.co.uk/>

who do not yet sell their goods online (Go ON UK 2012). There is a great deal of potential for public archaeology projects to link to this type of activity and approach the issue of community cohesion, community heritage and lifelong learning. The Adopt-a-Monument scheme<sup>106</sup> in Scotland has been successful in piloting projects that combine ICT training with the creation of digital heritage projects (C Jones pers. comm. 4 September 2013).

The issue of digital skills is significant for any public archaeology project preparing to adopt digital platforms for communications. The lack of training in basic IT skills was highlighted in a recent Office for National Statistics Statistical Bulletin (Office for National Statistics 2012a). The 2012 survey of Internet use in the UK clearly demonstrated that public confidence with ICT was significantly low even in regular users. 21 per cent of Internet users, for example, said that their current ICT skills were so poor that they couldn't protect themselves online from a virus or keep their data secure. In 2012 there were 21 million households with Internet access representing 80 per cent of the UK population. However, 5.2 million people reported that they were without an Internet connection and 54 per cent of these did not feel that they needed it. One in five, or 21 per cent, reported that a lack of digital literacy was their biggest barrier to Internet use and the costs of equipment and access to connection were barriers for 15 per cent and 14 per cent of households respectively. Concerns over privacy and security were barriers for 4 per cent of the respondents and this will be explored further below. The impact of local government cuts to public library services, which have been the focused point of provision for free or low-cost Internet access to the digitally disadvantaged, is an issue that also needs some consideration since it has impacts for widening participation in digital public archaeology projects. The public library service was instrumental in the launch of the People's Network<sup>107</sup> project in 2000 which aimed to link every UK-based public library to the Internet, provide universal access, improve take-up of digital technologies among the digitally and socially excluded and support lifelong learning (Big Lottery Fund 2004). A central component of the implementation of

---

<sup>106</sup> <http://www.archaeologyscotland.co.uk/index.php?q=node/43>

<sup>107</sup> <http://www.peoplesnetwork.gov.uk/>

this project was the rollout of information and communications technology training for paid staff in order for them to support the provision of computer-based training to the general public (King *et al* 2006).

A divide has also emerged between those who are able to access and use the Internet consistently (i.e. have a computer at home or access one regularly at work) and those who use the Internet intermittently (i.e. have access at school, occasionally at work or through public access in libraries or Internet cafes) (Witte & Mannon 2010, 49). However, as access to smartphones is increasing, perhaps this access divide will contract. These significant differences and resulting inequalities reflect wider societal nuances of demographic and socio-economic status. The complexity of these social, educational and demographic inequalities is further deepened by micro-differences of access and use. Research by Clark (2012) suggests that the movement to volunteer-led community libraries or closure of libraries outright (since the implementation of austerity measures by local authorities from 2010) has resulted in dwindling access to local, accessible and technically supported library ICT services alongside a lack of consistent ICT skills amongst volunteer staff running these new-model community-led library services. This will impact local libraries to different degrees, but this does mean that affected libraries will be unable to provide suitable ICT support for their local communities. Although digital access will not be a significant issue where free public access to computers is maintained, the ability of volunteers to support the public with their digital skills is a worrying side effect of budgetary cuts to local services and one that will impact the participation of lower socio-economic groups in a range of activities in the long term, including public archaeology online. There are two issues developing: 1) general Internet access, and 2) driving Internet users to public archaeology websites and social media platforms. Since public archaeology is competing with everything else available online, promoting online access to it and building public awareness that there is content to be found, are significant issues for the archaeological sector to address.

## 4.5 Information Retrieval and the Impact of ‘Search’

Information retrieval is the key to the successful use of the Internet as a learning tool and is one of the most common activities undertaken online (Haythornthwaite 2001; Zickuhr & Smith 2012). The subject of information literacy will be further explored in Chapter 8.4 with a discussion of the intersection of information-seeking abilities and behaviour, and an understanding of how to discern authoritative archaeological information on the Internet. A 2011 study by the Australia Institute demonstrated that only 15 per cent of search engine users looked beyond the first page of search results and that 37 per cent of users were unaware that search engines display paid-for advertising (Fear & Denniss 2011,3). Without critical thinking, problem-solving skills or some knowledge of how to use keywords and Boolean operators, users are less likely to find more esoteric, less popular, smaller websites, including those that are not created by technically efficient professionals.

Research has also documented that differences in skills relating to the informed use of Internet technologies are related to socio-demographic factors (Bonfadelli 2002; Wareham *et al* 2004; Hargittai & Hinnant 2008; Dobransky & Hargittai 2012) and the 2002 iteration of the Web Use Project<sup>108</sup> demonstrated that the ability to retrieve information efficiently and successfully varies according to demographics and topic-specific information-seeking skills (Hargittai 2002; Jansen & Spink 2006). Research has also shown that only one per cent of the public use the advanced search features available through search engines (Steinberg 2004). Novice web users, lacking familiarity with search engines, tend to weight hierarchical search engine results with relevance, quality and authority at face value rather than critically examining the search results, since less popular sites are likely to have lower prominence in rankings - and lower rankings would suggest lower levels of expert knowledge authority to the casual visitor (Hsieh-Yee 1993; Hölscher & Strube 2000; Jenkins *et al* 2003; Nunberg 2003; Lovnik 2011, Fuchs 2013).

---

<sup>108</sup> <http://webuse.org/>

The use of search engines supports information retrieval through a series of complex and secret algorithms (which are regularly updated) that account for the content of the webpages, the web page links and popularity of the searches by previous Internet users (Morris *et al* 2010; Levene 2011; Balabantaray *et al* 2013). These search engines have gained ubiquity by “producing, organizing, distributing, customizing and manipulating online information” (Segev 2008). Whilst these search engines have made information retrieval simple, powerful and efficient, research has shown that they are frequently unable to access the so-called “invisible web” (Devine & Egger-Sider 2004, 265) or deep web (Bergman 2000; Madhavan *et al* 2006; Madhavan *et al* 2008; Wright 2008; Balakrishnan *et al* 2013) which includes material found in databases and password-protected subscription-only content, giving access to material such as libraries, databases and journal subscriptions (Bergman 2001; He *et al* 2007; Lewandowski & Mayr 2007; Segev 2008; Seyedarabi 2011). This deep or invisible web can often only be accessed if the user has an awareness of specialist search engines or academic or institutional affiliations to access journal or library subscriptions - the impact of which has been previously outlined in Chapter 2.5. There are a number of challenges for the average Internet user in which the use of a search engine raises issues of inequality - successful use of a search engine requires the ability to successfully filter the information retrieved, and research into information-seeking behaviour on the Internet suggests that familiarity with the use of information technologies, and technical skills with Internet platforms, can positively influence the range and type of information retrieved (Cothey 2002; Hargittai 2002).

There are also implicit difficulties for users of search engines who want to search with terminologies and languages other than English (Lewandowski 2008a; Lewandowski 2008b; Hochstotter & Koch 2009). Users who experience the Internet through search engines are more likely to use large, popular websites at the expense of smaller, less well-known sites created and run by non-professionals (Introna & Nissenbaum 2000; Dobransky & Hargittai 2012). Alongside the difficulties outlined above, the challenge of information overload

in the digital age is a growing phenomenon whereby useful data is obscured or mixed into irrelevant or distracting information, and searching for and retrieving useful data can become stressful (Bawden & Robinson 2009; Denning 2006; Koski 2001; Zeldes 2009; Rogers 2012; Weinburger 2012). Furthermore, there is a vast and growing array of archaeological information sources, search engine optimisation variables (Boutet & Quoniam 2012; Killoran 2013; Moreno & Martinez 2013), and a corresponding variability in perceptions of trustworthiness, archaeological authority and information veracity. These issues will be further explored in Chapter 8.

#### **4.6 Demographics and Internet Use in the UK**

The impact of demographics on digital technology adoption has been explored extensively in the academic literature (for example: Hargittai & Hinnant 2008; Watkins 2009; Boyd 2011; Dobransky & Hargittai 2012). Both the 2011 Oxford Internet Survey (Dutton & Blank 2011) and the Office of National Statistics Statistical Bulletin for 2012 (Office for National Statistics 2012a) have documented the significance of the relationship between a person's age and Internet use. In both of these surveys, the majority of adults in the UK over the age of 16 reported that they accessed the Internet on a daily basis and had regular online access at home or through their workplace. This distribution of Internet use is most probably related to those adults being of working age. While 82 per cent of adults aged 16 to 24, and 63 per cent of those aged 55 to 64 used a computer every day, this was only common amongst 29 per cent of those aged 65 and over, who are more likely to be retired or ill, and therefore not in a workplace (Office of National Statistics 2012a). The Oxford Internet Survey also documented that the elderly, the retired and the poorly educated tend to be least likely to use the Internet. The survey noted that these groups are the most fearful of technology "breaking" or "failing when they need it most" (Dutton & Blank 2011, 15), a concern clearly related to a lack of skills and confidence in using Internet technologies.



Internationally, as well as in the UK, there is a clear correlation between income, educational achievement and Internet use, and this has been reflected in numerous research reports (Bonfadelli 2002; Hargittai 2002; Jansen & Spink 2006; Hargittai & Hinnant 2008; Dobransky & Hargittai 2012). In the UK, 45 per cent of the population with household incomes of less than £12,500 per year had not used the Internet before, and 61 per cent of the British population without any educational qualifications had never used the Internet (Oxford Internet Institute 2012). Research by the University and College Union in 2011 (UCU 2011) revealed that one in nine adults of working age (16-64) had no qualifications.

The Office of National Statistics data (2012a) regarding age and Internet use are especially revealing for those interested in the potential reach and impact of public archaeology projects online. The demographic profile of public interest in archaeology, as seen from the profile of membership of the voluntary archaeology sector, and the public audience for archaeological media, is an important factor to consider for the probability of public participation. Age profiles and other demographic information from the UK voluntary archaeology sector have been explored most recently in the 2010 CBA community archaeology report (CBA 2010). The audience research for archaeological television programming, commissioned by the CBA and EH in 2006 (Piccini 2006; Piccini 2010), highlighted some significant points regarding the demographic profile of the archaeological audience for television media. This is an area that deserves future research. According to the 2010 CBA report, the average age group of the voluntary sector in community archaeology in the UK is 55 and over. This could be a contributing factor to a slower uptake of online archaeology projects, especially those using participatory media platforms, by volunteer groups and organisations (i.e. the majority consumers of online public archaeology provided by professional organisations) more so since information about public archaeology is a relatively 'niche' interest and may struggle to find the popular appeal of heritage television programming (Kulik 2006, 76).

## 4.7 Demographics of Participation in Online Archaeology

The CBA report (2010) documented that in the year of the data collection, 2009, the average age of a UK-based volunteer archaeological society member was around 55 years old, whilst the average age of a local history society member was 60 years old and over. The 2012 EH *'Heritage Counts'* report on volunteering in the heritage sector reported that 62.2 per cent of heritage volunteers were aged 45 or over (English Heritage 2012).

This lack of diversity and bias towards participation in archaeology and local history by a predominantly older age group does not appear to be unique in the voluntary sector since retirement offers more time and opportunities to actively volunteer. It is difficult to obtain accurate data on volunteer demographics in the UK,<sup>109</sup> and the data that is available are a number of years out of date. For example, volunteers working for environmental organisations in the natural outdoors are also weighted towards an older age group. The National Trust (2005) reported that 52 per cent of their volunteers were over 65 years of age, and a review of the Wildlife Trusts volunteers in 2002 found that 46 per cent were retired (Institute of Volunteering Research 2006). Volunteers in the museums, libraries and archives sector were found to be increasing in age. In 2001, 65 per cent of volunteers were aged 55 and over and research by the Institute of Volunteering Research in 2005 found that this was up to 72 per cent (Institute of Volunteering Research 2005). A report for Parliamentary social statistics from 2011<sup>110</sup> found that regular formal volunteering was most common among those aged 35 to 74 (26 per cent to 29 per cent) compared with 21 per cent of those aged 26 to 34 years and 21 per cent of those aged over 75 years.

Piccini's research on television audiences for heritage programming (which did not include programming related to antiques, such as the BBC programme *Antiques Roadshow*) documented that 72 per cent of the heritage television audience were over 45 years old (2010, 312). This research also demonstrated

---

<sup>109</sup> <http://www.theguardian.com/voluntary-sector-network/community-action-blog/2012/feb/10/changing-trends-volunteering>

<sup>110</sup> <http://www.parliament.uk/briefing-papers/sn05428.pdf>

that the section of the population who watched the most heritage television programming were 15 per cent less likely than the average adult viewer to have access to a computer at home and 17 per cent more likely not to use a computer at all. The over-representation of older age groups in both active involvement in community archaeology, the volunteer sector as a whole, and the passive audience for archaeological media, could be an important factor to consider in the popularity, potential reach and impact of Internet technologies, when organisations choose to exploit online communications for public engagement with archaeology. It will be interesting to see how organisational strategies will change as those younger people volunteer when they are older.

One of the participants in this research, who is an active member of a local archaeology society and regional heritage umbrella organisation, has stated; “my own society... has hardly any members under 55! That is not a typo! 55! It is crazy and unless the societies break away from their traditional once a month lecture formats, I cannot see how local interest in heritage can be maintained” (J Shepherd 2012, pers. comm., 12 October). My personal experience of establishing a community archaeology group in the Waveney area of Norfolk and Suffolk during early 2013 demonstrated the difficulties involved with using digital technologies, even with communications as simple and culturally acceptable as using email and a website as the main medium for sharing information (A MacDonald 2013, pers. comm., 15 December). In January 2014 there were 160 supporters registered on the WVCAG contact database and only eight people did not have an email address. However, over half of the membership reported to us that they did not check their emails on a regular basis and that they would find accessing information through the website too complicated. Many stated that they would prefer to have a paper newsletter and phone contact rather than use email and the group website (A MacDonald 2014, pers. comm., 18 January).

Voluntary archaeology groups and organisations throughout the UK are seeing a rise in the age of their members and, in places, a lack of consistent interest and involvement from younger (and therefore, possibly, more technically able)

participants (J Shepherd 2012, pers. comm., 12 October). The combined information from the data from the CBA survey, Piccini's work on television audiences for archaeology programming, and the information supplied by interview participants and survey respondents during the data collection for this thesis, suggest that the audience for online engagement may not yet be found in great quantity, and it will be interesting to see the long-term effects of aging on the technically comfortable generations as they become involved in the volunteer archaeology sector, and the corresponding impact of mobile technologies. The issues of age, technological-innovation adoption rate, ICT skills, and cultural understanding of ICT have been prominent features of the data collection for this thesis. Those participants in this data collection, who are actively interested in archaeology, to the extent that they participate in local community archaeology groups or projects, are, as a rule, individuals who are unfamiliar with the digital world. As a result, reluctant or unable to use these platforms and technologies, to the extent that they are actively participating online or, in the extreme, are suspicious of these technologies and choose to avoid using and engaging with them. If archaeology is a minority interest subject and, despite the millions consuming archaeological television programming, its popularity does not translate into numbers of website visitors, then an audience demographic pitched at the older end of the market does not make for sound investment in digital forms of engagement.

This possibility has not deterred Rubicon Heritage Services<sup>111</sup> from embracing the use of social media as a central platform for public engagement during one of their commercial excavations in 2012 (Fig. 4.2). Rubicon Heritage Services, a commercial archaeological organisation working in the UK and Ireland, were using social media to support and “amplify” their outreach and public engagement programmes at Caherduggahn Castle and Bere Island in the Cork area of Ireland (Wilkins 2012, 11).

---

<sup>111</sup> <http://www.rubiconheritage.com/>



Fig. 4.2: Screenshot of the Bere Island Archaeology Project blog. 1 March 2014.

Retrieved from: <http://bereislandheritage.com/>

According to one of the project managers, the project avoided the “ill-defined sense of purpose” pervasive in other digital heritage projects by creating and implementing a social media campaign allied to the on-site programme (Wilkins 2012, 12). Rubicon’s attempts to overcome the issues of measuring success relied heavily on the use of Google Analytics<sup>112</sup> during their outreach work online in order to establish the location of their social media platform visitors and examine the length of visits and points of referral. This allowed the social media campaigns to be “fine-tuned on the go” (Wilkins 2012, 15). According to an article in the Institute of Archaeologists magazine *The Archaeologist* (Wilkins 2012, 15), Rubicon’s operations director, Brendon Wilkins, wrote that the organisation’s outreach programme for a community archaeology project on Bere Island, Cork, Ireland, relied on the associated project website to act as the central hub for public engagement with the project.

Despite the Bere Island community’s geographic isolation, situated off the west coast of County Cork, Ireland, and with a small population of 200 (Bere Island Community website 2013), Wilkins reported successful outcomes from this reliance on digital technologies as the key form of public discussion, enabling

<sup>112</sup> Google Analytics is a web statistics measurement tool which monitors the location and action of web traffic and traffic sources: <http://www.google.com/analytics/>

public interaction and participation in areas not previously disposed to archaeology (Wilkins 2012, 16). This may be in some small part a reflection of the Irish Government Department of Communications' Energy and Natural Resources National Broadband Scheme that ensures a minimum speed of 30Mbit/s broadband connection in rural areas through mobile phone technology (National Broadband Plan 2013). However, there is no evidence Rubicon Heritage has undertaken similar programmes of digital outreach, and the sustainability of the information provided to the public through the social media project on Bere Island is unclear.

There is further encouragement to be had for a positive approach to an older demographic in the 2009 Age Concern '*My Friends Online*' evaluation report (Age Concern 2009). This report demonstrated that during the dedicated Age Concern week, intended to encourage people over the age of 50 to get involved with digital technologies, 37 per cent of participants stated that they used the Internet for information relating to hobbies, the third most popular activity after accessing email, online news and weather forecasts. The report also showed that 24 per cent of participants used the Internet to shop online and 21 per cent used the Internet to research family history. The popularity of these activities, relating to hobbies and family history, amongst an older age group are especially encouraging for those working in community archaeology where there is a demonstrable bias to this more mature age group as the key target audience, and this offers further potential for inclusive public archaeology projects. Digital projects that can embrace a lifelong learning and digital focus could build on the popularity of these popular research themes amongst this demographic group and so further enhance active audience engagement in their own projects whilst supporting inclusive practice and encouraging wider participation.

#### **4.8 Trolling, Privacy Concerns and Online Abuse**

Discussion about archaeological themes will inevitably elicit strong opinions, both online and in face-to-face discussion. The creation and maintenance of 'safe

spaces', for both professionals and members of the public, to discuss archaeological topics on the Internet is an issue that has yet to be examined in the public archaeology literature. Academics appearing on archaeological or historical television programmes, or writing in the traditional press, are always at risk of criticism and personal challenge from their own professional colleagues and peers. The world of the professional archaeologist in the UK is a small and insular one - the estimated archaeological workforce in 2012-13 was 4,792 (Aitchison & Macqueen 2013). The archaeology profession carefully guards the notion of archaeological authority and expertise, and the backchannels provided by social media can amplify professional disagreement all too easily, as discussed briefly in Chapter 2 and expanded upon in Chapter 8. Within the context of the small proportion of the archaeological world that interacts online - through fora such as the BAJR Federation Forum,<sup>113</sup> the JISC BritArch mailing list,<sup>114</sup> Twitter and various Facebook groups - combative behaviour, strong opinions and argumentative peers are part of the landscape of interaction. These platforms, although often posting anonymously, comprise members of this small workforce and the insularity of these debates discourage professional archaeologists and members of the general public from commenting or participating in such online 'discussions'.

As an extreme example, during 2012-13, there were a series of scathing personal attacks made online about Professor Mary Beard, a TV presenter and academic in Classics at Cambridge University. These attacks were made in reaction to both digital and traditional media articles, with abusive comments made by trolls on social media platforms. After presenting the popular 2012 TV series *Meet the Romans*<sup>115</sup> and the 2013 series *Caligula with Mary Beard*<sup>116</sup> as well as an appearance on the BBC TV programme *Question Time*<sup>117</sup> on 17 January 2013, she was the subject of a series of discussion articles in the popular press. These articles were critical of her education, her family, her appearance and apparent

---

<sup>113</sup> <http://www.bajrfed.co.uk/>

<sup>114</sup> <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=BRITARCH>

<sup>115</sup> <http://www.bbc.co.uk/programmes/b01ghsjx>

<sup>116</sup> <http://www.bbc.co.uk/programmes/b037w0qh>

<sup>117</sup> <http://www.bbc.co.uk/programmes/b01q0hqx>

lack of attractiveness. Comments made on social media platforms, including Twitter, escalated to demonstrations of violent personal abuse that included rape and death threats (Day 2013; Dowell 2013; Marsden 2013; Wyatt 2013).

Much analysis of online communities and networks take place in isolation. This creates a hiatus between understanding the nature of online relationships and the community ties that people inevitably maintain with their own *online* and *offline* compatriots in closed circles. Wellman and Gulia have argued that the "[Inter]net is not a separate reality" (1999, 170). As Mazali notes, there is a close relationship between virtual and real communities - digital communities grow from communities that have "specific and localised values, problems and identity" (2011, 291). For most people, Internet relationships complement and enhance most real-life relationships in the real world, rather replace them completely. As Wellman acknowledged, these relationships and "networks", rather than "communities" in the traditional sense of the word, represent most people's current experience of social relationships in real life (2001, 228). Modern communities are defined relationally not spatially.

Online bullying and trolling is an act that has become increasingly prevalent in online communications. This has a small but significant impact on the participatory aspects of online public archaeology. The provision of discussion platforms and the associated communication behaviour encouraged by archaeological organisations have, in a small number of cases reported to the surveys undertaken for this research, been the subject of negative activities by small number of 'trolls' who have posted unpleasant or inappropriate comments. Aggressive and negative postings on archaeological blogs, forums and discussion lists, whilst not common, can happen.<sup>118</sup> The sixth survey undertaken for this thesis was entitled "Understanding Barriers to Public Engagement with Archaeology Online" and the data collection method is outlined in Chapter 3.

---

<sup>118</sup> For example, the author was subject to an *ad hominem* attack by the archaeological blogger Paul Barford, for writing about archaeological trolling on my own blog. This appears to be linked to the fact that one of the supervisors for this doctoral research works for the Portable Antiquities Scheme, and Paul Barford is vehemently anti-metal detectorist and opposes the work of the PAS. This attack can be found at: <http://paul-barford.blogspot.co.uk/2013/08/lora-richardson-on-archaeological.html>



The questions and full results can be found in Appendix F. The survey results indicated that although the act of trolling in archaeological circles was not a regular occurrence, episodes can be difficult for the organisations and individuals concerned, especially where the participant is new to the community, in a less-authoritative capacity such as student or volunteer, or feels obliged at an organisational representation level to respond by correcting inaccuracies or defend opinions. As an example, the PAS had to remove their 600-member discussion forum because of a number of particularly persistent trolls, yet the PAS remains the subject of vitriolic blog posts about their work and website content (D Pett 2011, pers. comm. 17 May). The Gender and Digital Culture project,<sup>119</sup> a collaboration between the universities of York and Southampton, aims to explore “the way that gender is negotiated, constructed and expressed through contemporary digital media, with an emphasis on how digital technologies variously facilitate, exacerbate, rethink or replicate diverse behaviour” (Gender & Digital Culture 2014). This project was established partly as a result of Sara Perry’s experiences as one of the project staff. She had been subject to a campaign of gender-related harassment through digital means (Perry 2013). Paying attention to negative comments, harassment or even personal threats is time-consuming, frightening and can be especially hurtful if anonymous, more so if it’s not, and especially given the small size of the professional archaeological sector (Aitchison and Macqueen 2013).

All archaeological organisations and participants need to ensure that they are resilient enough to ignore serious trolling and attempts at digital sabotage, both in personal and policy terms. The survey “Archaeology and Social Media Policy” undertaken as part of this research in 2012 (see Appendix B for the full survey questions and results, and Chapter 3 for the data collection method) explored whether archaeological groups and organisations had a written policy for social media communication. This survey will be discussed fully in Chapter 5.1, although the results mentioned here are pertinent to this specific section of this thesis and are therefore highlighted. This survey received 216 responses from a

---

<sup>119</sup> <http://genderanddigitalculture.wordpress.com/>

variety of archaeological respondents, both professional and voluntary: 40 organisations stated that they had a written social media policy in place, 124 did not and 32 did not know; 17 organisations, who responded 'other' were either part of larger organisations (such as local government) where broad institutional policies cover communications within and beyond the local government body and are not specific to archaeology; others had a set of informal guidelines for social media use but no formal policy in place or were in the process of creating and implementing policy arrangements. Question 11 of this survey, "Do you have a Risk Register for using social media?" received 200 responses: 130 organisations did not have a Risk Register; 46 did not know; only 7 organisations had one in place. One respondent noted that social media output was monitored and that misuse would result in disciplinary action according to their employee handbook. No survey respondent mentioned the existence of specific communications policy planning to manage the impact of negative comments or adverse discussion by the public through these media in any format, digital or otherwise.

An understanding of the concept and importance of how to manage any inappropriate or challenging communications through the Internet appears to have a weak response from organisations that have taken part in these online surveys. Question 10 asked, "Does your group or organisation provide training or written guidance to members or staff on official social media use? This received 207 responses: 119 organisations did not provide written guidance to their staff or volunteers; 42 did supply this information; 13 responded that they did not know. Comments were made which demonstrated that, in a small number of organisations, very basic guidance was offered on how to manage Internet communications, and that this was often transmitted verbally and informally. However, the data revealed that a number of organisations had made plans to provide specific training on the subject of communications management in the future, although some organisations did not feel that they needed to due to their size and the informal nature of their communications. It is highly likely that these statistics are out-of-date in 2014 - the speed of adoption of these

media means that more organisations are likely to have started to use some of these communications platforms, and as a result have created social media policies. Future research could be undertaken to re-examine the existence and impact of media policies for archaeological organisations.

#### **4.9 Dispositional Barriers to Participation Online**

Dispositional barriers to participation in public archaeology projects are important to consider, both for digital and ‘real-world’ engagement with the public. In social and political communities, online and offline, some individuals actively participate more than others (Putnam 2000; Weber *et al* 2003; Lee & Wei 2008). As an example, research on Wikipedia authors has demonstrated that only a small number of editors take part regularly, with around 10 per cent of authors responsible for 90 per cent of contributions (Ortega 2009, 106). These ‘dispositional’ aspects create barriers to wider public involvement in participatory online archaeology projects (as well as in real life) and for the purposes of this thesis these need some further consideration. Alongside the subtleties of physical and structural digital inequalities, these dispositional and participatory inequalities represent another underlying factor that creates barriers to participation in online projects or activities. These factors may play a part in the small number of contributions made in participatory media where opportunities have been provided by archaeological organisations for discussion about archaeological themes but have not yet seen wide adoption (see Chapter 5 for elaboration on this topic).

The swift evolution of the Internet, the growth in the number of online communities and the increased need for user-generated content to participate on the array of social media platforms have posed specific social challenges for users. The growing emphasis on co-creation and participation is creating a gap between those who actively produce and consume content and those that tend to read, listen or observe it passively. The latter neither contributes nor creates their own content and constitutes the ‘lurkers’ or non-participating audience

(Hargittai & Walejko 2008). The concept of a participation division within online interactions has been explored in a variety of demographic, economic and geographic contexts and, as this body of research has demonstrated, participation is clearly related to variable educational achievement, ICT skills and a higher socio-economic status (Hargittai & Walejko 2008; Mossberger *et al* 2008; Hargittai & Hsieh 2010; Zickuhr & Smith 2012).

It has been suggested that this reflects a new dimension to digital inequality because non-participants are missing out on the economic, social and creative benefits of digital technologies and communications. Some have described the phenomena as participation inequality (Nonnecke & Preece 2000; Nielsen 2006;; Karahasanović *et al* 2009; Brandtzæg & Heim 2011) although, as Nonnecke and Preece (2000) have indicated during their research into public participation on email discussion lists, “a case can be made for lurking being normal and public posting being abnormal...lurkers should be called participants (publicly silent though they may often be)” (2000, 7). Research by Preece, Nonnecke and Andrews found the main reasons for non-participation in online communities were because lurkers felt that they did not need to take part; lurking was part of exploring more about the online community; that it was helpful not to take part; there were personal problems with the ability to use the platforms; or because they did not like the community (2004, 11).

A large number of studies have explored user behaviour within online communities and across social media platforms, exploring voluntary participation, comment, discussion and the provision of user-generated content within these media (Nonnecke & Preece 2000; Nonnecke *et al* 2004; Nielsen 2006; Bishop 2007; Brandtzæg & Heim 2009a; Brandtzæg & Heim 2009b; Brandtzæg & Heim 2011; Brandtzæg 2012). A 2010 literature review and meta-analysis of media-user behaviour by Brandtzæg (2010) identified 22 different studies that have classified media and Internet users into user types from the year 2000 to 2009, with a variety of different typologies and classifications that have been developed to quantify user behaviour online (*inter alia* Sheehan 2002; Nielsen 2006; Horrigan 2007; Ortega Egea *et al* 2007; Ofcom 2008; Brandtzæg

& Heim 2010). Brandtzæg's meta-analysis of user behaviour around frequency of use, variety of use and content preferences, developed a model of eight user types, outlined in Table 4.1.

<i>User Types</i>	<i>Frequency of Use</i>	<i>Variety of Use</i>	<i>Typical Activity</i>	<i>Typical Media Platform</i>
(1) Non-users	No use	No use	No	All
(2) Sporadics	Low use	Low variety	No particular activity. No contact with e-government services. The Internet is rarely used for private purposes. Low interest, less experienced.	All
(3) Debaters	Medium use	Medium variety	Discussion and information acquisition and exchange. Purposeful action.	Blogs and social networking sites
(4) Entertainment users	Medium use	Medium variety	Gaming or passively watching videos, but also advanced use, such as UGC, programming, and shopping.	New media in general
(5) Socializers	Medium use	Medium variety	Socializing, keeping in touch with friends and family, and connecting with new acquaintances. Active social life, but less organised and purposeful, more spontaneous and flexible.	Social networking sites
(6) Lurkers	Medium use	Low variety	Lurking, time-killing SNSs, user-generated sites, and shopping	New media in general
(7) Instrumental users	Medium use	Medium variety	Choose media content for information and civic purposes, utility oriented, often work related, searching for e-Government or public information. Low on entertainment use. When shopping, comparing brands and promotional offers.	New media in general, including Internet, and online shopping
(8) Advanced users	High use	High variety	All (gaming, homepage design, shopping, programming, video, e-Government and UGC, etc.).	All

*Table 4.1: An initial unified Media-User Typology - MUT and the four criteria for defining types by media behaviour by P. B. Brandtzæg (2010)*

*Licensed for use by Elsevier by the Copyright Clearance Center's RightsLink service 2013.*

This user typology demonstrates the variety of different user requirements and motivations, although the media landscape is subject to change as new technologies and hardware platforms develop. Although organisations working in the cultural heritage sector generally tend not to report evidence of use about their digital resources (Warwick *et al* 2008), a high-level understanding of complex patterns of usage behaviour will provide an important resource for archaeological organisations seeking to create useable, useful and sustainable digital resources that will encourage participation and benefit the investment of resources and public interest.

Understanding user behaviour also highlights the importance and impact of digital literacy, discussed further in Chapter 8. Negotiating platforms and roles within different social media and online communities requires different levels of digital literacy and is heavily dependent upon motivation, culture and context (White & Cornu 2011). The 2012 EH *'Heritage Counts'* National Report noted the rise in importance of digital media in the heritage sector and that 18.9% of adults had visited a heritage website to take a virtual tour of a historical site. However, the report also stated that only 1.8 per cent of adults who had visited a heritage website between July 2011 and March 2012 had ever participated in a heritage forum online or made comments on a website (English Heritage 2012, 34). This apparently low level of public participation for heritage and social media needs further investigation. It is important to consider these figures and how organisational digital public engagement can positively encourage participation - that is, if the numbers of active participants really are so low.

An audience without the required motivation, skills or desire to pose questions nor to create content and contribute to discussions, will need a significant amount of support and encouragement to engage with any archaeological information or opportunity for interaction provided. For the greater adoption of these publicly focused communication media, where research suggests that the majority of users still prefer to lurk on digital platforms and simply observe, better levels and speed of access to the Internet will not automatically guarantee that a digital public archaeology project will widen participation or increase public involvement and discussion. Simply observing discussion and absorbing information are not activities that should or can be discouraged, however, since they still create the necessary digital footprints that provide metrical evidence for public engagement and participation. More importantly, the related data have reflexive value for the end-user in their future use and enjoyment of archaeological materials online, offering many possibilities for informal learning.

The differing levels of user participation certainly makes it more difficult for organisations to measure impact effectively, especially if they wish to move beyond the use of quantitative visitor analytics data demonstrated by Wilkins

(2012). The real risks for public archaeology projects, those that wish to pursue an inclusive and widening participation agenda are created when the contributions received through social and participatory media represent only a small fraction of the project's target audience. Hence, the associated differences in project participation on social media platforms and online communities can render the contributions and opinions found in these arenas unrepresentative of the local communities and local heritage concerns, since the contributions that are made may represent an active, vocal, and social capital-rich minority with sharp 'digital elbows'.

#### **4.10 Discussion**

As an example of recent innovations on this subject, the HLF policy on digital projects was altered in 2012 such that the new requirements are directly related to long-term public access, participation and multi-vocal approaches to heritage. There is renewed emphasis within the HLF guidelines for funded organisations to demonstrate tangible benefits for their digital participants. These include the need for robust and on-going evaluation of these digital projects, adherence to international accessibility standards in all funded digital projects and for the licensing of all project outputs under a Creative Commons license (although their suggestion of using a Non-Commercial license may not suit everyone who wishes to use these data). It asks grant holders to consider their audience and participation in some depth to:

...determine how digital technology will be used by that audience based on their needs and interests, and demonstrate how people will benefit from engaging through digital technology...provide opportunities for people to do something active...encourage audiences to respond to your heritage content, to interact with other people and places, or to add to our wider knowledge of heritage...to share their own experience, memories or learning with others (Heritage Lottery Fund 2012, 4).

These HLF guidance notes make it very clear that funded organisations must consider, in the initial stages of project design, whether the use of digital technologies will exclude part of their intended project audience (Heritage Lottery Fund 2012, 6). More specifically, grant holders are asked to consider whether their use of a specific technology, such as Apple's iOS-only smartphone apps, or QR codes,<sup>120</sup> could result in the exclusion of potential users, to consider whether the benefits outweigh the associated problems of audience exclusion and whether this would matter within the context of the project (Heritage Lottery Fund 2012b, 10). For those organisations undertaking digital public archaeology projects funded by the HLF, at the very least, the issue of digital inequalities has been seriously and extensively addressed in the guidance notes and policy documents relating to their grant. They and should be considered at the earliest stages of funding applications in the future, and as a project priority throughout.

Throughout this thesis, the issue of digital inequalities has been a prominent feature in the accrued survey data and research findings. There are a significant number of people, actively involved in community archaeology volunteering and societies, whose unfamiliarity with the digital world results in a suspicious of it. Whilst the digital divide and digital inequalities exist and play a key role in the accumulation of social, cultural, and economic capital, being able to gain access to a computer connected to the Internet should not be viewed as a solution to the problem. Digital inclusion is also an important issue for social exclusion, social justice and equality in society because, as has been discussed here, digital exclusion and digital inequalities translate into economic and cultural disadvantage. The advantages of digital inclusion are many: improved health; ability to socialise; the financial advantage of shopping and paying bills online; efficiency savings for public service providers; and improved education and employment outcomes (Champion for Digital Inclusion 2009).

---

<sup>120</sup> A QR code is a 'Quick Response Code', a type of machine-readable matrix code (like a barcode) which contains information, such as a URL. These codes allow users to scan the matrix code using a variety of devices, commonly a smartphone, and download the information attached to the code.



As research by Simon Tanner (Tanner 2012) has shown, there are tangible community benefits derived from digital resources created in the cultural, heritage, academic or creative industries. His work on a model to measure the value and impact of these resources has clearly demonstrated the need for an understanding of the stakeholder benefits, and has provided an essential model for the assessment and measurement of these outcomes. It is impossible to discuss actively all of the current archaeological activities, news, events, or even interrogate archaeological data disseminated online, nor use these public resources to their full potential, if the skills, knowledge and confidence to do so are absent or at best, patchy. As professionals working in public archaeology, it is disingenuous to expect either consistent or high levels of public, voluntary, non-professional involvement in digital public archaeology projects. Moreover, it is equally injudicious to assume that multi-vocal, inclusive projects will spring from any inspiration provided through online sources when a significant section of our target audiences are simply not yet able to participate or interact with them or us online.

This chapter has reviewed the impact of inequalities in the use of Internet and social media platforms. It has examined the importance of understanding the effect of these existing inequalities on the participants and audience for UK archaeological organisations that undertake public archaeology projects online. It has explored issues of digital exclusion that are specific to archaeology and which will have a significant impact on the ability of UK archaeological organisations to create open, inclusive, and participatory public archaeology projects online. Chapter 5 will further consider the barriers that exist for UK archaeology organisations operating in an online capacity. It will begin by exploring the range and context of public archaeology websites and social media platforms in the UK, as they have developed over the period from 2010 to 2013. Chapter 5 will consider how UK organisations plan for and build digital policy. The appraisal will extend to how organisations are planning for digital sustainability and archiving based on the series of interviews and surveys outlined in Chapter 3.

## CHAPTER 5: PARTICIPATION, EVALUATION AND POLICY

Our subject has social responsibilities and opportunities which it can fulfil through school education, through museums and books and through all the instruments of what is often rather disagreeably called ‘mass communications’ — the press; broadcasting, films and now television. If archaeology is to make its contribution to contemporary life and not risk sooner or later being jettisoned by society, all its followers, even the narrowest specialists, should not be too proud to take part in its diffusion. I would go further and say that we should not forget the problems of popular diffusion in planning our research (Hawkes, quoted in Wheeler (1956, 219).

Chapter 5 explores contemporary digital outreach projects and methods in the UK. It examines the platforms used by archaeological organisations to engage, consult and discuss with the public and raise awareness of archaeological activities through digital engagement. This chapter asks how as well as why organisations should engage with the public through digital platforms, as Stilgoe *et al* (2014, 5) have rightly argued “there is insufficient systematic reflection on what all this activity has achieved”. It considers how these organisations measure the success of their digital public archaeology projects, if at all, and what value is allotted to outreach, engagement and discussion with non-professionals through social media. It will ask: what kinds of digital public archaeologies have been practised in the UK to date? What current projects can be found online, and how do these projects evaluate the success of their work undertaken online? This chapter explores the landscape of digital public archaeology through the results of the creation of a database of online archaeology projects and organisations. It will interrogate the perception of success through online survey data collected from organisations running digital public archaeology projects. It will briefly consider where and how audiences use archaeological websites, and the type of activities undertaken and information sought. It will also discuss the unique issues presented for archiving evidence of public participation with digital public archaeology projects and social media.

Section 5.1 explores the literature surrounding public participation in academia and public engagement, and discusses the evolution of public participation and engagement within the discipline of archaeology. Section 5.2 explores the results of the three annual collations of online public archaeology projects and social media platforms in the UK. Section 5.3 considers if, how, and why organisations are evaluating the participation and outcomes of these projects, and how this is situated within the wider context of professional, academic and HLF-funded public engagement in the light of the work and policies of the National Co-ordinating Centre for Public Engagement,<sup>121</sup> the HLF<sup>122</sup> and the Institute for Archaeologists.<sup>123</sup> Section 5.4 examines archaeological attitudes towards undertaking public engagement and outreach through the use of Internet media, and will discuss the results of relevant questions from the nine online surveys undertaken for this research, which have been outlined in Chapter 3. Section 5.5 discusses the issue of managing social media contributions made by the public within UK archaeological organisations, from a policy and archiving perspective, and Section 5.6 contains a summary of the chapter findings.

## **5.1 Engagement, Participation and Co-Production**

We have already explored the history, definition and development of the concept of public archaeology as a distinct area of research and practise within the wider discipline of archaeology throughout Chapter 2. In order to better understand the opportunities for greater public participation in digital and social media within public archaeology programmes, this section will seek to outline the concepts of public engagement, public participation in archaeology and co-production of knowledge, through a brief examination of the literature on the subject. Unfortunately there is not room in this thesis to examine the many discussions, models, and implications of participatory practice in academic research and public engagement. However, this section will attempt to situate

---

<sup>121</sup> <https://www.publicengagement.ac.uk/>

<sup>122</sup> <http://www.hlf.org.uk/Pages/Home.aspx>

<sup>123</sup> <http://www.archaeologists.net/>

the most important of these concepts within the established understanding of the public archaeology models of Merriman (2004), Holtorf (2007), Moshenska (2009), and Matsuda and Okamura (2012), which have been discussed previously in Chapter 2, Section 3.

The term ‘public engagement’ is relatively new, and the National Co-ordinating Centre for Public Engagement defines the term to mean;

...the myriad of ways in which the activity and benefits of higher education and research can be shared with the public. Engagement is by definition a two-way process, involving interaction and listening, with the goal of generating mutual benefit (National Co-ordinating Centre for Public Engagement 2014).

Whilst the term public engagement is often used with reference to work undertaken in universities, it has percolated to science communication, archaeology and the Galleries, Libraries, Archives and Museums (GLAM) sector (Holliman *et al* 2009b; Bell 2013; Curtis 2013; Jones 2013; Pieczka & Escobar 2013; Saunders & Moles 2013; West 2013). The key element of the definition of public engagement is the concept of interaction and participation by the public. Participation is itself a contested term (Haywood *et al* 2004; Carpentier 2009; Carpentier 2011; Eversole 2012), and understandings of participation “often turn on its perceived relationship to power” (Stein 2013, 355). The relationship between archaeological expert and participatory media will be explored further in Chapter 8. Research by Carpentier and Dahlgren has made a very important point about the concept of public participation, especially when seen through the lens of public engagement through digital media;

Sometimes participation is, for instance, seen as mere presence and people are seen as participating when they are simply being exposed to specific cultural products like watching television, visiting a museum or reading a blog). In other cases participation and consumption become mercilessly conflated. Even merely being in a specific social space (such as the online) seems sometimes to already merit the label of participation, as it is then implied we are becoming part of a broader cultural reality, through the logics of socialisation and/or social integration (2011, 8).

There are a variety of categories of public participation in research, and numerous academic theories and critiques of the process (for example: Arnstein 1969; Pateman 1970; Carpini *et al* 2004; Carpentier 2011; Christensen 2011b; Clarke 2013). Citizen science has a long history; collaborative projects date back at least to the seventeenth century. Jeremy Bentham wrote in 1793, “Many hands make light work. Many hands together make merry work” (Transcribe Bentham 2013), and untrained amateur scientists have been gathering data, observations and specimens to assist naturalists and scientists such as Linnaeus and Ray, and monitoring weather patterns, bird migration or water quality since the eighteenth century at least (Ellwood *et al* 2010; Brenna 2011; Vetter 2011; Miller-Rushing *et al* 2012). Adapted from work by Bonney *et al* (2009) on citizen science (a model which will be explored further in Chapter 6) the concepts of participation can be divided into three categories. *Contributory participation* involves work designed by professionals, where the public can take part by contributing data. *Collaborative participation* is work designed by professionals, where members of the public contribute data, as well as take part in aspects of project design, dissemination or analysis. *Co-created participation* is work designed by both professionals and members of the public working in collaboration, and involves some level of active involvement on behalf of the non-professionals in some or all of the process of research development, implementation and reportage.

Arnstein’s (1969) often-cited ladder of citizen participation (Fig. 5.1) has perhaps been the most influential typology of community participation (Cornwall 2008, 270). Developed from her research into urban planning processes during the 1960s, Arnstein defined participation as the mechanisms whereby members of the public are able to exercise power in decision-making processes. According to her work, participation is defined in numerous practises. These include; taking part in consultations; deciding how to share information; understanding how to set policies, goals and research frameworks; undertaking programmes and activities, and distributing community benefits and resources. Her spectrum of community participation is “defined by a shift from control by

authorities to control by the people or citizens” (Cornwall 2008, 271), although the model, and other similar typologies (Pretty 1995; White 1996) suggest that the scale of participation ranges from genuine to manipulative and rhetorical. These typologies inform us of participatory offers *by* organisations, but do not inform us of participatory *experiences*, and this is another area where research is desperately needed within the context of the discipline of public archaeology.

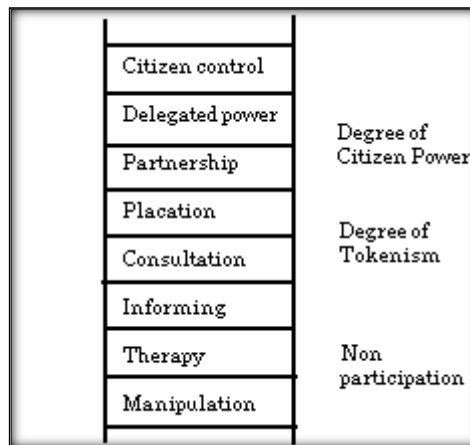


Fig. 5.1: Arnstein's ladder of citizen participation. 1 April 2014. Retrieved from: <http://www.partnerships.org.uk/guide/ideas.htm>

As discussed previously in Chapter 2.4, public participation in the practice of archaeology has a long tradition dating back to antiquarianism and the foundation of the discipline. The concept of archaeological knowledge as a key contributor to the education of society improvement of the population dates back to the nineteenth century (Carman 1996; Carman 2010). Archaeology has a long history of including nuanced variations of encounters and interpretations beyond the expert opinions of university-trained archaeologists, as the untrained and ‘uneducated’ non-professional has always been included in archaeological practice - the work of amateur antiquarian and archaeological societies during the 19th and early 20th centuries was central to the establishment of the discipline itself (Thomas 1974), and it has been argued that the modern

discipline of archaeology was “invented by the antiquarians” (Schnapp 2002, 139).

The growth and popularity of non-professional, lay interest in archaeology, was encouraged by a number of factors: the popularity of extra-mural local history and archaeology adult education classes from the 1930s to 1960s; low costs of evening classes and an increased desire for self-improvement; and more leisure time within post war UK society. These factors were supplemented by the appropriation of the countryside for leisure activities as part of the “Citizens Outdoors” movement (Matless 1998, 64), the search for a historically situated post-war identity (Speight 2003) and volunteer-driven rescue archaeology. Rescue archaeology was a vital part of the public involvement in the discipline, and was undertaken between the end of the Second World War and the early 1970s, in areas of post-war destruction, and in advance of development (Biddle 1974: Rahtz 1974). This was especially important in those urban areas damaged during the Second World War within the following three decades of national reconstruction of bomb-damaged areas, and the restructuring of towns and cities, and this took place before the arrival of national legislation governing the investigation of archaeological sites as part of the planning process (Heighway 1972: Biddle 1974: Rahtz 1974: Jones 1984). Planning Policy Guidance 16 was introduced in 1990 as formal recognition by the UK Government of the need to protect heritage assets and to advise local planning authorities in England and Wales on the treatment of archaeology within the planning and development process (Lincolnshire County Council 2012. As discussed in Chapter 2, this event supported the rapid development of the archaeological profession, as well as the “difficult socio-institutional challenges” of the communication of knowledge with non-professionals (Irwin 2014, 72).

Co-production has emerged as a potential solution to a criticism that research conducted in communities often fails to meaningfully include communities in its design and undertaking (Durose 2012, 2). The notion of sharing authority and co-production has become common currency within the literature of oral history and public history over the past two decades (Frisch 1990; Perks & Thompson

2006; Samuel 2012; Kean & Martin 2013), with a shift towards collaboration and co-production between experts and members of the public (Holden 2008, 14). Reflecting on Hodder's (1992, 186) argument that the public "need to be provided with the means and mechanisms for interacting with the archaeological past in different ways", we can find support for the concept of co-production in the 2005 *Faro Convention on the Value of Cultural Heritage for Society* (Council of Europe 2005). The Faro Convention has recognised that people have the right to find value and meaning in their own heritage communities, and to identify with their own definition of cultural heritage.

The de-centralisation of archaeology from archaeology-as-expert-profession happened well before the innovations of Internet technologies, and continues to exist in public archaeology projects across the UK (Tully 2007; Moshenska 2008; Isherwood 2009; Simpson 2010; Isherwood 2012; Moshenska & Dhanjal 2012). However, some examples of community archaeology projects in the UK, such as the Hinkshay Community Archaeology Project<sup>124</sup> in Shropshire and the community heritage project at Cawood Castle Garth<sup>125</sup>, North Yorkshire, led the project professionals working on both sites to suggest that, for the participants, taking part in the fieldwork, rather than taking control of the archaeological process, was of greater importance (Emerick 2009; Belford 2011). However, in the context of digital public archaeology participation "...should not simply be about generating public acceptance through the provision of information... but about citizens' active involvement in the development of socio-technical trajectories" (Delgado et al 2010, 827). If we examine the processes and promises of public engagement, public participation and co-curation through the lens of models for public archaeology, we can see that Arnstein's ladder of participation perhaps offers the best analogy for the scales of top-down community archaeology projects undertaken in the UK. In terms of participation through digital technologies, the top-down approach is simpler to manage and deliver, and power and control remains with the organisation, especially in the

---

<sup>124</sup> <http://paulbelford.blogspot.co.uk/2010/04/community-archaeology-at-hinkshay.html>

<sup>125</sup> <http://myweb.tiscali.co.uk/cawoodcastlegarth/>



context of dialogue and co-production, issues which will be explored in more detail on Chapters 6 and 8.

## **5.2 Digital Public Archaeologies in Practice**

The growth of public interest in the past, also discussed in Chapter 4, institutional commitments to widening participation and public engagement, alongside the development of the sub-specialisms of professional archaeological practice in public and community archaeology over the past 40 years, discussed in Chapter 2, have increased. This section will present the results of the quantitative assessment of UK-based digital public archaeology projects. Chapter 3 has outlined the background to the creation of a database of UK-based digital public archaeology projects as part of the research this thesis. The full results of the data collection can be found in Appendix K. This database enables an understanding of the quantity, platform, scope and geographical location of these projects, and allows a longitudinal overview of the use and context of digital technologies for public engagement in the archaeology sector through the period of my research from 2011 to 2013. Collating this information would enable a baseline of project data to be created, from which further research, including undertaking surveys and interviews with relevant organisations, could be planned, instigated and recorded. This highlighted the need to gather evidence for digital public archaeology projects on a regular basis. The growth and impact of Internet technologies in wider society is an ongoing process, and it was likely that during the three years of this research that there would be an increase in the uptake of these technologies within the sector. Factors such as the rise in popularity of smartphones, increased use of social media platforms, and better access to Wi-Fi, alongside greater emphasis on public archaeology within archaeological organisations would set the pace for change and an annual survey would be required to keep abreast of the latest developments within the discipline.

Throughout 2009, CBA undertook one of the most important pieces of research for the understanding of community and public archaeology in the UK, published in 2010 as the *Community Archaeology in the UK: Recent Findings* report (CBA 2010). The then-CBA Community Archaeology Support Officer comprehensively examined the size and state of voluntary activity in the UK within the heritage sector, and the survey findings demonstrated that there were approximately 2030 voluntary groups undertaking some form of archaeology, or heritage/history-based activity related to archaeology in 2009. This represents around a quarter of a million people actively participating in heritage issues as a hobby or leisure interest.

The CBA survey itself received a 25 per cent response rate from all the UK heritage groups identified by the CBA. Of the groups that responded to the survey request, 50 per cent noted that they held some form of photographic archive, whilst 26 per cent stated that they used Internet platforms to disseminate information about their activities and research. The tools used by heritage organisations to engage with their audiences and “implicate them in the processes of history “making” (Kidd 2010, 64) often include some form of Internet technology. The figures from the 2010 CBA report indicated that 26.5 per cent of the volunteer groups surveyed used a project website to disseminate information about their work (Council for British Archaeology 2010, 29). Whilst this information is now four years old, it does suggest that there are a significant number of volunteer-run archaeology organisations that do not use Internet technologies. There is also evidence within the CBA report that there are existing opportunities for engaging these groups with digital technologies as a method of dissemination, and 9.9 per cent of the groups surveyed had received training on disseminating research results (Council for British Archaeology 2010, 32). As an example, volunteer archaeology organisations frequently hold a photographic archive, often dating back decades (Council for British Archaeology 2010, 29). A photographic archive is something that could be shared and disseminated through an online photo management platform which would enable wider public engagement with the volunteer groups’ activities, and promote interest in their

work. Such projects have the potential to create and use engaging public archaeology websites and social media tools to promote, discuss and disseminate the activities of these organisations.

### **5.2.1 Data Results From 2010 to 2011**

Information on the method and process for data collection for this survey can be found in Chapter 3 and the full results can be found in Appendix K. The 2010 to 2011 data collection demonstrated that, as of the end of January 2011, there were 384 archaeology organisations and projects active in England and Wales who were using some form of Internet technology such as websites, blogs and social media platforms, for public engagement and the dissemination of archaeological information online. A variety of organisations; local authority archaeology projects, commercial archaeology companies, charities, and HLF funded and other grant-funded projects created these online projects. The greater majority belonged to local and regional voluntary archaeology groups. Some of these projects had a wider web presence beyond a project website, notably through the use of blogs, Facebook, Twitter, Flickr and other forms of social media. This survey showed that 43 projects out of 384, or 11 per cent, of all known projects at the end of January 2011 used the following Internet technologies in their public engagement: 12 organisations used Twitter; 9 organisations used Vimeo or YouTube to share films; 23 organisations used Facebook either as groups or pages; 15 organisations were using separate blogs alongside their conventional websites; only 4 organisations were using Flickr or Picasa<sup>126</sup> for photo storage and management and 5 organisations were using other participatory platforms and tools, such as Myspace<sup>127</sup> and Scribd.

---

<sup>126</sup> <http://picasa.google.com/>

<sup>127</sup> <https://myspace.com/>

## 5.2.2 Data Results From 2011 to 2012

The second survey of public archaeology projects online took place over the winter of 2011 to 2012. This survey also included archaeological groups and organisations in the Crown Dependencies, Scotland and Northern Ireland - which would allow a proper understanding of the quantity and quality of public archaeology projects available online throughout the UK. Building on the survey database created during the pilot research in 2010 to 2011, and using the same methodology for data collection, I revisited every website, blog and social media platform that had already been noted. From there, I recorded any changes in the types of platform used, new website addresses, and if projects had moved or were no longer appearing online. I also used updated news, information and links from the websites of the CBA Regional Groups; EH; IfA; Association of Local Government Archaeology Officers (ALGAO); the Royal Commission on Ancient and Historical Monuments for Wales (RCAHMW), Cadw, the Welsh Government's historic environment service and RCAHMS.

This survey found that there were 563 active online public archaeology projects, supported by commercial archaeology companies, voluntary local and regional amateur archaeology groups, grant-funded heritage projects, university archaeology departments and local authority archaeologists, as well as a handful of individuals running their own web-based projects. An increasing number of these projects were branching out beyond a relatively static project website, and social media was being adopted, and there was an increase in the use of blogs, Facebook, Twitter, Flickr and other forms of social media in the comparable data from England and Wales from 2010/11 to 2011/12.

Of these 563 online projects, 17.5 per cent were using social media platforms as a method of communication. 40 organisations were using Twitter; 6 organisations used Vimeo or YouTube to share films; 13 organisations were using photo storage sites; 95 organisations were using Facebook either as groups or pages; 49 organisations were using separate blogs alongside their conventional websites and one organisation had used Foursquare. This year saw

an increase of 233 per cent in the number of organisations adopting the Twitter platform from the previous year; a 33 per cent decrease in the use of video sharing sites; a 225 per cent increase in the use of photo storage sites; a 313 per cent increase in the use of Facebook pages and groups, and a 226 per cent increase in the number of organisations using blogs.

### **5.2.3 Data Results from 2012 to 2013**

The third and final survey of public archaeology projects online took place over the winter of 2012 to 2013. The organisations reviewed and geographical areas examined were exactly the same as the previous year, and again I revisited every website, blog and social media platform that had already been noted, recorded changes and new projects, and checked information on the websites of the CBA Regional Groups; EH; IfA; ALGAO; RCAHMW, RCAHMS, and Cadw, as well as Facebook and Twitter.

This survey found that there were 564 active online public archaeology projects, supported by commercial archaeology companies, voluntary local and regional amateur archaeology groups, grant-funded heritage projects, university archaeology departments and local authority archaeologists, as well as individuals running their own web-based projects. This was an increase of one project website over the course of a year. There was an increase in the use of blogs, Facebook, Twitter, Flickr and other forms of social media in the comparable data from 2011/12 to 2012/13.

Of these 564 online projects, 49 organisations were using Twitter; 20 organisations used video sharing platforms; 100 organisations were using Facebook either as groups or pages; 49 organisations were using separate blogs alongside their conventional websites; 17 organisations were using photo storage sites, and 12 organisations were using Foursquare. This saw an increase of only one new online project, but a 22.5 per cent increase in the use of Twitter, 233 per cent increase in the use of video sharing platforms; a 5 per cent increase

in the use of Facebook pages and groups; no increase in the use of blogs; a 31 per cent increase in the use of photo storage sites and a 1100 per cent increase in the use of Foursquare.

Whilst these longitudinal data represents an increase in the use of digital forms of public archaeology over the three years of the data survey, these still represent a small percentage of all active archaeological organisations and public archaeology projects in the UK. These organisations include at least 2040 UK community archaeology organisations (Council for British Archaeology 2010); 113 local government archaeology and curatorial departments; 44 university departments teaching archaeology (Everill & Nicolls 2011, 1); 154 community archaeology and heritage projects funded by the HLF (G Hylton, 2013, pers. comm., 5 February) and approximately 250 active commercial archaeological organisations in the development sector in the UK (Aitchison & Macqueen 2013). Whilst this does represent a small percentage of the overall number of potential organisational participants, the use of these digital contact zones has enabled a significant increase in news sharing, publicity, data-led open access resources, provided opportunities for the non-archaeological public to participate and interact with archaeological information online, provided organisations with opportunities for better publicity, and to widen and include their audiences in “the processes of history making” (Kidd 2010, 64).

Given the growing ubiquity of the participatory Web, professional archaeological organisations are no longer the sole creators or sharing points for archaeological information, and the official websites of professional archaeological organisations may not always be the main source of archaeological news and information online. This issue will be discussed in Chapter 6 with regards to the use of Twitter in the digital archaeological network. The issue of archaeological expertise and authority online is explored fully in Chapter 8.

### 5.3 Evaluating the Success of Digital Public Archaeology

As we have seen from the results of the qualitative data collection outlined in 5.2, archaeological organisations are adopting and using social media platforms to enhance their profile, connect with interested parties and share knowledge. But how can they measure the success of these communications platforms? Since the use of social media within organisations has impact on both staff time, and budget, and as discussed previously in Chapters 2 and 4, many grant-funded organisations need to report on their public engagement outputs, so gathering data on the use and interactions of these platforms would seem a necessary part of a strategic approach to public archaeology online.

There have been a number of developments of guidance for approaches to the evaluation of these media in the GLAM sector. Culture 24's *Let's Get Real* action research has been leading a series of projects in collaboration with UK-based cultural organisations which examines best practice for measuring the success of digital projects in cultural heritage (Culture 24 2014). Simon Tanner's community-focused work at King's College London led to the creation of the *Balanced Value Impact Model*, which "draws evidence from a wide range of sources to provide a compelling account of the means of measuring the impact of digital resources and using evidence to advocate how change benefits people" (Tanner 2012). The *Digital Engagement Framework*<sup>128</sup> is a tool, created by Jim Richardson and Jasper Visser, is a free, downloadable strategic planning workbook that considers the entire digital process from adoption to understanding audience within a cultural heritage context. The *Digital Engagement Cookbook*<sup>129</sup> is another comprehensive and free online resource that provides information on measuring and analysing digital engagement.

The practice of evaluating digital engagement is one that is increasingly common in a wide variety of disciplines where social media is used. For example, communications in healthcare, the hospitality sector, education or advertising (Chu 2011; Hughes *et al* 2012; Neiger *et al* 2012; Paek *et al* 2013; Korda & Itani

---

<sup>128</sup> <http://digitalengagementframework.com/#book>

<sup>129</sup> <http://engagementdb.org/>

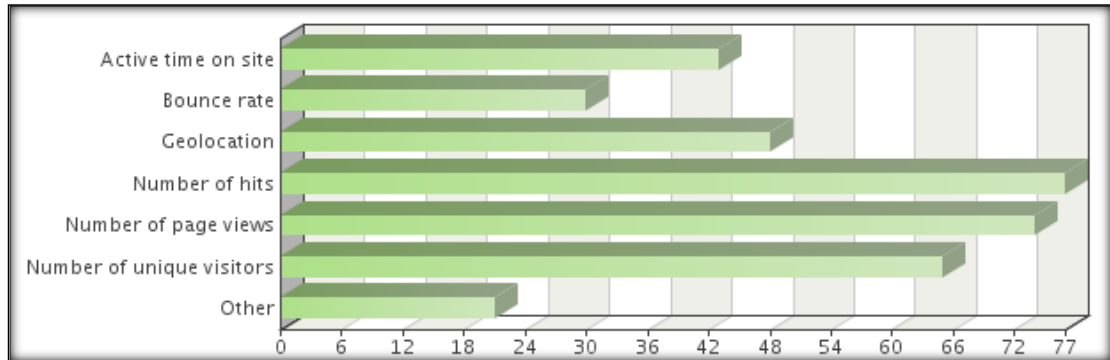
2013; Serra Cantallops & Salvi 2014). The benefits of such undertakings would seem clear: to understand user behaviour; observe participation; explore the effect of interaction with digital information; find out how easily people can find and interact with the information provided, and ultimately learn how to improve future communications and information provision.

To explore these issues within the context of the archaeology sector, I undertook Survey 5, “Measuring the Success of Your Digital Project”, which was made available from November 2012 to January 2013. The survey method is outlined in Chapter 3 and the questions and survey results can be found in full in Appendix E. This survey covered the types of metrics and analyses undertaken by archaeological organisations; how social media use was evaluated, if at all; how the results of these evaluations of digital engagement were used to feedback to public engagement strategies, funding bodies or management; whether non-digital public engagement was evaluated to provide some comparative data and what activities were most valued as part of evaluations of public engagement. It must be noted that 112 of the respondents to this survey were not from the UK, as the survey had been shared openly on Twitter as well as being emailed and shared on UK specific forums and websites. The majority of these overseas responses came from Australia, the United States or Spain. Since the aim of this thesis is to gather experiential data, it was not felt that the inclusion of non-UK data would affect the results of the data analysis, since the experience of organisational approaches to public engagement online were unlikely to be very different from the UK experience, and a snapshot of coverage of this issue would provide useful data. Of the British-based responses, 75 were from organisations based in England, 2 from Northern Ireland, 7 from Scotland, 4 from Wales and 18 worked UK-wide.

From the survey results, analysis of website metrics data took place within 42.4 per cent of organisations who responded, although 19.82 per cent did not know if this took place, and others noted that these data were collected but not examined systematically. The types of data collected can be seen below in Table 5.1. A number of the respondents did not know what kinds of data were



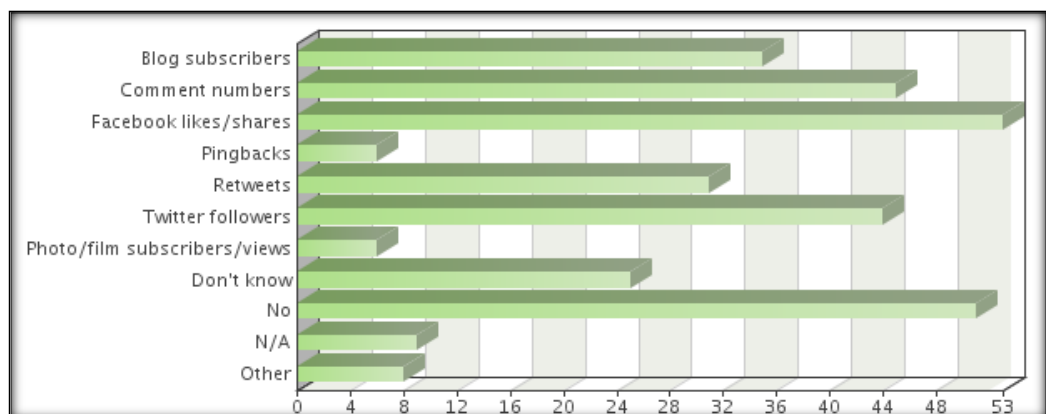
collected at all. The use of Google Analytics<sup>130</sup> was most common, or the metrics data supplied by the website host, such as WordPress' Jetpack.<sup>131</sup>



*Table 5.1: The types of metrics/analytics data collected from organisational websites*

Of 173 responding organisations, 89 had embedded social media sharing buttons on their main websites, so that content from the relatively static central sites were available for sharing, whilst 74 did not and 10 did not know.

The types of information collected by organisations on the use of their social media platforms are outlined in Table 5.2. Of 156 responding organisations, 51 did not collect any data.



*Table 5.2: The types of data collected from social media platforms*

<sup>130</sup> <http://www.google.com/analytics/>

<sup>131</sup> <http://jetpack.me/>

Organisations responding indicated that they monitor user interaction as well as user numbers, as well as mentions of their organisation, but the numbers of organisations that were monitoring the involvement and time investment by staff was very low. 17 organisations maintained an awareness of staff involvement and only 10 monitored the time invested in the use of these platforms for communication. Most respondents (roughly 65 per cent) indicated that their organisation did not report on their website analytics or social media engagement. Eighteen per cent of organisations did undertake reporting on these matters, to funders, management, their membership or stakeholders, or used these data as part of grant applications. Where these data were collected, a small majority of organisations reported that they used this information to feedback into public engagement planning and strategies, and better understanding user behaviour. This collection of online evaluation mirrors closely the results of Question 11 in the survey, which asked if evaluation information was collected from non-digital public engagement projects, where roughly 40 per cent of respondents collected feedback from events, attendee figures, comments and other qualitative data on learning outcomes, enjoyment and participant aspirations.

Most respondents felt that collecting both quantitative and qualitative information for evaluation was valuable, and in many cases, where funding for projects came from public monies, obligatory, although as one respondent noted in response to Question 12; "...the most important thing we'd like to measure is the differences in knowledge/attitude regarding the material we have presented. We have yet to come up with a satisfactory way of doing this". Evaluation is a valuable activity only if it is planned for, and the information gathered can be fed back into a strategy for improvement of the digital engagement offer made by the organisation in question. The lack of understanding of the potential use of this data for reports and grant applications is disappointing, but perhaps reflects the lack of value on the use of these media for public engagement, as well as a nuanced understanding of these data as sources for analysing the impact of

public archaeology programmes. The next section will highlight further the organisational reasons behind these issues.

## **5.4 Organisational Funding and Attitudes to Public Engagement Online**

It is important to consider if the hype and excitement created around a new technology will equate to its widespread adoption. Rather, it is more likely that those who were already more engaged with similar services and more skilled using the Internet are more likely to adopt new sites and platforms than those who were less active in related online domains, and these factors are systematically linked to user background such as gender and race and ethnicity in the literature (Brown 2007; Nakamura & Chow-White 2011; Hargittai & Hsieh 2013). It may be useful to briefly examine the adoption of digital public archaeology through the lens of Diffusion of Innovations Theory (DiT). DiT is concerned with how new technological ideas, objects or techniques, or the reuse of the old, migrates from their establishment to use. According to DiT, technological innovation is communicated through particular channels, over time, and amongst the members of a social system (Clarke 1999). DiT proposes that an innovation's adoption rate is dependent, in part, on how 'compatible' the innovation is with an individual's already established lifestyle (Wejner 2002; Mustonen-Ollila & Lyytinen 2003; Rogers 2010) and this is no less relevant for archaeological organisations and their adoption of social media and Internet technologies for public archaeology.

One of the most significant factors revealed through my research into the use of digital communication technologies for public archaeology has been the issue of funding. Survey 6: "Understanding Barriers to Public Engagement with Archaeology Online" asked organisations about the funding of their digital public archaeology projects. The method used for this survey is outlined in Chapter 3 and the full details of questions and results can be found in Appendix

F in the attached CD-ROM. As Table 5.3 demonstrates, 73 per cent of the respondents did not have any funding ring-fenced to support the creation and use of digital public archaeology projects. Of those organisations that responded to Question 4 “Can you divulge the budget you have for digital public archaeology/outreach work online per year, excluding staff costs?” approximately 69 per cent had no budget for these activities, and only 3 organisations reported that they had a budget of over £10,000.

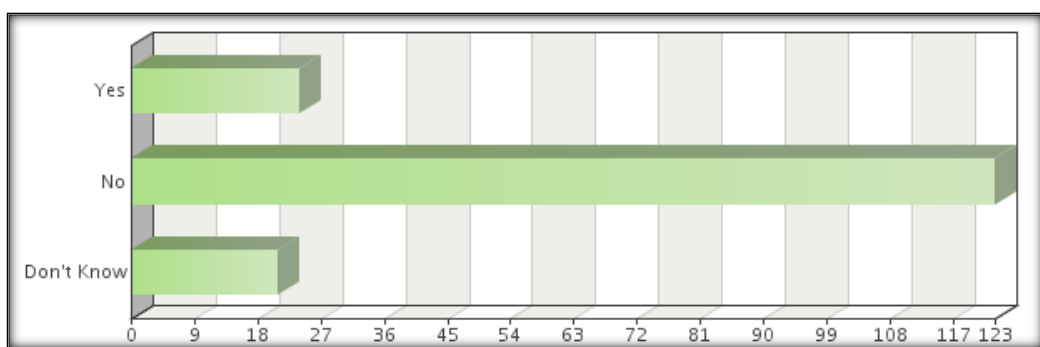


Table 5.3: “Do you have funding ring-fenced for digital public archaeology projects?”

## 5.5 Managing Social Media Use Through Policy

The ease and speed of communications facilitated through social media platforms means that there needs to be special consideration to the professional implications of the use of these media and the reflection of professional values to the public. As Grayson *et al* make clear, “social media in particular can create a perception of anonymity and detachment from social cues and consequences for online actions” (2010, 1227). There are several considerations for organisations intending to adopt participatory forms of online communication; the disclosure of confidential information; loss of communication control; misappropriation of information by third-parties; sharing personal information in public; associating with behaviour or activities that could bring an organisation into disrepute; using speech and behaviour disrespectful or insulting to colleagues and clients;

and reputational damage. Once information is posted online, there is no further control over its lifespan and replication, since screen shots can be created, and forwarded, even when problematic posts are removed from public view. An awareness of the potential size and diversity of audience is vital at all times; an awareness of the reach of indirect contact, through reposts, retweets and forwarded content via email renders a realistic grasp on audience figures almost impossible to gauge (Huber *et al* 2009; Griffin 2011; Tripp & Gregoire 2011; Anthonysamy *et al* 2012; Braun & Esswein 2012; Braun & Esswein 2013; Gaff 2014).

The complexity of permissions and privacy settings increased by churning development within social media platforms, often without little or no notice, leave these platforms open to user error and misjudgement. There are instances of e-crimes such as account hacking, identify theft, phishing and malicious viruses distributed throughout the Internet (Ahmad *et al* 2013; Yang *et al* 2013; He *et al* 2014; Sahu & Dubey 2014). 'Like jacking', and the propagation of malware is encouraged by the inherent, and misplaced, trust in the relationships, likes and recommendations found on our personal social networks (Weir *et al* 2011; Grabner-Kräuter & Bitter 2013; Kumar *et al* 2013). Issues with the use of social media in the workplace have been especially highlighted in the healthcare professions (Grayson *et al* 2010; Mainka *et al* 2014), and the associated literature has called for consensus-based standards for online professionalism, something pertinent to any profession managing the use of social media within an organisational context.

Clarity on the ownership of social media platforms, and copyright and intellectual property rights of the material produced there, with the technological resources of the employer, is an important consideration. Whilst the ability to communicate rapidly with a large number of people via Facebook and Twitter, for example, results in a number of followers, the question of ownership of these followers and the material created and shared online creates complex legal scenarios that will need careful consideration. Ownership of social media accounts themselves will need to be clearly identified, and the use and

ownership regulated. Twitter accounts are legally owned by the person who originally created them, unless the account is in the name of the employer or the employee is contracted to create the account (Miller 2012, 40). The benefits of the use of these social media could be lost if the employee moves to another company or is made redundant, and given that most organisations that responded to the social media survey have less than 3 staff managing their social media presence, this is a worrying possibility. Specific policy needs to be developed to safeguard ownership and content of social media content, alongside use and the management of organisational reputation and confidentiality for the sake of clarity, safe working practice, and continuation of online projects (Miller 2012, 43).

The use of the Internet in the archaeological workplace as a tool for public communication and engagement with archaeology brings with it challenges of organisational management, information control and the management of risks to individual and organisational reputations alike. The provision of official guidance about which staff members or volunteers should be engaging in social media, which social media platforms to use and which to avoid, and how much time should be spent using and managing these platforms are all essential considerations. There are important legal and ethical issues to consider, and organisational guidance on social media use is recommended by most employment organisations, such as ACAS, the Civil Service or the General Medical Council (ACAS 2014; Civil Service 2014; General Medical Council 2014). Identifying yourself online with a professional position or work email address will associate any information found online with your professional profile, even if it is very clear where the personal and professional boundaries lie (Landman *et al* 2010, 385). Social media companies have ultimate control over the information contained in and shared on their platforms, and they make no guarantee of information security (Mostaghimi & Crotty 2011). These social media each have their own unique architecture, which moulds the interactions on these platforms, and the way in which the user-generated content is managed. Privacy settings may change with short notice, and irregular users may

not notice these in time to maintain personal privacy. For Facebook use, access to personal information and previous posts can be made once the ‘friending’ process has occurred, so some caution is advisable on the types of Facebook account an organisation should use for sharing project information.

This section will discuss the results of the “Archaeology and Social Media Policy” survey, which was open for responses from October 2011 until January 2012. The questions and results of the full survey can be found in Appendix B on the CD-ROM, and the data collection method can be found in Chapter 3. 293 people took the online survey, and 189 completed every question. Question 1, “Does your organisation or group use any of the following social media tools in an official capacity relating to archaeological activity?” received 271 responses. 287 organisations that responded to the survey had a project website or blog, 176 projects were using Facebook pages or groups, and 112 were using Twitter. Photo-sharing sites, such as Flickr<sup>132</sup> and Picasa<sup>133</sup> were used by 62 projects whilst 53 projects were using film-sharing sites, such as YouTube<sup>134</sup> and Vimeo.<sup>135</sup> Google+<sup>136</sup> was used by 17 projects. There were 17 ‘other’ social media platforms mentioned in the survey responses. These included LinkedIn,<sup>137</sup> a business-oriented social networking site; Scribd<sup>138</sup>, a participatory document-sharing site; Yahoo Groups,<sup>139</sup> which are hybrids of an email list and a threaded Internet forum; Microsoft Sky Drive,<sup>140</sup> part of the Windows Live package that allows for file sharing; Google Fusion Tables,<sup>141</sup> a data management and visualisation application; iTunes,<sup>142</sup> a media player programme that can be used to store and download apps and pod casts and Photosynth,<sup>143</sup> a software application which can generate a three-dimensional model of digital photos.

---

<sup>132</sup> <https://www.flickr.com/>

<sup>133</sup> <http://picasa.google.com/>

<sup>134</sup> <http://www.youtube.com/>

<sup>135</sup> <https://vimeo.com/>

<sup>136</sup> <https://plus.google.com/>

<sup>137</sup> <https://uk.linkedin.com/>

<sup>138</sup> <http://www.scribd.com/>

<sup>139</sup> <https://uk.groups.yahoo.com/neo>

<sup>140</sup> <https://onedrive.live.com/about/en-us/>

<sup>141</sup> <http://www.google.com/drive/apps.html#fusiontables>

<sup>142</sup> <https://www.apple.com/uk/itunes/>

<sup>143</sup> <http://photosynth.net/>

Question 2, “Does your group or organisation have specific group members or staff who are responsible for the maintenance of these social media tools?” received 238 responses. 184 organisations that responded to the survey stated that they have specific staff allocated responsibility for online communications via social media platforms. The majority of staff responsible for the organisational web presence were not part of discrete communications department, but were instead practising archaeological staff. 31 organisations did not have specific staff, although this may include staff using social media as part of their normal daily work routine, or for the duration of particular projects or initiatives. 9 organisations did not know.

Question 3, “How many group members or members of staff have access to the official social media tools used in your group or organisation?” received 201 comments. The responses varied - many organisations had a handful of staff that had routine access to their work websites and social media platforms, and wider access was optional depending on relevance to the project in hand. In a number of cases, there was a noticeable disconnect between the breadth of organisational access permissions and the number of people working in archaeological posts that actually used these platforms. For example, one survey participant commented that their colleagues had access to “Facebook, in theory 61 (have access), only 2 bother”. Many organisations noted that they were subject to strict editorial control by a separate ICT or communications teams outside the archaeological team, and those participants who were in the employment of local government and large institutions such universities, reported that there were policy guidelines that restrict and channel the use of all public communications, including those made through social media platforms.

A number of websites were maintained and updated by specialist ICT staff within the organisation structure, or that this work was undertaken by external specialists, who did not work on a day-to-day basis within the organisation. Local authority use is frequently restricted and carefully managed, for political reasons as much as for IT security and privacy issues- one comment from a survey respondent stressed that as local authorities are considered to be political



entities “officers cannot enter into any ‘conversation’ as that might lead to political repercussions, as officers cannot be the ‘voice’ of the authority”. Permissions and admin rights for social media accounts were dependent on skills and position within the organisation, and that “one central person controls the social media”, insofar as the final decision on content is dependent on management or staff solely responsible for social media and communications. It would be interesting to consider if similar restrictions are replicated across the cultural and heritage sector, however, very little literature exists on the topic (Russo 2011; Culture 24 2014).

Within the voluntary organisations that responded, access to the group’s social media platforms and websites were either channelled through a management committee, or was reliant on the group members having ICT skills and familiarity with these platforms, which often meant that only one or two members of the group had access, and control, of the organisational Internet presence. 13 of these organisations did not know how many people within their organisations had access to their social media accounts and website.

Question 4, “In an institutional or organisational context, are these staff part of a discrete communications department, or are they practising archaeological staff” received 245 responses. 32 organisations had staff from their communications department using social media platforms. 111 were archaeological staff, 26 were administrative staff. 37 responded that this was inapplicable, and 39 stated ‘other’. Comments associated with the ‘other’ response demonstrate that volunteers, including students who were attending on a temporary basis, were often responsible for these communications, or that responsibility is shared between staff, especially in smaller organisations.

From the responding organisations, only 40 stated that they had a formal written social media policy in place. 124 did not, and 32 did not know. 17 organisations that responded ‘other’ were part of larger organisations, such as local government, where institutional policies not specific to archaeology were in place. Others noted that they had a set of informal guidelines for social media

use but no formal policy in place, or were in the process of creating and implementing policy arrangements.

Question 6, “Do you have specific group members or members of staff who have responsibility for monitoring comments/questions received via social media?” received 213 responses. 110 organisations stated yes, 64 no, and 23 did not know. Comments indicated that incoming questions and comments received via email or social media were dealt with by the most relevant staff or by their volunteers, depending on who has relevant expertise.

Question 7, “if the answer to Question 6 was yes, who deals with social media during absence/leave periods?” received 120 responses. 60 respondents noted that other members of the archaeological staff or volunteers would monitor their social media presence in their absence. 3 organisations would rely on IT staff, and 6 organisations would use members of their communications staff. 22 respondents did not have anyone to take over the monitoring and use of social media, 12 would continue to work on their organisational social media presence remotely, even if sick or on leave. 3 respondents did not know, and 10 did not feel this issue was relevant. Comments noted that the monitoring of social media in the absence of the dedicated staff was dependent on the urgency of the situation i.e. the length of absence, and the type of communication that needed to be dealt with. Arrangements to cover work-related tasks are common, although 12 respondents were happy to continue to monitor and update their organisational social media whilst on holiday, or off sick, since “it doesn’t take much to check social media even if not in work or on holiday” and the ubiquity of smartphones and Wi-Fi enabled this ‘always-on’ connectivity. There were a number of comments made that there were no staff or volunteers able to deal with the organisational social media platforms in the absence of key staff. This suggests that the social media profiles of the organisations, especially if in the voluntary sector, are so small and infrequently used, that a hiatus in monitoring these media would not have an undue effect on their organisations.

Question 8, “Is the social media strategy of your group or organisation driven by one particular individual?” received 213 responses. 78 organisations felt an individual drove their social media strategy, 90 did not, and 16 did not know. 17 felt this question was not applicable. Comments suggested that in many groups, social media strategies were a shared responsibility, or led by whoever at the time was running the relevant work projects and collaborations that required social media communications. Corporate communications departments were in control where organisations were part of larger institutions, and this is most common for archaeologists working in local government planning departments.

Question 9, “Does your group or organisation use corporate branding on your social media tools?” received 208 responses. The majority of organisations, 111, did, 61 did not, and 7 did not know. 18 organisations felt this was not applicable. Comments indicated that the use of branding depended on the size, length and affiliation of the project, and that corporate branding was often covered by social media policy and communication guidance, especially in larger organisations. Question 10, “Does your group or organisation provide training or written guidance to members or staff on official social media use?” received 207 responses. 119 organisations did not provide written guidance to their staff or volunteers, 42 did supply this information, and 13 responded that they did not know. Comments were made demonstrating that, in a small number of organisations, basic guidance and informal advice were used, and that there were plans to provide specific training on this subject in the future in some. A couple of organisations did not feel they needed to, due to the size of their group, and the informality of the communications made. Question 11, “Do you have a Risk Register for using social media?” received 200 responses. 130 did not have a Risk Register, 46 did not know, and only 7 organisations had one in place. One respondent noted that social media output was monitored, and that misuse would result in disciplinary action according to their employee handbook. Another stated that they did not understand the concept of a Risk Register.

These data demonstrate that the use of formal policy within archaeological organisations is patchy, depends heavily on the availability and knowledge of staff and the value placed upon public engagement by the organisation itself. These data were gathered in 2012, and it is highly likely that this information is out-of-date, since the growth, development and adoption of social media within archaeological organisations has been demonstrated throughout this thesis. Future work on this area would be advisable, and these data could be revisited for comparison.

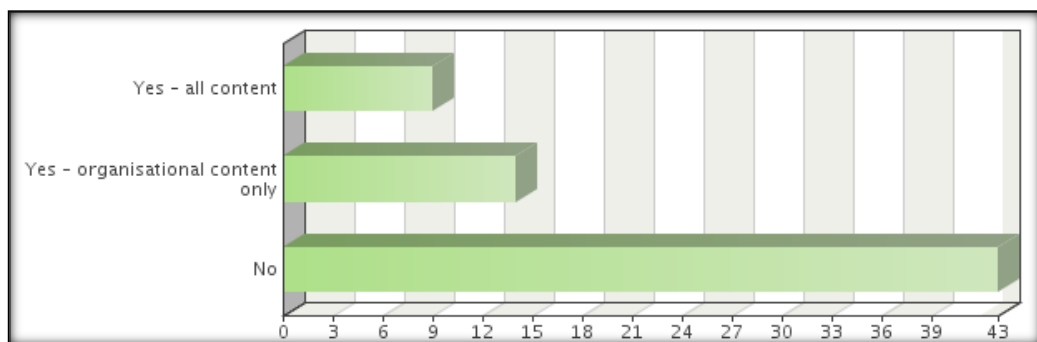
## **5.6 Archiving Material Generated by Digital Public Archaeology**

The question of archiving archaeological material, including digital data, is one that has caused concern to archaeologists for many years (Merriman & Swain 1999; Holtorf 2001; Richards 2002; Swain 2006; Richards *et al* 2010; de Silva 2011; Hicks 2013). In the first proper exploration of the impact of social media technologies on the issue of archiving archaeological information, Jeffery (2012) warned that the discipline faced “a second Digital Dark Age” (Jeffery 2012, 555), as the adoption by archaeologists of social media and collaborative websites is “running ahead of plans or policy to preserve the material generated” (Jeffery 2012, 555). Jeffery’s article draws attention to the paradox that, while there may be no expectation that the content of every blog and tweet will be permanently archived in a manner that makes it openly accessible, the fact that the longevity of much of this material is ultimately controlled by social media companies means that it may not be possible to ‘forget’ it fully. Jeffery used the examples of the archiving of the social media outputs at the 2012 Computer Applications and Quantitative Methods in Archaeology Conference (CAA 2012) and the *Day of Archaeology* project by the ADS to demonstrate that this type of material can be retained and valued (Jeffery 2012, 565). This subject will be revisited in Chapter 7.7 with regards to the *Day of Archaeology* project.

Question 12 of Survey 2, “Archaeology and Social Media Policy” which was undertaken in 2012 (the full results of which can be found in Appendix B),

asked if organisations had a policy or methodology to archive or preserve their social media outputs and dialogues. Only a handful responded that they had a policy in place - out of 128 responses to the question, 85 stated that they did not have a policy; 25 had some form of policy; 12 did not know if their organisation did and 6 did not feel it was relevant to their situation.

Building on these findings from the second survey, I undertook Survey 4: “Preserving Public Archaeology Content Created Online” in July and August 2012 (the full results of which can be found in Appendix D), in order to explore further organisational attitudes towards the preservation and ultimately the value placed on these forms of communications in the context of recording public archaeology practice and historiography. As Table 5.4 demonstrates, the majority of archaeological organisations who responded to the survey did not maintain copies of any social media outputs or public contributions.



*Table 5.4: “Do you keep backup copies of both your own social media and online content, and any public contributions?”*

Out of 66 responding organisations, only 18 stated that they officially captured any of their public engagement outputs that were created and maintained online. These forms of storage were screen captures as images or PDFs; digitally in MySQL or similar databases; capturing email feedback as Word documents; or collating images and comments shared through social media. No organisation reported that this work was undertaken as a routine part of workflow, and unless a specific records management policy was noted to be in place, then no

retention policy was specifically applied to this type of data. Only two organisations reported that they captured and stored any metadata associated with these media. The archiving of this material was undertaken by a mixture of staff depending on the type of project, although the most common response was the person in charge of the IT provision. The reasons given by those organisations that did undertake the collation and storage of social media conversations, public contributions and so forth are varied. These data allowed research into impact; evaluation of the effectiveness of website content; used in promotional material; maintained as protection against abuse, or if comments are useful for feedback; used to inform funders and supporters about online activities; as evidence for HLF grant reports.

Those organisations that did not capture and maintain records of interactions on social media platforms gave a mixture of conscious decisions not to or that they did not consider that archiving these media were possible or desirable. Some noted that they felt these media and the content shared through these platforms did not have value yet, although the responses indicated that some organisations were at an early stage in the adoption of these media and that this issue was one they would consider in the process. As one survey respondent noted;

Social media is, for the most part, just that, a social interaction. You don't record all of your conversations in person or by phone, why would you want to? If someone tells you something that is of particular interest you make a note of it if necessary and you do the same thing with social media. Just pick out the interesting stuff and dump the other 99.9%.

Whilst there is a great deal of validity in this argument, when considering the potential absence of any records of online activism, and community creation in archaeology which are discussed in Chapter 6, it is perhaps important to consider archiving important conversations and discussions. Just as letters and site diaries are used to reconstruct the history of archaeology, perhaps the arrival of the "Second Digital Dark Age" (Jeffery 2012, 555) could see the discipline lose part of its history.

## 5.7 Discussion

The implications of the impact of these technologies depend on the “economic, legal and policy decisions” made by institutions using the Internet (Dimaggio 2001, 307). Within some organisations, especially local authorities or commercial companies, using websites and social media can be difficult, or can be accessed only by a small number of staff. The exploration of the issue of social media policy shows that as local authorities are political entities, archaeological officers are forbidden to enter into any 'conversation' as that might lead to political repercussions as officers cannot be the 'voice' of the authority - all websites, press releases and blogs have to be run by the council or organisation official media team and access to social media at work, are, in most cases, blocked. Within commercial archaeology, there are many reasons why companies don't publicise their excavations via the Internet or other media and the development of social media policies within these organisations is vital to support public engagement.

Organisations which are able to benefit from institutional and financial commitment to using the Internet to engage with the public have access to hardware, software, specific technical knowledge and skills, and most importantly time to create and maintain successful sites. Access to a voice in public archaeology is affected by the transfer of these material advantages from respected institutions in 'real-life' archaeology to the digital world. How can a small community archaeology project compete for attention, if it is time and budget poor, with staff or volunteers that don't have the skills and confidence to fully embrace the digital world?

If these factors have really “de-centred expertise”, we must ask if this action affected the appreciation of archaeological authority held in popular consciousness (Adair *et al* 2011, 14). As “stage-managed spaces of engagement preclude the potential for ‘uninvited publics’ to engage with science and technology and widen the interaction and scope for reflexivity” (Stilgoe *et al* 2014, 7). Developing a commitment to inclusive practice and widening public

access to archaeological knowledge or data could de-centralise archaeological authority, but professional archaeological experts are still required for activities such as scientific dating, archaeo-botanical identification, or small finds conservation for example. The issue of archaeological authority and the concept of presentation and performance of archaeological expertise will be explored fully in Chapter 8.

Although there will not be one easy solution, a greater public and intra-archaeology awareness of the technical aspects of the Internet would be a useful start. Archaeologists need to develop skills and knowledge about site design; social media use; creative content management; measuring traffic to the site using metrics analysis packages; generating targeted content; understanding audiences; establishing policies, and supporting and including novices and newcomers. In the Library and Information Studies literature, this is known as digital literacy, which will be discussed in full in Chapter 8 (Lanham 1995; Glister 1997; Catts & Lau 2008; Miller & Bartlett 2012; Park 2013). Library and Information Studies have had an important role in encouraging these skills. Can archaeology do the same? Understanding and responding to these literacies should be part of the everyday work of an archaeologist working in public archaeology, not just part of a specialist ghetto. This type of knowledge could be included as part of any archaeology degree course that discusses public or community archaeology, or public engagement and dissemination. There are already some opportunities for training and guidelines on best practice provided by English Heritage<sup>144</sup> and this model could be developed further by organisations such as the Institute for Archaeologists or the CBA for commercial and community organisations. These barriers often require resources beyond social technologies to overcome (Benet & Segerberg 2012, 747), and as we can see from the results of Survey 6, “Understanding Barriers to Public Engagement with Archaeology Online” (the full results of which can be found in Appendix F), the financial and staff resources are frequently lacking in archaeological organisations in the UK.

---

<sup>144</sup> <http://www.conted.ox.ac.uk/V400-327>



Rectifying some of these inequalities calls for the subversion and sharing of socio-technical capital. Community and public archaeology needs to be able to compete for archaeological attention, and this can only be helped if archaeologists with digital skills are willing to share their knowledge benefits with all people practising archaeology, professional or not. And it is essential that non-specialist archaeologists are willing to listen and are offered opportunities to learn about public engagement online and see the value of using these methods of communications as part of a wider outreach toolkit. Thinking about the performance of better public archaeology through technology is techno-deterministic - exploring the complex societal interest and requirements of our shared and diverse pasts, and the need for nuanced methods of public engagement with this information is reduced to using technologies - if it is on the Internet, it is “public engagement” (Fuchs 2012, 386).

We need to acknowledge the fact that the Internet and mobile technologies are used far more often for the creation and maintenance of social relationships, and entertainment, in similar ways as print media, television and radio (Jensen 2010; Hofheinz 2011). The results of the Arts Council England research into digital audience, and their engagement with arts and culture online, suggested that digital media has more value as a tool of engagement with people that are already online, and have existing interests in cultural activities (Arts Council England 2010, 6). We ignore these activities at our own risk if we forget that for most consumers of archaeological information, this is at most, a weekend hobby, a part-time enjoyment or an integrated part of the pursuit of entertainment and distraction - and certainly not something to be pursued seriously as a career. But we can and must provide interesting engaging information and narratives for the public.

How, if at all, do organisations measure the success of their social media platforms? Is it about the numbers of 'likes' (a very passive engagement practice) retweets, or shares? How can the depth of participation be understood to be successful unless some level of qualitative assessment is undertaken? Whether or not Internet technologies afford marginalised groups and individuals the

opportunities to create and maintain their own interpretations of their pasts, the use of websites, blogs, Tweets, Facebook posts and similar platforms are meaningless without developing an understanding of visitor traffic as well as user behaviour and participatory motivations, as explored in Chapter 4. An understanding of the importance of attracting and engaging real-person traffic to one's social media platform is essential - otherwise using the Internet to create and display ones engagement with archaeology and heritage is simply an exercise in *using* technologies rather than *harnessing* them. Using the internet as a place to publicise your thoughts and activities and engage with others as part of a community is not the same as using it as a space for the "insubordination of individuals and groups who already have their voices co-opted by dominant narratives within the heritage sector" Waterton (2010, 9).

If research into and understanding of these issues are confined to a core of digital professionals working in archaeology in the UK, then the danger is that this work does not percolate to those who need the information most. Issues of authority and trust must be seen as equally important as technical, legal and accessibility issues, if the Internet is to become an equal platform for all communities and stakeholders: these issues will be explored further in Chapter 8. It is not just a matter of enabling local community archaeology groups, and archaeological organisations without dedicated and trained web staff to take part, but also to empower academics keen to share their knowledge and provide support for archaeological communities to develop online. The subject of harnessing the weak ties and social capital inherent in the use of social media communications for archaeological community activism, community projects and networking will be examined in the following chapters, 6 and 7.

## CHAPTER 6: ONLINE COMMUNITIES IN ARCHAEOLOGY

The evolution of web-based information & communication technologies has offered new and exciting ways to gather, organise and disseminate information for community groups and projects throughout the world. The Internet and World Wide Web have helped facilitate many forms of such activities by providing a framework for web-based communities to exist and be easily accessed by community groups of every type and focus (Doughty & O'Coill 2008, 385).

This chapter examines the location and formation of online communities in contemporary public archaeology practice, and explores examples from three distinct activities within the discipline - the use of social media for archaeological protest campaigns; the use of the social media platform Twitter as a locus for archaeological community; and the growing phenomenon of crowd-sourced archaeology projects, which involve a community based on participation in focused project activities. Section 6.1 assesses the definition of online communities found in the academic literature. Section 6.2 explores the implications of the sociological concepts of social capital and weak ties for the creation of archaeological networks online. Section 6.3 discusses the influence of these concepts on digital activism in archaeology. This section will examine the use of social media campaigning in archaeological contexts, and consider the experience of online campaigns on archaeology issues, with an example from Northern Ireland and the UK-based archaeological campaign, RESCUE, the British Archaeological Trust.<sup>145</sup> Section 6.4 widens the focus of this chapter to include an exploration of online archaeological communities, using the social media platform Twitter as a case study, through the results of a series of surveys undertaken for this thesis, undertaken annually from 2011 to 2013, which are described in Chapter 3 and can be found in the appendices. This section investigates whether the concept of an online archaeological 'community' is experienced, valued and actively pursued by Twitter users, based on the online surveys of archaeologists using the platform. It will also discuss the use of the

---

<sup>145</sup> <http://rescue-archaeology.org.uk/>

Twitter platform at archaeological conferences, as a focus for community interaction online, using data from a separate survey undertaken in 2013. Section 6.5 once more shifts the focus of the chapter to another area of online archaeological community with an examination of the phenomena of crowdsourcing. This will analyse the ability of archaeological projects to create and leverage online support for this type of participatory project, focusing on four case studies based in the UK. Section 6.6 contains a summary of the chapter findings and a discussion of the impact of the different platforms, methods of communication and technologies discussed throughout the chapter, on the phenomenon of online community-creation within the UK archaeology sector.

## **6.1 What is an Online 'Community'?**

Scholarly research into online communities has been part of the landscape of social science since the earliest developments of the participatory aspects of the World Wide Web and the work of Rhinegold (1993), Correll (1995), Webster (1995), Aronowitz (1996), Schuler (1996), Agre & Schuler (1997), Smith and Kollock (1999) and Wellman and Gulia (1999). There has been extensive research into the phenomena, location, psychology and activities of what have been variously termed social networks, networked relationships, online communities, online discussion communities or Internet-mediated communities (Rhinegold 1993; Driskell & Lyon 2002; Feenberg & Bakardjiva 2004; Jensen 2006; Kommers 2006; Bishop 2009; Reich 2010; Rainie & Wellman 2012; Alton & Balkunje 2013). Understanding how these online communities work, and estimating the peer effects of online social influence (which is explored further in Chapter 8) are critical to understanding the impact of social media technologies on public engagement with archaeology, and the potential for exploiting social networking for archaeological publishing, public engagement, fund raising and activism (Aral & Walker 2012, 337).

The definition of 'community' has been a central concern of historians, philosophers and sociologists since the nineteenth century, and one with a narrative of decline, as the traditional forms of geographically located community were observed by sociologists to be threatened by the social changes that accompanied the growth of urbanisation, communications technology and modernity (Bender 1978, 3). For example, Tönnies' classic work of social and political theory, *Community and Civil Society* (Tönnies 2001), first published in 1887 as *Gemeinschaft und Gesellschaft*, explored the personal and collective tensions presented by the definition of small-scale rural community and wider, urbanised society. He distinguished between traditional geographical and kinship-based community, *Gemeinschaft*, and broader, market-driven society and social ties, *Gesellschaft*. German sociologist Weber wrote on many aspects of the rise of urbanisation and the decline of community in his works *The Protestant Ethic and The Spirit of Capitalism* (1930) and *Economy and Society* (1978) and he defined community formation as one which has "any sort of affective, emotional traditional basis" (Whimster 2004, 344). As we shall see in Section 6.2, subsequent generations of researchers moved further from the debate about the loss of traditional community, including Bender who built upon the concepts of *Gemeinschaft* and *Gesellschaft*, and explored the modern American experience of community as a "communion" of human relationships, serving their own community interests, with communities defined by limited membership, shared purpose, affective ties and a sense of mutual obligation (1978, 8).

As Fremeaux has argued, the term 'community' was one of the most important sociological concepts to have "been 'appropriated' in the discourse of the UK's New Labour government" (2005, 265), alongside the role of heritage in tackling social exclusion (Newman & McLean 1998; Simpson 2010). As Yar has observed "New Labour's political programmes and policy proposals closely follow the communitarian line that links social problems with a lack of community in contemporary society" (2004). Derivatives of these concepts of community engagement and involvement have been equally used by the coalition since 2010 (Department for Communities and Local Government 2010; 2013a; 2013b). The

modern political concept of communities, in the UK at least, is dynamic, and is certainly being reworked and renegotiated dependant on social and political influence, often defined in contemporary terms with reference to history (Cohen 1985; Cohen 1986; Isherwood 2009; Pyburn 2009). Yet as Waterton asserts, “community... is judged in the minds of the participants rather than the geographical spaces they occupy, and is defined by the subjective experiences and associations it engenders” (2010a, 6).

With Waterton in mind, the term 'community' has a strong symbolic value that is not always reflected in the types of group interaction that can be found online, although it is frequently applied to social and participatory media sites on the Internet (for example: Rheingold 1993; Rainie & Wellman 2012; Alton & Balkunje 2013). We must consider whether the casual use of term 'communities' to mean electronic forms of grouping and networking may in fact be incorrect, and may not reflect the opinions of the participants in these networks. Do online communities dilute group intimacy and shared purpose and can these networks develop a sense of mutual obligation and support? Are there issues with the lack of visual cues in online communications? I would argue that there are low or non-existent barriers to joining, leaving, or ignoring many social networking communities, and interaction is shaped by personal commitment, as well as technological and temporal limitations. Can the benefits of weaker online relationships reflect similar relationships in real life when Internet communications make the expression of discontent as simple as a click? Are stronger interactions, personal support and networking online most likely to take place between people with similar interests and ambitions or kindred spirits seeking similar knowledge or experiences - do these shared interactions mark belonging to an online community? (Isherwood 2009).

Rheingold popularised the term “virtual community” in the early 1990s, and he defined online community as “social aggregations that emerge from the Net when enough people carry on discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace” (1993, 5). The

dominance of social media technologies on the Internet, as we have seen in Chapter 4.1, has located these virtual communities around the use of proprietary social networking platforms such as Facebook, Twitter, or Instagram, although the situation, location and definition of any online community is constantly evolving. Belonging to a number of these online communities, through social networking sites or forums is becoming a normal practice amongst Internet users (Wang *et al* 2012).

Yet much of the academic analysis of these online communities and networks takes place in isolation from the community itself, and abstracts the community ties that people also hold offline with their online networks and interactions that take place offline. The connections made through Facebook 'friendships' may cover a mixture of real friends, work colleagues and casual acquaintances, whilst membership of Facebook groups, or pages, encompasses another layer of 'belonging' to online communities situated around shared interests in music, politics, books and so on. Flickr networks exist - it is more than a photo storage site, and Burgess has argued that it is a place for enactments of "vernacular creativity" (2007, 8). Flickr contains communities of social practitioners, who situate their sense of community around thematic presentations of images, geographic locations or professional identities. The site offers a space for the discussion of the visual and dynamic representations of archaeology and heritage objects, sites and actions within a community space, as a form of intangible heritage renegotiated in the present (Affleck 2007; Freeman 2010; Terras 2010; Terras 2011).

As Wellman and Gulia argue, the Internet "is not a separate reality" (1999, 170). Mazali notes that there is a close relationship between virtual and real communities - digital communities grow from communities that have "specific and localised values, problems and identity" (2011, 291). For most people, the relationships performed through Internet technologies complement and enhance most real-life relationships in the real world, rather replace them completely. As Wellman (2001) acknowledges, these relationships, these networks, rather than

communities in the traditional sense of the word, are most people's current experiences of social relationships in real life, and modern communities are defined relationally not spatially. Wellman himself defines community as "networks of interpersonal ties that provide sociability, support, and information, a sense of belonging and social identity" (2001, 228). Being connected online serves to amplify and extend real-life relationships, enabled by Internet and mobile autonomous communication by any means necessary; always-on wireless connectivity, text-messaging, Twitter, Facebook, mobile internet technologies, and all available at your convenience, often through a portable device carried everywhere. But is this narrow definition of what constitutes a community enough to really be a community on the Internet? Are one-topic groups communities, and can shared identities situated around the subject of archaeology be a catalyst for community formation? Since the location of these communities is in a new space, online, where discussion and interaction takes place in different formats, time zones and at different pace - synchronous and asynchronous - do these differences matter any longer to the formation of a sense of connection and belonging to a network? What conditions, institutional or otherwise, need to exist to support the development of online networks and communities?

The mourning of the loss of rural community ties by the nineteenth-century sociologists mentioned in Section 8.1 is reflected to a certain extent in the sociological thinking of the twentieth century on the issue of community and society. Breakdowns in group memberships and institutional loyalties have been a trend in the more economically developed industrial democracies, resulting from pressures of economic globalization, spanning a period from roughly the 1970s through the end of the last century (Putnam 1995; Putnam 2001; Block 2008). The shift from group-based to individualized societies is accompanied by the emergence of flexible, social, weak tie networks (Granovetter 1973). The emerging alternative model that we call the logic of connective action applies increasingly to life in late modern societies in which formal organizations are losing their grip on individuals, and group ties are being replaced by large-scale,



fluid social networks (Castells 1996). These networks can operate through the organisational processes of social media, and their logic does not require strong organisational control or the symbolic construction of a united 'we' (Bennett & Segerberg 2012). Online community as a communal space outside and independent from institutions can also foster dissent, cultivate new discussions, challenge identity, reconfigure social relationships, and cross hierarchies. However, the very structure of some social networking platforms and discussion forums can act as "walls, hallways and doors with electronic locks" (Kling & Courtright 2003, 222), providing rules about who can participate and who is excluded; rules for communication; acceptable conventions (for 'newbies' for example) as well as social control agents and their practitioners within the communities in question. White and Le Cornu (2011) use the metaphor of place for online networks and communities, in which Internet users can be present with other people, and enact a membership of the Web. Structural adjustments therefore may be necessary to stimulate engagement, instil trust, and support group identity when using Internet technologies as part of a digital public archaeology. Developing groups and networks online will require special support - it cannot be assumed that ready communities exist or that they will.

So what drives individuals to participate in these online communities and social media platforms? Access to technology and the skill to use those technologies remains stratified. The democratic and utopian ideals attached to the Internet by early pioneers (see: Rheingold 1993), along with the potential for widened patterns of research, must also be tempered with a more critical awareness of inequalities, which sees online users dominated not only by Western countries, but also a demography characterised by white, middle-class males (Wessels 2009; Nakamura & Chow-White 2011; Wessels 2013). Indeed, as many scholars have pointed out, the use of the Internet in society reflects the power struggles, divisions and asymmetries of the 'real' world in terms of gender, sex, religion, age, class and ethnicity (Brown 2007; Nakamura & Chow-White 2011; Hargittai & Hsieh 2013). This is a significant point of caution for any research undertaken both through and on the Internet.

Communities forming online need not be considered in opposition to those created offline, but re-imagined as similar complexities of camaraderie and support forming in a new space, or place, where relationships are forged and new ways of being enacted and embodied self-identified community groups using digital technologies may struggle to find legitimacy as authentic and trustworthy voices, precisely because they are heard through a medium conventionally dismissed as either seemingly or potentially false and do not have the requisite affiliation with an academic authority to reinforce their legitimacy (see Chapter 8 on archaeological authority online). As such, while the Internet offers access to a virtual world with the potential to reap cultural and social benefits, it also brings with it a range of tensions and examples of misrecognition of data, authority or participation that cumulatively and unsatisfactorily renders it unhelpful.

Gere writes that despite the promises of social media to embrace nostalgia for the lost communities of the past, there are “historical precedents for the failure of every new form of communication to fulfil the Utopian ideals which almost always accompany their first appearance” (2012, 7). The iterative process of development and support for online communities in archaeology, as elsewhere, will require long-term commitment on the part of the originator to sustained communication and the encouragement of social interaction, as well as maintaining the relevance of both discussion and platform. That participatory projects are questionable in their effectiveness, when balanced against “democracy and ownership”, is understood (Kidd 2010, 65). The potential for public engagement and participation requires a considered strategic approach. The success of any social media endeavour in public archaeology must first recognise the need for a nuanced approach to the technologies involved, with careful consideration of the need for an investment of time, flexibility and an organisational commitment to collaboration with, and inclusion of, the wider public. Kling and Courtright's (2003) socio-technical model of the Internet sees social behaviour online interacting with technical aspects of the internet and they claim that space online must be seen as structured both socially and

technically to understand behaviour in online communities. The sustainability of these online communities is a complex issue - technological and fashionable obsolescence; user-unfriendly, complex sign-up processes; active exclusion and clique behaviour (Kling & Courtright 2003; Isherwood 2009); and the need to support online dialogue.

## 6.2 Social Capital and Weak Ties

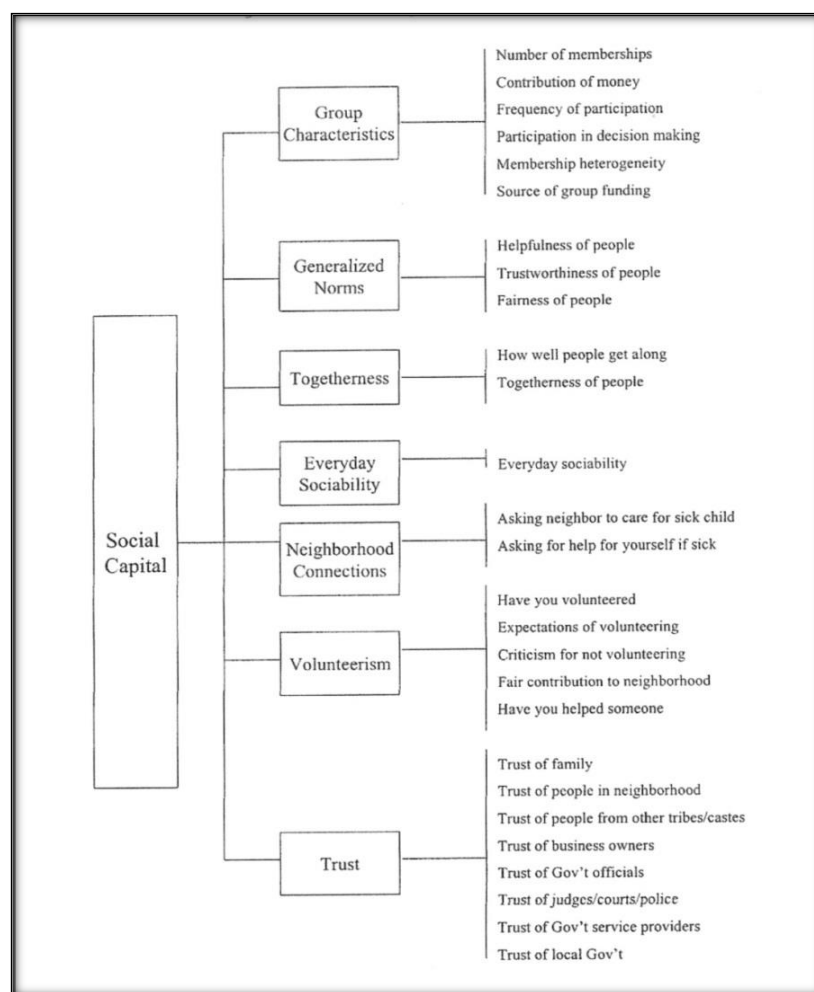
The concept of social capital - a concept defined as the benefits and resources accumulated through social relationships and social networks - has been disseminated from sociological theory into popular parlance over the past twenty years (Portes 2000, 43). As a sociological concept, social capital has been a subject of interest to a number of international development agencies and national bodies in the UK over the past decade, and the impact of this form of capital has been explored in a variety of diverse organisational contexts, such as the World Bank, the UK Office of National Statistics, and local government authorities. This diversity of interest is in recognition of the importance of the processes of gaining social capital, alongside human and economic capital, for economic success, community cohesion, and the wellbeing of society (Warren *et al* 2001; Office for Public Management 2005; World Bank 2011). The term 'social capital' is most famously associated with the work of four academics; French sociologist Pierre Bourdieu (1984; 1986), the American economist, Glen Loury (1977; 1981), the American sociologist James Coleman (1988), and American political scientist Robert Putman (1995; 2001).

Although rooted in the work of nineteenth century sociological thinkers such as Durkheim, de Tocqueville and Marx, the concept of social capital was first systematically explored in English translation by Pierre Bourdieu in his 1986 work *Forms of Capital*. This work focused on the benefits accrued by the individual by deliberately investing, constructing and participating in social networks and groups, as the reproduction and encouragement of inequalities

and elitism (Portes 2000; Gauntlett 2011). Bourdieu later goes on to define social capital as “the sum of the resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition” (Bourdieu & Wacquant 1992, 119). Glen Loury’s work on social capital concentrated on the inter-generational mobility and inequalities involved in race-related income and educational opportunities amongst Black Americans, although he did not expand his concept of social capital in great detail (Portes 2000, 46). James Coleman acknowledges his debt to Loury’s work in his broader view of social capital in his 1988 article *Social Capital in the Creation of Human Capital*. In this work, he approached the social, economic, inter-generational and regulatory aspects of the concept through an exploration of trust, social networks and the ability to organise collectively, as important functions of a successful society (Coleman 1988). Robert Putman is the foremost popular writer on the concept of social capital through his research on the decline of American civil, social and political life, most famously in his book *Bowling Alone* (Putman 1995; 2001). Putnam’s work on social capital concentrates on those elements of activity and relationships in society that can encourage togetherness and cohesion. He defines these relationships as bonding capital - strong social ties amongst groups such as neighbours and church members - and bridging capital - where members of one group connect with members of another group for advice, support or information (Siisiäinen 2000; Larsen *et al* 2004).

The strength, and strengthening, of a strong social tie relies on shared intimacy, mutuality, emotional connection, length of time and reciprocity (Granovetter 1973; Berkowitz 1982; Marsden & Lin 1982; Wellman 1982; Weenig & Midden 1991). Granovetter’s work suggested that the strengths of a relationship connection should be judged by the emotional intensity, shared confidences, reciprocal services and time invested that are involved in the relationship in question (1973). A weak tie can be defined as a beneficial relationship between individuals in social circles, based on acquaintanceship - for example, professional colleagues, ‘friends-of-friends’, contacts with shared points of

interest, which integrates the disparate groups into a wider setting and ultimately, wider society (Constant *et al* 1996; Kavanaugh *et al* 2005). Granovetter’s work emphasised the importance of weak ties in interpersonal networks for the diffusion of influence and information (Granovetter 1973; Granovetter 1982). The strength of weak ties lies in the possibility that “whatever is to be diffused can reach a larger number of people, and traverse a greater social distance, when passed through weak ties rather than strong” (Granovetter 1973, 1366).



*Fig. 6.1: The dimensions of social capital defined by Narayan and Cassidy (2001, 67). Reproduced with permission of SAGE Publications Copyright Clearance Centre 2014.*

Granovetter’s concepts of weak ties within social networks have been further defined by Putman (2001), and Narayan and Cassidy (2001) (Fig. 6.1), as a form of social capital - what Putnam terms bridging social capital. These weak

ties are not part of one's regular, close social network, but are instead relationships based on infrequent contact, and an absence of intimacy and reciprocity (Constant *et al* 1996, 120). The weak tie relationship can provide sources of information, professional connections and organisational networking (Wellman 1992). These bridges between social cliques allow connections between otherwise disconnected individuals and organisations (Kavanaugh *et al* 2005). The weak tie relationship is structured so that a wide variety of information can be diffused and accessed through these different social networks (Granovetter 1973; Putman 2001). Weak ties may actually be advantageous for networking and community, and concentration on the strength of these ties, ignores both content and context of the relationship interaction. The flexibility of such relationships, without the commitment of a strong tie, also allows for experimentation and "impose fewer concerns regarding social conformity" (Ruef 2002, 430). Previous diffusion research in communication studies has demonstrated that people rarely act on information received by mass media, unless this is also reinforced by personal relationships - emphasising the importance of weak ties and bridging social capital to reinforce cohesion and collective action (Katz & Lazafeld 1955; Rogers 1962; Kavanaugh *et al* 2005).

Positive online engagements - rather than abusive communication or trolling - between community members and social networks, however dynamic, asynchronous or geographically distant, are always socially embedded. Hampton suggests that online interaction should be considered another form of community interaction, facilitated by technology, rather than a distinct form of relationship and social practice (2003, 15). Research has demonstrated that social networking platforms are the most popular tools for addressing activism about social issues (Brodock *et al* 2009; Harlow & Harp 2012; Lovejoy & Saxton 2012). According to research by Denning (2000) there are five methods and stages of Internet activism: collection of information; publication of information; dialogue; coordinating actions and lobbying decision makers. Work by Warren *et al* on the use of Facebook for online activism suggests that there is a distinct "online community that supports and educates their online audience with similar

intentions for the good of the community” (2014, 288). The work of Jensen *et al* (2007), which explored the role of the Internet in community groups and political activity, suggests that whilst online activity is socially embedded, online community activism clusters around political action, information seeking, and contacting political actors, and the level of social engagement is reduced in comparison to being a simple extension of offline relationships. The indications within these data that participation in online political engagement is not dependent on education, age, belonging to a specific community or household income that are especially significant for public archaeology (Jensen *et al* 2007, 47).

A number of studies have been undertaken on the role of Internet technologies and communication in the impact of weak ties, bridging social capital and community activism (Bian 1997; Bandura 2001; Haythornthwaite 2001; Shah *et al* 2001; Hampton 2003; Kavanaugh *et al* 2005; Wasko & Faraj 2005; Gladwell 2010). However, the exploration of the influence of online communities is tainted by the presence of homophily, confounding effects, and simultaneity (Manski 1993; McPherson *et al* 2001; Aral *et al* 2009; Aral 2011; Aral & Walker 2012). The hypothesis that influential individuals act as catalysts for information dissemination appears to have little evidence in the academic literature to support its claims - a variety of research papers suggest that susceptibility to influence is more important in the spread of information and ideas and that it is unclear if influence, susceptibility or spontaneous adoption depend on the type of information or behaviour being shared (Kempe *et al* 2003; Centola & Macy 2007; Aral & Walker 2012; Tang *et al* 2012; Centola 2013). As my data demonstrates, these factors will be highlighted even further in a small discipline such as archaeology (see Chapters 4 and 8.5 for more discussion of this issue).

### **6.3 The Impact of Social Capital, Weak Ties and Online Activism on Archaeology**

The ability - or lack thereof - of online communities to sustain and leverage community interests, as well as organise and mobilise for collective action is a vital area for exploration by archaeology organisations involved in public engagement, and one especially important during the current period of severe austerity measures and long-term structural changes in local government (County Councils Network 2013; Local Government Association 2013) that have affected the archaeological profession in all areas of the discipline (Aitchison & Macqueen 2013; Institute of Historic Building Conservation 2013). One of the most important impacts of the current UK government's economic austerity programme is the impact of these measures on the provision of services by local government. During the period 2012-13, there was a significant reduction in the numbers of professional archaeological and heritage conservation advisors working in local government through management of Historic Environment Records in planning departments, with three members of full-time equivalent staff per local authority on average - the smallest has one, the largest has 16 (for now) (Institute of Historic Building Conservation 2013). The work of the HER is the core dataset which guides planning and protection of all areas of practise in archaeology and building conservation in the UK, yet there has been a 28 per cent fall in the number of local authority planning archaeologists and conservation experts since 2006 (Institute of Historic Building Conservation 2013). Both public access to archaeological information and archaeological sites and built heritage have been, in many areas, such as Merseyside (Council for British Archaeology 2011a) and Teesside (Council for British Archaeology 2011b), deemed at risk, through a lack of archaeological protection and Historic Environment Record support within the planning system at local authority level.

As a result of the National Planning Policy Framework (Department for Communities and Local Government 2012), there has been a shift in local



government assumptions in favour of development, despite concerns that archaeological sites are being lost, damaged or their setting obscured, and there is an increasing groundswell of online petitions and activism regarding threats to the historic environment from planning, development, or austerity measures (for example: RESCUE: The British Archaeological Trust 2014; SAVE Britain's Heritage 2014; Save the Cromwell Museum 2014; Save Hubberston Fort 2014). The concept of networked communities can be leveraged to protest quickly and virally against local, regional and national heritage issues.

In 2013, local and national protest at proposed local authority housing development plans in the area of one of the UK's most significant and intact Iron-Age hillforts at Old Oswestry, Shropshire, triggered a grassroots campaign, which is currently active online and offline. A local community archaeology group was re-established in 2013 as a reaction to the local authority proposals, called the *Old Oswestry Landscape and Archaeology Project* (Shropshire Star 2013). The community protest also founded its own Facebook page (Fig. 6.2) and has been actively using social media to connect with supportive audiences beyond the local area, including national heritage organisations such as RESCUE (The Heritage Journal 201; Oswestry 21 Community Voices 2013; RESCUE: The British Archaeological Trust 2014; Old Oswestry Hillfort Facebook Page 2014). The online campaign consists of a petition, Facebook campaign group and various calls from participants through social media platforms such as Twitter for action in order to prevent the allocation of housing in such an archaeologically-sensitive area, which is being proposed as part of the Local Authority Site Allocations and Management of Development Plan (SAMDev) (Old Oswestry Iron Age Hillfort Campaign Petition 2013). The campaign against the housing allocation plan is ongoing, with a combination of online and offline activism to harness local, national and international protest and support.



Fig. 6.2: Screenshot of the Old Oswestry Hillfort Facebook Page. 1 February 2014. Retrieved from: <https://www.facebook.com/OldOswestryHillfort>

However, as Kidd observes in the article *Enacting Engagement Online: Framing Social Media Use for the Museum*, communities are not sustained and maintained simply through the possession of a social media presence, nor does such a presence bring guarantees of notable use, traffic and interest. “It has been shown that much of the interaction and exchange that occurs within an online community (and certainly content creation) will come from a soberingly small segment of potential and actual users” (2010, 69). The use of social networking platforms for archaeology can help make community-focused activism more visible, in what is a niche subject nationally. By being able to observe the actions of those undertaking petitions and campaigning online, as a wider group of people can be informed of issues and activism, even if they choose not to take their involvement further than reading text. The key concept is the *visible* success of Internet technologies as a medium for activism, engagement and fundraising in archaeology and elsewhere (Bandura 2002).

There is a distinct lack of understanding of the role of Internet and mobile technologies and social media for campaigning and mobilising activism amongst archaeological communities, and this area of study has only recently been examined in the academic literature (Richardson 2013). The use of Internet technologies as a medium for protest and activism will allow organisations and individuals to share news, information and practical details; information can flow between groups and individuals at speed, and reach a wider audience than those activists involved in the organisation. Activists are no longer dependent on attendance at physical meetings, or chance encounters to share news or plan action. Online crowds can be assembled, audiences gathered and action can take place, across boundaries of geography, time and demographic. However, as Treré notes, there is a persistent “one-medium’ bias’ in academic literature in relationship to the role of Internet and mobile technologies and social movements and activism in real life (2011, 3). The section below will explore the developments of an archaeological campaign that harnessed the power of online social capital and weak tie networks online and offline, and demonstrates the value that these technologies bring to an ecology of communication media and personal ‘real-life’ relationships.

### **6.3.1 Cherrywood Crannog and Social Media-Based Activism**

These communication tools and practises are becoming fundamental cornerstones of activism strategies for issues related to threats to heritage and archaeology in the UK and beyond. In this section, we will examine a recent archaeological campaign in the UK that has extensively exploited social media platforms to actively campaign against threats to archaeology at the site of the Cherrymount Link Road Crannog, Co. Fermanagh, Northern Ireland.

During the early summer of 2012, the imminent destruction of an Early Christian high status waterlogged archaeological site at Drumclay, Co. Fermanagh was

first reported in a blog by an archaeologist in Northern Ireland on the 17th July (Chapple 2012). Part of the site, which was once a dwelling place called a 'crannog' in the area of a former lake, was being excavated by commercial archaeologists on behalf of the developer, the Northern Ireland Department for Regional Development, and overseen by archaeologists from the Northern Ireland Environment Agency and Northern Ireland Roads Service (Pitts 2012a) (Fig. 6.3). Archaeological excavation, scheduled for six weeks, commenced in June 2012, prior to the construction of the A32 Cherrymount link road-building scheme.

However, the junior site staff, and other archaeologists working in Northern Ireland, felt that the short rescue excavations were woefully insufficient to explore the archaeological monument to a professional level prior to its eradication by the road works. Crannogs are partially, or wholly, man-made islands constructed in lakes, rivers or estuarine areas, which were built with timber, stone and/or brushwood, and used as temporary or permanent settlements. Many of these defensible sites saw multiple periods of occupation and reuse and are often waterlogged with excellent preservation of artefact and environmental evidence, although few have yet been fully excavated (O'Sullivan 1998; Pitts 2012b). Examples have been found throughout Ireland and Scotland, and have a range of dates for construction, reuse and inhabitation, from 5,000 years ago up to the seventeenth century (Scottish Crannog Centre 2013).



*Fig 6.3: Drumclay Crannog during the excavation in 2012.  
Image used with the kind permission of Robert Chapple 2012.*

The potential for the preservation of waterlogged organic remains, such as wood and leather, and environmental evidence such as seeds, pollen, molluscs and phytoliths,<sup>146</sup> on these sites means that recovery and conservation of these archaeological objects and contexts can be time consuming, technically challenging and expensive (O'Sullivan 1998). The location and identity of the crannog at Drumclay had been published in the *Journal of the Royal Historical and Archaeological Association of Ireland* in 1873 (Wakeman 1873), which is widely available as a PDF through the JSTOR website.<sup>147</sup> The location of the Cherrymount crannog is recorded on the Northern Ireland Sites and Monuments Record (Northern Ireland Sites & Monuments Record 2013), and had appeared on the Ordnance Survey maps of 1835 and 1860 (Pitt 2012b; Chapple 2013,

---

<sup>146</sup> Phytoliths are “silica bodies produced by plants when soluble silica in the ground water is absorbed by the roots and carried up to the plant via the vascular system...Phytolith analysis can be a good tool for examining both the paleoenvironment and also cultural records, including evidence of diet and food processing” (PalaeoResearch Institute 2014).

<sup>147</sup> <http://www.jstor.org/stable/25506623>

10). Despite this clear archive of information, which would indicate that there was the potential for an archaeological site of national importance, the archaeological company undertaking the desktop research report on behalf of the developers had made serious professional omissions. The initial excavations at Drumclay (Fig. 6.3) had produced high-quality evidence from perishable materials, including fabric, footwear and a wooden plate, as well as evidence of a rare double-walled wattle house (Chapple 2012; Fermanagh Herald 2012; Chapple 2013). However, no specialist environmental archaeologist had been consulted for advice, or employed to sample the site, and storage facilities for ecofacts<sup>148</sup> and waterlogged material were non-existent. Prior to the initial six week excavation, engineering works had begun to drain the bog in which the site now stood - which led to the drying out and decay of the archaeological remains and a collapse of part of the site (Chapple 2013, 11). The excavation was scheduled to finish on 20 July 2012 and the concerned site archaeologists turned to social media to attract attention to the plight of the site and raise public and media awareness of the situation (Chapple 2012).

There was an immediate issue with the extent and length of the excavations at the crannog site. The archaeologists working on the site - which did not include the site director - and other professional archaeologists working in Northern Ireland and beyond, recognised the importance and significance of the archaeology that was being excavated over a short period of six weeks, without extensive investigation and rigorous archaeological excavation beyond five per cent of the total discernible area of the crannog site, prior to the construction of the highway (Pitts 2012b). Chapple's initial blog post of 17 July 2012<sup>149</sup> (Fig. 6.4) was accompanied by an anonymous report and photographs from the excavations and the condition of the site, which were leaked by a member of the archaeological staff working on the excavation and concerned at the apparent destruction of the significant features and preserved artefacts. Unfortunately,

---

<sup>148</sup> Ecofacts are environmental archaeological artefacts, such as seeds, pollen, charcoal and animal remains.

<sup>149</sup> <http://rmchapple.blogspot.co.uk/2012/07/urgent-important-early-christian.html>



this member of staff was identified and their employment contract was terminated (Chapple *et al* 2012; Pitts 2012b; Pitts 2012c). The subsequent social media campaign saw international protest, which drew public attention to the plight of the site, and establishment support for further investigation and proper mitigation through extended archaeological excavation (Pitts 2012c).



Fig. 6.4: Screenshot of Robert Chapple's blog post. 30 July 2012.  
Retrieved from: <http://rmchapple.blogspot.co.uk/2012/07/urgent-important-early-christian.html>

The site was also highlighted to the wider archaeological community through a discussion thread on the British Archaeological Jobs and Resources Federation Forum, an online publicly accessible discussion forum, primarily used by archaeologists, and managed by the British Archaeological Jobs and Resources

(BAJR) organisation on 25 July 2012 (British Archaeological Jobs and Resources Federation Forum 2012) as well as an article in the popular archaeology magazine *British Archaeology* (Pitts 2012b). A central focus for discussion and communication was created through the foundation of the Facebook *Cherrymount Crannog Crisis* group, was established in July 2012 (Cherrymount Crannog Crisis Facebook Group 2013), with membership drawn from regional archaeologists working in commercial archaeology, as well as a number of academics and state sector archaeologists, and concerned lay people (Chapple 2012; 2013). Large, influential national archaeology organisations were involved as their membership contacted them after reading the content of the blog post, including the Institute of Archaeologists of Ireland, and an online petition to the Northern Ireland Minister for the Environment was launched (Change.org 2014; Institute of Archaeologists of Ireland 2012). The Institute of Archaeologists of Ireland and the UK Institute for Archaeologists gave voice to their protest at the treatment of the site, and wrote to the Minister for the Environment in Northern Ireland to intervene (Institute of Archaeologists 2012b; Institute of Archaeologists of Ireland 2012). Robert Chapple also appeared on the regional television news and in the regional newspapers to discuss the issues with the excavation, as a result of attention from the media for his initial blog post (Chapple 2012). The original core protest group;

...consisted largely of a coalition of well-informed archaeologists, and in many ways the group treated the matter as an internal issue, writing directly to local politicians, communicating with the IAI (Institute of Archaeologists of Ireland), and writing to the Minister of the Environment, Alex Atwood (Chapple 2013).

The grassroots social media campaign also drew support from a wide and vocal public. Professional outcry and public pressure through the various social media platforms and in the national press led to a visit to the crannog site by the Northern Ireland Environment Minister, Alex Attwood, who placed an immediate ban on construction traffic around the site and a reassessment of the requirements of the archaeologists to fully complete the excavations (The



Impartial Reporter 2012). This was a significant victory for the concerned activists, and a wider investigation of the site was subsequently carried out, alongside consultations with specialist archaeologists experienced in excavating wetlands environments and undertaking environmental sampling. After continuous excavation from July 2012 over eight months, archaeologists were able to determine that the site at Drumclay had been occupied for over 1,000 years from before the seventh until the seventeenth century, and is one of Ireland's richest archaeological sites. A selection of the finds from the site, including a medieval burial, cloth, leather shoes, knives and a gaming board, are now part of a special exhibition at the Enniskillen Castle Museums (Pitts 2012b; Enniskillen Castle Museum 2013; Irish Times 2013).

It was only after this intense campaign to raise public awareness through the use of social media platforms that coverage of the issue in the regional and national press led to an international outcry and political intervention that eventually secured the site for further archaeological investigation throughout 2012. The campaign through social media also led to an internal professional investigation by the UK Institute of Field Archaeologists, after the normal channels of complaint and protest had been exhausted (Chapple 2012, British Archaeological Jobs and Resources Federation Forum 2012). Robert Chapple stated;

It was social media that got a groundswell of opinion together, in one place & kept it focused. The blog piece worked well in itself, but the format of a didactic post followed by comments isn't particularly designed for a discussion between equals - no matter how you approach the comments, they're always subservient to the original post. Email - much like regular mail - is essentially private & it's good for one to one communication & annoying politicians. However, social media - FB in particular, but Twitter too (and Google+ to a much smaller extent) allowed genuine communication and discussion between all parties - no matter if they were a respected archaeologist or an interested 'lay person' - and as equals (2013, pers. comm. 15 August).

The impact of social media platforms to secure the fate of the archaeology at the Drumclay crannog appears to be central to the success of public protest. The central point for the future use of social media as a campaign tool is how organisations and community bodies can sustain the intensity of these encounters with cultural, social and political issues, as well as in public archaeology - as quickly as a crowd can gather together to protest online, so can it disperse, and issues lose their immediacy and relevance in the vast churn of Internet news. Weak ties online require little or no acknowledgment of personal relationships or shared communities outside the digital world. There is little or no commitment involved in participation in an online campaign, unless you are the organiser. This makes it easy for participants to rendezvous and depart consciously, or simply drift from attentiveness to benign neglect. Social media can enhance our existing channels of communication - agile, mobile technologies make it easier for the concerned public to express themselves to their friends and followers. However, the fact that online and mobile communications enable swift reaction to current issues does not mean that these technologies are themselves the natural enemy of the status quo. Those politically concerned participants and protesters that are able to quickly mobilise in the face of issues like Drumclay crannog, which puts those without regular access to social media platforms, or those organisations or campaigners who are unsure how to use these media as part of public protest effectively, at a disadvantage. However, as Robert Chapple (2013, pers. comm, 15 August) wrote, "...this was a campaign that would have still been possible had we not had access to modern computing & social media. However, I doubt that it would have been as successful as it was".

### **6.3.2 RESCUE - Difficulties Harnessing Social Media Activism**

Yet other attempts at harnessing social media and campaigning online within the archaeology sector have not been as successful as the Cherrymount crannog

case. The organisation RESCUE (RESCUE: The British Archaeological Trust 2014) have used their website (Fig. 6.5) and social media presence as campaigning tools, with an active page on Facebook and Twitter account (for background information on RESCUE, see Chapter 3).

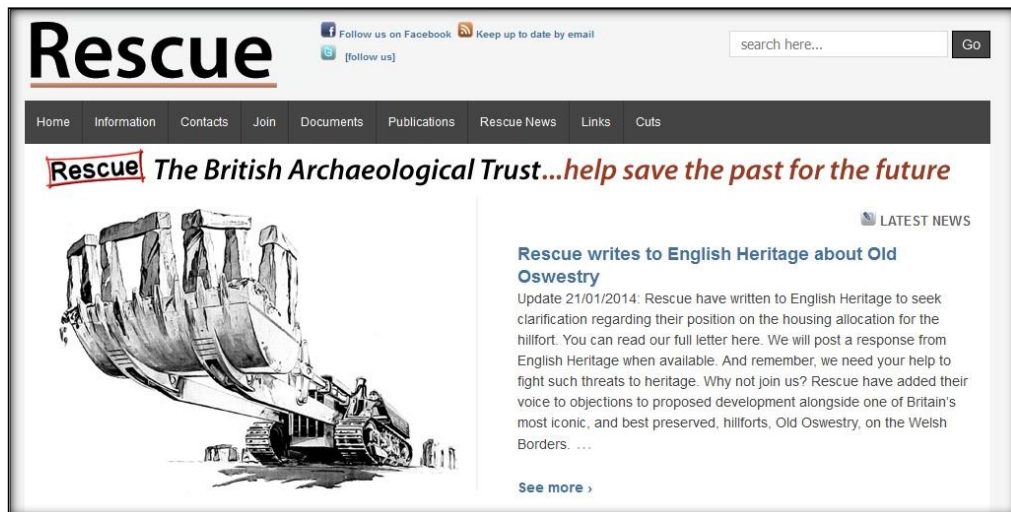


Fig. 6.5: Screenshot of the RESCUE website. 2 February 2014. Retrieved from: <http://rescue-archaeology.org.uk/>

RESCUE updates their Facebook page with news of archaeological campaign issues in the UK and overseas on a daily basis, and the main website also contains a geo-located map of cuts of museums, university departments, archaeological services and standing buildings at risk (RESCUE: The British Archaeological Trust 2014). However, the volunteer committee who are responsible for these platforms find the use of social media as a campaigning tool difficult:

...overall I'd say Rescue is a bit behind the times with regards to social media. Every so often I remember the Twitter account, but it doesn't get updated as regularly as it should. Also, I'd say that most of our followers on Twitter and Facebook are fairly passive - i.e. we don't get a lot of feedback - so I'm not desperately sure we're encouraging (proactive) activism, but rather feeding people's apathy and probably making them feel grateful that "someone else" is angry on their

behalf. Chris and I both find that quite frustrating and have discussed it at meetings in the past. It's not something I ever got to grips with properly when I was Secretary (T Howe 2013, pers. comm., 5 July).

The volunteer member of the RESCUE management team responsible for the RESCUE Facebook page is Dr Chris Cumberpatch, who posts articles gathered from a number of websites every day which seem relevant to the priorities of RESCUE as an organisation. Both members of the RESCUE council have expressed their frustrations with the use of social media as a method through which to engage members of the public interested in campaigning on heritage issues. Despite the success of the Cherrymount Crannog protest, harnessing the virality of social media platforms and the support of archaeological communities is not always straightforward without team members who are familiar with these platforms and can leverage the online connections required for publicity, as well as have time to undertake the preparation work required to support a successful campaign:

As far as I can judge, we tend get new followers joining when something grim happens - the days after the recent spending review saw a rush of new people. Unfortunately I think they see following the FB page as a substitute for actually joining RESCUE...I also failed to get to grips with the apathy factor when I was Secretary - I think that the only effective way to counteract it would be to run more aggressive and high profile campaigns on issues such as the destruction of the museum sector, the pernicious role of consultants, the progressive erosion of LA heritage services, the break-up of EH and so on but as we have discussed interminably at Committee meetings we lack the core of engaged and active supporters and the money (i.e. the ability to pay for a part-time or full time researcher who could develop our relationships with the mass media) to do this... (C Cumberpatch 2013, pers. comm, 6 July)

The Cherrymount and RESCUE online campaigns are both examples of Internet activism according to Denning's (2000) definition, and both campaigns have used the archaeological community online to attract support for information sharing, protest, and contacting political actors, reflecting the model of Jensen *et al* (2007), as well as created a focus for community, centred on interactions on the RESCUE and the Cherrymount Crannog Facebook pages. As these examples from the archaeological sector demonstrate, diffusion of information relies on

weak ties and bridging social capital to reinforce cohesion and collective action (Katz & Lazafield 1955; Rogers 1962; Kavanaugh *et al* 2005). The example of RESCUE suggests that people rarely act on the information received through their social media platforms, unless this is also reinforced by a sense of archaeological community centred on personal relationships and an urgent need for swift action. This emphasises the importance of communicating a sense of urgency and the perception of the destruction of the archaeological record to the online archaeological community, similar to that found in the Cherrymount crannog case or the Old Oswestry campaign, in order to invoke collective concern and action, and leverage weak ties within archaeological community and networks to extend the message beyond the existing supporter base.

## **6.4 Twitter as Archaeological Community**

This section of Chapter 6 moves from the examination of case studies of archaeological activism as a focus for community-formation, to an examination of the social media platform Twitter as the location and tool for the creation of archaeological community and networking. This section will explore the experiences of archaeologists using the platform, and how the format and communication supported by Twitter creates a sense of community and supports networking, using the sociological concepts of weak ties and social capital. The data for this section was collected through a series of three annual online surveys from 2011 to 2013, “Twitter and Archaeology”, and a “Live-tweeting at Archaeology Conferences” survey taken in 2013 which are outlined in Chapter 3 (full details of the survey questions and responses can be found in Appendices A (2011), C (2012), H (2013) and G (“Live-tweeting at Archaeology Conferences”). These surveys were designed to collect data that were descriptive and exploratory within the field of archaeological tweeting, and were not designed for formal hypothesis testing. I also began observing the use of Twitter for archaeological discussions and interactions during 2010, and made a formal

netnographic entrée to the archaeological Twitter community in April 2011 through my own website (Richardson 2011) (see Chapter 3 for full details of the online ethnographic or 'netnographic' approach taken for data collection for this thesis).

These archaeological activities were taking place on Twitter in a very unstructured and informal manner, and the platform was also being used as a 'first-port-of-call' means of transmitting archaeological news amongst archaeological peers. The potential to increase the use of the platform for the public and intra-disciplinary dissemination of information about archaeology projects, new discoveries and active excavations was exciting - but how did the platform work with and for archaeologists as an online community? As Miller notes Twitter offers "an unprecedented opportunity to study human communication and social networks" (2011, 1814). However, little peer-reviewed academic research had yet been undertaken that examined the use of Twitter in the archaeological sector apart from Morgan & Eve (2012), Richardson (2012) and Marwick (2013). An investigation into the use of the platform for public archaeology would provide useful data for the exploration of the research questions for this thesis, which examines the issue of online archaeological communities.

Twitter is a web-based application that combines aspects of social networking, instant messaging and blogging into a fast, simple and convenient mode of communication. Twitter enables registered users to post short status updates, messages, trivia, news, links, photos and videos, known as 'tweets' to a web-based public time line, or 'micro blog'. Originally designed for use with mobile phone text messaging services, the brevity of the format and restriction to 140 characters creates an informal and economic communication channel (Cain Miller 2010). The disclosure of personal information in the user profile section is pared-down, optional and brief, allowing only for name, location, a short 160-character biography and a web address. Limitations of real-life identity can be maintained, abandoned or re-imagined, as the emphasis of the Twitter platform

is in the present, the real-time update, rather than heavily focused on a detailed biography such as that found on the social networking platform, Facebook. Thoughts, links, commentary and questions take precedence over the user's identity and any information disclosed on Twitter is there to create and enhance the user's digital identity. After the user profile's creation, updates and interactions from that point on create a personal digital presence within Twitter and allow the user to 'live' their tweeted life. Twitter describes itself as a platform that allows users to “create and share ideas and information instantly, without barriers” (Twitter 2013). Since its founding in 2007, Twitter has developed beyond the scope of the original social networking application, into a platform for news, commentary, opinions, networking, marketing, political activism, photo-sharing, event documentation, conversation and community. The attraction of the platform may be in part to its innovation and immediacy;

The expressive limits of a kind of narrative developed from text messages, with less space to digress or explain than this sentence, has significant upsides. The best people on Twitter communicate with economy and precision, with each element —links, hash tags and comments -freighted with meaning (Carr 2010, 1).

Access to the “thoughts, intentions and activities of millions of users in real-time” (Phelan *et al* 2009, 385) has created a powerful channel for understanding the immediate, in-the-moment Internet. Johnson wrote that Twitter offered the most useful alternative to the Google search engine, in its ability to bypass the “slow, accumulation of authority” that create Google's search results in favour of the “super-fresh web” provided by Twitter (2009). The issue of archaeological authority on Twitter will be explored in Chapter 8. Twitter supports communication, between individual-to-individual, and to a broader individual-to-public - a 'broadcast' via Twitter to the time line audience.

Twitter's popularity is global, and there are over 230 million active users every month (Fiegerman 2013). According to research by Java *et al* (2007), Takhteyev *et al* (2012) and Leetaru *et al* (2013), social networks are created and

maintained through common language and users tend to cluster with others that share a language. Research has shown that the most predominant language used on Twitter was English, followed by Spanish, Indonesian, Malay and Portuguese (Burcher 2010; Mocanu *et al* 2013). Java *et al* (2007) categorized user intentions into four types: “Daily Chatter” with comments and reports on aspects of daily life and routine; “Conversations” between Twitter account holders, using the @user syntax; “Sharing Information” such as news and resources via URLs and “Reporting News” by providing information on recent events. The researchers noted that users frequently have more than one intention when using the platform, reflecting different roles within different online networks, often concurrently.

Research into the presentation of self in different mediated contexts has shown that the “imagined audience” is a key consideration for account holders when using social media (Marwick & Boyd 2010, 115). The disconnection between user and audience is important to consider, given the potential reach of the retweet, universal access to all public accounts via search engines, the possibility that there are significant numbers of dormant or infrequently-used Twitter accounts, and the likelihood that not every single follower reads every single Tweet on their time line. An audience on Twitter is constructed through the presentation of a constructed personal representation, personal relationships built through conversations and managing the balance between one-to-one and one-to-many communications (Marwick & Boyd 2010, 130).

The inherent contradictions of this “digital intimacy” or “ambient awareness” (Thompson 2008) means that users and followers can experience a relationship on terms negotiated individually and without the other's consent, beyond the ability to block a user, or indeed strike up and maintain a conversation with a complete stranger. The brevity of the information available about Twitter users ensures that the development of a deeper sense of trust through personal relationships within the platform is a longer process. The personal information available from a Twitter profile is limited and optional, and is an example of the



online performance of the archaeological self, further discussed in Chapter 8. Vazire & Gosling's work on personality impressions on personal websites concluded that "every detail of a personal website is the result of a conscious decision on the part of the author" (Vazire & Gosling 2004, 124).

The Twitter platform has been used by those working in archaeology as a conduit for information sharing, cooperation and discussion, frequently mentioning the existence of an archaeological community on the platform, often sharing information centred on the use of hashtags. Since 2009, Twitter has hyperlinked all hashtags in tweets to the Twitter search facility (Wikipedia 2014). Hashtags are now also found in use across a number of social networking platforms, including Facebook, Instagram, and Google+. Hashtags are a form of metadata tags, and their use allows Twitter users to collate and follow disparate asynchronous conversations across time zones, listen and respond to Twitter users outside their follow list, and further refine the Twitter platform's search facilities. Hashtags can assist in the search for specific discussion topics in what is potentially an overwhelming number of tweets, and it is now possible to search for hashtags directly on search engines such as Google<sup>150</sup> and Bing.<sup>151</sup> The hashtag is indicated by the use of the # (hash) symbol, which is placed before words within the text of the tweet. This allows the annotation and clustering of relevant Tweets around specific themes - as demonstrated in Fig. 6.6, which shows the use of the hashtag #archaeology.

---

<sup>150</sup> <https://www.google.co.uk/>

<sup>151</sup> <http://www.bing.com/>



*Fig. 6.6: Screenshot from Twitter demonstrating the use of the hashtag #archaeology. Retrieved from: <https://twitter.com/adreinhard/status/450782661523406848>*

The results of the three “Twitter and Archaeology” surveys clearly demonstrate that archaeological communities worldwide are embracing the Twitter platform for the same reasons as everyone else - to broadcast, listen and network with others in their field, but also to share and benefit from current archaeological research and discuss professional issues. This boundary-crossing global network lies both within and outside archaeological specialisms, and provides collaboration and contact that could only otherwise be facilitated by geographical proximity, synchronous research fields or conference attendance, organisational membership or personal acquaintance. Indeed, the majority of users have already met in person, or plan to meet in person, those archaeological acquaintances made through Twitter - which again demonstrates the existence and importance of weak ties and social capital for these communities (Granovetter 1973; Putnam 2001). Archaeological tweeters report that they are active on the platform, with the majority regularly posting about archaeologically related topics each week. The survey respondents report that they are enthusiastic about sharing their subject: tweeting frequency on archaeological topics does not depend on whether they have an official work account or one for personal use and the use of archaeology-related lists to filter and manage information is common.

The survey results clearly demonstrate a sense of belonging to a specific and growing archaeological network or community. The respondents especially valued the way in which Twitter facilitated small-group interaction across archaeological disciplines and the opportunity to learn from new, unpublished research and 'listen' and comment during tweeted conferences. However, there are barriers to a sense of archaeological community. Some noted the perception that there are low numbers of archaeological Twitter users, and highlighted a concern that infrequent participation, or satisfaction with a passive role, would fail to establish a meaningful sense of belonging, as an individual, in a larger archaeological network. Although social media offers a variety of platforms on which to communicate, the unique functionality of Twitter that provides a simple, informal networking channel and access to immediate news would be sorely missed should it fold, and similar experiences would be sought out using other web tools. The survey noted that the use of Twitter in communication with the public could create friction with organisations. There is a notable lack of organisational guidance for the use of Twitter, and indeed other forms of the social Web. This absence of policies for social media use appears to be widespread within archaeological organisations, and is an area ripe for further study. However, the scant information from the survey regarding organisational use could also be due to the prevalence of the use of the platform for personal opinion, news and dialogue, using non-work devices, as highlighted by the number of mobile phones used to Tweet, rather than any form of prescriptive organisational broadcasting.

#### **6.4.1 The Use of Twitter at Archaeological Conferences**

The method of online survey used for the “Live-tweeting at Archaeological Conferences” can be found in detail in Chapter 3, and full details of the questions and responses can be found in Appendix G. This survey covered the use of Twitter as a conference discussion and sharing tool and was designed to

collect data on participant's experiences and attitudes to tweeting at academic archaeology conferences, both as online spectator and active physical participant. The questions asked for the individual's perspective on a number of subjects - the preferred method for accessing archaeological conferences if unable to attend; the elements of Twitter use that encourages or discourages participation in live-tweeting; the personal benefits from participation in live-tweeting; the perception of the impact of live-tweeting on public engagement between archaeologists and non-archaeologists; collation and distribution of live-tweeted archaeological debate after events, and the need for live-tweeting etiquette and guidelines at archaeological conferences. The survey investigated how participants, both physically present and those online, can contribute to, and conceptualise, their involvement in academic discussion and wider public engagement through this Twitter back channel.

Since the Twitter application can be accessed through mobile devices, and in an era of increasing use of smartphones and tablet computers, alongside the increasing availability of Wi-Fi or mobile broadband connections at conference venues, there has been an increase in the use of the micro-blogging platform as an informal back channel for discussion and debate at academic conferences. The live-tweeting of archaeological conferences is growing in popularity in the UK, as the archaeological twitter community expands and more conference organisers recognise the need and expectation for an official hashtag and Wi-Fi at events. These "back channels" (Ross *et al* 2010, 214) are a location of temporary community formation, beyond the direct control of the conference organisers, which take place between both the conference attendees and remote followers, and the discussions, are most frequently situated around conference hashtags. The ability to remotely participate in events through the medium of Twitter, has increasing appeal for those unable to attend in person, as well as for those in attendance, in order to follow discussions, foster debate, and support personal networking. There are a number of benefits of the creation of a back channel to explore networking opportunities beyond the physical and disciplinary presence at the conference itself. The challenge presented by the

presence of a digital discussion channel, which lies beyond the formal conference structure of speaker, audience, question-and-answer-sessions, and physically seeing and experiencing the presentation of academic papers, has been explored in only a small handful of academic papers (Jacobs & McFarlane 2005; Reinhardt *et al* 2009; Ross *et al* 2010).

There are a number of issues involved in the use of these back channels at academic conferences, where previously undisclosed information may be shared as part of the presentation of new research material and data. On 30 September 2012, academic debate on the subject of live-tweeting from academic conferences, where the possibility of unpublished research being shared through social media was the subject of alarm amongst some parties became the so-called ‘#Twittergate’ debate.<sup>152</sup> This led to intense discussion on the issue of the ethics and use of live-tweeting at academic conferences, and a series of blogs and advisory notes were published in the higher-education media (Priego 2012a; Priego 2012b). The question of the benefits and risks involved with live-tweeting at archaeological conferences is interesting from the perspective of public archaeology. As discussed in Chapter 5, there is potential for the discussion backchannel to reach beyond the echo chamber of the professional archaeology community, but the survey does not provide a clear indication how the archaeological community on Twitter envisage this happening.

Respondents to the survey note that they participate in the Twitter back channel for a variety of reasons situated around the sense of *professional* archaeological community found on the platform; a sense of wider community “I am encouraged by the ability to participate if I’m not attending, or to provide my colleagues with a chance to participate if I am attending”; sharing the excitement of new archaeological information at conferences “anything that came up in a session that was revolutionary”; a feeling of “heightened inclusivity” and wider reach for information by sharing and retweeting

---

<sup>152</sup> A Storified version of the debate can be found at: <http://storify.com/adelinekoh/what-are-the-ethics-of-live-tweeting-at-conference.html>

conference tweets and furthering collaboration and discussion online and offline and “joining in with a community of other people tweeting about/discussing the same issues” (Survey 7, Question 5, Appendix G). The benefits of following conferences through Twitter, rather than attending them in real-life are a sense of vicarious participation and reduced isolation, professional networking, keeping abreast of the latest issues and discussion in archaeology and accessing the thoughts and opinions of participants rather than the speakers themselves (Survey 7, Question 8, Appendix G).

Using a hashtag as part of the online backchannel at a conference acts as a community focus point for debate and commentary. It allows real-life conference participants to share and categorise their tweets with Twitter followers that are specifically interested in certain topics, and acts as a bridge to participation for those following online. This also widens the reach of conference tweeting, since anyone using a public Twitter account can search and view any post that includes a hashtag, even if the account is not being followed directly. It is also beneficial for any asynchronous followers who want to pick up on the conference discussion after the event. The ability to use a hashtag within a conference setting is “...extremely useful when sharing contributing to a specific topic or event...it not only allows individuals to generate a resource based on that specific thematic...but also bridge knowledge and knowing, across networks of interest.” (Reinhardt *et al* 2009, 2). Many archaeology conferences and events now create an ‘official’ hashtag, to encourage backchannel discussion - For example, the UK Current Archaeology Live conference in March 2014 used #CA2014 (Fig. 6.7) as their hashtag.



*Fig. 6.7: Example of the hashtag #CALive. 27 March 2014.  
<https://twitter.com/CurrentArchaeo/status/439299014874640384>*

However, as the respondents to the survey note, there is no written convention for using and applying hashtags and no way of enforcing their use at any event. Not all tweets on a conference topic will be suitably annotated, as the use of a hashtag remains a personal choice, and the 140-character limit may force users to omit the hashtag to continue the debate. Using conference hashtags allow tweets to be retweeted numerous times, so these may then appear more than once in people's timelines. Hashtags also risk being spammed by social, post-event conversations, and these may clutter the conversations about the conference content, although these types of connections are important for building real-world social interaction and a sense of community. Discussion or comments that may be seen to be outside the remit of the conference topic, or which the tweeter may not wish to form part of an official archive of conference tweets will not use hashtags, so often debate and comments continue outside the official backchannel.

## 6.5 Leveraging Online Communities: Crowdsourcing in Archaeology

This section shifts the focus of this chapter to the exploration of online communities in archaeology through the phenomenon of crowdsourcing. Crowdsourcing, or leveraging and creating online communities for participatory projects, is a relatively new method for public engagement and connection with archaeological projects in the humanities through the use of Internet technologies. The concept of 'citizen science' is a form of research collaboration involving the participation of volunteer members of the public in scientific research projects to address real-world scientific problems and activities (Cohn 2008; Wiggins & Crowston 2011). The concept of crowdsourcing is not necessarily modern and there are a number of historical examples of projects in the UK from the seventeenth century onwards that adopt a participatory and distributed approach to data collection, such as the Longitude Problem (Royal Museums Greenwich 2013) or the Mass Observation project which took place from the 1930s to the 1950s (Mass Observation 2013). Citizen science projects enable data collection and research on scales that would be unfeasible through the involvement of professional scientists alone, due to geographic restrictions, financial issues or scalability (Miller-Rushing *et al* 2012).

Crowdsourced activities in the humanities, as with citizen science, offer the opportunity for geographically-dispersed individuals from all backgrounds to participate in the analysis and creation of information sources, reviewing and correcting content, tagging photographs and solving visual problems, transcribing handwritten data, or sharing and collating personal histories (Oomen & Aroyo 2011; Wiggins & Crowston 2011; Dunn & Hedges 2012; Estellés-Arolas & González-Ladrón-de-Guevara 2012). The term "crowdsourcing" first appeared in an article by Jeff Howe in the June 2006 issue of *Wired* magazine, entitled *The Rise of Crowdsourcing* (Howe 2006a; 2006b). His article and subsequent blog post defined crowdsourcing as;



...the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call. This can take the form of peer-production (when the job is performed collaboratively), but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential laborers (Howe 2006a, 5).

The solicitation of micro-donations through the use of social networking platforms is another growing community-focused phenomenon, and is related to the increasing ubiquity of crowdsourced projects, the leveraging of social networks and social capital, and the relative success of fundraising through the website platforms of crowdfunding organisations and companies such as Indiegogo,<sup>153</sup> Kickstarter<sup>154</sup> and Sponsume.<sup>155</sup> This form of ‘crowdsourcing’ sponsorship has certainly had an impact on the archaeological profession, especially in the face of austerity cuts to funding streams and competition for HLF funding. Whilst a full examination of the impact of this subject is beyond the remit of this thesis, there are a number of notable archaeological projects that have exploited this form of social media-driven fundraising to support their activities over the past three years; the archaeological field school, Dig Ventures (DigVentures 2014) or the Bronze Age boat appeal in Dover, Kent.<sup>156</sup> This form of leveraging online community connections has even helped to secure Ph.D. thesis funding for an archaeology student at Manchester Metropolitan University (S Smith 2013, pers. comm., 17 August).

But who and what are the ‘crowds’ and communities from which information and participation is sourced? The application of the business term crowdsourcing is perhaps less appropriate in the humanities. Are these ‘crowds’ truly large and representative of the general public, or are they simply a small number of active and keen expert participants, who are using a digital platform for their volunteer efforts, rather than being active in ‘real life’? Do these crowdsourced projects reflect a sense of online community, leveraging weak ties and social capital to

---

<sup>153</sup> <http://www.indiegogo.com/>

<sup>154</sup> <https://www.kickstarter.com/>

<sup>155</sup> <http://www.sponsume.com/>

<sup>156</sup> <https://www.kickstarter.com/projects/1989781916/float-the-dover-bronze-age-boat>

support participation? The theoretical and practical reach of a crowdsourced project may be very different in reality. The number of committed participants may be low, and this reflects the longstanding tradition of physical volunteering in collection augmentation in the GLAM sector (Owens 2012). Project participants self-select, are led by their interest in the subject area, their skills and experience, and have regular access to computer equipment and a broadband connection (Ridge 2012). The participants may in fact be highly skilled and knowledgeable about the subjects they are working on; “expert communities, if not professionalized ones” (Ito 2006, 64) and be extremely committed, motivated and become responsible for a larger share of the production of crowdsourced knowledge (Leadbeater & Miller 2004; Terras 2010).

In the GLAM sector and the digital humanities, there are a growing number of crowd-sourced projects. For example, UCL’s ‘Transcribe Bentham’<sup>157</sup> crowd-sourced initiative is a collaborative transcription project, which aims to digitise Bentham’s unpublished manuscripts, and “improve access to, and searchability of, this enormously important collection of historical and philosophical material” (Moyle 2011; Transcribe Bentham 2013). The Dickens Journals Online Text Correction Project (Online Dickens Project 2013) aims to launch a complete online edition of Dickens’s weekly magazines, *Household Words* and *All the Year Round*, using online volunteers to assist with text correction. Within archaeology, there have been a small number of public archaeology projects that contain an element of crowdsourced and user-generated content. Four current examples of archaeological crowdsourcing, which will be considered in this section, include the; Bristol City Council’s *Know Your Place*<sup>158</sup> web tool; the University of Oxford *Hillforts Atlas Project*<sup>159</sup>; the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) *Canmore*<sup>160</sup> and the *UrCrowdsource*<sup>161</sup>

---

<sup>157</sup> <http://blogs.ucl.ac.uk/transcribe-bentham/>

<sup>158</sup> <http://maps.bristol.gov.uk/knowyourplace/>

<sup>159</sup> <http://www.arch.ox.ac.uk/hillforts-atlas.html>

<sup>160</sup> <http://www.rcahms.gov.uk/canmore.html>

<sup>161</sup> <http://urcrowdsource.org/omeka/>

project, jointly managed by the British Museum and University of Pennsylvania Museum. Only one of these examples, UrCrowdsource, is a crowdsourced project which involves volunteers undertaking knowledge management tasks, such as collating, and sorting information, and transcribing handwritten texts, and Ridge (2012) argues that the line between crowdsourcing and user-generated content is blurry, although the PAS is also a crowd-sourced project, with 23000 contributors providing information that is then processed into digital content, as well as 7000 entries made directly by the public (D Pett 2014, pers. Comm. 5 March). However, within the context of UK public archaeology, the end result of an enhanced database of publicly accessible information in the case of Canmore, the *Hillforts Atlas Project*, and *Know Your Place* locates these projects firmly within the definition of crowdsourcing as peer-production, and the focus of a specifically online community situated around shared content-creation and a shared project outcome.



Fig. 6.8: Screenshot of the *Know Your Place* web interface. 30 January 2014. Retrieved from: <http://maps.bristol.gov.uk/knowyourplace/>.

The Bristol City Council *Know Your Place* crowdsourcing project (Fig. 6.8) uses a GIS map-based public interface, which is populated with data including historic mapping, historic images and the Bristol Historic Environment Record (HER), and is aimed at a diverse audience, including council officers and planning

consultants, as well as schools, researchers and local heritage groups (Bristol City Council 2013). The website enables wider access to the information held in the HER archives, as well as supporting members of the public to upload their own images, oral histories and commentary, with the potential to include other media formats such as film and audio. This community layer was partly crowdsourced through a series of outreach events and community workshops undertaken by the project officer in partnership with the University of Bristol under the umbrella of *Know Your Bristol* (University of Bristol Centre for Public Engagement 2013). The online call for open participation was enhanced by the provision of detailed information on how to upload information on the website itself - one of the few archaeological projects in the UK to provide such explicit instructions to support participation. The use of crowdsourcing to augment an online tool for planning provides a unique and permanent insight into the often unrecorded and intangible aspects of resident's interaction with heritage and place, which would otherwise lie outside the planning process - and highlights the value of these community interactions and sense of ownership of archaeological and historical material in a spirit of multi-vocality (Insole & Piccini 2013).

To supplement the work of the *Know Your Place* project, in October 2013, City Design Group, in association with Bristol City Council, launched the *Heritage Eye* smartphone app for both Android and iPhones, funded by English Heritage. The mobile phone app enables members of the public with smartphones to "survey the condition of Listed Buildings" (Google Play Store 2013). These surveys then allow the smartphone user to assess whether the building is damaged or at risk, and subsequently submit the completed survey to *Know Your Place* for checking by the council Conservation Officers (Design Bristol 2013). The app will contribute to the maintenance of Bristol's Buildings at Risk Register and assist council staff to manage the impact of planning and development. From an urban planning perspective, the application of community-produced data, whether elicited through a real-life workshop or the use of a smartphone app, will actively impact the city planning process, support the production of a Local

List<sup>162</sup> for Bristol and maintain and update the Heritage at Risk Register. The potential impact of this actively multi-vocal community heritage, place-making and planning crossover is high - the project strands have a long-term vision and the project staff appears to be committed to innovative methods of supporting the crowd-community to create heritage values that are truly reflective of local communities.



*Fig. 6.9: Screenshot of the RCAHMS Canmore web interface. 30 January 2014. Retrieved from: <http://canmore.rcahms.gov.uk/>.*

The RCAHMS Canmore (Fig. 6.9) is a searchable, map-based database available on the RCAHMS website, which contains information on the archaeological and standing building resources of Scotland (Royal Commission on Ancient and Historical Monuments of Scotland 2014a). The Canmore database provides opportunities for members of the public to upload their own heritage-related text and images, and choose a license for their reuse, through the MyCanmore interface. RCAHMS has been collecting information, drawings and photographs

<sup>162</sup> Local Lists can be used to identify significant local heritage assets to support the development of Local Plans by local authority planning departments (English Heritage 2014a)

of Scotland since 1908, documenting Scotland's historical places past and present. The project aims;

...to raise awareness of the man-made environment of the past and present that is on people's own doorstep...help people recognise the value of their own places and spaces, to share them with others online and in exhibitions, and, by understanding them, to increase their influence on future developments in their own environment" (Royal Commission on Ancient and Historical Monuments of Scotland 2014a).

As a direct result of this project, the ability for the public to add images and information directly into Canmore was developed. There was also recognition that we will never realistically be able to have information and images on every single building and site in Scotland, so if the public can add to this then that will supplement what we can provide. There's also a realisation that there are other amateur and professionals 'experts' out there who can share their knowledge with the wider world through crowdsourcing, and therefore improve the public's awareness and appreciation of the built heritage. As well as building/site information and images, this could also enhance the social history side, connecting people to these places. In terms of stats, we've got 6,430 contributors, and 32,823 images and 1,926 text contributions have been made (P Graham 2013, pers. comm. 17 October).



Fig. 6.10: Screenshot of the Hillforts Atlas Project. 30 January 2014.  
Retrieved from: <http://www.arch.ox.ac.uk/hillforts-atlas.html>

The *Hillforts Atlas Project* (Fig. 6.10) is a four-year collaborative project between the University of Oxford and the University of Edinburgh, and is funded by the UK Arts and Humanities Research Council. It aims to;

...create an online interactive database that will include standardised information on all hillforts in the UK and Eire and enable interrogation and analysis at a range of scales from an individual hillfort to the whole collection. The database will be linked to Google Earth/Maps so that the locations of hillforts can be seen within their landscape contexts. At the close of the project, the data file will be available for re-use in a variety of software (University of Oxford Archaeology Department 2014).

The project includes an element of crowdsourcing as part of the data collection process, what the project terms “citizen science” (University of Oxford Archaeology Department 2014). The project is in the process of soliciting contributions to the survey from individuals and community archaeology groups and provides an online survey form, with instructions, on the project website<sup>163</sup>. The project director, Professor Gary Lock has noted that the;

<sup>163</sup> <http://www.arch.ox.ac.uk/hillforts-form.html>



Citizen Science programme has generated considerable interest. However, as with most initiatives, it has taken some time before the exercise has really ‘taken off’... Whilst the hillfort pro-forma surveys have formed the focus of the exercise, the very act of advertising the existence of the Atlas project, and the requirement of public involvement, has encouraged interested individuals and groups to provide a great deal of information to the project (including plans, photographs and papers)” (G Lock 2014, pers. comm. 4 February).



Fig. 6.11: Screenshot of the UrCrowdsource project. 30 January 2014. Retrieved from: <http://urcrowdsource.org/omeka/>.

The UrCrowdsource project (Fig. 6.11) is part of a larger research project *Ur of the Chaldees: A Virtual Vision of Woolley's Excavations*, which is funded by Leon Levy Foundation (UrCrowdsource 2013). The crowdsourced element of this research has similar scope to the UCL Bentham Project mentioned above - UrCrowdsource aims to harness online volunteers to assist with the transcription of thousands of documents that relate to the 1922-1934 excavations of the ancient city of Ur in Mesopotamia, that were created during the joint expeditions of the British Museum and the University of Pennsylvania Museum. The website requires users to log in, so the project can oversee and credit the work of the volunteer transcribers. It also includes a glossary of names of fieldworkers from the original expeditions, guidelines for reading the material, and a glossary of relevant archaeological words and abbreviations. The data for transcription



includes typewritten reports, accounts, and letters and handwritten notes taken at the site. The data produced from these crowd-produced transcriptions will be made freely available as part of an open-source website under a Creative Commons license, which the organisers envisage will contain all known data from Ur (UrCrowdsource 2013).

These four projects create a very different sense of community to that discussed in the two other areas of consideration of community in this chapter. The participatory nature of these crowdsourced projects can certainly be seen to fit the scope and models for public archaeology outlined in Chapter 2.3. The different experiences offered by the projects will offer different archaeological communities - the RCAHMS and UrCrowdsource projects are both interactions between individuals and projects, which will provide a sense of belonging and community through sharing digital data, tagging, and other online activity. The physical experiences of archaeology involved in the *Know Your Place* and *Hillforts Atlas Project* offer further opportunities to meet like-minded people through workshops, training meetings and public events, enhancing in real-life the weak ties that can be found in involvement with the projects online. The communities created through these projects are not ones based on interaction between individuals and active discussion. They are instead communities situated around activities, around projects and they can instead develop a sense of partnership and community with the project, rather than between participants. This reflects the concepts of social capital discussed in Section 6.2 - the projects are only successful if they can attract and support the interest of participants through fostering a sense of belonging.

## **6.6 Discussion**

The concept of online community formation is a key issue for archaeology in the UK, especially during a period of unprecedented threat to the public funding of

heritage organisations and the archaeological aspects of the planning system discussed in Section 6.3. The potential for heritage organisations to exploit opportunities to leverage the interest of archaeological communities online, and the associated weak ties and social capital - alongside enjoying the benefits of free, uncompensated labour of crowdsourcing - is an important area for further research. Similar activities have been discussed at length elsewhere with reference to sociological theory and Critical Internet Studies (Andrejevic 2012; Fuchs 2013; Scholz 2013). In a period of economic austerity, the gradual move towards volunteerism and the use of free labour to support the heritage sector, often through internships and digital volunteering, has been noted by a number of organisations, including the Museums Association and EH, through the *'Heritage Counts'* survey (English Heritage 2012; Steel 2013). Although outside the scope of this thesis, there is potential impact on jobs and professionalism with the rise of crowdsourcing and digital volunteering in museums and public archaeology projects, and this deserves further exploration in future research.

From the data discussed in this chapter, online interaction through social media appears to engender a sense of affinity with the subject at hand, and supports weak tie relationships that develop into trusted and reliable online contacts - be that through a protest, petition, or sharing of an archaeological news item. This will be further explored in Chapter 8, through the discussion of archaeological authority online. The data demonstrates that self-identification as belonging to online archaeological communities creates a sense of group intimacy and shared purpose, and that these networks develop a sense of mutual obligation and support, both online and offline. Whether these archaeological communities are located on Twitter, created through crowdsourced projects or developed and dispersed through the actions of digital activism, the affinity with the subject of archaeology is the "cement that bonds, perhaps only for a moment, but a moment that lingers" (Merrifield 2011, 109).

This brief encounter with a sense of community, I argue, in an archaeological context, is an encounter with the past, a fleeting experience of awareness of the

importance of this shared interest, and the ties that are created through this through a collective understanding of a shared fascination, and a shared experience. The types of online community activism discussed in this chapter certainly clusters around political action, information seeking, and contacting political actors, although these case studies lead us to question the effectiveness of the use of these media alone. We can see from this data that online activity in archaeological circles is socially embedded, and this will be further explored in Chapter 8 with a consideration of archaeological authority. This social element poses difficult questions for the issue of public engagement between archaeologists and non-professionals through the use of social media platforms, if the weak tie is necessary before trust and inclusion can occur and this will also be discussed in Chapter 8.

I would restate that, in order to stimulate public engagement, instil trust, and support community allegiance and identity through the use of Internet technologies, as part of a digital public archaeology project, we need to undertake audience research and be prepared to provide further practical support and be open to dialogue. It cannot be assumed that ready communities exist or aspire that they will be easily created, or indeed found through platforms such as Twitter, and issues of digital literacy, discussed in Chapter 4, archaeological authority, discussed in Chapter 8 and top-down approaches to public archaeology, discussed in Chapter 2, must also be carefully thought through. The concepts of shared experience and community creation based on the social capital found within archaeological communities will be further explored in Chapter 7, which examines the *Day of Archaeology* blogging project as a community endeavour, which combines aspects of crowdsourcing, community creation and leveraging weak ties online.

## CHAPTER 7: CASE STUDY - THE *DAY OF ARCHAEOLOGY*

This chapter will use the *Day of Archaeology*<sup>164</sup> project as a case study. Section 7.1 discusses the process that created this online public engagement project. Section 7.2 examines the project structure and website. Section 7.3 explores participation in the project, and section 7.4 contains information about content and organisations using the site. Section 7.5 explores the effectiveness of the project as a node for creating archaeological community amongst the social-media-using members of the archaeological profession. It will also identify how the project needs to develop to meet its potential as a digital public archaeology project, and will discuss the benefits and disadvantages of this form of project for public engagement. Section 7.5 will also present evidence for social capital and weak ties in the archaeological community that participated in the events, and explore the assumptions, based on the literature discussed in Chapter 4, ‘Online Communities in Archaeology’: any kind of interaction and contributions will be made by a relatively small group of people who are already socially embedded and linked (Kidd 2010; Brandtzeag 2010). Section 7.6 provides an overview of the educational use of the *Day of Archaeology* project website, and section 7.7 examines the need to archive the project. Finally, section 7.8 contains a discussion and summary of the chapter findings.

### 7.1 Founding the Project

The *Day of Archaeology* project is an annual, crowd-sourced global community blogging project that solicits contributions of written blog posts on a specific day each year. These blog posts describe a day in the working lives of the participating archaeologist, museum staff member or community archaeology volunteer, through written text, photos and/or video (Day of Archaeology 2013). The posts are presented on the website (Fig. 7.1), as well as being tweeted and

---

<sup>164</sup> [www.dayofarchaeology.com](http://www.dayofarchaeology.com)

shared on the project's Facebook page. The first international *Day of Archaeology* was held online on 29 July 2011, initially as part of the Council for British Archaeology's regular fortnight-long celebration of archaeology activities in the UK, the Festival of British Archaeology,<sup>165</sup> and was subsequently repeated on 29 July 2012 and 29 July 2013 (Day of Archaeology 2013).



Fig. 7.1: Screenshot of the 2013 Day of Archaeology website. 15 January 2014.  
Retrieved from: <http://www.dayofarchaeology.com/>

The project was initially conceived through a conversation on the social media platform Twitter, between myself and fellow Ph.D. student and archaeologist, Matt Law, from Cardiff University, in March 2011 (Fig. 7.2). This took place after a discussion about making a contribution to the 2011 *Day in the Life of the Digital Humanities* project. The *Day in the life of the Digital Humanities* is an annual online community participation project for people working in humanities computing, organised by the University of Alberta and designed to publicise the variety of activities that take place under the umbrella term of 'Digital Humanities' (Day in the Life of the Digital Humanities 2011). This initial

<sup>165</sup> <http://www.archaeologyfestival.org.uk/>

conversation on Twitter eventually included other Twitter users from the archaeological community who were interested in supporting the project, and it was decided to create a similar day-long online event which would be dedicated to collecting and collating a series of 'behind-the-scenes' blog posts solicited from people working and volunteering in any area of the discipline of archaeology.

The founding project team in 2011 consisted of Andrew Dufton (Brown University), Stuart Eve (UCL/L-P: Archaeology), Matt Law (University of Cardiff), Jessica Ogden (L-P: Archaeology), Dan Pett (British Museum), and myself. The foundation of the *Day of Archaeology* was seen by the team to be a good opportunity to undertake a born-digital public archaeology project and also to create a project that could act as a practical case study for my own research into new digital methods of community creation and public engagement with archaeology on a large scale.



Fig. 7.2: Screenshot of the original Twitter conversation founding the Day of Archaeology. 14 April 2014. Retrieved from: <http://www.dayofarchaeology.com/project-background/>

## 7.2 Project Structure

The initial structure of the *Day of Archaeology* was created through the pooled time, skills and ICT resources of the project team, and the website was established without any financial support, using free and open source software. Sponsorship ‘in kind’ was offered from the British Museum’s department of Portable Antiquities and Treasure, L-P: Archaeology, BAJR and the UCL Centre for Digital Humanities - mainly through publicity and promotion of the event. The project had a donation of free server space thanks to the participation of the British Museum; the team members created a website, and set up a Twitter account<sup>166</sup> as well as establishing a Facebook page.<sup>167</sup> A competition was launched through these social media platforms to design a logo for the project, which allowed a further “crowd-sourcing” element to be added to the endeavour (Ogden 2011). The WordPress<sup>168</sup> open source content management system (CMS) was chosen to power the *Day of Archaeology* website, as it offered simple customisation, and was straightforward to use; contributors could create posts, embed media and links, or post and respond to comments without any previous experience of using a CMS, and it could give a variety of tiered access permissions to the participants, allowing some editorial control over the content. Detailed instructions on how to use the WordPress system were made available on the website before the project started, and the *Day of Archaeology* team have provided support over a period of a week before and after the project *Days*, in order to enable archaeologists who were not familiar with CMS, or needing support with authoring content via the Internet, to contribute through email or text documents.<sup>169</sup>

The *Day of Archaeology* project team is run as a loose collective, with between five and eight active members of the collective at any time, and there is no formal management organisation or hierarchy within the group. Membership is

---

<sup>166</sup> <https://twitter.com/dayofarch>

<sup>167</sup> <https://www.facebook.com/thedayofarchaeology>

<sup>168</sup> <http://en-gb.wordpress.org/>

<sup>169</sup> How to Contribute: <http://www.dayofarchaeology.com/about-the-project/contributing-to-a-day-of-archaeology-2012/>

fluid, and the team has expanded and contracted when members are busy elsewhere. The digital competencies of the team are varied: from the initial group, five members worked in the field of digital technologies in the archaeological sector, and had experience of information technology management, programming and website development, and the remaining two were familiar with content management systems and social media use. The geographic location and organisational affiliation of the team is also disparate - the majority of the 2013 team was based in the UK, with two members in the United States and one member in Spain. Three of the collective members are undertaking Ph.D. research and are full or part-time students, whilst the rest are self-employed, allied to an academic institution or working in a museum. For the first two iterations of the project, the *Day of Archaeology* contributions were made only in English, but with the addition of the Spanish-speaking member of the team, the 2013 project was able to invite content from Spanish-speakers in Europe and South America - although only twelve contributions were made directly in Spanish by nine archaeologists. There were also three contributions in French and one in Portuguese. To expand the project in future, additional language capabilities within the team would support greater participation from the Middle East, Africa and Asia and the ability to post in additional languages would enable the team to ensure that archaeological projects from all continents were represented, as well as give a greater global appeal to the project. At present, participation by archaeologists is heavily weighted towards Anglophone countries, dominated by participation from the UK, Canada and the United States, and this is reflected in the sources of traffic to the site, illustrated in Fig. 7.3, where the darker blue areas on the map indicates a higher number of visits to the website from these countries.



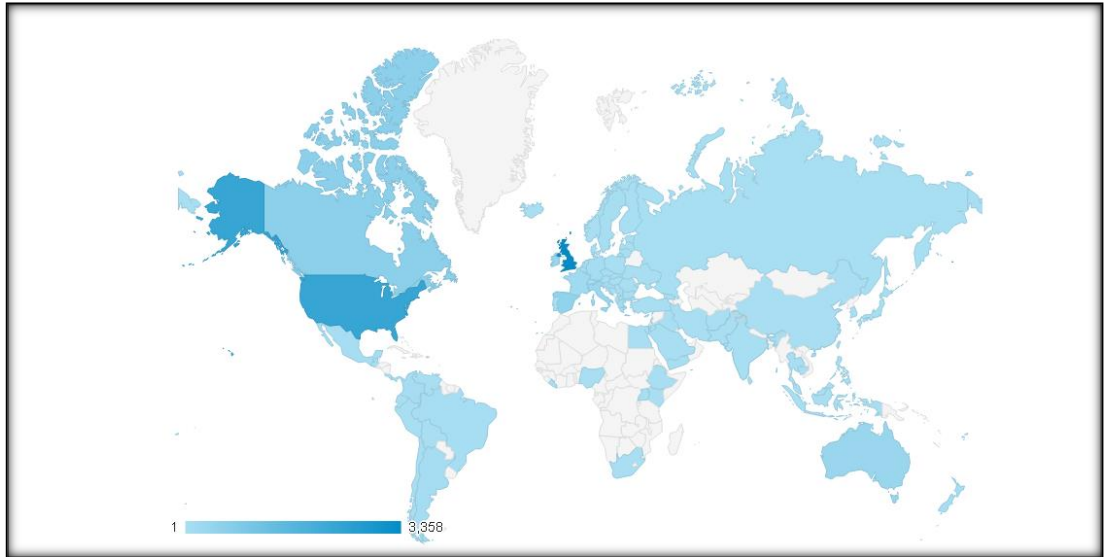


Fig. 7.3: Traffic sources for the Day of Archaeology 2013. 16 March 2014.  
Retrieved from: <http://www.dayofarchaeology.com/wrapping-up-the-day-of-archaeology-2013/>

### 7.3 Participation in the *Day of Archaeology*

The request for contributions to the project is made on a number of online platforms as well as through traditional forms of communication. Information about the project is circulated to archaeological communities and individuals by the project team, via email, blogs, Twitter, Facebook, and emails to various archaeological subject-specific mailing lists. Whilst there will be some crossover between these accounts, as the archaeological Twitter network is still relatively small, this represents a significant social network to leverage for retweets, links and requests for information.

The Facebook page (Fig 7.4) for the *Day of Archaeology* has 810 likes (last updated 20 January 2014). The Facebook page is linked to the *Day of Archaeology* Twitter account, and the same information is posted on each platform - information about the upcoming project, details of participation, and highlights from the current site content. The team relied heavily on online archaeological networks to promote participation in the project, and contacts

were made with the Council for British Archaeology, who lead the publicity for the UK-based Festival of British Archaeology.<sup>170</sup>

A publicity drive took place over the few months before each event, using social media contacts and networks, online archaeological forums, email lists, listings in the *British Archaeology* magazine, publicity on the British Museum and PAS websites, and by word-of-mouth to colleagues and organisational partners. As the project team includes a member of staff from the British Museum's PAS, the project was able to gain exposure through the British Museum blog and social media accounts on Twitter and Facebook, as well as featuring permanently as a link on the front page of the PAS website (Portable Antiquities Scheme 2013; D Pett 2014, pers. comm., 12 January). Publicity posters were displayed in a small number of archaeological departments and commercial archaeology companies where the project had participants, and an editorial article was published in *British Archaeology* magazine in 2012 (Pitts 2012a).

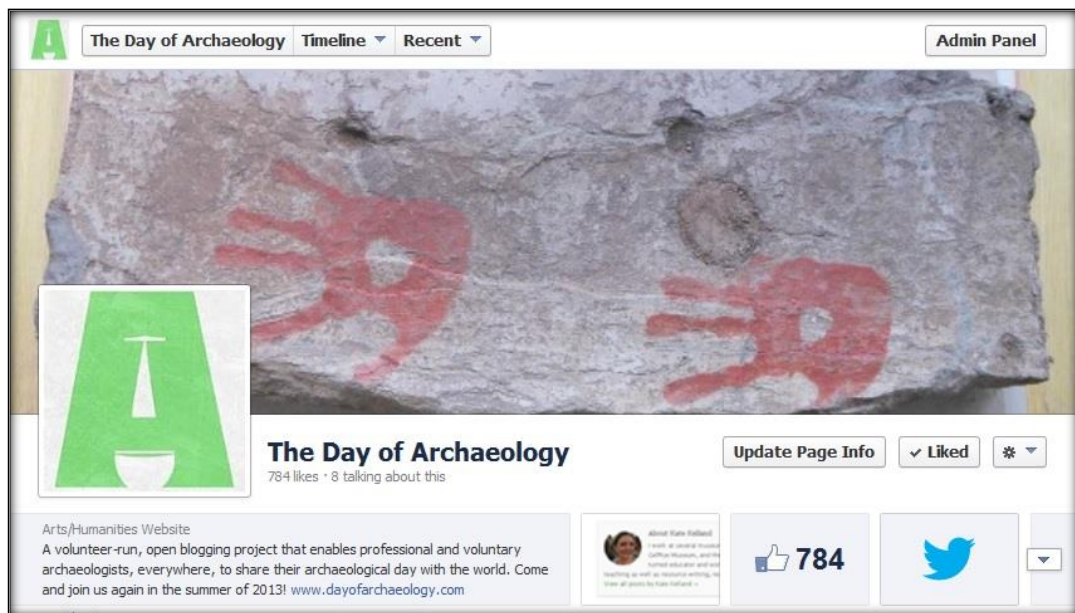


Fig. 7.4: Screenshot of the Day of Archaeology Facebook Page. 1 March 2014.

Retrieved from: <https://www.facebook.com/thedayofarchaeology>

<sup>170</sup> Festival of British Archaeology website: <http://www.archaeologyfestival.org.uk/>

During the various iterations of the project from 2011 to 2013, there have been 1067 registered users of the *Day of Archaeology* website, with 1122 articles posted. A breakdown of the number of posts and images uploaded to the website can be found in Table 7.1. However, a significant number of the posts are badly geo-referenced, so mapping the posts was a haphazard exercise, and the contributions were also in need of metadata additions, such as categories and tags, so it was reliant on the *Day of Archaeology* team to add this information, which created extra work when editing and publishing the posts. A third party tool using the semantic tagging platform OpenCalais<sup>171</sup> provided by Thomson Reuters was used to suggest tags and extra metadata for each post automatically. A large number of images were uploaded to the site. 3,296 have been submitted since 2011 and, with a few exceptions where copyright was maintained, are licensed under Creative Commons CC BY-SA 3.0, the majority of these images are available to anyone to reuse, even for use within a commercial context. There have been 321 comments and 261 pingbacks, or links to other blog posts on the *Day of Archaeology* website, or on other blog sites, were received over the three years.

<i>Year</i>	<i>No. of Posts</i>	<i>No. of Images</i>
2011	429	942
2012	343	1206
2013	329	1148

*Table 7.1: Number of posts and images uploaded to the Day of Archaeology website, 2011 to 2013.*

When the project was established, it was hoped that by harnessing public attention for this one single day, those involved in archaeology would be able to showcase the many different activities, contexts and occupations that make up the archaeological sector worldwide. The range of archaeological occupations

---

<sup>171</sup> <http://www.opencalais.com/>

within the discipline is very broad, and the contributors to the project have been drawn from a wide variety of representations of the archaeological profession. During the lifecycle of the project, participants have contributed from organisations throughout the United Kingdom and Ireland, almost every European Union country, Asia, North America, Australia, the South Pacific, the Middle East, Africa and South America.

Organisational participants have included professional archaeologists from organisations such as universities, commercial archaeology companies, educational charities and museums - large UK-based organisations have included British institutions such as the British Museum,<sup>172</sup> the Royal Commission on Ancient Monuments for Scotland<sup>173</sup> and English Heritage.<sup>174</sup>

## 7.4 Exploring Use and Contributions

Participants have taken a number of approaches to the presentation of their contributions to the *Day of Archaeology* over the three years of its existence. Many of the posts are presented in a diary format, some are image-only, and there have been a number of films made especially for the project. This section will briefly examine three different uses of the *Day of Archaeology* by both individual contributors and archaeological organisations, and will explore how often they posted, what kind of content they contained, and how this information has been used.

The staff of the London Archaeological Archive and Research Centre (LAARC) has participated in all three iterations of the *Day of Archaeology* project. In 2011, only one post was made, by a single member of the LAARC staff, which mentioned the day's activities of the Research Centre, and included photographs

---

<sup>172</sup> For example: <http://www.dayofarchaeology.com/a-day-in-ceramics-glass-and-metals-conservation-at-the-british-museum-29th-july-2011/>

<sup>173</sup> For example: <http://www.dayofarchaeology.com/rcahms-day-of-archaeology-2013-myarchaeology/>

<sup>174</sup> For example: <http://www.dayofarchaeology.com/a-day-in-the-life-of-a-heritage-information-partnerships-supervisor/>

of the staff and volunteers at work.<sup>175</sup> In 2012 and 2013, the LAARC staff expanded their contributions to the *Day of Archaeology*, and undertook a novel exercise entitled “LAARC Lottery”. Each hour of the *Day* itself, between 12 until 5pm, the LAARC staff encouraged the public to explore their hundreds of thousands of archaeological finds interactively and at random. This was facilitated through the use of Twitter, using the hashtags #dayofarch<sup>176</sup> and #LAARC,<sup>177</sup> or through the use of the comments section of the *Day of Archaeology* website. Every hour offered the possibility of exploring a new area of the LAARC, broken down into five major areas of their collections; general finds, registered finds, metal, textile and environmental finds. The staff asked participants to suggest a random number, depending on the number of shelves in the archival area in questions, and then the LAARC staff visited the relevant shelf number, and photographed and over the day, wrote a series of six blog posts about the objects found in each collection area.<sup>178 179</sup>

There has been a series of documentaries from the organisation *NGO Archaeologia* (who are working in Macedonia) and they produced a programme of national activities to promote archaeology throughout the country on the *Day of Archaeology* in 2012 and 2013 (Ivanovic 2013). The events in Macedonia were funded by the National Cultural Programme for 2013 of the Macedonian Ministry of Culture, and were supported by the Museum of Macedonia, Museum of the city of Vinica and the Student Archaeological Association ‘Axios’.<sup>180</sup>

The posts from 2011 to 2013, have to date demonstrated a wide variety of activities and occupations in the archaeological sector; archaeologists searching for sites by kayak in Newfoundland, Canada;<sup>181</sup> museum conservators conserving archaeological models from the archives at Salisbury and South Wiltshire

---

<sup>175</sup> <http://www.dayofarchaeology.com/at-the-laarc/>

<sup>176</sup> <https://twitter.com/search?q=%23dayofarch&src=typd&f=realtime>

<sup>177</sup> <https://twitter.com/search?q=%23LAARC&src=typd>

<sup>178</sup> <http://www.dayofarchaeology.com/author/afetherston/>

<sup>179</sup> <http://www.dayofarchaeology.com/author/acorsini/>

<sup>180</sup> <http://www.dayofarchaeology.com/a-day-with-macedonian-archaeology-2013/>

<sup>181</sup> <http://www.dayofarchaeology.com/searching-for-archaeological-sites-on-oderin-island-newfoundland-canada/>

Museum in the UK;<sup>182</sup> postgraduate students working on a laboratory analysis of Aztec artefacts in Toluca, Mexico;<sup>183</sup> reports from an archaeological tour guiding company in Zimbabwe;<sup>184</sup> community archaeology and graveyard recording in western Ireland,<sup>185</sup> and field archaeologists undertaking excavations in Tokelau in the South Pacific.<sup>186</sup> Individuals who have contributed to the *Day* include conservators, field archaeologists working on excavations, underwater archaeologists exploring maritime archaeology, and archaeological surveyors undertaking geophysical prospection. The project participants have freely contributed blog posts, videos and images, and there have also been contributions by a wide variety of non-professionals, such as American metal detector hobbyists,<sup>187</sup> community archaeology volunteers working on the Thames foreshore in London,<sup>188</sup> Ph.D. archaeology students<sup>189</sup> and voluntary archaeology groups, such as the Waveney Valley Community Archaeology Group.<sup>190</sup> The variety of these contributions demonstrate the complexity, excitement and frustrations that “all archaeologists, whether professional or amateur, student or 'armchair enthusiast', must deal with on a daily basis” (Day of Archaeology 2013).

## 7.5 The *Day of Archaeology* as Archaeological Community

As Hansen *et al* have noted in their exploration of social media network analysis, “collections of individual social media contributions can create vast, often beneficial, yet complex social institutions” (2011, 5). Bought together, the individual contributions from archaeologists participating in the *Day of*

---

<sup>182</sup> <http://www.dayofarchaeology.com/the-pitt-rivers-archaeological-models/>

<sup>183</sup> <http://www.dayofarchaeology.com/aztec-archaeology-at-calixtlahuaca-or-not-one-of-my-better-days/>

<sup>184</sup> <http://www.dayofarchaeology.com/zimbabwean-guidings/>

<sup>185</sup> <http://www.dayofarchaeology.com/historic-graveyards-and-community-archaeology-in-ireland/>

<sup>186</sup> <http://www.dayofarchaeology.com/archaeology-at-the-end-of-the-date-line-vicarious-video-from-nukunonu-tokelau/>

<sup>187</sup> <http://www.dayofarchaeology.com/metal-detecting-and-archaeological-advocacy-some-observations-and-ideas-from-a-detectorist/>

<sup>188</sup> <http://www.dayofarchaeology.com/how-do-you-like-your-walls-your-majesty/>

<sup>189</sup> <http://www.dayofarchaeology.com/a-day-in-the-life-of-a-phd-student/>

<sup>190</sup> <http://www.dayofarchaeology.com/medieval-graffiti-in-the-waveney-valley/>

*Archaeology* has created a valuable project for both public engagement with archaeological topics in the present and future social history research of the archaeological discipline (Jeffrey 2012, 565). The challenge is to understand how these individual contributions to the *Day of Archaeology* project are situated within the context of the collective properties of the project itself, and the impact that these contributions have had on the growth of a sense of archaeological community.

Understanding and visualising the interconnections between participants will allow the *Day of Archaeology* management collective to improve the mechanisms, through which participants can contribute, connect and create good quality posts, and develop socially productive relationships. This will in turn support the long-term value of the project to the archaeological community as a node for common interest, a snapshot of the profession and tool for social history, beyond its value as a public engagement and dissemination project. To approach the question of the *Day of Archaeology* as the locus of archaeological community, this section will explore three sets of data: a simple analysis of the tweets using the #dayofarch hashtag; an exploration of the results of an online survey of participants undertaken in July and August 2012 after the second *Day of Archaeology* and two social network analyses of the website content undertaken during the third *Day of Archaeology* in 2012 and 2013.

### **7.5.1 Analysis of the #dayofarch Twitter Hashtag**

The Twitter platform has been a productive source of publicity with the discipline of archaeology. Team member Dan Pett set up a plugin to measure whether the tweeted links from the *Day of Archaeology* Twitter account were being clicked, and automatically tweeted the majority of posts (except for when the account exceeded the daily rate limit for posting photos). Over 5500 tweets (including retweets) were sent using the #dayofarch hashtag - to put this into

perspective, the British Museum #pompeilive<sup>191</sup> archive from 18 and 19 June 2013<sup>192</sup> showed 18,000 tweets relating to the live cinema broadcast of the Pompeii exhibition on those two days in 2013 (D Pett 2014, pers. Comm. 5 March). The Twitter accounts which posted the most tweets and had the most @ replies about the *Day of Archaeology* in 2013 are shown in Table 7.2.

<i>Top Tweeters</i>	<i>Vol. of Tweets</i>	<i>@'s</i>	<i>% RT</i>
dayofarch	619	4917	
AdamCorsini	132	180	17
lornarichardson	124	209	31
portableant	122	164	32
rcahms	121	170	13
m_law	83	90	33
tharrosinfo	81	3	81
JaimeAlmansa	78	32	23
TRArchaeology	75	8	67
TinctureOfMuse	69	11	61
VitaEmilia	67	48	10

Table 7.2: *Top Tweeters by volume and retweet for the Day of Archaeology 2013*

The *Day of Archaeology* tweets were collected using Martin Hawksey's Tags Version 5 tool<sup>193</sup> which is easy to set up and allows the various Twitter conversations that took place about the *Day of Archaeology* to be analysed. For example we could see how many people used the #dayofarch hashtag in their output in 2013 (696), who tweeted the most about the day, and how many interactions were made using the hashtag shown in Fig. 7.5.

<sup>191</sup> <https://twitter.com/search?q=%23pompeilive%20%20&src=typd>

<sup>192</sup> [http://www.britishmuseum.org/about\\_us/news\\_and\\_press/press\\_releases/2013/pompeii\\_live.aspx](http://www.britishmuseum.org/about_us/news_and_press/press_releases/2013/pompeii_live.aspx)

<sup>193</sup> <http://mashe.hawksey.info/2013/02/twitter-archive-tagsv5/>



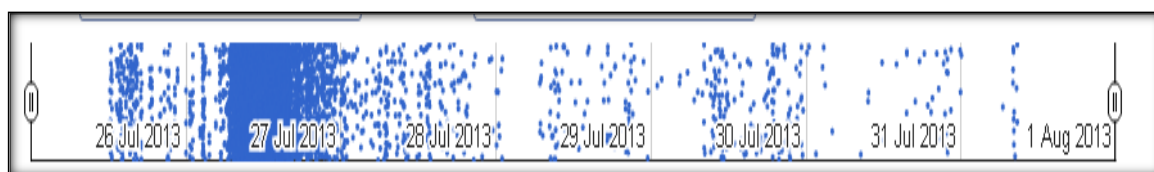


Fig. 7.5. Day of Archaeology Twitter timeline showing the posting frequency of tweets from 26 July - 1 August. 24 March 2014. Retrieved from: <http://www.dayofarchaeology.com/tinkering-with-the-machine-and-linking-data/>

### 7.5.2 Online Survey

An online survey of the *Day of Archaeology* participants took place after the second event on 29 July 2012 (which can be found in full in Appendix L). Of the 343 participants in the 2012 iteration, 92 responded to the survey, which was undertaken through Google Docs, a free web-based office suite owned by Google as part of the Google Drive service.<sup>194</sup> The most significant findings of the survey were situated around the issues of public engagement and moving the project beyond the archaeological community. The respondents felt that the project encouraged a focal point and sense of community amongst professional archaeologists, which traversed boundaries of geography, discipline and academic affiliation. The sharing of posts and tagging of articles with similar themes, encouraged discussion of activities and interests within the archaeological community - archaeologists working in different contexts or continents on similar material were able to make connections and discuss plans to share data and work together in future. The survey findings emphasised that participation in the *Day of Archaeology* had successfully fostered a sense of community creation through participation in the project and that the creation of a situated community through involvement with the wider project was especially valued:

<sup>194</sup> <https://www.google.com/drive/?authuser=0>

*“It's good to know that there are indeed a lot of archaeologists out there. By having the day of archaeology, it sort of helps bonding us up together as a profession.”*

*“It was easy to contribute and you felt like you were part of a larger community and helping to spread knowledge of archaeology (both to the public, but also to other archaeologists).”*

*“...also made individuals feel more a part of a world-wide community, regardless of the differing avenues of archaeology or related disciplines an individual currently works in.”*

The greatest concerns of the participants noted in the survey responses were the abilities of the project to promote itself as an educational and useful resource that would experience repeated visits once the initial excitement over the *Day of Archaeology* had finished, and questioning how the project could effectively engage with members of the public beyond the archaeological world and encourage a wider number of participants from outside Europe and North America.

*“...I'm not sure if it spread further than other archaeologists.”*

*“I believe this project is one of the most interesting outreach initiatives done. What is left is to give it a wider range of participants and more publicity in the public sphere.”*

The issue that the project was born-digital was also represented in the survey responses, since the publicity and social networks that were engaged to share and promote information about the day was almost exclusively social media platforms, especially Twitter, Facebook and blogs. The only ‘real-life’ publicity

provided by the *Day of Archaeology* project collective were a downloadable publicity poster for participants to print and display themselves, and some flyers added to conference packs at the Theoretical Archaeology Group conference in 2011 and for the Spanish-language JIA archaeology conference in 2013 (J Almanza Sanchez and P Hadley 2013, pers. comm., 12 November). There were contradictory opinions from the participants on the perceived benefits of a completely digital project publicity campaign. Some felt that the digital platforms excluded possible participants, who did not use social networking sites:

*“..I know that folks who are not on Twitter or Facebook tend to not know about it. They may well go to the site if they knew. Need better way to get info out. I think sending out flyers ahead of time was a great idea...”*

Although others felt that by harnessing the reach of online social networks, a wider group of people could be accessed:

*“Social networking has meant that word about the event has spread across a large demographic.”*

The responses to the survey, alongside the blog comments, certainly demonstrate that participation in the *Day of Archaeology* project is the enactment of a form of ‘bridging’ social capital as outlined by Putman (2001). As discussed in the previous chapter, these ‘bridging’ relationships are not part of one’s regular, close social network, but are instead sources of information, professional connections and organisational networking (Wellman 1992; Constant *et al* 1996; Kavanaugh *et al* 2005). The connections supported by the *Day of Archaeology* website comments facility is interesting to examine - as new posts were created, new connections could be made, frequently within the discipline itself rather than between members of the public and archaeologists.

### 7.5.3 Analysis of Website Content

Some of the main obstacles to using the *Day of Archaeology* project as an open resource and information bank for the archaeology sector are the number of contributions and searching the number of posts on the site, especially when the navigation of the site does not easily differentiate between each year of the project's iteration. The current search facilities provide a category search and a free-text search box (Fig. 7.6). The *Day of Archaeology* search engine is run on Apache Solr, an open source enterprise search platform, whose features include “powerful full-text search, hit highlighting, faceted search, near real-time indexing, dynamic clustering, database integration, rich document (e.g., Word, PDF) handling, and geospatial search” (Apache Solr 2013). This is an extremely powerful search solution, and one that is far more comprehensive than the native WordPress search facilities. It is possible to perform complex searches if one knows how to use the syntax - a better guide to how to search the website using this may support better interrogation of the site content (D Pett 2013, pers. comm. 10 December). However, as each article is edited and categorised either by the individual contributor or one of up to eleven members of the project team, there can be no guarantee that the articles have been tagged or categorised appropriately and fully, which will affect the search capabilities of the site - and this is an issue for all multi-authored sites, so this project is not a singular example of this.

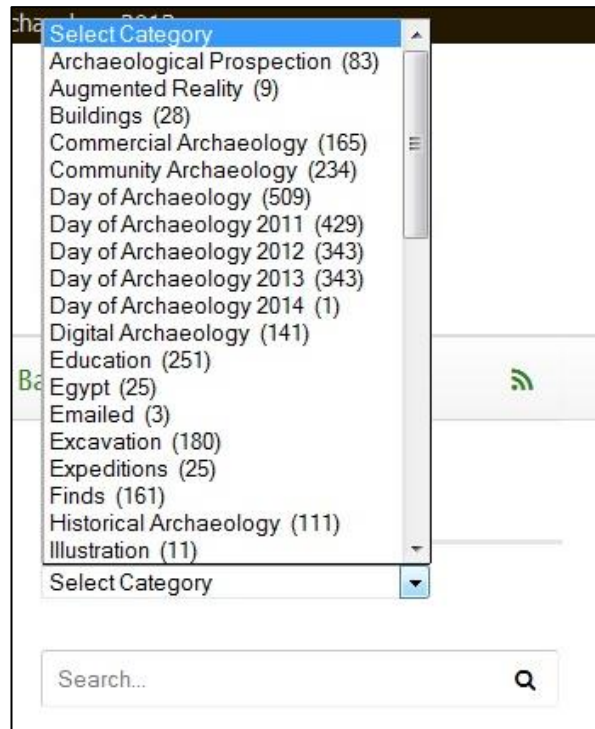


Fig. 7.6: Screenshot of the Day of Archaeology website search facilities. 16 March 2014. Retrieved from: <http://www.dayofarchaeology.com/>

Work using social networking analysis, quantitative analysis and visualisation has been particularly enlightening on the issue of community development and useful content within the project. Shawn Graham, a digital archaeologist and Assistant Professor of Digital Humanities at Carleton University in Ottawa, Canada, examined the *Day of Archaeology* project through the use of topic-modelling (Graham 2012). Topic modelling can be understood as tools for extracting topics or injecting semantic meaning into vocabularies;

Topic models represent a family of computer programs that extract topics from texts. A topic to the computer is a list of words that occur in statistically meaningful ways. A text can be an email, a blog post, a book chapter, a journal article, a diary entry - that is, any kind of unstructured text (Graham *et al* 2012).

The work Graham undertook on the *Day of Archaeology* website content attempts to answer his question “What are the discourses of practicing archaeologists?” and the results offered some interesting insights into understanding the *Day of*

*Archaeology* project as a community of practice. The production of a “mental geography of archaeological discourse” (Graham 2012) indicated that the top three topics modelled by Graham that connects the *Day of Archaeology* project together are 10, 13, and 17 in Table 7.3. Topics 13 and 17 relate to the day-to-day tasks that archaeologists do and the activities that break up the day, whilst topic 10 seems to relate to how we study and teach the discipline.

<i>Topic</i>	<i>Keywords</i>
10	field day students year summer school reading week continue lab university learn photo program dig questions process called student season graduate page river campus digging unit crew experience class undergraduate veterans features larger dirt director learning sense order indiana artifacts
13	archaeology project day heritage work report team week activities staff month busy time working emails blog wessex today planning archaeological friday check due fieldwork visit company environment officer previous design exciting office manager event based current reports development side table
17	day work time back things job office today days good home made morning working start lunch making started spend call long pretty couple finally short writing moment meeting finished leave lots read afternoon involved feel happy rest top don

Table 7.3: Topics gathered from Graham’s work on the *Day of Archaeology*. 18 March 2014. Retrieved from: <http://electricarchaeology.ca/2012/07/09/mining-a-day-of-archaeology/>

In 2013, as a response to the issue of searching the large number of posts on the site, Ben Marwick, an archaeology Professor from the University Of Washington Department Of Anthropology, undertook “distant reading”<sup>195</sup> to gain insight into the contents of the *Day of Archaeology* website content (Marwick 2013). His work through distant reading attempted to explore what a typical day for an archaeologist might be, the different kinds of archaeological activities represented in the blog posts and whether there are any similarities between the types of archaeologist’s experience. In the 2012-2013 corpus there were a total of 352,558 words in 622 blog posts by 370 unique authors. The number of authors is inexact because some posts were made by multiple authors. There were significantly fewer blog posts written in 2013 (n = 273) compared to 2012 (n = 348), but the average length of the posts is slightly higher in 2013 (mean = 591) compared to 2012 (mean = 549) (Marwick 2013).

<sup>195</sup> “Distant reading” is a term created by Franco Morreti (2005; 2013) whose work theorised a mode of literary macro analysis based on the analysis of a large volume of literary material

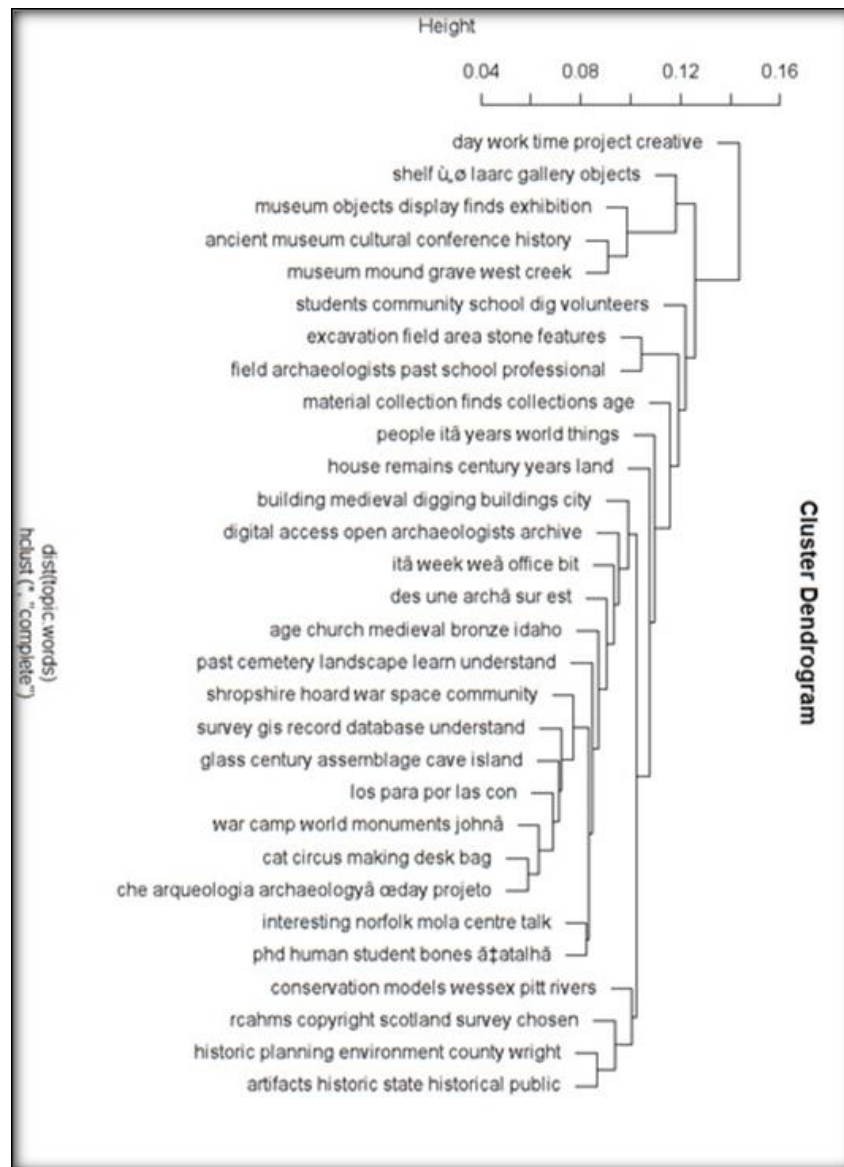


Fig. 7.7: Cluster dendrogram of topics from the Day of Archaeology created by Ben Marwick. 16 March 2014. Retrieved from: <https://github.com/benmarwick/dayofarchaeology>

Marwick's work discovered that there was a noticeable shift in the topics mentioned in the corpus of material on the site from 2012 to 2013. Topics 12, 23 and 28 are non-English language topics indicating a greater international contribution that year and Topic 6 reflects the large number of posts in 2013 by or about archaeologists working with the Royal Commission on the Ancient and Historical Monuments of Scotland (Marwick 2013). From the topic modelling, Marwick was able to identify the types of activities most mentioned by the

participating archaeologists, and the hierarchical clustering of topics in Fig. 7.7 shows that most topics are very similar, with museum topics acting as a distinct group (Marwick 2013). Field survey and excavation are common topics, as well as activities related to the discovery of archaeology through geophysics or aerial photography;

The context of site discovery and artefact recovery is frequently one where education and community engagement are priorities. For example, topic 10 includes mentions of students and children, and topic 3 references learning, communities and kids. The discovery and recovery process is also quite labor intensive, especially when it comes to producing documentation. We see terms relating to documenting finds, such as forms, records and database across several topics (Marwick 2013).

Marwick's conclusions support the evidence that a significant number of contributors to the *Day of Archaeology* project are already involved in some form of public archaeology. Topic 11 reveals the world of the heritage manager, with topics associated with commercial archaeology, the planning process or site management and Topic 4 demonstrates the popularity of the *Day of Archaeology* project within digital archaeological circles and the digital humanities, with topics associated with ICT.

The information provided by Graham and Marwick provides an interesting in-depth, exploration of the many topics and themes presented by the Day of Archaeology participants. Whilst this information cannot indicate how useful the project has been for the creation of online communities of practice, it does demonstrate very clearly the educational resource that the project website provides, and the amount of mineable potential in the data contained within.

## **7.6 The *Day of Archaeology* as an Educational Resource**

There have been a number of organisations and individuals that have used the material on the *Day of Archaeology* website for educational purposes and



archaeological careers advice. One of the collective members, Andrew Dufton, a Ph.D. student at Brown University, was involved as a teaching assistant on an archaeology-focused Massive Open Online Course (MOOC) organised by Brown University through the online education company Coursera (Coursera 2014). The online course is aimed at large-scale participation and provides open, free access to the course materials, videos and reading lists via the Internet. The Brown University online course *Archaeology's Dirty Little Secrets* (Fig. 7.8) ran for the first time during June and July 2013 and again in February 2014.<sup>196</sup> The *Day of Archaeology* project website was used as a case study for unit seven of the course entitled “Where does archaeology happen? Who can play?” and also featured in the forum discussions. On the *Day of Archaeology* itself in 2013, information about the project was posted on the course Facebook page, and the post received 56 likes, 8 comments, and 12 shares, with an overall reach of just over 2500 individuals (A Dufton 2013, pers. comm. 8 November).

The Day of Archaeology website content has also been used as source material for Indiana University South Bend Anthropology & Informatics (EvolvedTech 21 Nov. 2013), Schools Prehistory, an education organisation in the UK focused on the presence of prehistory in the National Curriculum (kimbidulph 21 Nov. 2013) and as part of an undergraduate assignment for a course on the representation of archaeology in the popular media at the University of Washington Seattle (Marwick 2014).

---

<sup>196</sup> <https://twitter.com/lornarichardson/status/439791595895152641/photo/1>

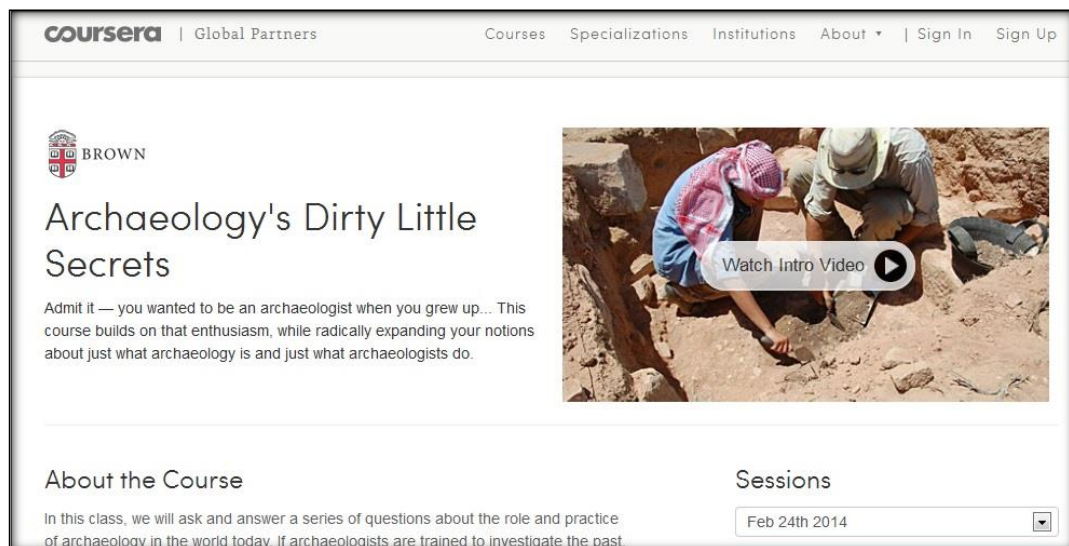


Fig. 7.8: Screenshot of the Coursera/Brown University MOOC 'Archaeology's Dirty Little Secrets'. 1 March 2014. Retrieved from: <https://www.coursera.org/course/secrets>

## 7.7 Archiving the Day of Archaeology

The development of the *Day of Archaeology* project also raised the issue of long-term digital content preservation and archiving social media. Despite the transient nature of the online tools used, the project team recognised the value of the material being published on the project site and felt that it was appropriate to preserve this material for future research (D Pett, 2014, pers. comm. 14 January). As part of the process of working towards archiving the content, issues of privacy, copyright and intellectual property rights were considered from the beginning of the project, and explicit permission has been sought for archiving from the participants during the registration process (Richardson 2012b). The team envisaged from the beginning that the site content would remain available online afterwards for as long as possible, under a Creative Commons Attribution-ShareAlike 3.0 License.<sup>197</sup> This would encourage visitors to discuss, comment on, share, use and reuse content beyond

<sup>197</sup> <http://creativecommons.org/licenses/by-sa/3.0/>

the *Day of Archaeology* itself each year, and stand as a snapshot record of the discipline year-by-year.

The site is archived as part of the British Library's web archiving programme, a free-to-view project which can be accessed directly from the Internet, although it does not capture the information held in the *Day of Archaeology* site beyond the text and images (British Library 2011). The ADS became involved in discussions with the *Day of Archaeology* project during 2012, to explore the possibility of creating a long-term archive for the *Day of Archaeology* site content, which will be extracted and stored outside the open-source platforms which currently contain the website (Jeffrey 2012, 565). The content of the *Day of Archaeology* website has been already been extracted and made available as a comma separated values (CSV) file by Ben Marwick via Github,<sup>198</sup> a code-repository site for open source projects. This data is freely available, and can be manipulated and repurposed under the *Day of Archaeology* Creative Commons license (Marwick 2013).

## 7.8 Discussion

The experience of creating and managing the *Day of Archaeology* project has provided the project team with a useful insight into best practices for managing digital public archaeology projects. There have been a number of positive and negative experiences working as part of a collective, and crowdsourcing contributions from archaeologists globally (Pett 2013). This is perhaps where the *Day of Archaeology* project exposes the weaknesses and strengths of using digital communications as the basis for a public archaeology project in equal measure.

There are a series of issues that have been part of the production of the project, that are valuable lessons for future digital archaeology projects. The organisational arrangement of a 'collective' to manage and direct the project in fact allows irregular participation in the organisational side of the project, and

---

<sup>198</sup> <https://github.com/>

this has led to some members of the team taking on more of a share of the lead-in to the project than others, and some unable to help out on the *Day of Archaeology* at all due to other commitments. A more formal organization of responsibilities may help this process. The lack of funding for the project has limited the amount of publicity that the project has been able to undertake, and ensuring that funds are available; both for staff time, and for project materials such as posters, are essential for the project to expand to its full potential.

Involving archaeologists beyond Anglophone countries has been difficult, due to the language limitations of the team involved. Attracting archaeologists who do not use social media as part of their everyday work-related communications is difficult, especially when using social media as the primary form of communication to publicise the project. Creating a publicity drive for the project as a resource for the wider public, as well as for the professional archaeological community for use in careers guidance or as source of educational material is essential if the project is to meet its participatory potential.

Clearer instructions for participants are needed, explaining how to upload contributions and layout the text and images correctly, and how to add relevant geo-references and metadata to the contributions. This would make the process of editing and publishing the content much simpler for the time-pressed *Day of Archaeology* project team. Clearer instructions are needed on how to use the search power of the Apache Solr search facilities, which may assist visitors to the website to make better use of the website content as an educational resource, and as a platform for exploring the discipline.

This case study chapter has reviewed: the establishment of the *Day of Archaeology* project; the project structure and participation in the project using a series of five examples of posts to the *Day of Archaeology* website. It has explored work undertaken on the content of the project website; the correlation between the *Day of Archaeology* community and the associated theory of online community creation outlined in Chapter 6.3. It has reviewed the use of the project website for educational purposes, and the possibility of archiving the site

content for future preservation. The survey findings and an examination of the comments on the site has demonstrated that for many participants, the *Day of Archaeology* had created a sense of community through the act of taking part in the project, which reflects the theory of weak ties and social capital outlined in Chapter 6.3. In terms of the public archaeology theory outlined in Chapter 2.3, the *Day of Archaeology* certainly meets the requirements of Merriman's "multiple perspectives model" where archaeologists engage with the public from a desire to enrich people's lives, and stimulate thought, emotion and creativity (Merriman 2004, 7). It also complies with Holtorf's "public relations model", where archaeologists are actively involved in improving the public image of the discipline (Holtorf 2007). The *Day of Archaeology* project also reflects Matsuda and Okamura's (2011) "outreach" model, since archaeological experts are communicating archaeological information to non-archaeologists. The project can certainly be seen to agree with my definition of public archaeology in practice, since the *Day of Archaeology*, as a digital project, offers a form of "democratisation of communication, activity or administration; through communication with the public" (see Chapter 2.3).

## CHAPTER 8: UNDERSTANDING ARCHAEOLOGICAL AUTHORITY IN A DIGITAL CONTEXT

...with the increasing spread of social media and mobile communication, the social networks of knowledge construction are becoming not only vastly bigger and quicker and less limited by space and time constraints than they have been before, but also more of a threat to established authorities (Hofheinz 2011, 1426).

This chapter will examine the issues of authority, organisational reputation, ownership and trust within archaeological organisations in the UK, which relate to the practice of public archaeology through the use of digital technologies. It will explore how these issues are addressed from within these organisations, using data gathered through a series of nine email questionnaires, alongside some of the results of the online surveys undertaken for this research from 2011 to 2013, which have been outlined in Chapter 3. The debate on archaeological authority and the nature of public participation in both the production and consumption of culture is contested, and precedes the development of Web 2.0 technologies defined in Chapter 4.1, although the advent of participatory digital culture has expanded the discussion. This partly derives from enduring epistemological debate around the nature of knowledge and expertise “between dominant positivist and alternative non-positivist approaches to research” (Durose *et al* 2012, 4). At the centre of this discussion lies a question of authority: is traditional expertise obsolete in the era of participatory technologies and how do professional archaeologists and archaeological organisations exercise their archaeological expertise in an online context? (Jenkins 1991; Kleinberg 1999; Surowiecki 2005; Lanier 2006; Keen 2007; Fischer 2009; Crooke 2010; Lanier 2010; Bevan 2012; König 2012).

An understanding of why some archaeological organisations, alongside their data and interpretations may be considered to be more authoritative than others, and the conflicted relationship between authority, participation, co-creation and

expertise, brings with it a participatory dilemma for the theory and practice of public archaeology. This chapter will explore how the archaeological authority of these respected and recognisably authoritative organisations manifests itself online and if these organisations actively address the issue of their own archaeological authority within their digital practice. It will ask if the participatory nature of social media can threaten or undermine these organisations' archaeological authority and if the proliferation of websites devoted to alternative archaeology (Schadla-Hall 2004; Holtorf 2005b; Fagan 2006; Trigger 2008; Feder 2010; Feder *et al* 2011; Pruitt 2011; Anderson *et al* 2013) on the Internet pose any serious threat to archaeological authority in the UK. It will also ask whether this is something that archaeological organisations feel they need to address. I will argue in this chapter that archaeological organisations in the UK have transferred their institutional authority to the digital realm successfully, and that there is little evidence that archaeologists are threatened by the existence of alternative voices online, or by the opportunities for sharing multiple perspectives on the past which are provided by participatory media. I will demonstrate that the impact of social media is less about public engagement, and more about public broadcast. What we can see in archaeological communications is the *performance* of openness to debate and discussion (as explored in Chapters 5 and 6), which is more immediately relevant to public archaeology practice in the UK than the concepts of multiple voices and the co-creation of archaeological data, projects or debate.

To consider these questions, this chapter examines the definitions and debates around the concept of authority. Section 8.1 examines the sociological and political approaches to the subject of authority in the academic literature, and discusses the role of authority in archaeological theory and practice. Section 8.2 briefly considers multi-vocality: public archaeology as critical practice and the diverse understandings of the past. Section 8.3 discusses the concept of information literacy and information-seeking behaviour and how these factors may impact upon the ability to differentiate between professionally produced archaeological content, and the critical consumption of online information

(Weinberger 2011; Rhinegold 2012). Section 8.4 explores the phenomena of fantastic or “bad archaeology” (Fitzpatrick-Matthews & Doeser 2014), and the issues for professional archaeologists of alternative archaeologies promulgated online in the UK. Section 8.5 and 8.6 will examine how the role of the non-professional has created, constrained and enabled the concept of archaeological authority, and how the impact of the Internet and participatory media technologies could, and do, affect the notion of archaeological authority within archaeological communications online. Section 8.5 explores the results of some of the questions from the online surveys outlined in Chapter 3, whilst Section 8.6 addresses these considerations through the results of the email questionnaires introduced in Chapter 3, and the eight case studies, drawn from high-profile and digitally active UK-based archaeological organisations. The significance of this new data will be discussed in the light of the traditional notions of archaeological authority and models for public archaeology in the discussion found in Section 8.6.

## **8.1 What is ‘Authority’? What is Archaeological Authority?**

Historians, philosophers, political scientists, sociologists, social psychologists, anthropologists, and many others have struggled with the abstract and relative concept of authority and it has long been a source of debate and disagreement in the social sciences (for example: Arendt 1968; Weber 1978; Sennett 1981; Raz 1990; Herbst 2003; Thomas 2004; Thomas 2011). The tools that emphasise personal or organisational status as authoritative are “assurance, superior judgement, the ability to impose discipline, the capacity to inspire fear” according to sociologist Richard Sennett (1981, 18). The complex cultural and social concept of authority and expertise is, within the context of archaeology as much as anywhere else, central to the assignment of intellectual authority through expertise to an entity or person (Bevan 2012, 2). The literature regarding the definition of what constitutes expertise is vast and varied, and encompasses skills, processes, decision-making or knowledge (Glaser & Chi



1988; Ericsson & Smith 1991; Shanteau 1992; Bereiter & Scardamalia 1993; Ericsson *et al* 2006; Farrington-Darby & Wilson 2006; Ericsson *et al* 2007; Hartelius 2011). The concept of expertise and authority is ineradicably linked to the development of the process of professionalisation within occupations, which has been analysed systematically within the sociological literature since the 1930s (Carr-Saunders & Wilson 1933; Wilensky 1964; Jackson 1970; Abbott 1988; Macdonald 1995; Kehoe *et al* 2000; Jacobs & Bosanac 2006). The recognition of core characteristics of professional expert, and by extension, authoritative signals, includes;

Formal education and entry requirements; a monopoly over the esoteric body of knowledge and associated skills; autonomy over the terms and conditions of practice; collegial authority; a code of ethics and, commitment to a service ideal (Anleu 1992, 24).

As explored in Chapter 2, Section 5, opportunities for collaborative relationships with public audiences who are interested in archaeology are not always taken on board within the archaeological profession and the impact of the professional-amateur split on the discipline of archaeology is further emphasised by membership of professional organisations such as the Institute for Archaeologists<sup>199</sup> or the Society of Antiquaries,<sup>200</sup> possession of advanced degrees in archaeological subjects, and expert understanding of archaeological protocols, policies and procedures. One of the roles of the professional archaeologist is to construct, interrogate and interpret the past through the evidence of material culture (Pruitt 2011, 2). The subsequent interpretations are made through epistemic dependence (Blais 1987, 369), the application of rigorous scientific techniques, the execution of carefully constructed methodologies and an intimate understanding of the rules and procedures of archaeological practice (Rassool 2010, 83). We can see then, that the role of the professional, expert archaeologist undertaking public archaeology is to facilitate public access to archaeological information, using their archaeological skills and

---

<sup>199</sup> <http://www.archaeologists.net/>

<sup>200</sup> <http://www.sal.org.uk/>

subject-specific knowledge - a two-way interaction which involves trust on behalf of the public and within the discipline, public deference to the archaeologist's accumulated knowledge base and skill set, the public performance of the professional's archaeological experience, and the public acceptance of institutional affiliation as an embodiment of that expertise (Rassool 2010; Pruitt 2011). As Hodder argues;

Subordinate groups who wish to be involved in archaeological interpretation need to be provided with the means and mechanisms for interacting with the archaeological past in different ways. This is not a matter of popularising the past, but of transforming the relations of production of archaeological knowledge into more democratic structures (1992, 186).

The narratives created by archaeologists and historians, whether independently or through co-creation and a multi-vocal stance, cannot be extricated from the diverse contemporary and historical social, political and economic contexts in which archaeology is practised. The creation of a historical narrative is an intrinsically political act, and becomes a "tool of social control" (Kojan 2008, 77). Most professional, practising archaeologists are trained practitioners, fundamentally involved in the creation and commodification of their professional hegemony (Pyburn 2009, 167). According to Waterton (2010b, 113) it is heritage organisations who decides who, when and how member of the public can access the education and knowledge required to appreciate the expert's self-defined common understanding of heritage issues, although as Baxter rightly critiques, this is difficult to see in practical terms within the heritage policy-making process that governs the work of most regional and national heritage agencies which are "now focused on the management of change within the built environment and land use planning systems" (2012, 193).

The practice of archaeology in areas of political, ethnic or economic dispute, such as Israel, Nepal or Bolivia, is part of the performance of government policy, power or subordination; brokerage of knowledge between expert and non-

expert; recognition of forgotten histories, or the public negation of subaltern heritage (Soffer 1982; Fawcett *et al* 2008; Kojan 2008). The creation and maintenance of a professional monopoly over a “specialist body of knowledge and skills” allows authoritative control over knowledge that is both controlled by policy, publicly beneficial and seen to be in the hands of the most adept curators and performers of these expert skills and knowledge (Soffer 1982, 801).

We can see from this discussion that the authority of archaeological information and data created by professional archaeologists is also ascribed by the audience and does not necessarily undermine the position of the professional archaeologist as expert. It is through the development of a public appreciation for their education, knowledge, expertise and authority over many years that the public archaeologist will find a supportive audience for the presentation of their expert knowledge. Principles of community empowerment, co-creation and a participatory culture may mask hierarchical and structured approaches to archaeological knowledge, expertise and material objects, what Rassool calls “knowledge ventriloquism” (2010, 81). The non-professional audience for archaeological information will in turn, acknowledge the embodiment of archaeological authority within the professional archaeologist (Stein 2012).

The central question for this chapter is whether or not the impact of Internet technologies as a communication medium for archaeology can override or challenge these “traditional models of expertise by disrupting established information routines and cultivating multi-perspectivalism” (Pfister 2011, 218). I would argue that, despite being able to access archaeological information in ever increasing quantities, especially with the advent of access to online material through Internet technologies, and a growing amount of archaeological data freely available to download, this empowerment will always derive from a subordinate relationship between the public and the professional archaeologist. This is, once more, a reflection of the ‘top-down’, outreach, broadcast and public relations approaches to public archaeology, which have been outlined in detail in Chapter 2.

The role of the gatekeeper to archaeological information is privileged, supported in the UK financially by a variety of policies, stakeholders, statutory bodies and regulations, and grant funding, as well as public money and public confidence and value that draws authoritative strength from the public perception of its stability and longevity (Bevan 2012, 3). As Kojan (2008, 70) has noted, there are many stakeholders in a society who have diverse understandings of the past as it exists in the contemporary social world, and acknowledging that these multitudes of experiences and opinions about the past exist and are valid for those people, has to become a key component of the practice of archaeology. There will always be subtly- contested understandings of the past at archaeological sites and monuments, which may arise from a wide variety of sources; orally transmitted knowledge and histories; legends and mythologies; religious and spiritual associations; disputed ownership or subaltern and hidden heritage; Fisher & Adair state that "...many people can have a valid response to and perspective on any subject, and that a rich and meaningful conversation can emerge by linking those that do have true expertise with those alternative perspectives and new voices" (2011, 50). Understandings of perspective, agency, personal meaning, and individual experience and community concerns are vital tools for the establishment of an equitable public archaeology. These multiple understandings of the past and the actions of humans in the past, and the reactions to these in the present will always exist "regardless of how archaeologists or any other party feel about it" (Kojan 2008, 75).

Yet, how relevant the scale of considerations of multi-vocality is to the UK audience remains difficult to gauge. Certainly, the UK has to acknowledge its historic role as a former Empire, a former colonial power, and the resulting diversity of population and experiences with interactions with the past. The discussions of British identities within popular media and academic archaeology and history (Paxman 1999; Ackroyd 2002; Kumar 2003; Miles 2005) are, as Johnson argues "implicit and inflected rather than overtly stated" (2008, 45) and linked politically and culturally to concerns relating to contemporary issues of multi-culturalism and social inclusion, as discussed in Chapter 2 Section 2.

Johnson makes a strong argument that the historic landscape of the UK is a palimpsest of the impact of the archaeology of economy and class, and one that is relevant to reconsideration in the light of a multiple-voices approach to land use, human agency and socio-political interaction, especially at a local scale, rather than one seeking to provide grand narratives (2008, 52).

How relevant these issues are when weighed against the opportunities to foster online relationships between a variety of publics, as well as archaeological communities, with diverse sources of digitised images, information and cultural material from the past is questionable. The central issue remains, for me, what kinds of relationships do we, as professional archaeologists, wish to foster between archaeological material culture and data, the small-scale local archaeologies that Johnson advocates, the wider public understanding of the past in the present, through national narratives, and more subtly, the populist public interest in the more obscure and mysterious aspects of archaeology (Buchli & Lucas 2001; Holtorf 2005a; Moshenska 2006; Moshenska 2013), which are, as Bevan notes, part of “a niche market” at best (2012, 9).

The growing importance of emphasis on the diversity of audience for heritage is another point of note, since archaeological sites and standing buildings may have different interpretations, meanings and relevance on the basis of class, gender and ethnic origin, as well as national, regional and local identity. An organisational attitude that seeks to build on these privileges, by opening itself and its work to the public through participation, exploration and co-curation by, and with, non-archaeologists, could enhance the value and impact of otherwise low-profile archaeological work. Trigger wrote that we need to seek to understand how archaeologists behave not just as “individuals but as researchers working within the context of social and political groups” (1984, 369). The fundamental issue, in my opinion, is the need for an acknowledgement within the profession that multiple interpretations of historic and archaeological information may occur, and that the associated problem is rather more methodological - in terms of how to comfortably embrace an acceptance of (not necessarily agreement with) the existence of multiple reactions to experiences of

landscape, the urban environment or material culture in museum displays, alternative spiritual or folklore beliefs, or even multi-vocality, as a reaction to the fruits of professional archaeological research - rather than an issue of expecting the public to wholeheartedly embrace the correct expert archaeological interpretation.

## 8.2 Multi-Vocality and Opening the Field of Discourse

As Kojan (2008) has argued, diverse understandings of the past exist, even with archaeological ‘truths’ widely disseminated within societies. Whatever archaeologists feel about these alternative viewpoints, they will continue to exist and be shared, regardless of archaeological understandings of the past. As an example, recent debate on the existence of smugglers tunnels throughout the UK on the Britarch Forum<sup>201</sup> clearly demonstrates the invisibility amongst professional archaeologists and archaeological data of a strong trope in British folklore and local history of the archaeological “uncanny” (Moshenska 2006).

Therefore, acknowledging the existence of these many narratives and exploring approaches to multi-vocality should be a “key component of the practice of all archaeology rather than a methodology to be adopted or rejected according to the predilections of individual archaeologists” (Kojan 2008, 70). An understanding and appreciation of the many possibilities and significance of encounters with archaeological material or landscapes, allows archaeologists to maintain their “scientific study of the past and an axiology of place and past, examining the broader values of distinct cultural and social groups” (Colwell-Chanthaphonh & Ferguson 2006, 150). Hodder has argued that archaeologists interested in democratising archaeological enquiry should pay attention to the beliefs and concerns of those most at risk from dispossession by dominant archaeological narratives and enquiries (Hodder 2008, 210), and has also written on the moral and ethical responsibility of archaeologists to facilitate the

---

<sup>201</sup> <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A1=ind1402&L=BRITARCH#40>

participation of non-professionals in archaeological interpretations (Hodder 1999).

The appearance of post-processual theory in archaeology during the 1980s was heavily influenced by the emergence of post-modernism within academia. The practice of archaeology has been, and continues to be shaped and negotiated within historical, political, cultural and socio-economic contexts and cannot realistically be extracted from these (Habu & Fawcett 2008, 91). That is not to say that multi-vocality presents competing narratives and the importance of archaeological work disappears in epistemological relativist pluralism where no single narrative has authority over another (Wylie 2008, 202). As we have seen in Chapter 2 Section 3 (and in Kojan (2008, 70) and Silberman (2008, 138)) the compromises within community archaeology projects and heritage tourism that elicit community and visitor participation, with the semblance of community involvement, often serve the archaeologist's expertise and local economic activity, rather than supporting and empowering the non-professional participant, which subtly undermines any oppositional practice of multi vocality. However, within a UK context, where the public appreciation of the archaeological expertise of the professional is fundamentally embedded in public consciousness, and there are few alternative perspectives to embrace, the concept of multi-vocality is perhaps difficult to locate within archaeological practise, unless it is seen as the need to understand the social phenomena situated around archaeological place, both in the present and in the past (Rodman 1992; Hodder 2003; Colwell-Chanthaphonh & Ferguson 2006).

Archaeology as a professional discipline seeks to maintain a professional, expert status. The Institute for Archaeologists was awarded Royal Chartership in February 2014,<sup>202</sup> which emphasises further its professional status and recognition of the technical skills and knowledge of its members (Institute for Archaeologists 2014a). Bodies such as the IfA, English Heritage, or The Royal Commission on Ancient and Historical Monuments of Scotland, seek to protect knowledge and standards through policy and management guidelines, which

---

<sup>202</sup> <http://www.archaeologists.net/charter/faqs>

includes for example, English Heritage's *Management of Research Projects in the Historic Environment*<sup>203</sup> or *Caring for Historic Graveyard and Cemetery Monuments*.<sup>204</sup>

The shifting nature of the participatory Internet could bring with it an innate threat to the misrepresentation of archaeological knowledge in the public realm and fear of the use of the Internet for 'illegitimate', alternative archaeology. This is further explored in section 8.4. As McDavid noted in 1997, during the earliest days of the use of websites in archaeology, Internet technology could open the field of discourse, which defines archaeological truths to those outside archaeology - which make claims which are not supported by professionally produced archaeological data, and to those who may wish to appropriate this data for their own purposes. It is perhaps then unsurprising that many archaeological projects actively using social media do not choose to engage in dialogue and discussion with the public. However, in the realms of 'community' archaeology, archaeological outreach and other forms of public engagement with archaeological practise and process, we might reasonably expect to find evidence of shared appreciation or discussion, through an online presence, on a par with the aspirations of such projects in the non-digital sphere, for inclusivity, openness and participation. This resonates with Hodder's insistence that multivocality is "an oppositional practice, capable of critically transforming archaeology" and encourages belief that the use of participatory technology can democratise enquiry (2008, 210).

### **8.3 Information Literacy and Information-Seeking Behaviour**

The implications of the move from seeking information sources physical to virtual Library users demand 24/7 access, instant gratification at a click, and are increasingly looking for "the answer"

---

<sup>203</sup> <http://www.english-heritage.org.uk/publications/morphe-project-managers-guide/>

<sup>204</sup> <http://www.english-heritage.org.uk/publications/caring-historic-graveyard-cemetery-monuments/>



rather than for a particular format: a research monograph or a journal article for instance. So they scan, flick and “power browse” their way through digital content, developing new forms of online reading on the way that we do not yet fully understand (or, in many cases, even recognise) (Rowlands *et al* 2008, 293).

The evolution of the Internet has reconfigured the way in which people discover, understand, use, share and create information, and consequently there is a wide variety of quality of information available online (Miller & Bartlett 2012). The information landscape of the Internet, especially when explored via search engines, can privilege popularity over the “low-circulation-high-quality” archaeological information that heritage professionals provide (Stein 2012). Users have to accept information on face value due to the expertise of the author or the institutional affiliations with which it is associated, what Hardwig has described as “strategic trust” (1991, 206). Discrimination between authentic, credible archaeological information, and populist, inaccurate and misleading archaeological sensationalism, or even pseudo-archaeology, requires an ability to apply critical thought to information retrieved online - digital and information literacy, which has been briefly discussed alongside the issue of digital divides and digital exclusion in Chapter 4.4. Information literacy has been a key concept within Library and Information Studies for 40 years, with the concept of computer literacy growing with the development of computer technologies during the 1980s and 1990s (Zurkowski 1974; American Library Association 1989; Lanham 1995; Gilster 1997; Snavely & Cooper 1997; Society of College, National and University Libraries 1999; Virkus 2003; Andretta 2007).

Digital literacy was recognised by the UNESCO *Prague Declaration* as a key skill for “for participation in the knowledge economy and in civil society” (UNESCO 2003; Catts 2012), and was described in the International Federation of Library Associations and Institutions *Alexandria Proclamation* of 2005 as “essential for individuals to achieve personal, social, occupational and educational goals” (International Federation of Library Associations and Institutions 2005; Catts 2012). The concept of digital and information literacy has been described in a

variety of ways; “multimedia literacy” (Lanham 1995, 198); the ability to use and understand ideas rather than technologies, and from a wide variety of digital sources (Gilster 1997); an ability to understand information via hypertext, critical understanding, awareness of networks as information sources and the ability to create and publish one’s own material online (Bawden 2001; Gurak 2001; Dutton & Shepard 2006). Most definitions are concerned with;

...the ability to find and use information... but goes beyond this to encompass communication, collaboration and teamwork, social awareness in the digital environment, understanding of e-safety and creation of new information. Both digital and information literacy are underpinned by critical thinking and evaluation (Open University 2012).

For the purposes of this thesis research, the definition of digital literacy proposed by Catts and Lau (2008) has been used. This defines information literacy as the ability to; recognise information needs; locate and evaluate the quality of information; store and retrieve information; make effective and ethical use of information and apply information to create and communicate knowledge. One of the central issues with archaeological material found online - as with all other academic subjects - is that information and disinformation can be difficult to unpick without an element of digital literacy (Miller & Bartlett 2012). Miller and Bartlett’s collation of issues between digital literacy and truth is especially useful to consider in the light of an understanding of archaeological authority and expertise. Offline strategies for verifying archaeological information, through an ability to examine relevant peer-reviewed books, journal articles or archaeological data may not always be applicable in an online context (although as we have seen in Chapter 5, this is not always the case). Access to this sort of material may be difficult and expensive due to distance, expense or the lack of academic institutional affiliation, especially for community archaeology members, commercial archaeologists and those working outside the academy, when affiliation would give access to academic libraries and up-to-date archaeological literature, previously discussed in Chapter 1. Miller and Bartlett’s

(2012, 37) discussion of the key challenges and strategies for mitigation has been included in this thesis as the best example of a model for the key issues of information literacy and these have been adapted in the following paragraph. These issues include:

**“Anonymity and the pedigree problem”**: The complexity of information provided online, and the lack of specialisms or expertise means that judgements about truth claims are difficult, especially when “much of the discussion on the Internet occurs under the cloak of anonymity, or where identity (and therefore authority) can be easily faked”.

**“Absence of gatekeepers”**: The growth of participatory media, user-generated content and access to an unprecedented level of information means that, as a society, we do not always have the equivalent of newspaper editors, academic textbooks and peer-review before content is made public, so “we sometimes create social epistemological structures and processes to order and categorise information according to its value and ‘truth’”.

**“Pseudo-sites and propaganda”**: Many websites do not contain accurate information, although they may be designed to appear authoritative and truthful.

**“Use of imagery”**: Appearance of websites is often a consideration when considering the accuracy of information held within these sites, and “image manipulation techniques are increasingly allowing misinformation to be powerfully and attractively packaged”

**“Echo chambers”**: Use of the Internet is often subject to “algorithms used in increasingly personalised web services” that create a tailored online experience based on our previous interests.

**“Skittering’ and ‘bouncing’”**: Information consumption online does not reflect “critical, deep, single-source reading”. Information seekers “bounce” through a handful of web pages supported by search engines, and “skitter” across these pages, viewing information rather than actively reading it. According to Miller

and Bartlett an online article is viewed “for around five minutes, and summaries are read much more than the full content”. (Adapted from: Miller & Bartlett 2012, 37)

The concept of ‘information behaviour’ describes “the many ways in which human beings interact with information, in particular, the ways in which people seek and utilize information” (Bates 2010). The impact of ICT on information behaviour has seen a growth in research in this area of library and information studies (Cronin & Hert 1995; Wilson 1999; Xie 2003; Rieh 2004; Bates 2010; Park 2013). There has been very little research into the phenomena of information-seeking behaviour for archaeological information - and only a handful of examples of research exist, from the UK, India and Sweden, which look at the user behaviour of professionals working in the field archaeology sub-discipline and archaeological academia (Corkill & Mann 1981; Stone 1982; Huvila 2006; Huvila 2008a; Huvila 2008b; Ahmad 2009) and none of these focus on the consumers of archaeological information.

Understanding information-seeking behaviour is also essential to evaluate the impact of digital media in online public archaeology and one of the surveys undertaken for this research was specifically created to gather data on the qualitative experiences of consumers of archaeological information online. The data collection parameters and processing method for this survey, the ninth undertaken for this thesis, has been outlined in Chapter 3, and full details of the survey questions and results can be found in Appendix I. The findings from survey 9, “Using the Internet for Archaeology”, are especially interesting to consider alongside issues of information literacy and an understanding of information-seeking behaviour in archaeology, as well as the information discussed throughout Chapter 4 covering issues of digital inequalities.

Survey 9 received 577 responses. The survey was especially targeted at members of the public active in the UK voluntary archaeology sector, through links on the Britarch Forum,<sup>205</sup> inclusion in *British Archaeology* magazine, and by directly

---

<sup>205</sup> <https://www.jiscmail.ac.uk/cgi-bin/webadmin?A0=BRITARCH>

emailing an invitation (with the survey's URL) to community archaeology groups. Professional archaeologists and organisations were also invited to take part and also responded through the call for participation made through my own blog<sup>206</sup> and Twitter account<sup>207</sup> and on various archaeology-related Facebook pages. One in five responses came from professional archaeologists (21.9 per cent), members of local, regional history or archaeology groups or societies (16.35 per cent), postgraduate archaeology students (14.76 per cent), 'other' (10.95 per cent), volunteers (10.16 per cent), undergraduate archaeology students (8.25 per cent), those "interested in the subject but not active" (8.25 per cent), those working in academia above postgraduate level (5.71 per cent), and museums professional (3.65 per cent). The age range was weighted towards the 25-54 year old age range, as 53.72 per cent of respondents fell into these categories, although 69 responses were from the 55-74 age range.

The most significant findings relevant to this chapter are found in the survey responses to questions about the use of archaeological websites, which archaeological websites are visited, and the use (or not) of social media platforms to access information about archaeological topics. The majority of people who responded to the survey declared that they access archaeological websites on a daily or weekly basis - 44 per cent and 26 per cent respectively. The types of websites that the participants reported visiting regularly range from large archaeological organisations such as the ADS,<sup>208</sup> RCAHMS Canmore,<sup>209</sup> the CBA,<sup>210</sup> Heritage Gateway<sup>211</sup> and Current Archaeology,<sup>212</sup> to smaller organisations like Past Horizons,<sup>213</sup> the BAJR website and discussion forum,<sup>214</sup> the *Day of Archaeology*, as well as blogs, Facebook pages and Twitter.

---

<sup>206</sup> <http://digipubarch.org/>

<sup>207</sup> <https://twitter.com/lornarichardson>

<sup>208</sup> <http://archaeologydataservice.ac.uk/>

<sup>209</sup> <http://www.rcahms.gov.uk/canmore.html>

<sup>210</sup> <http://www.archaeologyuk.org/>

<sup>211</sup> <http://www.heritagegateway.org.uk/gateway/>

<sup>212</sup> <http://www.archaeology.co.uk/>

<sup>213</sup> <http://www.pasthorizons.com/>

<sup>214</sup> <http://www.bajr.org/>

Sixty four per cent of the respondents to the “Using the Internet for Archaeology” survey had used some form of social networking platform such as Facebook, Twitter or YouTube to find out more about archaeology, although 14 per cent had not. The most popular platform used for archaeological information was Facebook, followed by Twitter. Other forms of social media were mentioned as useful places to find archaeological information, but these were not as popular as Facebook or Twitter. These platforms include (in descending order of popularity in the survey) YouTube for information on excavations, demonstrations of experimental archaeology or interviews; platforms such as blogs, including Blogger, Tumblr and WordPress, valued for their space for comments and discussion; Academia.edu, which was found to be a useful platform to access academic papers without accessing pay walled journals or needing an affiliation to an academic library; and LinkedIn for work-related social networking. Email lists, Google+, Instagram, online forums, Pinterest, and Scoop.it<sup>215</sup> were also mentioned by a handful of respondents.

Responses indicated that the participants in Survey 9, the profile of which has been outlined above, had a reasonable awareness of the need for an information-literate approach to archaeological information shared through social media: the respondents comments included an acknowledgement that Facebook page moderators need to be vigilant regarding the quality of content posted; that the quality of archaeological information varies depending on the Facebook page moderation, source material and interpretation, and is prone to spam. The participants were sometimes confused about the source of information found on Facebook pages, and felt the ability to discriminate was a fundamental requirement to judge the worth of the archaeological content; it was noted that archaeological content found on YouTube was of varied quality and offered little participatory interaction between content-producers and the audience; information shared via social media platforms is only as good as the quality of the author and the sources; survey participants noted that they built

---

<sup>215</sup> <http://www.scoop.it/>

relationships with reliable archaeological sources on Twitter, and checked links before accepting the veracity of the information provided.

Participation in discussions on archaeology forums or social media platforms appears to be dependent on the users perception of having confidence, valid knowledge, qualifications and disciplinary authority to comment on archaeological content; survey respondents expressed a fear of 'making a fool of themselves' in participating in discussion - anonymous participation was seen as a beneficial method of encouraging more dialogue. The responses also noted the appearance of 'trolls' and vitriolic comments, which was off-putting. Responses suggest that users do not have a lot of time to spend on commenting on social media platforms, and there is the perception that commenting on archaeological information can be a waste of time "There is literally no point in commenting or joining in. Nothing ever changes..." (Survey 9, Question 12, Appendix I).

From these results, age does not seem related to digital literacy, as all responses indicated a level of consideration of sources and authoritative affiliation when searching for information, especially on social media platforms. Educated people made the responses to the survey and the minimum level of educational qualification attained is GCSE. 105 of the participants have first-degree level education, whilst 56 are studying for, or possess, a Ph.D. (Survey 9, Question 23, Appendix I). The academic literature has noted that education and technical familiarity has positive effects on the ability to efficiently use the Internet (Hargittai 2004; Hargittai & Hinnant 2008; Case 2012; Parks 2013), and this is certainly supported in the qualitative data produced by Survey 9. The data show that the audience makes the ultimate judgement about the value of these media and the information shared on these platforms, and building a relationship with the users ascribes authority and authenticity to the archaeological information and the interactions between the professional archaeologist and members of the public.

The Megalithic Portal,<sup>216</sup> a website created and run by volunteer non-archaeologists (Fig. 8.1), was also reported as a popular website for broad coverage of archaeological information, maps and location details, the ability for the public to contribute to the site, the range of quality photographs of the archaeological sites, and what one participant called a “balance between accepted science and possible science” (Survey 9, Question 12, Appendix I). This is an interesting presentation of mixed approaches to archaeological expertise within the realm of digital public archaeology. The website contains a vast catalogue of information on over 40,000 ancient sites in 130 countries, including descriptions, maps, geo-location, access information, and 115,000 images, many of which have been crowdsourced from website visitors. The site also shares archaeological news stories, and data downloads for promotional material, audio, e-books and newsletters, and is professionally built and maintained. The site also contains a large and well-used online forum, which contains posts on a variety of topics. In the light of the discussion of information literacy in Section 8.3, the website could be seen to provide a forum for misleading information for the uninitiated, who may not be willing, or able to differentiate between the variety of information and discussion contained within the website. This site is an interesting example of the presentation of multiple voices and approaches to archaeological information, and the realms of the archaeological fantasy and mystery.

The Megalithic Portal website forum includes a series of eight forum threads. Five of these are dedicated to site administration, instructions on how to use the site, or for the exchange and sale of books and other items. Three threads are dedicated to discussion topics. One is for the discussion of “mainstream” archaeological matters relating to megaliths and prehistory; one is for the discussion of topics relating to the Roman or “Dark Age” period, ancient crosses and other related historical or geographical topic; and one is an esoteric thread titled “Sacred Sites and Megalithic Mysteries” (Fig. 8.2). This thread states clearly on the forum page that it is for “alternative ideas relating to ancient sites,

---

<sup>216</sup> <http://www.megalithic.co.uk/>



theories involving earth energies, dowsing, ritual, or other such things” (Megalithic Portal 2014) and it contains a large amount of fantastic and alternative archaeological discussions on subjects as diverse as; “Evidence of Alien Visits to Earth, UFO?”;<sup>217</sup> “Relativism, political correctness and censorship”<sup>218</sup> or “The Principle: Stonehenge”.<sup>219</sup> The forum thread with most visits and discussion topics is “Sacred Sites and Megalithic Mysteries”.

As part of the research for this chapter, I contacted the website founder, Andy Burnham, with questions about the approaches and management of the more esoteric content found on the site, and how they managed the differences between the mainstream information and the alternative archaeologies, whilst remaining open and inclusive about people’s different opinions on archaeological ‘truth’. Two of the administrators of the site responded, and both emphasised that there were differences of opinion between the administrators about the toleration of the “Earth Mysteries” thread. There were geographical and political sensitivities inherent in some of the content that has been shared through the forum thread and that these were carefully monitored - including the removal of posts and the banning of forum members if they share unpleasant and unacceptable content - white supremacist material for example.

Whilst most British people are quite relaxed about 'alternative' archaeology, (and some Americans positively revel in it) it can be a very sensitive issue in Germany as alternative theories historically had an association with the Third Reich. We have discovered that there is still one far right group in Germany propagating alternative theories for unpleasant purposes - we have of course distanced ourselves from them and not allowed them to post. There are also various groups/individuals such as Ancient Celtic New Zealand who need careful handling and we try to avoid propagating such 'white supremacist' type ideas (A Burnham 2014, pers. comm., 7 March).

---

<sup>217</sup>

<http://www.megalithic.co.uk/modules.php?op=modload&name=Forum&file=viewtopic&topic=4168&forum=4>

<sup>218</sup>

<http://www.megalithic.co.uk/modules.php?op=modload&name=Forum&file=viewtopic&topic=4175&forum=4>

<sup>219</sup>

<http://www.megalithic.co.uk/modules.php?op=modload&name=Forum&file=viewtopic&topic=6043&forum=4>



Fig. 8.1 Screenshot of the Megalithic Portal website. 21 February 2014. Retrieved from: <http://www.megalithic.co.uk/index.php>

The website itself had been set up originally;

...with the intention of being inclusive, but not intrusively so such that our main pages became full of unsubstantiated ideas... That's how we set up our 'Mysteries' Forum as a safe place for such ideas to be expressed, as a 'relief valve' as it were for the rest of the site as we can direct people over there rather than get into such discussions on our main pages... Once we were up and running, the sorts of ideas and theories we were being sent rather decided that we would be inclusive. I wasn't inclined to delete and ignore all of the stuff that was coming in as I knew it would be of interest to our visitors, even if not always to myself (A Burnham 2014, pers. comm., 7 March).

The website administrator emphasised that the website was established as a method of sourcing information on obscure archaeological sites that had been written about in various alternative and mainstream magazines and books during the 1980s and 1990s. They noted that the creation of the website was a direct response to the lack of publicly available and reliably-visualised and located information, before the advent of online HER and other archaeological databases made access to archaeological information faster and easier.

‘Runemage’, one of the administrators who responded to my email, noted that the contents of these threads are moderated with a “light touch”, that forum members must sign up to Terms and Conditions as part of their use of the site and that only the forum members can post. Abusive accounts are blocked, but there is freedom to post questions and discuss alternative archaeologies unchallenged, within the boundaries of decency. In their responses to my email questions, Runemage made a point which reflects the issues of dispositional divides outlined in Chapter 4.9;

There are comparatively few forum posters compared to our membership, I’ve looked at other non-archaeology sites which provide a platform for different but still alternative views and it seems to be the way of things. Large membership, very small core of regular posters, a few newbies now and again. We even ran a couple of polls to see if there’s anything we can do to encourage more people to join in on all of our fora, but there’s only a very small take-up (Runemage 2014, pers. comm., 7 March).

The screenshot shows the Megalithic Portal website interface. At the top, there are navigation links for Search, Latest Entries, Find a Site, Join In, News & Links, Forum, Shop, About Us, and Login / New account. Below this is a main menu with links for News, Forum, Browse by Country/Type, About us/Help/FAQ, Your Own Page, Your Visit Log, email Newsletter, Join our Society, Contact Editor, Site Search, and AdChoices. The forum thread is titled "Moderated by : davidmorgan , TimPrettv , Andy B , Klingon , MickM , bat400 , sem , Runemage , TheCaptain" and "The Megalithic Portal and Megalith Map : Index >> Sacred Sites and Megalithic Mysteries". The thread contains several posts, including one titled "Did Bronze Age Man have Digital Cameras?" with a long list of page numbers (1-105) and a reply count of 2091. Other posts include "Sidereal time" (4 replies) and "Stonehenge connection to the Great Pyramid" (115 replies).

Fig. 8.2. Screenshot of the Megalithic Portal discussion forum “Sacred Sites and Megalithic Mysteries”. 1 March 2014. Retrieved from: <http://www.megalithic.co.uk/modules.php?op=modload&name=Forum&file=viewforum&forum=4>

## 8.4 Alternative Archaeologies and the Internet

Schadla-Hall wrote that “the vast majority of the public has no interest or direct contact with what members of the archaeological profession consider to be their subject” (2004, 255). The apparent lack of concern at this proposition amongst the profession, as noted by Schadla-Hall, and Kojan in 2008, perhaps reflects an underestimation of the impact of access to the Internet and the accompanying vast quantities of badly-written, badly-researched, dubious or downright false websites containing ‘archaeological’ information and archaeological conspiracy theories available online (Archaeology Fantasies 2014; Fitzpatrick-Matthews & Doerer 2014; PalaeoBabble 2014).

‘Alternative’, ‘fringe’, ‘pseudo-scientific’ or ‘cult’ archaeologies are a thorny issue for mainstream archaeologists, with shifting barriers between conventional archaeological interpretations and alternative explanations, clouded by the evolution of academic archaeological thought and post-modernist approaches to archaeological evidence (Jordan 1981; Harrold & Eve 1987; Williams 1987; Wallis 2003; Schadla-Hall 2004; Holtorf 2005b; Fagan 2006; Kojan 2008; Feder *et al* 2011; Pruitt 2011; Normark 2012; Anderson *et al* 2013). Whilst there is not space in this thesis to explore the full academic literature and many studies and refutations of alternative archaeologies by professional archaeologists, there has been a huge growth in the production and popularity of alternative archaeological information and conspiracy theories in the media in recent decades (Brittain & Clack 2007; Holtorf 2007; García-Raso 2011). For example, books such as *Chariots of the Gods* (Von Däniken 1970); *Fingerprints of the Gods* (Hancock 1995), *The Modern Antiquarian* (Cope 1998) or *Ancient Giants Who Ruled America* (Dewhurst 2014); fictional and ‘factual’ TV, documentaries and films such as The History Channel’s *Ancient Aliens*,<sup>220</sup> the BBC’s *Bonekickers*,<sup>221</sup> SyFy’s *Stonehenge Apocalypse*,<sup>222</sup> or Living TV’s *Paranormal Egypt*,<sup>223</sup> or even ‘archaeological’ TV reality programmes that feature professional archaeologists

---

<sup>220</sup> <http://m.imdb.com/title/tt1643266/>

<sup>221</sup> <http://www.bbc.co.uk/programmes/b00cl92f>

<sup>222</sup> <http://www.imdb.com/title/tt1488598/>

<sup>223</sup> <http://www.imdb.com/title/tt1535270/>

such as *Chasing Mummies: The Amazing Adventures of Zahi Hawass*,<sup>224</sup> as well as numerous video games that present alternative archaeological viewpoints and information, such as the *Tomb Raider*,<sup>225</sup> or *Uncharted* series.<sup>226</sup>

Whilst there are notable differences in the relationship between archaeology and the media in the UK and the United States, (Ascherson 2004; Henson 2006; Kulik 2006; Harrison 2010; Bonacchi *et al* 2012; Anderson *et al* 2014), and the realms of alternative archaeology in the UK are definitely not mainstream enough to induce most TV producers to commission alternative archaeology programmes on the scale found in North America, there is a British market for misinformation through digital media, illustrated in the findings of Fitzpatrick-Matthews and Doeser (2014) and the more esoteric content of the Megalithic Portal,<sup>227</sup> for example. The two-pronged approach described by Anderson *et al* (2013) is one of the best argument for the importance of online public archaeology; the “intellectual ‘whack-a-mole’” (Anderson *et al* 2013, 28) of refutation and challenge by professional archaeologists on social media and organisational websites after-the-fact, or for the discipline to acknowledge the risks outlined in Miller and Bartlett’s challenges for information literacy discussed in section 8.3, and proactively adopt the potential of the Internet and address genuine archaeological narratives in an absorbing, stimulating, multi-mediated and jargon-free manner that engages and educates. Whilst the ‘top-down’ approach of Holtorf’s “education model” (2007), or Matsuda and Okamura’s “outreach” model (2011) seem at first most appropriate for the management of archaeological authority online in the face of alternative archaeologies, it is perhaps only within a framework of the media presentation of an archaeological discipline that is willing to engage with, discuss and refute where necessary, multiple understandings of the past, that public archaeology online can survive the demand for archaeological “commodities” (Moshenska 2010, 46). As a discipline, we need to present and discuss narratives to the

---

<sup>224</sup> <http://www.drhawass.com/blog/chasing-mummies-series-comes-end>

<sup>225</sup> <http://www.tombraider.com/gb/base/brandsitepreorder?refer=71>

<sup>226</sup> <http://naughtydog.com/games/uncharted/>

<sup>227</sup> <http://www.megalithic.co.uk/>

public that venture beyond the world of *Time Team*, and into the real world of archaeological mystery, the morbid, life and death in the past, present-day detective work and painstaking science, in order to counter the UK archaeological fictions that perpetuate online, of earth energies,<sup>228</sup> direct descent from prehistoric populations,<sup>229</sup> or that the builders of Stonehenge believed in geo-centricity.<sup>230</sup>

## 8.5 Locating Archaeological Authority Online: Case Studies from the Twitter Platform

Credibility, reputation and trust are critical issues when dealing with the public dissemination of archaeological news and information online. Online information is not necessarily less credible, but there are vast amounts of inaccurate and low-quality websites. Credibility has been described as the perceived quality of information by the user, and consists of “two key elements: trustworthiness (well-intentioned) and expertise (knowledgeable)” (Lucassen & Schraagen 2011, 1233). Reputation is a “fluid, contingent, and precarious attribute generated entirely by the perception, attention and approval of others” (Hearn 2010, 423), and maintaining a positive reputation involves a continuous process and performance of image-management (Rodden 2006, 75). The active creation and management of personality and self-expression on social media platforms raises a number of issues around interpersonal perception, reputation management and controlled identity. No direct research has yet been undertaken into photographic or biographic representation on Twitter, and the image is only one small part of a very short biography. Unlike Facebook or blogs, the Twitter profile can only carry one picture (Twitter Help Center 2014). Users can choose an image that they feel best represents their communicated self or opt for the default Twitter avatar, which is a white egg shape on a coloured background. The range and style of the profile images is vast: individuals or groups, close-

---

<sup>228</sup> For example: <http://www.ley-man.co.uk/index.html>

<sup>229</sup> <http://stonehenge-ancestors-quest.co.uk/>

<sup>230</sup> <http://heavenshenge.blogspot.co.uk/2011/12/of-hyperion-we-are-told.html>

ups, blurred images, symbols, organisational logos, cartoons, or avatars, and “...self-presentation on Twitter takes place through on going ‘tweets’ and conversations with others, rather than static profiles. It is primarily textual, not visual” (Marwick & Boyd 2011, 116). The importance of the process of evaluating authenticity can be observed during the decision to exercise reciprocity after being 'followed' by another Twitter user. Twitter's account profile facility is limited and many account holders prefer to maintain a high degree of anonymity, using nicknames and impersonal avatars

As evidenced in the surveys for this thesis, many people using and interacting on archaeological social media platforms are professional archaeologists or researchers; many users work in the academic field, and the authenticity of, and trust, in archaeological news can be an emotive subject, as explored in Section 8.2. The evaluation of information credibility online is far less simple than in the pre-Internet era - the user is frequently left to judge the veracity of the information discovered online for themselves (Lucassen *et al* 2013). The academic literature on information credibility in digital media is extensive, and somewhat beyond the remit of this thesis (for example: Flanagin & Metzger 2000; Kioussis 2001; Metzger *et al* 2003; McKnight & Kacmar 2006; Metzger 2007; Metzger *et al* 2010; Lucassen & Schraagen 2011; Schmierbach & Oeldorf-Hirsch 2012; Lucassen *et al* 2013). However, recent studies have shown that there are discrepancies between what users consider relevant to ascertain information credibility, and that used by search engines such as Google and Bing (Schwarz & Morris 2011; Morris *et al* 2012). Those seeking credible information rely on their experience and expertise with the subject, information literacy and critical awareness, or experience of the information provider, in order to form a judgement on the accuracy and validity of the information retrieved (Lucassen & Schraagen 2011). Research by Lucassen *et al* (2013), unsurprisingly, showed that people with some knowledge of the topic evaluate the credibility of information found online differently than those with no prior experience or understanding.

The rapid, real-time update of the Twitter platform makes it an ideal source for following and sharing the latest news, discussion and commentary, and has been used to break fresh news from weather, sport, world events, political revolutions, to celebrity gossip, and natural disasters (Eltahawy 2010; Becker *et al* 2011; Castillo *et al* 2011; Christensen 2011a; Liu *et al* 2013; Veenstra *et al* 2014). These news items have been tweeted by newspapers, news agencies, citizen journalists and blogs, as well as first-person observations from people 'on the ground'. "Trending topics" are listed on the Twitter site (Fig 8.3), representing the most-mentioned keywords and hashtags from emerging news on the whole Twitter time line, although users can adjust what they see as the trending topics by narrowing or expanding their geographic filter.

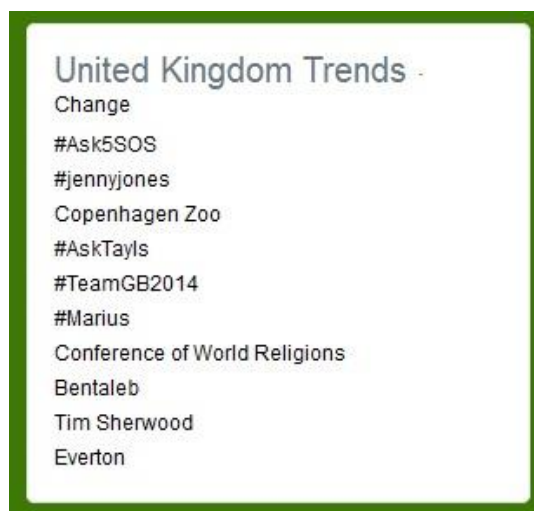


Fig. 8.3: Screenshot of Twitter UK trending topics. 9 February 2014. Retrieved from: <https://twitter.com/i/discover>

Twitter can rapidly update information and facilitate swift analysis and interpretation of events far faster even than traditional media websites (Castillo *et al* 2011). Yet, the speed and churn of the Twitter time line, and the increasing use of mobile phone connections to update the platform (Twitter Advertising Blog 2013), may facilitate the spread of misinformation, and the issue of ascertaining credibility within online micro-blogging is an important aspect to



consider within the paradigm of asserting archaeological authority in an online context. The Twitter platform has also been the focus of research into information credibility (for example: Al-Eidan *et al* 2010; Popescu & Pennacchiotti 2010; Schmierbach & Oeldorf-Hirsch 2010; Starbird *et al* 2010; Yardi *et al* 2010; Al-Khalifa & Al-Eidan 2011; Castillo *et al* 2011; Kang *et al* 2012; Ikegami *et al* 2013, An *et al* 2013).

The work of Castillo *et al* (2011) suggested that Twitter users estimated the level of credibility of information exchanged via the website using several markers of believability; the emotional reactions and sentiments of users generated by certain topics; the level of questioning of topics by users sharing or retweeting information; the external sources cited, the existence and authenticity of an external source and URL; the numbers of followers, the number of Tweets sent, and the longevity of a Twitter account. The research concludes that credible news items “...tend to include URLs... have deep propagation trees... are propagated through authors that have previously written a large number of messages, originate at a single or a few users in the network, and have many re-posts...” (Castillo *et al* 2011, 5). The asynchronous nature of the Twitter feed allows users time to consult external sources to verify information shared via Twitter (Schrock 2010, 2) and research the veracity of the information supplied: “Twitter feeds may be perceived as a stream of interesting titbits of information that are quickly evaluated and easily ignored” (Schrock 2010, 17). Whilst misinformation is not a new Internet phenomenon by any means, the use of a social media platform for political propaganda, marketing, spam and malicious behaviour could seriously damage the credibility of information publicized via Twitter. However, as Schrock points out, “for the Twitter environment there may be few risks to being deceived, other than the occasional spurious status update” (2010, 17).

The responses to the “Twitter and Archaeology” online survey questions over the three years of the survey which took place between 2011 and 2013, and examine the perception of archaeological authority and the need for accuracy when tweeting, are very interesting in the light of the literature on Twitter as a

credible news source. The data collection and collation method for these surveys are outlined in Chapter 3, and the full results of the surveys, including the questions and responses, can be found in Appendices A (2011), C (2012) and H (2013). Results from these three surveys show that the limitations of the account profile mean that what users say on Twitter, how often and with whom they interact is of far greater importance to the perception of the authority and influence than the contents of the short biography and accompanying avatar or image. Personal and professional reputation and organisational affiliation, weak ties, the perception of reliability, the length of time the source has held a Twitter account, influence on the archaeological sector in 'real life', as well as biographical information found elsewhere online are all important factors in the perception of trustworthiness of both the information shared through Twitter and the individual source account.

For many of the respondents, a weak tie connection and the possession of social capital, as defined by Granovetter (1973; 1982) and Putnam (1995; 2001) and discussed in Chapter 6.2, including familiarity with the work of the connection is central to the perception of authority, overriding the relative anonymity offered by the Twitter platform. Where Twitter users do not have personal acquaintanceship with the Twitter source, the survey respondents have noted that they will actively search for more information about a person or academic affiliation or professional status through the use of a search engine, in order to ascertain the reliability of the information provided. The archaeological tweeters who responded to the surveys over the three years are rigorous fact-checkers - checking sources of information, biographies and personal and institutional websites. Question 15 of Survey 8 addressed this issue and selections of the comments received on this subject (which can be found in full in Appendix H) include:

*“I will assess the source of the information in terms of who the individual/organisation is and try to determine where the information for their tweets is coming from.”*

*“...visiting the very source of news/links, checking what else people posted and wrote, whether they’re acquainted with topic and/or where they work, for how long...”*

*“Check them out using a search engine.”*

*“Follow-up search in search engines to check the veracity, as well as discussion with friends.”*

It is also noticeable, as previously discussed in Chapter 6, that the longitudinal element of the “Archaeology and Twitter” surveys can demonstrate a growing sense of an off-line community within the online archaeological Twitter network. More of those people responding to the survey in 2013 noted that they were familiar with the Twitter account holders they follow in real life, having met them at conferences or through professional encounters, and some of the comments noted that these meetings in person have started through an acknowledgement of themselves as tweeters.

The extent that the potential reach and audience of a user’s shared information Twitter can be vast, and is exercised through the simple act of receiving a retweet, has a number of implications for the use of social media platforms for dissemination of authoritative information and publicity. This is an important yet imperceptible example of why an appreciation of the requirements and abilities of the imagined audience around issues of information literacy and information credibility during the production of archaeological information online are essential. It is also fundamental that public archaeology projects consider how influence and reach affects the longevity of information circulation, since reused and recycled content can last longer than expected online.

An extreme example of this was demonstrated in April 2011, when an international news item was circulated via Twitter that covered the discovery of a so-called “Gay Caveman” during an archaeological excavation in the Czech Republic. This sensationalist story was first reported in the *Daily Telegraph* (2011) (Fig. 8.4) and the *Daily Mail* (2011) in the UK on the 6th and 8th of

April respectively, and the news items were swiftly spread throughout global media platforms. The UK newspaper articles had included information about the identification of the sexual orientation of an individual in a Copper Age burial, dating to around 5000 years ago. This biological male had been interred with an 'unusual' grave assemblage and orientation, previously only found in burials found in the region that had been identified as belonging to biological females. There was much conjecture in the press and online about the transgender status or homosexuality of the human interred in the unusual burial, often in disparaging terms; the *Daily Mail* referred to the individual as “The Oldest Gay in the Village” in the article headlines (Daily Mail 2011).



Fig. 8.4: Screenshot from the Daily Telegraph. 20 February 2014. Retrieved from: <http://www.telegraph.co.uk/news/newsttopics/howaboutthat/8433527/First-homosexual-caveman-found.html>

The reactions to this news by the archaeological community studied during this period varied. Many of the archaeological news accounts simply retweeted this

information as a news item, without critical analysis. A small but vocal number of archaeologists met the news with increasing anger and derision both on Twitter and through their blogs (Killgrove 2011; Hawks 2011; Joyce 2011), and attempts were made to bring some archaeological critique to an otherwise inflammatory and inaccurate tabloid story. However, the Gay Caveman story as a Twitter phenomenon did not simply disappear in the face of these denunciations by high profile archaeological experts. The story carried on being shared as a fresh news item some days after it was first released, and the last known retweet of this story, which imagines the narrative to be current, as well as ignores the scientific community's updates and challenges to the veracity of the information was on 15 June 2011 by @gayandhappy, who Tweeted "Gay Caveman' Found By Archaeologists ". This is an interesting development of the "Gay Caveman" story, as part of the mythology and history of modern homosexuality, and, whilst a period of nine days between the release of fresh information and @gayandhappy's retweet is not a particularly long time, I would argue that the speed of the Internet, and the Twitter platform means that this example is a useful warning about the potential 'long-tail' of archaeological stories found in the global media that contain inaccuracies and sweeping generalisations.

## **8.6 Email Questionnaire Case Studies**

This section of Chapter 8 contains the results and an analysis of the email questionnaires undertaken as part of the research for this thesis, which were drawn from eight case studies of high profile and digitally active UK-based archaeological organisations. The background information on the participant organisations for these email questionnaires and the method of data collection and collation are outlined in detail in Chapter 3, and full details of the questions and results can be found in Appendix J. The eight case studies are: Archaeosoup Productions, a privately owned educational enterprise; Big Heritage, a social enterprise for heritage education; British Archaeological Jobs and Resources

(BAJR), a privately run archaeological organisation providing information, advocacy and support services to the archaeological community and members of the public; The Council for British Archaeology (CBA), a long-established UK-based educational and advocacy charity which aims to “promote the appreciation and care of the historic environment for the benefit of present and future generations” (Council for British Archaeology 2014); The English Heritage Archaeology section, part of English Heritage, the Historic Buildings and Monuments Commission for England, an executive non-departmental body funded through the Department for Culture, Media and Sport; The PAS, a national “partnership project which records archaeological objects found by the public in order to advance our understanding of the past” (Portable Antiquities Scheme 2013); RESCUE, the British Archaeological Trust, is a small UK-based registered charitable organisation that exists to campaign for the protection and conservation of archaeological sites, artefacts and monuments; The Royal Commission on Ancient and Historical Monuments of Scotland (RCAHMS), a non-departmental body of the Scottish Government, responsible for strategic survey and recording of the historic and built environment of Scotland and the management and maintenance of a national collection of written records, manuscripts and photographs relating to Scotland's maritime history, industrial past, built environment and archaeology (Royal Commission on Ancient and Historical Monuments of Scotland 2014).

The survey questions examined the relationship between these eight archaeological organisations and their experiences of propagating and maintaining their archaeological expertise and authority on the Internet, through their websites and presence on their various social media platforms. The aim was to draw out the common concerns, issues and mitigation strategies for the maintenance of audience trust, through the exercise of archaeological authority. Can the participatory nature of social media threaten or undermine these organisations' archaeological authority? Can the proliferation of websites devoted to 'cult', 'alternative' and 'fantastic' archaeology on the Internet threaten this archaeological authority, and is this something that archaeological

organisations feel they need to address? The findings discussed below are the result of collating and coding the responses using a Grounded Theory approach, and the full details and responses to these questionnaires can be found in Appendix J. The data coding has revealed a series of shared approaches to the use of Internet technologies as a form of public archaeology and public engagement amongst these eight organisations, which reflect the results of the Twitter survey responses outlined in section 8.5. For simplicity of reference, the outcomes of the survey coding have been presented in Tables 8.1 and 8.2.

<i>How to Determine the Authority of 3rd Party News Items?</i>	<i>What is the Importance of Transmitting Correct Information via Internet?</i>	<i>What are Mitigation Strategies for Accidental Presentation of Incorrect Information?</i>
Filter information using organisations' expert understanding of material	Reputation of organisation very important	Use professional judgement before transmission
Carefully check news sources	Reliant on public interpretation of data	Take time to consider material before publishing
Check institutional affiliation of news source	Aware that the speed of the Internet allows for fast retractions/addendums	Editorial guidelines are in place
Use common sense		Be prepared for retraction/addendum

*Table 8.1: Summary of the issues for the case-study organisations relating to sharing news items from third-party sources.*

<i>How Organisational Authority is Presented through Internet &amp; Social Media Platforms</i>	<i>Presentation of Organisational Expertise Online</i>	<i>Digital Communications as Commitment to Public Archaeology</i>
Representation of authoritative affiliation (logos, branding)	Accentuate embodied knowledge & experience of organisation (staff, data)	Vital for public impact & dissemination
Content of information shared is professional, authoritative & trustworthy	Professional writing style	Embedded in organisational communications
Robust editorial policies in place	Branding	Perception of cost efficiency
Element of formality in presentation & discussion of information	Organisational values made clear & performed	Perception of wide public audience for archaeology online

*Table 8.2: Summary of the issues for the case-study organisations with the presentation of expertise and authority as part of public archaeology.*

So how does the archaeological expertise of these respected and recognisably authoritative organisations manifest itself online? Information shared is carefully

vetted, filtered and the provenance checked before it is re-shared. These organisations are actively managing the appearance of their own archaeological authority within their digital practice; as the trust of their audiences, and reputation of their affiliations are central concerns. However, there is awareness that the speed of information shared online allows for rapid retractions, corrections and comments, and the interpretation of the data sources mentioned once these stories leave the organisation will not always be that desired by the originating source, nor the archaeological organisation acting as a conduit for news. The results of the questionnaire show that these considerations affect the ability of these organisations to harness the speed of interactions in the digital realm, since the process of checking and ensuring accuracy and style of content will take time. However, this does not prevent the organisations from being willing to discuss archaeological issues through social media - all were very positive that the use of social media and Internet platforms were vital parts of the communication of archaeological information for their organisations; that using websites, blogs and social media were considered to be effective, and cheap communication tools for dissemination; and that digital media offered an effective means of presenting nuanced levels of detail for different audiences.

The presentation of institutional expertise online amongst the case study participants reveals common values; authority was represented through logos and branding, as well as highlighting and emphasising the embodiment of knowledge, expertise and professional skills through staff profiles, possession of experts within the organisation and the data value; professional content and a sense of formality within the style of writing; and ensuring that the organisational values were clear within the content and method of delivery of information.

None of the organisations felt that the issue of alternative interpretations of any data or news stories were problematic, beyond the issue of trolling, which is especially difficult around the sensitive issues of metal detecting and portable antiquities. The organisations welcomed the use of Internet technologies as an opportunity to share knowledge and offer audiences the opportunity to respond,



through open dialogue, and empowering the audience by providing descriptive, accurate information; "...taking a press release is a responsibility to research it, mould it, tailor it and present it along with supporting information you have gathered on the way. Then the reader is empowered to not just accept what is written, but to see what they discover" (Appendix J, case study 3).

## 8.7 Discussion

Studies of social network analysis models and 'weak tie' connections, explored in Chapter 6, have suggested that online authority is, in part, derived from the density of ties to centrally located individuals - so these media have facilitated collaboration as well as strengthen the sense of authority gained through network ties (O'Neil 2006). This is reflected in the results of the three "Archaeology and Twitter" surveys to some extent, in that the popularity, length of membership and regular use of the platform weights followers in favour of the information shared by these Twitter accounts over those of new or less frequent posters.

Opportunities for self-representation using social media reflect Corner's idea of a "strategy of representation", where there are distinct choices about which aspects of the self to choose to represent, and the methods by which to present these (1995, 79). As Wellman and Guila have argued, "...before life on the Net, people didn't always go to experts..." (1999, 174). This has some resonance today, since the distinction between archaeologist and non-archaeologist can be fluid online - the distinction between a professor and an undergraduate on Twitter for example, can only be seen in the context of a 160-character biography - the content of which is often obscure, and may not provide any links to identify the person tweeting as a member of a real-life institution. The content and quality of the communication is what seems to count according to the results of the three "Twitter and Archaeology" surveys undertaken for this thesis (see Appendices A, C and H). The presence of academic or institutional credentials is not what matters to techno-utopians such as Clay Shirkey: mass

peer production - crowdsourcing - the public performance of competence - online is absolute (O'Neil 2009, 2).

Yet these institutional credentials impact how we understand and acknowledge the notion of the expert and the way in which expert knowledge is presented and performed is vital to establish authority (Pruitt 2011, 250). In his seminal work *The Presentation of Self in Everyday Life* (1959), Erving Goffman conceptualised identity as a continual performance, and theorized that individuals should be able to manage or control private-public boundaries by selectively revealing and concealing one's identities in a continual process of interaction with other people (Blumer 1969; Leary & Kowalski 1990; Strauss 1993; Marwick & Boyd 2011). So are these Web-enabled changes are simply a technologically facilitated continuation of longer-term developments within archaeology as a whole? I would suggest perhaps that the online interaction between the non-archaeological, imagined audience and the professional archaeologist is the interface required to produce a Goffmanesque performance of archaeological expertise, and it is this conscious performance of identity, skill and knowledge that underlines the authoritative nature of being an authentic archaeologist, something that has also been explored by Rodden (2006) and Hearn (2010).

Based on the results of the online surveys discussed, and case studies presented in this chapter, we must seriously question whether new landscapes of participatory media can fundamentally change, open, or even threaten the authority of archaeological organisations and academic knowledge, since the research presented in this chapter indicates that the ownership of online archaeological expertise and authority is robustly maintained and defended by archaeological organisations throughout the UK and that this is itself subtly stratified by institutional affiliation, real-life status, professional accomplishment and even the ability to leverage digital literacy and longevity on these platforms. The encouragement of audience participation in the production of archaeological knowledge by archaeological organisations seems to have gone only a small way towards supporting multiply voiced, participatory approaches to heritage issues,

with the Bristol *Know Your Place* project one of the best examples found during the research for this thesis, which is discussed fully in Chapter 6. Despite the considerable scale and intricacy of the many issues of information inequalities outlined in Chapter 4, and the nuanced variants in information literacy outlined in Section 8.3, and although the Internet is a repository of misleading information and advice on all topics, not least archaeology, the possibilities for mass-appeal “bad archaeology” (Fitzpatrick-Matthews & Doeser 2014) in the UK seems minimal.

The behaviours involved in the interactions between the non-professional layperson and archaeology and archaeologists online through social media, which have been explored in this thesis - “nano-endorsements” such as citation indexing, favouriting blog posts or tweets, rating, liking or tagging images, posts or comments - are passive activities that do not necessarily present any challenge to archaeological authority (Bevan 2012, 3). Equally, commenting on the content of blogs, creating posts on Facebook pages or exchanging ideas and comments through Twitter could raise challenges, present different ideas, question interpretations and extend arguments between the public and the professional archaeologist. However, organisations have to welcome and embrace these types of interactions, actively seek out and support these kinds of online dialogue and multiple perspectives, and be prepared for the variety of responses this is likely to elicit. Technology will absolutely “lower the barrier to entry” to historical and archaeological detective work (Fisher & Adair 2011, 55) but will it sustain interest, support multiple perspective and encourage organisations to really listen to their partners in participatory engagement?

Perhaps the fundamental answer to the question of how we, as professional archaeologists in the UK can recognise elements of epistemic unrest, lies in how we can work with the interested and opinionated public, without trivialising multiple perspectives to absolute relativism or ignoring them completely. In the prevailing atmosphere of economic austerity, it is all too easy to view enquiry into cultural heritage and archaeology as reduced in importance and value to wider society, despite the dichotomy of the rise of volunteerism in the heritage

sector (Steel 2013; VisitEngland 2013), and increasing involvement of the public through the growth of community archaeology projects (for example: Thames Discovery Programme 2014; Waveney Valley Community Archaeology Group 2014). Archaeologists need to demonstrate the value of their work on a consistent basis (Stein 2012), and the key to a successful approach in this carefully choreographed dance between archaeological expertise and public co-curation and creation is to incorporate participatory techniques into organisational public engagement strategies, online and offline, without fear of misinterpretation or misrepresentation (Simon 2011, 30).

As the results of the data explored in this chapter have demonstrated very clearly, this recognition of multi-perspectivalism is not, on the whole, undertaken through a process of actively acknowledging shared authority or through accommodating poly-vocal responses to archaeological information at all. Organisations are generally very strongly defended against participation in difficult conversations, through the careful consideration and preparation of material to share online and the editorial process, and sometimes even through the implementation of organisational social media policies discussed in Chapter 5. Nor do most of the organisations or individuals that responded to my surveys for this research attempt to facilitate digital self-directed exploration of archaeological data, without the exercise of ‘top-down’ expert knowledge and guidance, and these trends provide a public archaeology model that sits firmly in the “deficit”, “outreach”, “public relations”, and “educational” models of Merriman (2004) and Holtorf (2007). Exploring these models for public engagement with archaeology means we must confront “the structure of social relationships that we wish to foster” (Bevan 2012, 12).

I argue that we do not proactively support the interpretations and perspectives created and imagined by non-professionals within the framework of the participatory web (MacArthur 2011, 61), frequently because they simply do not exist, belong firmly in the realms of the uncanny or unreasonable, or are part of local history and folklore and therefore not part of professionally produced archaeological data or narratives. I would also argue that, these nuances aside,

through the consideration of the types of social relationships we wish to create, guided by archaeologists and leading the public 'other', we remain trapped in an epistemic loop of 'top-down' public archaeology, even with the augmentation of participatory media. This creates a space for what I term 'participatory ventriloquism' where the top-down approach to public and community archaeology translates to the Internet, and we are at risk of performing our self-defined roles as archaeologists in the digital realm, through telling non-archaeologists what to read, ask and contribute through Internet technologies and our social media platforms, rather than consider the needs and interests of the audience. These issues will be further discussed in the conclusion in Chapter 9.

## CHAPTER 9: CONCLUSION

Much of public archaeology is overloaded with eloquent calls for action couched in far-from specific terms (Fagan 2003, 3).

This thesis set out to examine the impact of Internet technologies on the practice of public archaeology in the UK, within professional archaeological communities working in commercial archaeology, higher education, local authority planning departments and community settings, as well as the voluntary archaeology sector in the UK, within the paradigm of democratic access to heritage and associated digital resources. My research has examined the role and activities of archaeological organisations using Internet platforms for public engagement; this has included reflection on the types of audiences for digital archaeology and the level of participation in these projects offered by archaeological organisations. It has examined and dissected the impact of the many digital inequalities that exist in UK society, as well as the issue of digital literacies, on the audience for archaeological information. It has examined the growing sense of focused online communities within archaeological social networks, using the Twitter platform as a case study, and has explored this in the light of the sociological concepts of social capital and weak ties. The thesis has used a variety of approaches to data-gathering, including the use of online surveys, email questionnaires, online ethnography, the social media platform, Twitter, and the public archaeology blogging project, the *Day of Archaeology*. It has also discussed the concept of archaeological expertise and authority, whilst reflecting critically on the promises of an inclusive, participatory media, and has discussed current attitudes within the professional and voluntary archaeological sectors towards community participation and public engagement through the use of digital technologies and social media platforms. The main contributions of this thesis are summarised, further work highlighted and the limitations of the method and scope are discussed in this final concluding chapter.

## 9.1 Overview of Chapter Conclusions

This thesis has located the subject of Internet technologies and online participation within the context of both the historical background to the development of the discipline of public archaeology and UK archaeology as it is practised today. It has outlined the sectors within which public archaeology projects are presented through digital means, and the platforms through which this work is taking place, presenting a detailed overview of the models for public and community archaeology, as the paradigms within which the different formats of digital public archaeology can be located. The presentation and sharing of archaeological knowledge with and to the public through the use of participatory media requires firm commitment to public engagement, and a clear strategic approach to this form of interaction and communication. Through increasing organisational commitment to information sharing and discussion online, archaeologists must first have a clear understanding of how this information about the past is sought and processed, received, interpreted, associated, subverted and recycled. Instant access to information can support fresh connections in thought, new interpretation and a refinement of data. If archaeology is to develop a new relationship with the public through digital media then this must involve an archaeologist's (or archaeological organisation's) new awareness of audiences and a willingness to participate in, and accommodate, dialogue with those members of the public.

Chapter 3 examined the method in which data were collected and processed for this research, to answer the main research question, to examine the impact of Internet technologies on the practice of public archaeology, within professional archaeological communities working in commercial archaeology, higher education, local authority planning departments and community settings, as well the voluntary archaeology sector in the UK. The chapter discussed the methods used, how these methods guided data collection, further data analysis and the development of associated conclusions, which used a Grounded Theory approach to the data, rather than a preconceived theoretical approach to guide

data collection and analysis.

This thesis presented a detailed discussion of the impact of a variety of inequalities in access and use of Internet and social media platforms in the UK throughout Chapter 4. Beginning with the growth of the Internet and the subsequent development of 'Web 2.0', this thesis has examined the potential application of participatory Internet technologies for public archaeology and provided strong critique the claims for the transformative power of the Internet for public archaeology. It has explored the existing inequalities in participation in public archaeology projects online; the problems of information retrieval and the impact of search; the demographics of the UK audience for archaeology; online abuse; user typologies and dispositional barriers to participation in social media.

The establishment of participatory forms of digital communication and inclusive, stakeholder-driven public archaeology practices requires organisations to first consider the effects of wider issues of network and hardware access, user motivation, digital literacy, educational literacies, and inequalities of access to the digital world. The results of the data and literature relating to digital inequalities and participation discussed in this thesis underlines the central importance of understanding audiences, and complex user behaviours in order to ensure that archaeological organisations planning to create useable and useful digital resources can support wide participation and maximise educational opportunities, whilst ensuring that the investment of organisational resources for public engagement are in the public interest.

This research has explored the landscape of contemporary digital outreach projects and methods in the UK and the types of platforms used by archaeological organisations to share knowledge and raise awareness of archaeological activities through digital engagement. It has reflected on the strengths of these projects within a participatory framework, and considered organisational approaches the measurement of success at the outcomes of their



digital public archaeology projects. Whilst value is allotted to outreach, engagement and discussion with non-professionals through social media in a number of organisations, especially those with dedicated staff, time and financial resources, there are several significant issues involved that inhibit this activity becoming more commonplace.

An understanding of audience is yet again highlighted as a central issue for the future development of digital public archaeology, as well as an understanding how to measure the success of a digital project. Organisations have little strategic planning in place to manage the requirements of staff time, technical ability and communications policy involved in the creation and sustainability of these types of projects effectively. Creating public engagement projects in professional settings with archaeologists who do not use social media as part of their everyday work-related communications is difficult, and volunteer groups are frequently reliant on a handful of members to manage their digital communications, which is a precarious practice. These practises do not support sustainability or add value to the use of these media if these projects are transient or poorly supported.

The broad exploration of three areas of online community in archaeology - online activism, Twitter networking and crowd-sourced projects - has highlighted the ability to create and exploit opportunities to leverage the interest of archaeological communities online through weak ties and social capital. This sense of archaeological community is an encounter with the past in the present, creating an awareness of the importance of this shared interest, and the weak ties that are formed through these disparate activities leading to community formations are based on shared experiences and passions situated around encounters with the past.

The case studies within this thesis that represent examples of online activism and crowd-sourcing in archaeology raise the question of the effectiveness of the use of these media alone for communication. The social element noted within the

data collated from Twitter also poses difficult questions for the issue of public engagement between archaeologists and non-professionals through the use of social media platforms, if weak ties are necessary before trust and inclusion can occur. I would restate that, in order to stimulate public engagement, instil trust, and support community allegiance and identity through the use of Internet technologies, as part of a digital public archaeology project, we urgently need to undertake audience research and be prepared to provide further practical support and be open to dialogue. It cannot be assumed that ready-made communities exist or aspire that they will be easily created, and the considerations of associated issues such as digital literacy, participatory motivations, online authority, and the top-down models of public archaeology, need careful consideration.

The case study of creating and managing the *Day of Archaeology* project has provided an insight into best practices for managing digital public archaeology projects and outlined the positive and negative experiences of using digital communications as the basis for a public archaeology project, examining how the project was established, how it is structured and how it operates. The series of five examples of contributions to the *Day of Archaeology* website has explored the types of information that had been shared by archaeological practitioners, suggesting future possibilities for information sharing. It has discussed how the website content had been repurposed, and archived, and how the project fitted in with the paradigm of online community creation.

There are many opportunities to foster a sense of community through online participation, and these reflect the theories of weak ties and social capital. Reflecting on models for public archaeology, which were examined in in Chapter 2.3, online archaeological communities can be seen to be part of the paradigm of Merriman's "multiple perspectives model" where archaeologists engage with the public from a desire to enrich people's lives, and stimulate thought, emotion and creativity (Merriman 2004, 7), as well as Holtorf's "public relations model", where archaeologists are actively involved in improving the public image of the

discipline (Holtorf 2007, 114).

This thesis has discussed the concept of authority and the sociological and political approaches to the subject in the academic literature, as well as the role of authority in archaeological theory and practice. It considered the role of multi-vocality and diverse understandings of the past from a UK perspective, and has highlighted the significance of information literacy and information-seeking behaviour. The results of the data collection has demonstrated how these factors could affect the ability of non-archaeologists to differentiate between professionally produced archaeological content and misleading alternative or fantastic archaeological content. It briefly discussed the phenomena of alternative archaeology, and the areas in which these may be found online in the UK, using the Megalithic Portal as a case study and has discussed the role of the non-professional in the creation and maintenance of archaeological authority and expertise, within the context of archaeological communications online.

As a result of this research, we must question whether participatory media can fundamentally change, open, or even threaten the authority of archaeological organisations and academic knowledge. Data collected for this research indicates that online archaeological expertise and authority is robustly maintained by archaeological organisations throughout the UK. Multiple perspectives on archaeological interpretation and meaning are not apparent within the framework of the participatory web, frequently because they simply do not exist in the UK - these alternative viewpoints are often part of local history and folklore, or wilful misinterpretation, and therefore not part of professionally produced archaeological data or narratives. In the UK, archaeology organisations carefully consider and prepare the types of archaeological information it presents to the public, and control the areas in which dialogue rather than broadcast can take place.

## 9.2 Future Research Directions

This thesis is limited in its scope for many reasons, not least the broad overview of the subject area and the rapid development of new online communications platforms and digital tools for data collection, as well as new methods of analysis of digital content and social interactions. Future research to extend the analysis of archaeological communities would benefit from social network analysis and visualisation similar to that undertaken using NodeXL<sup>231</sup> and the concept of distant reading undertaken by Graham (2012) and Marwick (2013). Grand-scale sentiment analysis of the kinds of discussions and questions raised on social media platforms by members of the public would enable a better understanding of how those outside the silo of the discipline sees and values archaeology. Work on archaeological website metrics data would enhance the quantitative understanding of when and how these sites are used, and provide useful data for issues of website content, navigation and accessibility.

Further work must be undertaken around the issue of institutional training and professional development on the subject of digital communications management, social media policy and digital archiving. If we are to leave any kind of legacy for future generations of archaeologists to understand the form and methods of communications used by archaeologists in the early 21st century, it is vital that we consider how we collect and archive records of our public archaeologies. It is highly likely that the data collected for this doctoral research on social media and archiving policies will be out-of-date in 2014. The speed of adoption of these media within the discipline will expand the forms of communications, locations of use for information sharing, and communication policy development. Further work should be undertaken to re-examine the existence and impact of these policies within archaeological organisations and enhance an understanding of the role of the archaeologists as an information gatekeeper and the public display and reception of archaeological expertise.

---

<sup>231</sup> <http://nodexl.codeplex.com/>

One of the largest knowledge gaps in public archaeology which I have identified during my doctoral research is a systematic exploration of the location and demographics of the audiences for archaeological information. This thesis has shed some light on the attitudes and activities of archaeological organisations and individuals regularly involved in the discipline, either through employment or through active volunteer work. Although the surveys attempted to reach the non-professional or volunteer sector, the results could not reflect entirely the thoughts of a non-archaeological audience, since its focus was on the impact of these participatory technologies from an organisational perspective. Whilst this thesis has contributed some new data to an understanding of the contexts in which members of the public access and interact with archaeological information and data online, there remains scope for the development of research projects which explore the impact of these technologies on the audience for archaeology, and this is something I plan to develop in my post-doctoral research.

### **9.3 Conclusion**

As my research has shown, recognition of multiple perspectives on archaeological experiences is not, on the whole, undertaken through a process of actively acknowledging shared authority or through accommodating multiple, often emotional, responses to archaeological information at all. As this thesis has demonstrated, archaeological organisations are generally very strongly defended against participation in difficult conversations, and there is a very real sense of the “...rejection of emotion as irrational” (Evrard 1997, 172). The facilitation of digital self-directed exploration of archaeological data is never practised without expert guidance, and these trends provide a model of digital public archaeology that sits firmly in the “deficit”, “outreach”, “public relations” and “educational” models of Merriman (2004) and Holtorf (2007).

UK archaeology as a discipline urgently needs to understand the subtle ways in which the hidden issues of digital literacies and digital divides have serious impact on community inclusion and the practice of digital public archaeology. We must find better methods of measuring the impact of our digital projects beyond the simple measurement of website hits, Facebook likes or Twitter followers. We must also be willing to share best practice both within the discipline and with colleagues working in the GLAM sector, public history and science communications. Too many wheels are being reinvented, and too many disciplinary silos are created and sustained by our continued isolation as communicators.

The “rhetoric of community” (Waterton & Smith 2010, 8) needs to be re-examined and practitioners of online public archaeology must choose “...the structure of social relationships that we wish to foster” (Bevan 2012, 12). Merriman (2002, 547) wrote 14 years ago that archaeologists have long communicated blindly to an audience it does not understand, without being able to assess the effectiveness of this broadcast, or discover whether the 'message' has been successfully received. Merriman’s quote is, unfortunately, just as relevant today and the issue is just as urgent. Through our lack of understanding these existing relationships with the general public online, which are generally instigated by archaeologists, rather than springing from interested and passionate communities, we continue to create 'top-down' public archaeology, even when we offer public engagement and participation in archaeology through digital technologies. The introduction of my conceptualisation of this model of participation in digital public archaeology as a form of participatory ventriloquism suggests that expert-led top-down public and community archaeology translates to the Internet, and as I have discussed in Chapter 8, we perform our roles as archaeologists and manage public interaction with and recognition of these roles in the digital realm as much as we do offline.

This thesis also highlights the need for better understanding of the element of the exploitation of human resources implicit in social media platforms, and this

must be considered within the growing complexities of funding issues, the impact on the discipline of national economic austerity, and the benefits of free, uncompensated labour of crowdsourcing and community curation. These issues have been discussed at length elsewhere in the academic literature of sociology and Critical Internet Studies (Andrejevic 2012; Fuchs 2013; Scholz 2013) and these deserve further examination in relationship to public and community archaeology. Although outside the scope of this thesis, there are potential effects on both the availability of jobs, and professionalism within the discipline, with the rise of crowdsourcing and digital volunteering in museums and public archaeology projects. These issues must be considered in any discussion of the impact of participatory media on public archaeology.

Schadla-Hall wrote that “despite the assumption that the public in general supports the efforts of archaeologists in protecting their heritage...there is remarkably little hard statistical evidence for the level of public support and interest” (Schadla-Hall 1999). As Ascherson noted in his editorial introduction to the first issue of the journal *Public Archaeology* in 2000, these are indeed carefully-chosen words. We are at a pivotal moment for archaeology as a professional discipline. In the conclusion of the 2012 volume, *Archaeology and Digital Communication*, Pett and Bonacchi (2012) quote from the great public archaeologist R.E.M Wheeler that;

...today the public has every right to its archaeology, palatably garnished; for the days of private patronage are over, and most of the field archaeology now comes directly out of our rates and taxes, whether we like it or not (Wheeler 1955, 64).

Their recent argument that Wheeler’s statement is topical and that digital public engagement with archaeology can go some way to fulfil Wheeler’s concept is, on reflection, difficult to comprehend in the current political climate. It is ironic to consider Wheeler’s ambitions for public archaeology sixty years later, both in the context of the fact that the majority of archaeology is now undertaken by private companies working on behalf of (predominantly) private developers, that the

provision of taxpayer-funded local government archaeologists is eroding rapidly and that volunteerism and crowdfunding archaeology are seriously considered as a valid means of survival for the academic and professional discipline, as a result of the economic policies of the coalition government.

Technology will absolutely “lower the barrier to entry” to participation in digital archaeologies (Fisher & Adair 2011, 55), but will these archaeology projects be sustainable, interesting, and engaging enough to attract new audiences? As I have shown, professional archaeologists must recognise that we need to better understand how we can work with the public, without devaluing community participation or ignoring multiple perspectives. Archaeologists have to demonstrate to the public and to government the social, health, economic and cultural value of our work on a consistent basis if we are to see a continuation of public funding, and value for the subject within wider society, planning control, higher education and as part of a vibrant volunteer sector. We must all become better public archaeologists, better digital public archaeologists, with an unprecedented urgency, if we are to survive as a discipline with public relevance and value.

We must re-evaluate what we currently understand about the presentation of archaeology to the public through the Internet and the presentation of the public to archaeology. Archaeologists have consistently failed at this, or appear to be so enthused by the possibilities of adopting these new media platforms without strategic direction, that they forget that a significant proportion of their audience have neither access to, motivation for, nor an understanding of the participation that is expected of them. The key to a successful approach in this carefully choreographed dance between archaeological expertise and public co-curation and creation is to incorporate supportive, open and participatory techniques into organisational public engagement strategies, online and offline. This must be undertaken without fear of misinterpretation or misrepresentation, and should be grounded solidly in an understanding of who we are sharing knowledge with and to what purpose. We need to ask ourselves, through our digital



communications, have we served archaeology, and have we served our public?

## BIBLIOGRAPHY

Abbott, A. D. (1988). *The System of Professions: Essay on the Division of Expert Labour*. Chicago: Chicago University Press.

ACAS. (2014). *Social media and how to develop a policy*. [Online] Retrieved from: <http://www.acas.org.uk/index.aspx?articleid=3375>. Date accessed: 1 April 2014.

Ackroyd, P. (2002). *Albion: The Origins of the English Imagination*. London: Chatto & Windus.

Addyman, P. V. (1989). The role of the professional in the professional institution. In: Cleere, H. (Ed.), *Archaeological Heritage Management in the Modern World. One World Archaeology*, 302-307. London: Unwin Hyman.

Adedoyin-Olowe, M., Medhat Gaber, M., & Stahl, F. (2013). A survey of data mining techniques for social media analysis. *Lecture Notes in Computer Science*, 7895, 135-145. Retrieved from: <http://arxiv.org/abs/1312.4617v1>. Date accessed: 5 January 2014.

Affleck, J. (2007). *Memory Capsules: Discursive Interpretation of Cultural Heritage through Digital Media*. Unpublished Ph.D. thesis, University of Hong Kong. Retrieved from: <http://hub.hku.hk/handle/10722/50301>. Date accessed: 16 March 2014.

ALGAO: Association of Local Government Archaeological Officers UK. (2014). *Homepage*. [Online] Retrieved from: <http://www.algao.org.uk/>. Date accessed: 19 March 2014.

Age Concern UK. (2009). *My Friends Online Week Evaluation Report 2009*. [Online] Retrieved from: [http://www.ageuk.org.uk/Documents/EN-GB/myfriendsonline\\_report\\_2009.pdf?dtrk=true](http://www.ageuk.org.uk/Documents/EN-GB/myfriendsonline_report_2009.pdf?dtrk=true). Date accessed: 4 April 2014.

Age Concern UK. (2012). *ITea and Biscuits Week 2012*. [Online] Retrieved from: <http://www.ageuk.org.uk/work-and-learning/technology-and-internet/events/itea-and-biscuits/>. Date accessed: 20 November 2012.

Agre, P., & Schuler, D. (1997). *Reinventing Technology, Rediscovering Community: Critical Explorations of Computing as a Social Practice*. Greenwich, CT: Ablex.

Ahmad, S. (2009). Information seeking behaviour of archaeology and heritage management professionals of Delhi: A study. *Pearl: A Journal of Library and Information Science*, 3(4), 68-73.

Ahmad, T., Haque, M. A., Al-Nafjan, K., & Ansari, A. A. (2013). Development of Cloud Computing and Security Issues. *Information & Knowledge Management (2224-896X)*, 3(1). [Online] Retrieved from: <http://www.iiste.org/Journals/index.php/IKM/article/view/3969>. Date accessed: 4 April 2014.

- Aitchison, K., & Macqueen, D. (2013). *Archaeology Labour Market Intelligence: Profiling the Profession 2012-13*. Landward Research. [Online] Retrieved from: <http://www.landward.eu/2013/10/archaeology-labour-market-intelligence-profiling-the-profession-2012-13.html>. Date accessed: 16 January 2014.
- Al-Eidan, R. M., Al-Khalifa, H. S., & Al-Salman, A. S. (2010). Measuring the credibility of Arabic text content in Twitter. In: *Proceedings of the 5th International Conference on Digital Information Management*, 285-291. Retrieved from: <http://dx.doi.org/10.1109/Icdim.2010.5664223>. Date accessed: 17 February 2014.
- Al-Khalifa, H. S., & Al-Eidan, R. M. (2011). An experimental system for measuring the credibility of news content in Twitter. *International Journal of Web Information Systems*, 7(2), 130-151.
- Allen, M. (2008). Web 2.0: An argument against convergence. *First Monday*, 13(3). [Online] Retrieved from: <http://www.ic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/viewarticle/2139/19>. Date accessed: 16 November 2012.
- Alton, Y. K. C., & Balkunje, R. S. (2013). Beyond knowledge sharing: Interactions in online discussion communities. *International Journal of Web-Based Communities*, 9(1), 67-82.
- Ambinder, M. (2009). The revolution will be Twittered. *The Atlantic*. [Online] 15 September 2009. Retrieved from: <http://www.theatlantic.com/Politics/Archive/2009/06/the-revolution-will-be-tweeted/19376/>. Date accessed: 3 December 2012.
- American Library Association (1989). *Presidential Committee on Information Literacy: Final Report*. [Online] Retrieved from: <http://www.ala.org/ala/mgrps/divs/acrl/publications/whitepapers/presidential.cfm>. Date accessed: 29 January 2014.
- An, J., Li, W. J., Ji, L. N., & Wang, F. (2013). A survey on information credibility on Twitter. *Applied Mechanics and Materials*, 401, 1788-1791.
- Anderson, D. S., Card, J. J., & Feder, K. L. (2013). Speaking Up And Speaking Out Collective Efforts In The Fight To Reclaim The Public Perception Of Archaeology. *The SAA Archaeological Record*, 13(2), 24-28.
- Anderson, J. (1984). *Time Machines*. Nashville: AASLH.
- Anderson, J. (1985). *The Living History Source Book*. Nashville: AASLH.
- Anderson, P. (2007). *What Is Web 2.0? Ideas, Technologies and Implications for Education*. [Online] Retrieved from: <http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf>. Date accessed: 1 January 2013.

Andrejevic, M. (2012). Exploitation in the data mine. In: Fuchs, C., Boersma, K., Albrechtslund, A., & Sandoval, M. (Eds.), *Internet and Surveillance*, 71-88. New York: Routledge.

Andretta, S. (Ed.). (2007). *Change and Challenge: Information Literacy for the 21st Century*. Adelaide: Auslib Press.

Angelo, D. (2013). *The Move Towards Public Archaeology*. [Online] Retrieved from:  
[https://www.academia.edu/4033713/EGA\\_entry\\_The\\_Move\\_Towards\\_Public\\_Archaeology](https://www.academia.edu/4033713/EGA_entry_The_Move_Towards_Public_Archaeology). Date accessed: 18 March 2014.

Anleu, S. L. R. (1992). The professionalisation of social work? A case study of three organisational settings. *Sociology*, 26(1), 23-43.

Anthonyamy, P., Rashid, A., Walkerdine, J., Greenwood, P., & Larkou, G. (2012). *Collaborative Privacy Management for Third-Party Applications in Online Social Networks*. Paper presented at WWW Workshop on Privacy and Security in Online Social Media, Lyon, France. Retrieved from:  
[http://precog.iiitd.edu.in/psosm\\_www2012/a5-anthonysamy.pdf](http://precog.iiitd.edu.in/psosm_www2012/a5-anthonysamy.pdf). Date accessed: 30 March 2014.

Apache Solr (2013). *Solr Features*. [Online] Retrieved from:  
<http://lucene.apache.org/solr/index.html>. Date accessed: 10 December 2013.

Aral, S. (2011). Identifying social influence: A comment on opinion leadership and social contagion in new product diffusion. *Marketing Science*, 30(2), 217-223.

Aral, S., Muchnik, L., & Sundararajan, A. (2009). Distinguishing influence-based contagion from homophily-driven diffusion in dynamic networks. *Proceedings of the National Academy of Sciences of the United States of America*, 106(51), 21544-21549.

Aral, S., & Walker, D. (2012). Identifying influential and susceptible members of social networks. *Science*, 337(6092), 337-341.

Archaeological Data Service. (2010). *ALSF (Aggregates Levy Sustainability Fund) Dissemination: Benchmark Report Theme 4c. Outreach: The Sands of Time, Aggregates and the Public*. [Online] Retrieved from:  
[http://archaeologydataservice.ac.uk/archives/view/alsfdisc\\_eh\\_2010/](http://archaeologydataservice.ac.uk/archives/view/alsfdisc_eh_2010/). Date accessed: 29 November 2012.

Archaeology Data Service. (2014). *Homepage* [Online] Retrieved from:  
<http://archaeologydataservice.ac.uk/>. Date accessed: 18 March 2014.

Archaeology Fantasies. (2014). *Homepage* [Online] Retrieved from:  
<https://archyfantasies.wordpress.com/>. Date accessed: 7 February 2014.

Archaeosoup Productions. (2012). *About*. [Online] Retrieved from:  
<http://archaeosoup.com/>. Date accessed: 10 September 2013.

- Arendt, A. (1968). *'What Is Authority?' Between Past and Future*. New York: Penguin.
- Arnstein, S. R. (1969). A ladder of citizen participation. *Journal of the American Institute of Planners*, 35(4), 216-224.
- Aronowitz, S. (1996). *Technoscience and Cyberculture*. New York: Routledge.
- Arts Council England. (2010). *Digital Audiences: Engagement with Arts and Culture Online*. [Online] Retrieved from: [http://www.artscouncil.org.uk/media/uploads/doc/Digital\\_audiences\\_final.pdf](http://www.artscouncil.org.uk/media/uploads/doc/Digital_audiences_final.pdf). Date Accessed: 29 November 2012.
- Ascherson, N. (2000). Editorial. *Public Archaeology*, 1(1), 1-4.
- Ascherson, N. (2004). Archaeology and the British media. In: Merriman, N. (Ed.), *Public Archaeology*, 145-158. London: Routledge.
- Ashworth, G. J. (1994). From history to heritage - from heritage to identity: In search of concepts and models. In: Ashworth, G. J., & Larkham, P. J. (Eds.), *Building a New Heritage: Tourism, Culture and Identity in the New Europe*. London: Routledge.
- Association of Internet Researchers. (2013). *Ethics Guide*. [Online] Retrieved from: [http://ethics.aoir.org/Index.Php?Title=Main\\_Page](http://ethics.aoir.org/Index.Php?Title=Main_Page). Date accessed: 19 November 2013.
- Balabantaray, R. C., Swain, M., & Sahoo, B. (2013). Evaluation of Web search engines based on ranking of results and features. *International Journal of Human Computer Interaction*, 4(3), 117-127.
- Balakrishnan, R., Kambhampati, S., & Jha, M. (2013). Assessing relevance and trust of the deep web sources and results based on inter-source agreement. *ACM Transactions on the Web*, 7(2) Article 11, 1-32. Retrieved from: <http://dx.doi.org/10.1145/2460383.2460390>. Date accessed: 18 March 2014.
- Bandura, A. (2001). Growing primacy of human agency in adaption and change in the electronic era. *European Psychologist*, 7(1), 2-16.
- Banks, M. (2008). *On the Way to the Web: The Secret History of the Internet and its Founders*. Berkeley: Apress.
- Barlow, J. P. (1996). A declaration of the independence of cyberspace. *Humanist*, 56(3), 18-19.
- Barrios, M., Villarroya, A., Borrego, A., & Ollé, C. (2011). Response rates and data quality in web and mail surveys administered to Ph.D. holders. *Social Science Computer Review*, 29(2), 208-220.
- Bates, M. J. (2010). *Information Behaviour*. [Online] Retrieved from: <http://pages.gseis.ucla.edu/faculty/bates/articles/information-behavior.html>. Date accessed: 4 April 2014.

- Bauer, A. A. (2013). Multivocality and 'Wikiality': the Epistemology and Ethics of a Pragmatic Archaeology. In: Scarre, C., & Coningham, R. (Eds.), *Appropriating the Past: Philosophical Perspectives on the Practice of Archaeology*, 176-194. Cambridge: Cambridge University Press.
- Bawden, D. (2001). Information and digital literacies: A review of concepts. *Journal of Documentation*, 57(2), 218-259.
- Bawden, D., & Robinson, L. (2009). The dark side of information: Overload, anxiety and other paradoxes and pathologies. *Journal of Information Science*, 35(2), 180-191.
- Baxter, I. (2012). Politics, policy and the discourses of heritage in Britain. *Cultural Trends*, 21(2), 193-195.
- BBC Website (2013a). *Ofcom to open up airwaves for 4G mobile services*. [Online] 1 February 2013. Retrieved from: <http://www.bbc.co.uk/news/technology-21291932> Date accessed: 3 February 2013.
- BBC Website (2013b). *North-south divide among silver surfers, says Age UK*. [Online] 17 September 2013. Retrieved from: <http://www.bbc.co.uk/news/uk-24112448>. Date accessed: 17 September 2013.
- Beale, N. (2012). How community archaeology can make use of open data to achieve further its objectives. *World Archaeology*, 44(4), 612-633.
- Beck, A., & Neylon, C. (2012). A vision for open archaeology. *World Archaeology*, 44(4), 479-497.
- Becker, H., Naaman, M. & Gravano, L. (2011). Beyond trending topics: Real-world event identification on Twitter. In: *Proceedings of the Fifth International AAAI Conference on Weblogs and Social Media*, 438-441. Retrieved from: <http://www.cs.columbia.edu/~gravano/Papers/2011/icwsm11-a.pdf>. 28 March 2014.
- Belford, P. (2010) *Community archaeology at Hinkshay*. [Online] 28 April 2010. Retrieved from: <http://paulbelford.blogspot.co.uk/2010/04/community-archaeology-at-hinkshay.html>. Date accessed: 25 December 2013.
- Belford, P. (2011). Archaeology, community and identity in an English new town. *The Historic Environment*, 2(1), 49-67.
- Bell, A. R., Davies, S. R., & Mellor, F. (2008). *Science and Its Publics*. Cambridge: Cambridge Scholars Publishing.
- Bell, C. (2013). On Play: Public Engagement. *Journal of Theatre and Performing Arts*, 7(2), 73.
- Bender, B. (1998). *Stonehenge: Making Space*. Oxford: Berg.
- Bender, T. (1978). *Community and Social Change in America*. New Brunswick, NJ: Rutgers University Press.

- Bengry-Howell, A., Wiles, R., Nind, M., & Crow, G. (2011). *Methodological innovations: Netnography, child-led research and creative research methods*. ESRC National Centre for Research Methods. NCRM Working Paper Series 01/11. [Online] Retrieved from: [http://eprints.ncrm.ac.uk/1844/1/review\\_of\\_methodological\\_innovations.pdf](http://eprints.ncrm.ac.uk/1844/1/review_of_methodological_innovations.pdf). Date accessed: 6 January 2014.
- Bennett, W. L., & Segerberg, A. (2011). Social media and the organization of collective action: Using Twitter to explore the ecologies of two climate change protests. *The Communication Review*, 14(3), 197-215.
- Bennett, W. L., & Segerberg, A. (2012). The logic of connective action. *Information, Communication & Society*, 15(5), 739-768.
- Benson, S. P., Brier, S., & Rosenzweig, R. (Eds.). (1986). *Presenting the Past*. Philadelphia: Temple University Press.
- Bere Island Community. (2013). *Bere Island: A place apart* [Online] Retrieved from: <http://www.bereisland.net/>. Date accessed: 4 July 2013.
- Bereiter, C., & Scardamalia, M. (1993). *Surpassing Ourselves: An Inquiry into the Nature and Implications of Expertise*. Chicago: Open Court Publishing Company.
- Bergman, M. K. (2000). *The Deep Web: Surfacing Hidden Value*. Sioux Falls, SD: BrightPlanet LLC.
- Bergman, M. K. (2001). White paper: The deep web: surfacing hidden value. *The Journal of Electronic Publishing*, 7(1). Retrieved from: <http://www.press.umich.edu/jep/07-01/bergman.html>. Date accessed: 1 January 2013.
- Berkowitz, S. D. (1982). *An Introduction to Structural Analysis: The Network Approach to Social Research*. Toronto: Butterworths.
- Bevan, A. (2012). Value, authority and the open society. Some implications for digital and online archaeology. In: Bonacchi, C. (Ed.), *Archaeology and Digital Communication: Towards Strategies of Public Engagement*, 1-14. London: Archetype.
- Bian, Y. (1997). Bringing strong ties back in: Indirect ties, network bridges and job searches in China. *American Sociological Review*, 62(3), 366-385.
- Biddle, M. (1974). The future of the urban past. In: Rahtz, P. A. (Ed.), *Rescue Archaeology*. Harmondsworth: Penguin.
- Big Heritage. (2014). *Homepage* [Online] Retrieved from: <http://bigheritage.co.uk/>. Date accessed: 23 January 2014.
- Big Lottery Fund (2004). *The people's network: Evaluation summary*. [Online] November 2004. Retrieved from: [http://www.biglotteryfund.org.uk/er\\_eval\\_peoples\\_network\\_evaluation\\_summary\\_uk.pdf](http://www.biglotteryfund.org.uk/er_eval_peoples_network_evaluation_summary_uk.pdf). Date accessed: 15 December 2012.

- Bishop, J. (2007). Increasing participation in online communities: A framework for human-computer interaction. *Computers in Human Behaviour*, 23(4), 1881-1893.
- Bishop, J. (2009). Enhancing the understanding of genres of Web-based communities: The role of the ecological cognition framework. *International Journal of Web-Based Communities*, 5(1), 4-17.
- Bishops Grosseteste College (2014). *M.A in Community Archaeology*. Retrieved from: [http://www.bishopg.ac.uk/?\\_id=10513](http://www.bishopg.ac.uk/?_id=10513). Date accessed: 18 March 2014.
- Blackshaw, T. (2010). *Key Concepts in Community Studies*. London: Sage.
- Blais, M. J. (1987). Epistemic tit for tat. *The Journal of Philosophy*, 84(7), 363-375.
- Block, P. (2008). *Community: The Structure of Belonging*. San Francisco: Berrett-Koehler Publishers, Inc.
- Blumer, H. (1969) *Symbolic Interactionism: Perspective and Method*. Englewood Cliffs, NJ: Prentice-Hall.
- Bonacchi, C. (Ed). (2012). *Archaeology and the Digital: Towards Strategies of Engagement*. London: Archetype.
- Bonacchi, C., Furneaux, C., & Pett, D. (2012). Public engagement through online TV channels: A way forward for the audiovisual communication of archaeology. In: Bonacchi, C. (Ed.), *Archaeology and the Digital: Towards Strategies of Engagement*, 50-65. London: Archetype.
- Bonfadelli, H. (2002). The Internet and knowledge gaps: A theoretical and empirical investigation. *European Journal of Communication*, 17(1), 65-84.
- Bonney, R., Cooper, C. B., Dickinson, J., Kelling, S., Phillips, T., Rosenberg, K. V., & Shirk, J. (2009). Citizen science: a developing tool for expanding science knowledge and scientific literacy. *BioScience*, 59(11), 977-984.
- Bosnjak, M., & Batinic, B. (2002). Understanding the willingness to participate in online surveys. In: Batinic, B., Reips, U. D. & Bosnjak, M. (Eds.), *Online Social Sciences*, 81-92. Seattle, WA: Hogrefe & Huber.
- Bourdieu, P. (1984). *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge & Kegan Paul.
- Bourdieu, P. (1986). The forms of capital. In: Richardson, J. G. (Ed.), *Handbook of Theory and Research for the Sociology of Education*, 241-258. New York: Greenwood.
- Bourdieu, P., & Wacquant, L. J. D. (1992). *An Invitation to Reflexive Sociology*. Chicago: University Of Chicago Press.



- Bournemouth University (2014). *Archaeological Investigations Project*. [Online]. Retrieved from: <http://csweb.bournemouth.ac.uk/aip/aipintro.htm>. Date accessed: 18 March 2014.
- Boutet, C., & Quoniam, L. (2012). Towards Active SEO (Search Engine Optimisation) 2.0. *JISTEM Journal of Information Systems and Technology Management*, 9(3), 443-458. Retrieved from: <http://www.jistem.fea.usp.br/index.php/jistem/article/view/2124>. Date accessed: 23 March 2014.
- Boyd, D. (2011). "White flight in networked publics?" How race and class shaped American teen engagement With Myspace and Facebook. In: Nakamura, L., & Chow-White, P.A. (Eds.), *Race after the Internet*, 203-222. New York: Routledge.
- Brabham, D. (2008). Crowdsourcing as a model for problem solving: An introduction and cases. *Convergence: The International Journal of Research into New Media Technological Studies*, 14(1), 75-90.
- Bradley, R. (2006). Bridging the two cultures - Commercial archaeology and the study of prehistoric Britain. *The Antiquaries Journal*, 86, 1-13.
- Brandtzæg, P. B. (2010). Towards a unified Media-User Typology (MUT): A meta-analysis and review of the research literature on Media-User Typologies. *Computers in Human Behavior*, 26(5), 940-956.
- Brandtzæg, P. B. (2012). Social networking sites: Their users and social implications - A longitudinal study. *Journal of Computer-Mediated Communication*, 17(4), 467-488.
- Brandtzæg, P. B., & Heim, J. (2009a). Explaining participation in online communities. In: Whitworth, B., & De Moor, A. (Eds). *Handbook of Research on Socio-Technical Design and Social Networking Systems*, 167-182. New York: Information Science Reference.
- Brandtzæg, P. B., & Heim, J. (2009b). Why people use social networking sites. In: Ozok, A. A., & Zaphiris, P. (Eds.), *Online Communities*, 143-152. Berlin: Springer-Verlag.
- Brandtzæg, P. B., & Heim, J. (2011). A typology of social networking sites users. *International Journal of Web Based Communities*, 7(1), 28-51.
- Braun, R., & Esswein, W. (2012). Corporate Risks in Social Networks - Towards a Risk Management Framework. *AMCIS 2012 Proceedings*. Paper 9. Retrieved from: <http://aisel.aisnet.org/amcis2012/proceedings/VirtualCommunities/9>. Date accessed: 30 March 2014.

- Braun, R., & Esswein, W. (2013). Towards a Conceptualization of Corporate Risks in Online Social Networks: A Literature Based Overview of Risks. In: *Proceedings of the 17th IEEE International Enterprise Distributed Object Computing Conference (EDOC)*, 267 -274. Retrieved from: [http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6658287&url=http%3A%2F%2Fieeexplore.ieee.org%2Fexpl%2Fabs\\_all.jsp%3Farnumber%3D6658287](http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6658287&url=http%3A%2F%2Fieeexplore.ieee.org%2Fexpl%2Fabs_all.jsp%3Farnumber%3D6658287). Date accessed: 30 March 2014.
- Brenna B. (2011). Clergymen abiding in the fields: The making of the naturalist observer in eighteenth-century Norwegian natural history. *Science in Context*, 24(2), 143-166.
- Brittain, M., & Clack, T. (2007). Introduction. In: Clack, T. & Brittain, M. (Eds.), *Archaeology and the Media*, 11-66. Walnut Creek: Left Coast Press.
- British Archaeological Jobs and Resources Forum. (2012). *Cherrymount Crannog, Co. Fermanagh*. [Online] 25 July 2012. Retrieved from: <http://www.bajrfed.co.uk/showthread.php?5746-Cherrymount-Crannog-Co-Fermanagh>. Date accessed: 3 August 2013.
- British Archaeological Jobs and Resources. (2013). *UK contractors, consultants and sole traders: Archaeology*. [Online]. Retrieved from: <http://www.bajr.org/whosewho/contractor.asp>. Date accessed: 3 October 2013.
- British Archaeological Jobs and Resources. (2014). *Homepage* [Online] Retrieved from: <http://www.bajr.org/>. Date accessed: 19 March 2014.
- Bristol City Council. (2013). *Know Your Place*. [Online] Retrieved from: <http://www.bristol.gov.uk/page/planning-and-building-regulations/know-your-place>. Date accessed: 15 October 2013.
- British Library. (2011) Web-Archivist@Bl.Uk. British Library Web Archiving Programme. [Email] Message To Archaeology, D. (Dayofarchaeology@Gmail.Com). Sent 24 May 2011: 16.44.
- Brodock, K., Joyce, M., & Zaack, T. (2009). *Digital Activism Survey Report 2009*. DigiActive Research Series. [Online] Retrieved from: <http://cmuk.inet-tr.org.tr/DigitalActivisim-SurveyReport2009.pdf>. Date accessed: 16 March 2014.
- Brown, D. (2007). *Archaeological archives. A guide to best practice in creation, compilation, transfer and curation*. [Online] Retrieved from: [http://www.britarch.ac.uk/archives/archives\\_best\\_practice.pdf](http://www.britarch.ac.uk/archives/archives_best_practice.pdf). Date accessed: 25 December 2013.
- Buchanan, E. A., & Hvizdak, E. E. (2009). Online survey tools: Ethical and methodological concerns of human research ethics. *Journal of Empirical Research on Human Research Ethics*, 4(2), 37-48.

Buchli, V., & Lucas, G. (2001). The absent present: archaeologies of the contemporary past. In: Buchli, V., & Lucas, G. (Eds.). *Archaeologies of the Contemporary Past*, 3-18. London: Routledge.

Bullas, J. (2014). 22 social media facts and statistics you should know in 2014. *jeffbullas.com* [Online] (n.d.). Retrieved from: <http://www.jeffbullas.com/2014/01/17/20-social-media-facts-and-statistics-you-should-know-in-2014/#Itfmhmc5sxfizbex.99>. Date accessed: 23 January 2014.

Burcher, N. (2010). *Twitter facts and figures - Latest Twitter statistics users, countries, demographics, timelines etc.* [Online] 13 May 2010. Retrieved from: <http://www.nickburcher.com/2010/05/twitter-facts-and-figures-latest.html>. Date accessed: 15 May 2011.

Burgess, J. E. (2007). *Vernacular Creativity and New Media*. Ph.D. Thesis: Queensland University of Technology. Retrieved from: <http://eprints.qut.edu.au/16378/>. Date accessed: 23 March 2014.

Burgess, J. & Brun, A. (2012). Twitter archives and the challenges of "big social data" for media and communication research. *M/C - Media and Culture Journal*, 15(5). Retrieved from: <http://journal.media-culture.org.au/index.php/mcjournal/article/viewarticle/561>. Date accessed: 5 January 2014.

Burkett, I. (2001). Traversing the swampy terrain of postmodern communities: Towards theoretical revisionings of community development. *European Journal of Social Work*, 4(3), 233-246.

Burtenshaw, P. (2010). A Reply to "What is Public Archaeology?" *Present Pasts*, 1. Retrieved from: <http://dx.doi.org/10.5334/pp.8>. Date accessed: 16 March 2014.

Cabinet Office. (2010). *Policy Paper: Building the Big Society*. [Online] Retrieved from: <https://www.gov.uk/government/publications/building-the-big-society>. Date accessed: 19 March 2014.

Cain Miller, C. (2010). Why Twitter's CEO demoted himself. 31 October. *New York Times*. Retrieved from: <http://www.nytimes.com/2010/10/31/Technology/31ev.Html>. Date accessed: 6 June 2011.

Cammaerts, B. (2008). Critiques on the participatory potentials of Web 2.0. *Communication, Culture & Critique*, 1(4), 358-377.

Cann, A., Dimitriou, K. & Hooley, T. (2011). *Social media: A guide for researchers*. Research Information Network. [Online] Retrieved from: <http://www.rin.ac.uk/our-work/communicating-and-disseminating-research/social-media-guide-researchers>. Date accessed: 2 November 2013.

- Carman, J. (1996). *Valuing Ancient Things: Archaeology and the law*. Leicester: Leicester University Press.
- Carman, J. (2002). *Archaeology and Heritage: An Introduction*. London: Continuum.
- Carman, J. (2006). *Valuing Ancient Things: Archaeology and the Law*. London: Leicester University Press.
- Carman, J. (2010). Coming full circle: Public archaeology as liberal social programme, then and now. In: Russell, I. & Koerner, S. (Eds.), *Unquiet Pasts: Risk Society, Lived Cultural Heritage, Re-Designing Reflexivity*, 151-160. Farnham: Ashgate Publishing Ltd.
- Carpentier, N. (2009). Participation Is Not Enough The Conditions of Possibility of Mediated Participatory Practices. *European Journal of Communication*, 24(4), 407-420.
- Carpentier, N. (Ed.). (2011). *Media and participation: A site of ideological-democratic struggle*. Bristol: Intellect Books.
- Carpini, M. X. D., Cook, F. L., & Jacobs, L. R. (2004). Public deliberation, discursive participation, and citizen engagement: A review of the empirical literature. *Annual Review of Political Science*, 7, 315-344.
- Carr, D. (2010). Why Twitter will endure. *New York Times*. [Online] 1 January 2010. Retrieved from: [http://www.nytimes.com/2010/01/03/weekinreview/03carr.html?\\_R=1&Sq=why&\\_R=0](http://www.nytimes.com/2010/01/03/weekinreview/03carr.html?_R=1&Sq=why&_R=0). Date accessed: 26 April 2011.
- Carr-Saunders, E., & Wilson, P. (1933). *The Professions*. Oxford: Clarendon Press.
- Case, D. O. (2012). *Looking for Information: A Survey of Research on Information Seeking, Needs, and Behavior*. Bingley, West Yorkshire: Emerald Group Publishing.
- Castells, M. (1996). *The Rise of the Network Society. Vol. 1 of The Information Age: Economy, Society And Culture*. London: Blackwell.
- Castells, M. (2001). *The Internet Galaxy: Reflections on the Internet, Business and Society*. Oxford: Oxford University Press.
- Castells, M. (2012). *Networks of Outrage and Hope: Social Movements in the Internet Age*. Cambridge: Polity Press.
- Castillo, C., Mendoza, M., & Poblete, B. (2011). Information credibility on Twitter. In: *WWW '11: Proceedings of the 20th International Conference on World Wide Web*. [Online] Retrieved from: <http://research.yahoo.com/node/3475>. Date accessed: 13 April 2011.

- Catts, R. (2012). Indicators of adult information literacy. *Journal of Information Literacy*, 6(2), 4-18.
- Catts, R., & Lau, J. (2008). *Towards Information Literacy Indicators*. Paris: UNESCO. [Online] Retrieved from: [http://www.ifla.org/files/informationliteracy/publications/towards-information-literacy\\_2008-en.pdf](http://www.ifla.org/files/informationliteracy/publications/towards-information-literacy_2008-en.pdf). Date accessed: 18 January 2014.
- Centola, D. M. (2013). Homophily, networks, and critical mass: Solving the start-up problem in large group collective action. *Rationality and Society*, 25(1), 3-40.
- Centola, D. M., & Macy, M. (2007). Complex contagions and the weakness of long ties. *American Journal of Sociology*, 113(3), 702-734.
- Champion for Digital Inclusion. (2009). *The Economic Case for Digital Inclusion*. [Online] Retrieved from: [http://www.parliamentandinternet.org.uk/uploads/final\\_report.pdf](http://www.parliamentandinternet.org.uk/uploads/final_report.pdf). Date accessed: 11 February 2013.
- Change.org. (2014). *Minister Attwood, Dept. of the Environment, Northern Executive, Ireland: Crannóg in Crisis. Archaeologists Need Time To Record 1000 Yrs Of History*. [Online] Retrieved from: <http://www.change.org/en-gb/petitions/minister-attwood-dept-of-the-environment-northern-executive-ireland-crann%C3%B3g-in-crisis-archaeologists-need-time-to-record-1000-yrs-of-history>. Date accessed: 1 February 2014.
- Chapman, R. (2003). *Archaeologies of Complexity*. London: Routledge.
- Chapple, R. (2013). Cherrymount Crannog, Fermanagh. *Archaeology Ireland*, 26(3), 10-12.
- Chapple, R. (2012). *Urgent! Important early Christian crannog in Fermanagh in danger of destruction - Help needed!* [Online] 17 July 2012. Retrieved from: <http://rmchapple.blogspot.co.uk/2012/07/urgent-important-early-christian.html>. Date accessed: 12 August 2013.
- Chapple, R., O' Dowd, J. & Seaver, M. (2012). *Drumclay, Cherrymount: a crannog in crisis*. Paper presented to Institute Of Archaeologists of Ireland, Belfast. [Online] Retrieved from: <http://rmchapple.blogspot.co.uk/2012/11/drumclay-cherrymount-crannog-in-crisis.html>. Date accessed: 7 July 2013.
- Charmaz, K. (1995). Grounded theory. In: Smith, J. A., Harre, R., & Langenhove, L. V. (Eds.), *Rethinking Methods in Psychology*, 29-49. London: Sage.
- Charmaz, K. (2006). *Constructing Grounded Theory: A Practical Guide through Qualitative Analysis*. London: Sage.

- Cherrymount Crannog Crisis Facebook Group. (2013). [Online] Retrieved from: <https://www.facebook.com/groups/254450291340252/>. Date accessed: 13 August 2013.
- Chisnall, P. (2001). *Marketing Research*. London: McGraw-Hill.
- Christensen, C. (2011a). Twitter revolutions? Addressing social media and dissent. *The Communication Review*, 14(3), 155-157.
- Christensen, H. S. (2011b). Political activities on the Internet: Slacktivism or political participation by other means? *First Monday*, 16(2). Retrieved from: <http://firstmonday.org/article/view/3336/2767>. Date accessed: 30 March 2014.
- Christian, L. M., Parsons, N. L., & Dillman, D. A. (2009). Designing scalar questions for Web surveys. *Sociological Methods and Research*, 37(3), 393-425.
- Chu, S. C. (2011). Viral advertising in social media: participation in Facebook groups and responses among college-aged users. *Journal of Interactive Advertising*, 12(1), 30-43.
- Churchill, G. A. (1999). *Marketing Research: Methodological Foundations* (7th Ed.). Fort Worth TX: The Dryden Press, Harcourt-Brace College Publishers.
- Civil Service. (2014). *Social media guidance - How to Use Social Media*. [Online] Retrieved from: <http://www.civilservice.gov.uk/news/lets-get-social/how-to-use-social-media>. Date accessed: 4 April 2014.
- Clark, I. (2012). *To What Extent do Community Libraries Address the Concerns of the Digital Divide?* MSc Dissertation: University Of Wales, Aberystwyth. [Online] Retrieved from: [http://infoism.co.uk/research/community\\_libraries\\_and\\_the\\_digital\\_divide](http://infoism.co.uk/research/community_libraries_and_the_digital_divide). Date accessed: 12 December 2012.
- Clarke, J. (2013). In Search of Ordinary People: The Problematic Politics of Popular Participation. *Communication, Culture & Critique*, 6(2), 208-226.
- Clarke., R. (1999). *A Primer in Diffusion of Innovations Theory*. [Online] Retrieved from: <http://www.rogerclarke.com/SOS/InnDiff.html>. Date accessed: 3 April 2014
- Cohen, A. P. (1985). *The Symbolic Construction of Community*. London: Tavistock.
- Cohen, A. P. (Ed.) (1986). *Symbolising Boundaries - Identity and Diversity in British Cultures*. Manchester: Manchester University Press.
- Cohn, J. P. (2008). Citizen science: Can volunteers do real research? *Bioscience*, 58(3), 192-197.
- Coleman, J. (1988). Social capital in the creation of human capital. *American Journal of Sociology*, 94, 95-120.

- Coleman, S. & Ross, K. (2010). *The Media and the Public: Them and us in media discourse*. Oxford: Blackwell Publishers.
- Colwell-Chanthaphonh, C., & Ferguson, T. J. (2006). Memory pieces and footprints: multivocality and the meanings of ancient times and ancestral places among the Zuni and Hopi. *American Anthropologist*, 108(1), 148-162.
- Colwell-Chanthaphonh, C., Ferguson, T. J., & Gan, D. W. (2011). Multivocality in multimedia: Collaborative archaeology and the potential of cyberspace. In: Matsuda, A., & Okamura, K. (Eds.), *New Perspectives in Global Public Archaeology*, 239-249. London: Springer.
- Constant, D., Sproull, L. & Kiesler, S. (1996). The kindness of strangers: The usefulness of electronic weak ties for technical advice. *Organization Science*, 7(2), 119-135.
- Cooper, C. (2008). *Community, conflict and the state: rethinking notions of 'safety', 'cohesion' and 'wellbeing'*. Basingstoke: Palgrave Macmillan.
- Cope, J. (1998). *The Modern Antiquarian. A Pre-Millennial Odyssey Through Megalithic Britain*. London: Thorsons.
- Copeland, T. (2004). Presenting archaeology to the public: Constructing insights on-site. In: Merriman, N. (Ed.), *Public Archaeology*, 132-144. London: Routledge.
- Corbishley, M. (2011). *Pinning Down the Past: Archaeology, Heritage, and Education Today*. Woodbridge: Boydell Press.
- Corkill, C., & Mann, M. (1981). *Doctoral students in humanities: A small-scale panel study of information needs and uses 1976-79*. Centre for Research on User Studies Occasional Papers 5. Sheffield: University Of Sheffield, Department of Information Studies.
- Cormode, G., & Krishnamurthy, B. (2008). Key differences between Web 1.0 and Web 2.0. *First Monday*, 13(6). [Online] Retrieved from: <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2125/1972>. Date accessed: 16 November 2012.
- Corner, J. (1995). *Television Form and Public Address*. London: Edward Arnold.
- Cornwall, A. (2008). Unpacking 'Participation': Models, meanings and practices. *Community Development Journal*, 43(3), 269-283.
- Correll, S. (1995). The ethnography of an electronic bar. *Journal of Contemporary Ethnography*, 24(3), 270-298.
- Cosmeston Archaeology. (2011). *Cardiff University Excavations at Cosmeston Medieval Manor*. [Online] Retrieved from: <http://cosmestonarchaeology.co.uk/about-the-blog/>. Date accessed: 4 July 2013.

Cothey, V. (2002). A longitudinal study of World Wide Web users' information-searching behaviour. *Journal of the American Society for Information Science*, 53(2), 67-78.

Council for British Archaeology. (2010). *Community Archaeology in the UK: Recent Findings*. [Online] 10 April 2010. Retrieved from: <http://www.britarch.ac.uk/research/community>. Date accessed: 3 October 2013.

Council for British Archaeology. (2011a). *Merseyside HER re-opens*. [Online] 6 July 2011. Retrieved from: <http://www.archaeologyuk.org/news/070611-merseysideher>. Date accessed: 19 September 2013.

Council for British Archaeology. (2011b). *Middlesbrough Council to cut archaeology funding*. [Online] 10 July 2011. Retrieved from: <http://www.archaeologyuk.org/news/111007-teescuts>. Date accessed: 19 September 2013.

Council for British Archaeology. (2014). *A Brief History of the CBA*. [Online] Retrieved from: <http://www.britarch.ac.uk/cba/history>. Date accessed: 19 February 2014.

Council for Independent Archaeology. (2013). *Homepage* [Online] Retrieved from: <http://www.independents.org.uk/>. Date accessed: 18 November 2013.

Council of Europe. (1992). *European Convention on the Protection of the Archaeological Heritage (Revised)*. [Online]. Retrieved from: <http://conventions.coe.int/treaty/en/treaties/html/143.htm>. Date accessed: 18 November 2013.

Council of Europe. (2005). *Framework Convention on the Value of Cultural Heritage for Society*. [Online] Retrieved from: <http://conventions.coe.int/treaty/commun/quevous.asp?nt=199&cm=8&cl=en>. Date accessed: 3 October 2013.

County Councils Network. (2013). *Meeting the Challenges of the Austerity Decade*. [Online] Retrieved from: <http://www.countycouncilsnetwork.org.uk/library/july-2013/file22/>. Date accessed: 1 February 2014.

Couper, M. P. (1998). Measuring survey quality in a CASIC environment. In: *Proceedings of the Survey Research Methods Section, American Statistical Association*, 41-49. Retrieved from: <http://www.websm.org/uploadi/editor/measuring%20survey%20quality%20in%20a%20casic%20environment.pdf>. Date accessed: 18 March 2014.

Couper, M. P. (2000). Web surveys: A review of issues and approaches. *Public Opinion Quarterly*, 64(4), 464-94.

Couper, M. P. (2005). Technology trends in survey data collection. *Social Science Computer Review*, 23(4), 486-501.



Couper, M. P. (2013). Is the sky falling? New technology, changing media, and the future of surveys. *Survey Research Methods*, 7(3), 145-156.

Coursera. (2014). *Archaeology's Dirty Little Secrets*. [Online] Retrieved from: <https://www.coursera.org/course/secrets>. Date accessed: 24 March 2014.

Crass, D. C. (2010). The crisis in communication: Still with us? In: Sebastian, L., & Lipe, W. D. (Eds.), *Archaeology & Cultural Resource Management: Visions for the Future*, 253-282. Santa Fe: School for Advanced Research Press.

Cronin, B., & Hert, C. A. (1995). Scholarly foraging and network discovery tools. *Journal of Documentation*, 51(4), 388-403.

Crooke, E. (2010). The politics of community heritage: motivations, authority and control. *International Journal of Heritage Studies*, 16(1-2), 16-29.

Crosby, A. (2002). Archaeology and Vanua development in Fiji. *World Archaeology*, 34(2), 363-378.

Crow, G., & Mah, A. (2012). *Conceptualisations and meanings of "community": The theory and operationalisation of a contested concept*. Connected Communities. Arts and Humanities Research Council. [Online]. Retrieved from: <http://www.ahrc.ac.uk/Funding-Opportunities/Research-funding/Connected-Communities/Scoping-studies-and-reviews/Documents/Conceptualisations%20and%20meaning%20of%20community%20%20the%20theory%20and%20operationalisation%20of%20a%20contested%20concept.pdf>. Date accessed: 29 March 2014.

Culture 24 (2014). *Let's Get Real action research*. [Online] Retrieved from: <http://weareculture24.org.uk/projects/action-research/>. Date accessed: 30 March 2014.

Curtis, V. (2013). Public engagement through the development of science-based computer games: The Wellcome Trust's "Gamify Your PhD" initiative. *Science Communication*, In-press.

Daily Mail. (2011). *The oldest gay in the village: 5,000-year-old is 'outed' by the way he was buried*. [Online] 8 April 2011. Retrieved from: <http://www.dailymail.co.uk/sciencetech/article-1374060/gay-caveman-5-000-year-old-male-skeleton-outed-way-buried.html>. Date accessed: 6 June 2011.

Daily Telegraph. (2011). *First homosexual caveman found*. [Online] 6 April 2011. Retrieved from <http://www.telegraph.co.uk/news/newstopics/howaboutthat/8433527/first-homosexual-caveman-found.html>. Date accessed: 4 June 2011.

Datasift. (2014). *Pricing*. [Online] Retrieved from: <http://datasift.com/pricing/>. Date accessed: 5 January 2014.

- Davis, K. L. (1997). Sites without sights: Interpreting closed excavations. In: Jameson, J. H. (Ed.), *Presenting Archaeology to the Public*, 84-98. Walnut Creek: Altamira Press.
- Davis, T. (2010). Third spaces or heterotopias? Recreating and negotiating migrant identity using online spaces. *Sociology*, 44(4), 661-677.
- Day, E. (2013). Mary Beard: I almost didn't feel such generic, violent misogyny was about me. *The Guardian*. [Online] 26 January 2013. Retrieved from: <http://www.theguardian.com/books/2013/Jan/26/Mary-Beard-Question-Time-Internet-Trolls>. Date accessed: 24 January 2014.
- Day in the Life of the Digital Humanities. (2011). *Homepage*. [Online] Retrieved from: [http://tapor.ualberta.ca/taporwiki/index.php/Day\\_in\\_the\\_Life\\_of\\_the\\_Digital\\_Humanities\\_2011](http://tapor.ualberta.ca/taporwiki/index.php/Day_in_the_Life_of_the_Digital_Humanities_2011). Date accessed: 9 October 2013.
- Day of Archaeology. (2013). *About the Project*. [Online] Retrieved from: <http://www.dayofarchaeology.com/>. Date accessed: 9 October 2013.
- Denning, D. (2000). Activism, hacktivism, and cyber-terrorism: The Internet as a tool for influencing foreign policy. *The Computer Security Journal*, 16(3), 15-35.
- Denning, P. J. (2006). The profession of IT: Infoglut. *Communications of the Association for Computing Machinery*, 49(7), 15-19.
- Department for Business, Innovation and Skills. (2011). *2011 Skills for Life Survey: Headline Findings*. Research Paper 57. [Online] Retrieved from: <http://www.bis.gov.uk/assets/biscore/further-education-skills/docs/0-9/11-1367-2011-skills-for-life-survey-findings>. Date accessed: 3 October 2013.
- Department for Communities and Local Government. (2010). *The Coalition: Our Programme for Government on Communities and Local Government*. [Online] Retrieved from: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6192/1657233.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6192/1657233.pdf). Date accessed: 1 October 2013.
- Department for Communities and Local Government. (2012). *National Planning Policy Framework*. [Online] March 2012. Retrieved from: [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6077/2116950.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf). Date accessed: 3rd October 2013.
- Department for Communities and Local Government. (2013a). *Community and Society*. [Online]. Retrieved from: <https://www.gov.uk/government/topics/community-and-society>. Date accessed: 1 October 2013.
- Department for Communities and Local Government. (2013b). *Bringing People Together in Strong, United Communities*. [Online] July 2013. Retrieved from: <https://www.gov.uk/government/policies/bringing-people-together-in-strong-united-communities>. Date accessed: 1 October 2013.

Department for Culture, Media and Sport. (2012a). *Broadband Roll-Out Moves into Top Gear*. [Online] 23 November 2012. Retrieved from: <https://www.gov.uk/government/news/broadband-roll-out-moves-into-top-gear--2>. Date accessed: 5 December 2012.

Department for Culture, Media & Sport. (2012b). *Master Site Occupation Agreement*. [Online] Retrieved from: [http://webarchive.nationalarchives.gov.uk/20121204113822/http://www.culture.gov.uk/images/publications/msoa\\_faq.pdf](http://webarchive.nationalarchives.gov.uk/20121204113822/http://www.culture.gov.uk/images/publications/msoa_faq.pdf). Date accessed: 3 October 2013.

Department for Culture, Media and Sport. (2013). *Making it easier for the communications and telecoms industries to grow, while protecting the interests of citizens*. [Online] Retrieved from: [http://www.culture.gov.uk/what\\_we\\_do/telecommunications\\_and\\_online/8757.aspx](http://www.culture.gov.uk/what_we_do/telecommunications_and_online/8757.aspx) Date accessed: 24 March 2014.

Design Bristol. (2013). *Heritage Eye Smartphone App*. [Online] 7 October 2013. Retrieved from: <http://designbristol.ning.com/profiles/blogs/heritage-eye-smartphone-app>. Date accessed: 14 October 2013.

Devine, J., & Egger-Sider, F. (2004). Beyond Google: The invisible Web in the academic library. *Journal of Academic Librarianship*, 30(4), 265-269.

Dewhurst, R. J. (2014). *The Ancient Giants Who Ruled America: The Missing Skeletons and the Great Smithsonian Cover-Up*. Rochester, VT: Bear & Company.

DigVentures. (2014). *About Us*. [Online] Retrieved from: <http://digventures.com/>. Date accessed: 24 March 2014.

Dillman, D. A. (2000). *Mail and Internet Surveys: The Tailored Design Method*. New York: John Wiley & Sons.

Dillman, D. A. & Bowker, D. K. (2001). The Web questionnaire challenge to survey methodologists. In: Reips, U-D., & Bosnjak, M. (Eds.), *Dimensions Of Internet Science*, 159-178. Lengerich, Germany: Pabst Science Publishers.

Dimaggio, P., Hargittai, E., Neuman, R. W., & Robinson, J. P. (2001). The Internet's implications for society. *Annual Reviews of Sociology*, 27, 307-336.

DiNucci, D. (1999). Fragmented future. *Print*, 53(4), 221-223. [Online] Retrieved from: [http://darcy.com/fragmented\\_future.pdf](http://darcy.com/fragmented_future.pdf). Date accessed: 28 December 2012.

Dixon, J. (2013). Archaeology, Politics and Politicians, or: Small p in a big P World. In: Dalglish, C. (Ed.), *Archaeology, the Public and the Recent Past*, 111-123. Woodbridge: Boydell Press.

Dobransky, K., & Hargittai, E. (2012). Inquiring minds acquiring wellness: Uses of online and offline sources for health information. *Health Communication*, 27(4), 331-343.

- Doughty, M., & O'Coill, C. (2008). Online gaming and Web-based communities: Serious games for community development. *International Journal of Web-Based Communication*, 4(3), 384-391.
- Dowell, B. (2013). Mary Beard Suffers 'Truly Vile' Online Abuse After Question Time. *The Guardian*. [Online] 21 January 2013. Retrieved from: <http://www.theguardian.com/media/2013/jan/21/mary-beard-suffers-twitter-abuse>. Date accessed: 24 January 2014.
- Driskell, R. B., & Lyon, L. (2002). Are virtual communities true communities? Examining the environments and elements of community. *City & Community*, 1(4), 373-390. DOI: 10.1111/1540-6040.00031. Date accessed: 13 August 2013.
- Dufton, A., & Eve, S. (2012). *Guerrilla Foursquare: a Digital Archaeological Appropriation of Commercial Location-Based Social Networking*. Paper presented at Computer Applications & Quantitative Methods in Archaeology conference 2012, Southampton, March 2012. Retrieved from: [http://www.academia.edu/5088693/Guerrilla\\_Foursquare\\_a\\_Digital\\_Archaeological\\_Appropriation\\_of\\_Commercial\\_Location-Based\\_Social\\_Networking](http://www.academia.edu/5088693/Guerrilla_Foursquare_a_Digital_Archaeological_Appropriation_of_Commercial_Location-Based_Social_Networking). Date accessed: 28 March 2014.
- Dunn, S., & Hedges, M. (2012). *Crowd-sourcing in the Humanities: A scoping study*. Connected Communities. Arts and Humanities Research Council. [Online] Retrieved from: <http://www.ahrc.ac.uk/Funding-Opportunities/Research-funding/Connected-Communities/Scoping-studies-and-reviews/Documents/Crowd%20Sourcing%20in%20the%20Humanities.pdf>. Date accessed: 20 March 2014.
- Durose, C., Beebeejaun, Y., Rees, J., Richardson, J., & Richardson, L. (2012). *Towards Co-Production in Research with Communities*. Connected Communities Arts and Humanities Research Council. [Online] Retrieved from: <http://www.ahrc.ac.uk/Funding-Opportunities/Research-funding/Connected-Communities/Scoping-studies-and-reviews/Documents/Towards%20Co-Production%20in%20Research%20with%20Communities.pdf>. Date accessed: 29 March 2014.
- Dutton, W., & Shepard, A. (2006). Trust in the Internet as an experience technology. *Information, Communication and Society*, 9(4), 433-451.
- Dutton, W. H., & Blank, G. (2011). *Next Generation Users: The Internet in Britain*. Oxford Internet Survey (OxIS) Report. [Online] Retrieved from: [http://www.oii.ox.ac.uk/publications/oxis2011\\_report.pdf](http://www.oii.ox.ac.uk/publications/oxis2011_report.pdf). Date accessed: 3 October 2013.
- Dyson, F. (2002). In praise of amateurs. *New York Review of Books*, 49(19), 4-8.
- Ellwood, E. R., Primack, R. B., & Talmadge M. L. (2010). Effects of climate change on Spring bird arrival times in Thoreau's Concord from 1851 to 2007. *The Condor*, 112(4), 754-762.

- Eltahawy, M. (2010). Facebook, YouTube and Twitter are the new tools of protest in the Arab World. *Washington Post*. [Online] 7 August 2010. Retrieved from:  
<http://www.washingtonpost.com/wpdyn/content/article/2010/08/06/AR2010080605094.html>. Date accessed: 3 October 2013.
- Elton, M. C. J., & Carey, J. (2013). The prehistory of the Internet and its traces in the present: Implications for the future. In: Dutton, W. (Ed.), *The Oxford Handbook Of Internet Studies*, 27-45. Oxford: Oxford University Press.
- Emerick, K. (2009). Archaeology and the cultural heritage management “toolkit”: The example of a community heritage project at Cawood, North Yorkshire. In: Waterton, E. & Smith, L. (Eds.), *Taking Archaeology out of Heritage*, 91-116. Cambridge: Cambridge Scholars Publishing.
- English Heritage. (2012). *Heritage Counts national report. Using & Benefiting: Volunteering in the Historic Environment*. [Online] Retrieved from:  
<http://hc.english-heritage.org.uk/content/pub/2012/hc-2012-england.pdf>. Date accessed: 18 March 2014.
- English Heritage. (2014a). *Local Listing*. [Online] Retrieved from  
<http://www.english-heritage.org.uk/caring/listing/local/local-designations/>. Date accessed: 1 February 2014.
- English Heritage. (2014b) *About Us*. [Online] Retrieved from:  
<http://www.english-heritage.org.uk/about/>. Date accessed: 18 March 2014.
- Enniskillen Castle Museum. (2013). *What's On*. [Online] Retrieved from:  
<http://www.enniskillencastle.co.uk/whats-on/>. Date accessed: 12 August 2013.
- Ericsson, K. A., Charness, N., Feltovich, P., & Hoffman, R. R. (2006). *Cambridge Handbook on Expertise and Expert Performance*. Cambridge: Cambridge University Press.
- Ericsson, K. A., Prietula, M. J., & Cokely, E. T. (2007). The making of an expert. *Harvard Business Review*, 85(7/8), 114.
- Ericsson, K. A., & Smith, J. (1991). Prospects and limits of the empirical study of expertise: An introduction. In: Ericsson, K. A., & Smith, J. (Eds.), *Towards a General Theory of Expertise*, 1-38. Cambridge: Cambridge University Press.
- Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, 14(4), 532-550.
- Estellés-Arolas, E., & González-Ladrón-de-Guevara, F. (2012). Towards an integrated crowdsourcing definition. *Journal of Information Science*, 38(2), 189-200.
- Evans, R. J. (1997). *In Defence of History*. London: Granta Publications.
- Evans, J. R., & Mathur, A. (2005). The value of online surveys. *Internet Research*, 15(2), 195-219.

- Everill, P., & Nicholls, R. (2011). *Archaeological Fieldwork Training: Provision and Assessment in Higher Education*. University of Winchester and Higher Education Academy Subject Centre for History, Classics and Archaeology. [Online]. Retrieved from: [http://www.heacademy.ac.uk/hca/resources/detail/arch\\_resource\\_fieldwork\\_training\\_everill\\_nicholls](http://www.heacademy.ac.uk/hca/resources/detail/arch_resource_fieldwork_training_everill_nicholls). Date accessed: 2 November 2011.
- Eversole, R. (2012). Remaking participation: challenges for community development practice. *Community Development Journal*, 47(1), 29-41.
- Evrard, Y. (1997). Democratizing Culture or Cultural Democracy? *Journal of Arts Management, Law & Society*. 27(3), 167-176.
- Eynon, R., Fry, J., & Schroeder, R. (2008). The ethics of Internet research. In: Fielding, N., Lee, R. M., & Blank, G. (Eds.), *Handbook of Online Research Methods*, 23-41. London: Sage.
- Fagan, B. (2003). Come, let me tell you a tale. In: Cripps, B., Dickau, R., Hartery, L. J., Lobb, M., Nicholls, L. and Varney, T. (Eds), *Archaeology into the New Millennium: public or perish*, 2-5. Calgary: Archaeological Association of the University of Calgary.
- Fagan, B. (2005). *Writing Archaeology: Telling Stories about the Past*. Walnut Creek: Left Coast Press.
- Fagan, G. G. (2006). Diagnosing pseudoarchaeology. In: G. G. Fagan (Ed.), *Archaeological Fantasies: How Pseudoarchaeology Misrepresents the Past and Misleads the Public*, 23-46. London: Routledge.
- Farrington-Darby, T., & Wilson, J. R. (2006). The nature of expertise: A review. *Applied Ergonomics*, 37(1), 17-32.
- Faulkner, N. (2000). Archaeology from below. *Public Archaeology*, 1(1), 21-33.
- Faulkner, N. (2009). The Sedgeford crisis. *Public Archaeology*, 8(1), 51-61.
- Fawcett, C., Habu, J., & Matsunaga, J. M. (2008). Introduction: Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies. In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 1-11. New York: Springer.
- Fear, J., & Denniss, R. (2011). What You Don't Know Can Hurt You: How Market Concentration Threatens Internet Diversity. *The Australia Institute*. [Online] 16 August 2011. Retrieved from: <http://www.tai.org.au/node/1764>. Date accessed: 18 March 2014.
- Feder, K. L. (2010). *Encyclopedia of Dubious Archaeology: From Atlantis to the Walam Olum*. Westport, CT: Greenwood Publishing Group.

- Feder, K. L., Lepper, B. T., Barnhart, T. A., & Bolnick, D. (2011) Civilizations Lost and Found: Fabricating History; Part One: An Alternate Reality. *Skeptical Inquirer*, 35(5), 38-45.
- Feenberg, A., & Bakardjieva, M. (2004). Virtual community: No “killer application”. *New Media & Society*, 6(1), 37-43.
- Fermanagh Herald. (2012). *Concern for Cherrymount site*. [Online] 19 July 2012. Retrieved from: <http://fermanaghherald.com/2012/07/concern-for-cherrymount-site/>. Date accessed: 18 March 2014.
- Fiegerman, S. (2013). Twitter: What to expect in 2014. *Mashable*. [Online] 25 December 2013. Retrieved from: <http://mashable.com/2013/12/25/twitter-predictions-2014/> Date accessed: 2 February 2014.
- Fischer, F. (2009). *Democracy and Expertise: Reorienting Policy Enquiry*. New York: Oxford University Press.
- Fisher, M. & Adair, B. (2011). Online dialogue and cultural practice: A conversation. In: Adair, B., Filene, B., & Colossi, L. (Eds.), *Letting Go? Sharing Historical Authority in a User-Generated World*, 44-55. Walnut Creek: Left Coast Press.
- Fitzpatrick-Matthews, K., & Doeser, J. (2014). *Bad Archaeology* [Online]. Retrieved from: <http://www.badarchaeology.net/>. Date accessed: 5 February 2014.
- Flanagin, A. J., & Metzger, M. J. (2000). Perceptions of Internet information credibility. *Journalism and Mass Communication Quarterly*, 77(3), 515-540.
- Flatman, J., & Perring, D. (2013). The National Planning Policy Framework and archaeology: A discussion. *Papers from the Institute Of Archaeology*, 22, 4-10. Retrieved from: <http://dx.doi.org/10.5334/pia.390>. Date accessed: 18 November 2013.
- Flew, T. (2008). *New Media: An Introduction* (3rd Ed.). Melbourne: Oxford University Press.
- Frankel, M. S., & Siang, S. (1999). Ethical and Legal Aspects of Human Subjects Research on the Internet. A Report of a Workshop, June 10-11 1999. *American Association for the Advancement of Science (AAAS)*. Washington, D.C. Retrieved from: [https://nationalethicscenter.org/resources/187/download/ethical\\_legal.pdf](https://nationalethicscenter.org/resources/187/download/ethical_legal.pdf). Date accessed: 6 January 2014.
- Freeman, C. G. (2010). Photosharing on Flickr: Intangible heritage and emergent publics. *International Journal of Heritage Studies*, 16(4), 352-368.
- Fremaux, I. (2005). New Labour’s appropriation of the concept of community: A critique. *Community Development Journal*, 40(3), 265-274.

- Fricker, R. D., & Schonlau, M. (2002). Advantages and disadvantages of Internet Research surveys: Evidence from the literature. *Field Methods*, 14(4), 347-367.
- Frisch, M. (1990). *A Shared Authority: Essays on the Craft and Meaning of Oral and Public History*. New York: State University of New York Press.
- Fritz, J. M., & Plog, F. T. (1970). The nature of archaeological explanation. *American Antiquity*, 35(4), 405-412.
- Fuchs, C. (2011). *Foundations of Critical Media and Information Studies*. New York: Routledge.
- Fuchs, C. (2012). Social media, riots and revolutions. *Capital & Class*, 36(3), 383-391.
- Fuchs, C. (2013). *Social Media: A Critical Introduction*. London: Sage.
- Fulford, M. (2011). The impact of commercial archaeology on the UK Heritage. In: Curtis, J., Fulford, M., Harding, A., & Reynold, F. (Eds.), *History for the Taking? Perspectives on Material Heritage*, 33-53. London: British Academy. Retrieved from: <https://www.britac.ac.uk/policy/History-for-the-taking.cfm>. Date accessed 28 March 2014.
- Gaff, B. M. (2014) Corporate Risks from Social Media. *Computer*, 47(1), 13-15.
- García-Raso, D. (2011). Watching video games: Playing with archaeology and prehistory. *AP: Online Journal in Public Archaeology*, 1, 73-92. Retrieved from: <http://www.arqueologiapublica.es/descargas/1300786325.pdf>. Date accessed: 24 March 2014.
- Gauntlett, D. (2011). *Three approaches to social capital*. Retrieved from: <http://www.makingisconnecting.org/gauntlett2011-extract-sc.pdf>. Date accessed: 24 March 2014.
- Gender & Digital Culture. (2014). [Online]. Retrieved from: <http://genderanddigitalculture.wordpress.com/>. Date accessed: 24 January 2014.
- General Medical Council. (2014). *Doctor's use of social media (2013)*. [Online] Retrieved from: [http://www.gmc-uk.org/guidance/ethical\\_guidance/21186.asp](http://www.gmc-uk.org/guidance/ethical_guidance/21186.asp). Date accessed: 4 April 2014.
- Gere, C. (2012). *Community without Culture in a Digital Culture*. Basingstoke: Palgrave Macmillan.
- Giaccardi, E. (2012) (Ed.). *Heritage and Social Media. Understanding heritage in a participatory culture*. Oxford: Routledge.
- Gilster, P. (1997). *Digital Literacy*. New York: John Wiley & Sons.
- Given, L.M. (2008). *The Sage Encyclopaedia of Social Science Research Methods*. London: Sage.



- Gladwell, M. (2010). Small change. *New Yorker*. 4 October 2010. [Online] Retrieved from: [http://www.newyorker.com/reporting/2010/10/04/101004fa\\_fact\\_gladwell](http://www.newyorker.com/reporting/2010/10/04/101004fa_fact_gladwell). Date accessed: 21 August 2012.
- Glaser, B. G. (1978). *Theoretical Sensitivity*. Mill Valley, CA: Sociology Press.
- Glaser, B. G. (1992). *Emergence versus Forcing: Basics of Grounded Theory Analysis*. Mill Valley, CA: Sociology Press.
- Glaser, B. G. (1998). *Doing Grounded Theory: Issues and Discussion*. Mill Valley, CA: Sociology Press.
- Glaser, R., & Chi, M. (1988). Overview. In: Chi, M., Glaser, R., & Farr, M. (Eds.), *The Nature of Expertise*, xv-xxxvi. New Jersey: Lawrence Erlbaum.
- Glaser, R. & Strauss, A. L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Publishing Company.
- Gnip. (2014). *The Source for Social Data*. [Online] Retrieved from: <http://gnip.com/>. Date accessed: 5 January 2014.
- Goffman, E. (1959). *The Presentation of Self in Everyday Life*. New York: Anchor Books.
- Go ON UK. (2012). *The Size of the Opportunity*. [Online] Retrieved from <http://www.go-on.co.uk>. Date accessed: 20 November 2012.
- Google Play Store. (2013). *Heritage Eye*. [Online] Retrieved from: <https://play.google.com/store/apps/details?id=uk.gov.bristol.heritageeye>. Date accessed: 14 October 2013.
- Gorman, G. E., & Clayton, P. (2005). *Qualitative Research for the Information Professional: A Practical Handbook*. London: Facet Publishing.
- Graham, S. (2012). Mining a Day of Archaeology. *Electric Archaeology* [Online]. Retrieved from: <http://electricarchaeology.ca/2012/07/09/mining-a-day-of-archaeology/>. Date accessed: 24 March 2014.
- Graham, S., Weingart, S., & Milligan, I. (2012). Getting Started with Topic Modeling and MALLET. [Online] Retrieved from: <http://programminghistorian.org/lessons/topic-modeling-and-mallet>. Date accessed: 27 March 2014.
- Grandcolas, U., Rettie, R., & Marusenko, K. (2003). Web survey bias: Sample or mode effect? *Journal of Marketing Management*, 19(5-6), 541-561.
- Granovetter, M. (1973). *The strength of weak ties*. *American Journal of Sociology*, 78(6), 1360-1380.

- Granovetter, M. (1982). The strength of weak ties: A network theory revisited. In: Marsden, P., & Lin, N. (Eds.), *Social Structure and Network Analysis*, 105-130. New York: John Wiley & Sons.
- Grabner-Kräuter, S., & Bitter, S. (2013). Trust in online social networks: A multifaceted perspective. In: *Forum for Social Economics*, 1-21.
- Griffin, J. (2011). Double edged sword of communicating via social media. *Keeping Good Companies*, 659-663.
- Grima, R. (2004). *Archaeological Research and the Public*. Paper delivered to the Sixth European Commission Conference on Sustaining Europe's Cultural Heritage: From Research to Policy. [Online] Retrieved from: [http://www.ucl.ac.uk/sustainableheritage/conference/proceedings/pdf/3b.2\\_grima.pdf](http://www.ucl.ac.uk/sustainableheritage/conference/proceedings/pdf/3b.2_grima.pdf). Date accessed: 16 October 2013.
- Grima, R. (2010). A reply to "What is public archaeology?" *Present Pasts*, 1(1), 53-54. Retrieved from: <http://dx.doi.org/10.5334/pp.10>. Date accessed: 16 October 2013.
- Grimes, J. M., Fleischman, K. R., & Jaeger, P. T. (2009). Virtual Guinea Pigs: Ethical implications of human subjects research in virtual worlds. *International Journal of Internet Research Ethics*, 2(1), 38-56.
- Grossnickle, J., & Raskin, O. (2001). What's ahead on the Internet? *Marketing Research*, 13(2), 9-13.
- Groves, R. M., Fowler Jr, F. J., Couper, M. P., Lepkowski, J. M., Singer, E., & Tourangeau, R. (2013). *Survey methodology*. Hoboken, NJ: John Wiley & Sons.
- Guba, E. G., & Lincoln, Y. S. (1989). *Fourth Generation Evaluation*. Newbury Park, CA: Sage.
- Gurak, L. (2001). *Cyberliteracy*. New Haven: Yale University Press.
- Habu, J. & Fawcett, C. (2008). Science or narratives? Multiple interpretations of the Sannai Maruyama site, Japan. In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 91-117. New York: Springer.
- Haddon, L. (2006). The contribution of domestication research to in-home computing and media consumption. *The Information Society*, 22(4), 195-204.
- Hale, A. (2011). *Linking Communities to Historic Environments: A Research Review Summary*. Edinburgh: Royal Commission on Ancient and Historical Monuments of Scotland. [Online] Retrieved from: [http://www.rcahms.gov.uk/rcahms\\_media/files/survey/lche\\_report.pdf](http://www.rcahms.gov.uk/rcahms_media/files/survey/lche_report.pdf). Date accessed: 18 March 2014.
- Hampton, K. N. (2003). Grieving for a lost network: Collective action in a wired suburb. *The Information Society*, 19(5), 417-428.

- Hancock, G. (1995). *Fingerprints of the Gods: The Evidence of Earth's Lost Civilisation*. London: William Heinemann Ltd.
- Hansen, D. L., Shneiderman, B., & Smith, M. A. (2011). *Analyzing Social Media Networks with NodeXL: Insights from a Connected World*. Burlington, MA: Morgan Kaufmann Publishers.
- Hardwig, J. (1991). The role of trust in knowledge. *Journal of Philosophy*, 88(12), 693-708.
- Hargittai, E. (2002). Beyond logs and surveys: In-depth measures of people's web use skills. *Journal of the American Society for Information Science and Technology*, 53(14), 1239-1244.
- Hargittai, E. (2004). Internet access and use in context. *New Media and Society*, 6(1), 137-143.
- Hargittai, E. (2008). The digital reproduction of inequality. In: Grusky, D. (Ed.). *Social Stratification*, 936-944. Boulder, CO: Westview Press.
- Hargittai, E., & Hinnant, A. (2008). Digital inequality: Differences in young adults' use of the Internet. *Communication Research*, 35(5), 602-621.
- Hargittai, E., & Hsieh, Y. P. (2010). From dabblers to omnivores: A typology of social network site usage. In: Papacharissi, Z. (Ed.), *The Networked Self*, 146-168. New York: Routledge.
- Hargittai, E., & Hsieh, Y. P. (2013). Digital Inequality. In: Dutton, W. (Ed.). *The Oxford Handbook of Internet Studies*, 129-150. Oxford: Oxford University Press.
- Hargittai, E., & Walejko, G. (2008). The participation divide: Content creation and sharing in the digital age. *Information, Communication and Society*, 11(2), 239-256.
- Harlow, S., & Harp, D. (2012). Collective action on the Web. *Information, Communication and Society*, 15(2), 196-216.
- Harrold, F. B., & Eve, R. A. (1987). *Cult Archaeology and Creationism. Understanding Pseudoscientific Beliefs about the Past*. Iowa City: University of Iowa Press.
- Harris, T. M. (2012). Interfacing archaeology and the world of citizen sensors: exploring the impact of neogeography and volunteered geographic information on an authenticated archaeology. *World Archaeology*, 44(4), 580-591.
- Harrison, R. (2010). Exorcising the 'Plague of fantasies': Mass media and archaeology's role in the present; or, why we need an archaeology of 'now'. *World Archaeology*, 42(3), 328-40.
- Hartelius, J. (2011). *The Rhetoric of Expertise*. Lanham, MD: Lexington Books.

- Hawks, J. (2011). The "Gay caveman". *John Hawks*. [Online] 7 April 2011. Retrieved from:  
<http://johnhawks.net/weblog/topics/meta/communication/gay-caveman-prague-2011.html>. Date accessed: 6 June 2011.
- Hawkes, J. (1968). The proper study of mankind. *Antiquity*, 42, 255-262.
- Haythornthwaite, C. (2001). The Internet in everyday life. *American Behavioral Scientist*, 45(3), 363-382.
- He, B. Z., Chen, C. M., Su, Y. P., & Sun, H. M. (2014). A defence scheme against Identity Theft Attack based on multiple social networks. *Expert Systems with Applications*, 41(5), 2345-2352.
- Hearn, A. (2010). Structuring feeling: Web 2.0, online ranking and rating, and the digital 'reputation' economy. *Ephemera: Theory and Politics in Organization*, 10(3/4), 421-438.
- Hearn, A. (2011). Confessions of a radical eclectic: Reality television, self-branding, social media, and autonomist Marxism. *Journal of Communication Inquiry*, 35(4), 313-321.
- Heighway, C. M. (Ed.). (1972). The Erosion of History: Archaeology and Planning in Towns. *Council for British Archaeology Occasional Paper*. [Online] Retrieved from:  
[http://archaeologydataservice.ac.uk/archives/view/cba\\_op/op4.cfm?cfid=106378&cftoken=Ee6bdef1-cb6a-438d-ab3ed9d44b8192f4&](http://archaeologydataservice.ac.uk/archives/view/cba_op/op4.cfm?cfid=106378&cftoken=Ee6bdef1-cb6a-438d-ab3ed9d44b8192f4&). Date accessed: 2 May 2012.
- Henson, D. (2006). Television archaeology: education or entertainment? Retrieved from:  
[http://www.academia.edu/352779/Television\\_archaeology\\_education\\_or\\_entertainment](http://www.academia.edu/352779/Television_archaeology_education_or_entertainment). Date accessed: 24 March 2014.
- Henson, D. (2009). What on earth is archaeology? In: Waterton, E., & Smith, L. (Eds.), *Taking Archaeology Out Of Heritage*, 117-135. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Henson, D. (2010). The academy and the public. In: Russell, I., & Koerner, S. (Eds.), *Unquiet Pasts: Risk Society, Lived Cultural Heritage, Re-Designing Reflexivity*, 209-222. Farnham: Ashgate Publishing Ltd.
- Henson, D., Stone, P. G., & Corbishley, M. (Eds.). (2004). *Education and the Historic Environment*. London: Routledge.
- Herbst, S. (2003). Political authority in a mediated age. *Theory and Society*, 32(4), 481-503.
- Heritage Gateway. (2014). *Homepage*. [Online] Retrieved from:  
<http://www.heritagegateway.org.uk/gateway/>. Date accessed: 19 March 2014.

- Heritage Journal, The. (2013). *Old Oswestry Hill Fort: A campaigner asks - "Why aren't EH entirely on the side of the public?"* [Online] 17 September 2013. Retrieved from: <http://heritageaction.wordpress.com/2013/09/17/old-oswestry-hill-fort-why-arent-eh-entirely-on-the-side-of-the-public/>. Date accessed: 19 September 2013.
- Heritage Lottery Fund. (2012). *Thinking About: Using Digital Technology in Heritage Projects*. [Online] Retrieved from: [http://www.hlf.org.uk/howtoapply/furtherresources/documents/Thinking\\_About\\_Good\\_Digital\\_Practice.pdf](http://www.hlf.org.uk/howtoapply/furtherresources/documents/Thinking_About_Good_Digital_Practice.pdf). Date accessed: 10 December 2012.
- Heritage Lottery Fund. (2013a). *Evaluation*. [Online] Retrieved from <http://www.hlf.org.uk/aboutus/howwework/pages/evaluation.aspx#.ursg9rqiucu>. Date accessed: 25 December 2013.
- Heritage Lottery Fund. (2013b). *Our Background*. [Online] Retrieved from: <http://www.hlf.org.uk/aboutus/pages/ourbackground.aspx#.urshklqiqu>. Date accessed: 25 December 2013.
- Heritage Lottery Fund. (2014). *What we fund*. [Online] Retrieved from: <http://www.hlf.org.uk/HowToApply/whatwefund/Pages/whatwefund.aspx#.UyifP87nT8c>. Date accessed: 18 March 2014.
- Hesse-Biber, S., & Leavy, P. (2008). *Handbook of Emergent Methods*. New York: Guilford Press.
- Hicks, D. (2013). Characterizing the World Archaeology Collections of the Pitt Rivers Museum. In: Hicks, D., & Stevenson, A. (Eds.) *World Archaeology at the Pitt Rivers Museum: A Characterization*, 1-15. Oxford: Archaeopress.
- Hine, C. (2000). *Virtual Ethnography*. London: Sage.
- Hine, C. (2005). *Virtual Methods: Issues in Social Research on the Internet*. Oxford: Berg.
- HM Treasury (2013). *Spending Round 2013*. [Online] Retrieved from: <https://www.gov.uk/government/topical-events/spending-round-2013>. Date accessed: 24 March 2014.
- Hochstotter, N., & Koch, M. (2009). Standard parameters for searching behaviour in search engines and their empirical evaluation. *Journal of Information Science*, 35(1), 45-65.
- Hodder, I. (1985). Postprocessual archaeology. In: Schiffer, M. (Ed.), *Advances In Archaeological Method and Theory*, 8, 1-26. New York: Academic Press.
- Hodder, I. (1992). *Theory and practice in archaeology*. London: Routledge.
- Hodder, I. (1999). *The Archaeological Process: An Introduction*. Oxford: Blackwell.

- Hodder, I. (Ed.). (2000). *Towards Reflexive Method in Archaeology: The Example of Catalhöyük*. Cambridge: McDonald Institute of Research and British Institute of Archaeology at Ankara.
- Hodder, I. (2002). Archaeological Theory. In: Cunliffe, B., Davies, W., & Renfrew, C. (Eds.), *Archaeology: The Widening Debate*, 77-90. Oxford: British Academy.
- Hodder, I. (2003). Archaeological reflexivity and the "local" voice. *Anthropological Quarterly*, 76(1), 55-69. Retrieved from: <http://www.jstor.org/stable/3318361>. Date accessed: 20 February 2014.
- Hodder, I. (2004). *Archaeology beyond Dialogue*. Salt Lake City: University of Utah Press.
- Hodder, I. (2008). Multivocality and Social Archaeology. In: Habu, J., Fawcett, C., & Matsunaga, M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 196-212. New York: Springer.
- Hofheinz, A. (2011). Nextopia? Beyond revolution 2.0. *International Journal of Communication*, 5, 1417-1434.
- Hogan, B., & Quann-Hasse, A. (2010). Persistence and change in social media. *Bulletin of Science, Technology and Society*, 30(5), 305-319.
- Hogg, A. (2003). Web efforts energize customer research. *Electric Perspectives*, 28(5), 81-83.
- Holbrook, N., & Morton, R. (2008). *Assessing the Research Potential of Grey Literature in the Study of Roman England*. [Online] Retrieved from: <http://ads.ahds.ac.uk/catalogue/collections/blurbs/811.cfm>. Date accessed: 18 November 2013.
- Holden, J. (2008). Learning at the heart of culture: Implications for the heritage sector. *Journal of Education in Museums*, 29, 13-19.
- Hole, B. (2012). A call for open scholarship in archaeology. In: Bonacchi, C., (Ed.), *Archaeologists and Digital Communication: Towards Strategies of Public Engagement*, 114-126. Archetype: London.
- Holliman, R., Thomas, J., Smidt, S., Scanlon, E., & Whitelegg, L. (Eds.). (2009a). *Practising Science Communication in the Information Age: Theorising Professional Practices*. Oxford: Oxford University Press.
- Holliman, R., Whitelegg, E., Scanlon, E., Smidt, S., & Thomas, J. (Eds.). (2009b). *Investigating Science Communication in the Information Age: Implications for Public Engagement and Popular Media*. Oxford: Oxford University Press.
- Hölscher, C., & Strube, G. (2000). Web search behavior of Internet experts and newbies. *Computer Networks*, 33(1-6), 337-346.

- Holtorf, C. J. (2001). 22 Is the past a non-renewable resource?. *Destruction and conservation of cultural property*, 286.
- Holtorf, C. (2005a). *From Stonehenge to Las Vegas. Archaeology as Popular Culture*. Walnut Creek: Altamira Press.
- Holtorf, C. (2005b). Beyond crusades. How (not) to engage with alternative archaeologies. *World Archaeology*, 37(4), 544-551.
- Holtorf, C. (2006). Experiencing archaeology in the dream society. In: Russell, I. (Ed.), *Images, Representations and Heritage*, 161-175. New York: Springer.
- Holtorf, C. (2007). *Archaeology is a Brand! The Meaning of Archaeology in Contemporary Popular Culture*. Oxford: Archaeopress.
- Holtorf, C., & Högberg, A. (2005). Talking people: From community to popular archaeologies. *Lund Archaeological Review* (11/12), 79-88.
- Hoonakker, P, & Carayon, P. (2009). Questionnaire survey nonresponse: A comparison of postal mail and Internet surveys. *International Journal of Human-Computer Interaction*, 25(5), 348-373.
- Horrigan, J. B. (2007). A Typology of Information and Communication Technology Users. *Pew Internet Report*. [Online] 6 May 2007. Retrieved from: <http://pewinternet.org/reports/2007/A-Typology-Of-Information-And-Communication-Technology-Users.aspx>. Date accessed: 2 January 2013.
- Howe, J. (2006a). The rise of crowdsourcing. *Wired*. Issue 14. [Online] June 2006. Retrieved from: [http://www.wired.com/wired/archive/14.06/crowds.html?pg=1&Topic=Crowds&Topic\\_Set=](http://www.wired.com/wired/archive/14.06/crowds.html?pg=1&Topic=Crowds&Topic_Set=). Date accessed: 5 August 2013.
- Howe, J. (2006b). *Crowdsourcing: A Definition*. [Online] 2 June 2006. Retrieved from: [http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing\\_a.html](http://crowdsourcing.typepad.com/cs/2006/06/crowdsourcing_a.html). Date accessed: 2 October 2013.
- Hsieh-Yee, I. (1993). Effects of search experience and subject knowledge on online search behaviour: Measuring the search tactics of novice and experienced searchers. *Journal of the American Society for Information Science*, 44(3), 161-174.
- Huber, M., Kowalski, S., Nohlberg, M., Tjoa, S. (2009). Towards Automating Social Engineering Using Social Networking Sites. In: *International Conference on Computational Science and Engineering 2009*, 117-124. Retrieved from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.165.9388&rep=rep1&type=pdf>. Date accessed: 30 March 2014.
- Hudson, D., Seah, L-H., Hite, D., & Haab, T. (2004). Telephone pre-surveys, self-selection, and non-response bias to mail and internet surveys in economic research. *Applied Economics Letters*, 11(4), 237-240.

Hudson, K. (1981). *A Social History of Archaeology: The British Experience*. London: Macmillan.

Hughes, D. J., Rowe, M., Batey, M., & Lee, A. (2012). A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior*, 28(2), 561-569.

Huvila, I. (2006). *The Ecology of Information Work - A Case Study of Bridging Archaeological Work and Virtual Reality Based Knowledge Organization*. Åbo, Finland: Åbo Akademi University Press. Retrieved from: <https://oa.doria.fi/bitstream/handle/10024/4153/tmp.objres.83.pdf?sequence=1>. Date accessed: 30 January 2014.

Huvila, I. (2008a). Information work analysis: An approach to research on information interactions and information behaviour in context. *Information Research*, 13(3), Paper 349. Retrieved from: <http://informationr.net/ir/13-3/paper349.html>. Date accessed: 30 January 2014.

Huvila, I. (2008b). The information condition: Information use by archaeologists in labour, work and action. *Information Research*, 13(4), Paper 369. Retrieved from: <http://informationr.net/ir/13-4/paper369.html>. Date accessed: 30 January 2014.

Ikegami, Y., Kawai, K., Namihira, Y., & Tsuruta, S. (2013). *Topic and Opinion Classification Based Information Credibility Analysis on Twitter*. In: *2013 IEEE International Conference on Systems, Man, and Cybernetics*, 4676-4681. Retrieved from: <http://ieeexplore.ieee.org/iel7/6689802/6721750/06722551.pdf?arnumber=6722551>. Date accessed: 5 February 2014.

Impartial Reporter, The. (2012). *Attwood imposes 'No-go zone' on Cherrymount Crannog*. [Online] 31 July 2012. Retrieved from: <http://www.impartialreporter.com/news/roundup/articles/2012/07/31/397524-attwood-imposes-nogo-zone-on-cherrymount-crannog/?mode=print>. Date accessed: 14 August 2013.

Insole, P., & Piccini, A. (2013). Your place or mine? Crowdsourced planning, moving image archives and community archaeology. *Archäologischen Informationen*. [Online] Retrieved from: [http://www.dguf.de/fileadmin/ai/archinf-ev\\_insole\\_piccini.pdf](http://www.dguf.de/fileadmin/ai/archinf-ev_insole_piccini.pdf). Date accessed: 16 October 2013.

Institute for Archaeologists. (2012a). *Standards and Guidance for Stewardship of the Historic Environment*. [Online] Retrieved from: [http://www.archaeologists.net/sites/default/files/node-files/ifa\\_standards\\_stewardship.pdf](http://www.archaeologists.net/sites/default/files/node-files/ifa_standards_stewardship.pdf). Date accessed: 29 November 2012.

Institute for Archaeologists. (2012b). *Crannog site at Drumclay, Co. Fermanagh*. [Online] Retrieved from: <http://www.archaeologists.net/news/120725-Crannog-Site-Drumclay-Co-Fermanagh>. Date accessed: 1 February 2014.



Institute for Archaeologists. (2013). *Standards and Guidance for the Creation, Compilation, Transfer and Deposition of Archaeological Archives*. [Online] Retrieved from: <http://www.archaeologists.net/sites/default/files/node-files/Archives2009.pdf>. Date accessed: 25 December 2013.

Institute for Archaeologists. (2014a). *Code of Conduct*. [Online] Retrieved from: <http://www.archaeologists.net/sites/default/files/node-files/code-of-conduct-revoct2013.pdf>. Date accessed: 10 January 2014.

Institute for Archaeologists (2014b) *Voluntary and Community Archaeology Group*. [Online] Retrieved from: <http://www.archaeologists.net/groups/voluntary>. Date accessed: 18 March 2014.

Institute for Archaeologists. (2014c). *Individual Membership*. [Online] Retrieved from: <http://www.archaeologists.net/join/individual>. Date accessed: 18 October 2011.

Institute for Archaeologists eBulletin. (2014). *Membership services update*. Institute for Archaeologists. 28 March 2014.

Institute of Archaeologists of Ireland. (2012). *Drumclay Crannog, Ministerial Response*. [Online]. Retrieved from: <http://www.iai.ie/index.php/news-a-events/iai-news/89-drumclay-crannog-ministerial-response.html>. Date accessed: 1 February 2014.

Institute of Historic Building Conservation. (2013). *A Fifth Report on Local Authority Staff Resources*. [Online] 7 September 2013. Retrieved from: <http://ihbconline.co.uk/newsarchive/?p=6410>. Date accessed: 17 September 2013.

Institute of Volunteering Research. (2005). *Volunteering in Museums, Libraries and Archives: Key Findings and Issues in the Literature*. [Online] July 2005. Retrieved from: <http://www.ivr.org.uk/component/ivv/volunteers-in-museums-key-findings-and-issues-from-the-literature>. Date accessed: 5 December 2012.

Institute of Volunteering Research. (2006). *Unlocking the Potential? Reviewing the Wildlife Trusts' Project to Strengthen Volunteering*. [Online] January 2006. Retrieved from: [http://www.ivr.org.uk/images/stories/institute-of-volunteering-research/migrated-resources/documents/w/wildlife\\_trust.pdf](http://www.ivr.org.uk/images/stories/institute-of-volunteering-research/migrated-resources/documents/w/wildlife_trust.pdf). Date accessed: 3 October 2013.

International Federation of Library Associations and Institutions. (2005). *The Alexandria Proclamation on Information Literacy and Lifelong Learning*. The Hague, Netherlands: IFLA. Retrieved from: <http://archive.ifla.org/iii/wsis/beaconinfosoc.html>. Date accessed: 30 January 2014.

Introna, L. D., & Nissenbaum, H. (2000). Shaping the Web: Why the politics of search matters. *The Information Society*, 16(3), 169-185.

- Irish Times. (2013). *Hoard of artefacts from Enniskillen Crannóg go on display*. [Online] 6 June 2013. Retrieved from: <http://www.irishtimes.com/news/science/hoard-of-artefacts-from-enniskillen-crann%3fb3g-go-on-display-1.1419257>. Date accessed: 12 August 2013.
- Irwin, A. (1995). *Citizen Science: A Study of People, Expertise, and Sustainable Development*. London: Routledge.
- Irwin, A. (2014). From deficit to democracy (re-visited). *Public Understanding of Science*, 23(1), 71-76.
- Irwin, A., & Wynne, B. (Eds.). (1996). *Misunderstanding Science? The Public Reconstruction of Science and Technology*. Cambridge: Cambridge University Press.
- ISGAP. (2014). *Deposition & Archiving (Including Data Standards Advice)*. Introduction to Standards and Guidance in Archaeological Practice [Online]. Retrieved from: <http://www.isgap.org.uk/docs/3>. Date accessed: 18 March 2014.
- Isherwood, R. (2009). *Community Archaeology. A Study of the Conceptual, Political and Practical Issues Surrounding Community Archaeology in the United Kingdom Today*. Unpublished Ph.D. Thesis: University Of Manchester.
- Isherwood, R. (2012). Community Archaeology: Conceptual and Political Issues. In: Moshenska, G., & Dhanjal, S. (Eds.), *Community Archaeology: Themes, Methods and Practices*, 6-17. Oxford: Oxbow.
- Ito, M. (2006). Japanese media mixes and amateur cultural exchange. In: Buckingham, D., & Willet, R. (Eds.), *Digital Generations: Children, Young People and New Media*, 49-66. London: Routledge.
- Ivanovic, R. Contact@Archaeologica.Org.Mk. Day Of Archaeology. [Email] Message To Day Of Archaeology (Dayofarchaeology@Gmail.Com) Sent Sunday 2 June 2013: 09.51.
- Jackson, J. A. (Ed.). (1970). *Professions and Professionalization*. Cambridge: Cambridge University Press.
- Jacobs, M., & Bosanac, S. E. (2006). *The Professionalization of Work*. Whitby, ON: De Sitter Publications.
- Jacobs, N., & McFarlane, A. (2005). Conferences as learning communities: some early lessons in using 'back-channel' technologies at an academic conference - Distributed intelligence or divided attention? *Journal of Computer Assisted Learning*, 21(5), 317-329.
- Jameson, J. H. (Ed.). (1997). *Presenting Archaeology to the Public. Digging for Truths*. Walnut Creek: Altamira Press.
- Jameson, J. H. (2004). Public archaeology in the United States. In: Merriman, N. (Ed.), *Public Archaeology*, 21-58. London: Routledge.

- Jansen, B., & Spink, A. (2006). How are we searching the World Wide Web? A comparison of nine search engine transaction logs. *Information Processing and Management*, 52(1), 248-263.
- Java, A., Finin, T., Song, X., & Tseng, B. (2007). Why we Twitter: Understanding microblogging usage and communities. [Online] *Proceedings of the Joint 9th Webkdd and 1st Sna-Kdd Workshop on Web Mining and Social Network Analysis*. Retrieved from: [http://delivery.acm.org.libproxy.ucl.ac.uk/10.1145/1350000/1348556/p56java.pdf?ip=144.82.100.71&cfid=29982599&cftoken=95239828&\\_\\_acm\\_\\_=1309623790\\_ab70b6b6bfc0e72a368ec2fd94d0b3c3a](http://delivery.acm.org.libproxy.ucl.ac.uk/10.1145/1350000/1348556/p56java.pdf?ip=144.82.100.71&cfid=29982599&cftoken=95239828&__acm__=1309623790_ab70b6b6bfc0e72a368ec2fd94d0b3c3a). Date accessed: 13 April 2011.
- Jeffrey, S. (2012). A new digital dark age? Collaborative Web tools, social media and long-term preservation. *World Archaeology*, 44(4), 553-570.
- Jenkins, C., Corritore, C., & Wiedenbeck, S. (2003). Patterns of information seeking on the Web: A qualitative study of domain expertise and Web expertise. *IT & Society*, 1(3), 64-89.
- Jenkins, H. (1991). *Textual Poachers. Television Fans and Participatory Culture*. London: Routledge.
- Jensen, B. (2010). 'Let's not go to the dogs tonight': Rhetoric as a strategy of accountability in archaeological outreach. In: Russell, I., & Koerner, S. (Eds.), *Unquiet Pasts: Risk Society, Lived Cultural Heritage, Re-Designing Reflexivity*, 173-184. Farnham: Ashgate Publishing Ltd.
- Jensen, D. G. (2006). *Comparison of Online Communities: MySpace, Facebook, LiveJournal, MyCyberSpace and Xanga*. Denver: Associated Content.
- Jensen, M. J., Danziger, J. N., & Venkatesh, A. (2007). Civil Society and Cyber Society: The role of the Internet in community associations and democratic politics. *The Information Society: An International Journal*, 23(1), 39-50.
- Johnson, M. (1999). *Archaeological Theory: An Introduction*. Oxford: Blackwell.
- Johnson, M. (2008). Making a Home: Archaeologies of the Medieval English Village. In: Habu, J., Fawcett, C., & Matsunaga, J.M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 45-55. New York: Springer.
- Johnson, P., & Thomas, B. (1995). Heritage as Business. In: Herbert, D. T., (Ed.), *Heritage Tourism and Society*, 170-190. London: Mansall.
- Jones, B. (1984). *Past Imperfect: The Story of Rescue Archaeology*. Heinemann, London.
- Jones, S. (2013). Dialogues between Past, Present and Future: Reflections on Engaging the Recent Past. In: Dalglish, C. (Ed.) *Archaeology, the Public and the Recent Past*, 163-176. Woodbridge, Suffolk: Boydell Press.

- Jordan, P. (1981). Archaeology and Television. In: Evans, J.D., Cunliffe, B., & Renfrew, C. (Eds.), *Antiquity and Man. Essays in Honour of Glyn Daniel*, 207-213. London: Thames & Hudson.
- Journal of Community Archaeology & Heritage. (2014). *About this journal*. [Online]. Retrieved from: <http://www.maneyonline.com/loi/cah>. Date accessed: 18 March 2014.
- Joyce, A. (2011). "Gay cavemen": Wrecking a perfectly good story.' *Ancient Bodies, Ancient Lives*. [Online] 7 April 7 2011. Retrieved from: <http://ancientbodies.wordpress.com/2011/04/07/Gay-Caveman-Wrecking-A-Perfectly-Good-Story/>. Date accessed: 6 June 2011.
- Joyce, R. A., & Tringham, R. E. (2007). Feminist adventures in hypertext. *Journal of Archaeological Method and Theory*, 14(3), 328-358.
- Juel, H. (2012). Social media and the dialectic of enlightenment. *Triplec: Open Access Journal for a Global Sustainable Information Society*, 10(2), 765-770. Retrieved from: <http://www.triplec.at/index.php/triplec/article/view/451>. Date accessed: 7 January 2012.
- Kaminsky, R. (2009). Iran's Twitter revolution. *Human Events*. [Online] 18 June 2009. Retrieved from: <http://www.humanevents.com/2009/06/18/Trans-Twitter-Revolution/>. Date accessed: 3 December 2012.
- Kang, B., O'Donovan, J., & Höllerer, T. (2012). Modelling topic specific credibility in Twitter. In: *IUI '12: Proceedings of The 2012 ACM International Conference On Intelligent User Interfaces*, 179-188. [Online] Retrieved from: <http://www.cs.ucsb.edu/~holl/pubs/Kang-2012-IUI.pdf>. Date accessed: 4 February 2014.
- Kansa, E. C., Kansa, S. W., & Watrall, E. (2011). *Archaeology 2.0: New Approaches to Communication and Collaboration*. Los Angeles, CA: Cotsen Institute of Archaeology Press. [Online] Retrieved from: <http://escholarship.org/uc/item/1r6137tb>. Date accessed: 29 April 2012.
- Katz, E., & Lazafield, P. (1955). *Personal Influence*. New York: The Free Press.
- Kavanaugh, A., Reese, D. D., Carroll, J. M., & Rosson, M. B. (2005). Weak ties in networked communities. *The Information Society*, 21(2), 119-131.
- Kean, H., & Martin, P. (Eds). (2013). *A Public History Reader*. London: Routledge.
- Keen, A. (2007). *The Cult of the Amateur: How Blogs, MySpace, YouTube, and the Rest of Today's User-Generated Media are destroying our Economy, our Culture, and our Values*. New York: Doubleday.
- Kehoe, A. B., Emmerichs, M. B., & Bendiner, A. (2000). *Assembling the Past: Studies in the Professionalization of Archaeology*. Albuquerque: University Of New Mexico Press.

- Kemp, S. (2014). Social, Digital and Mobile Worldwide in 2014. *We Are Social*. [Online] 9 January 2014. Retrieved from: <http://wearesocial.net/blog/2014/01/social-digital-mobile-worldwide-2014/>. Date accessed: 18 March 2014.
- Kempe, D., Kleinberg, J., & Tardos, E. (2003). Maximizing the spread of influence through a social network. In: *Proceedings of the 9th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*. [Online] Retrieved from: <http://www.cs.cornell.edu/home/kleinber/kdd03-inf.pdf>. Date accessed: 2 October 2013.
- Kenny, J. (2009). Unpicking archaeology and heritage. In: Waterton, E., & Smith, L. (Eds.), *Taking Archaeology out of Heritage*, 209-229. Newcastle upon Tyne: Cambridge Scholars Publishing.
- Kidd, J. (2010). Enacting engagement online: Framing social media use for the museum. *Information Technology & People*, 24(1), 64-77.
- Killgrove, K. (2011). 'Gay caveman! ZOMFG!'. *Powered By Osteons*. [Online] 6 April 2011. Retrieved from: <http://www.poweredbyosteons.org/2011/04/gay-caveman-zomfg.html>. Date accessed: 6 June 2011.
- Killoran, J. B. (2013). How to Use Search Engine Optimization Techniques to Increase Website Visibility. *IEEE Transactions on Professional Communication*, 56(1), 50-66.
- King, S. (1996). Researching Internet communities: Proposed ethical guidelines for the reporting of results. *The Information Society*, 12, 119-128.
- King, S., McMenemy, D., & Poulter, A. (2006). Effectiveness of ICT training for public library staff in the UK: Staff views. *The Electronic Library*, 24(2), 265-276.
- Kiousis, S. (2001). Public trust or mistrust? Perceptions of media credibility in the Information Age. *Mass Communication & Society*, 4(4), 381-403.
- Kleinberg, J. M. (1999). Authoritative sources in a hyperlinked environment. *Journal of the Association for Computing Machinery*, 46(5), 604-632. Retrieved from: <http://doi.acm.org/10.1145/324133.324140>. Date accessed: 27 January 2014.
- Kling, R., & Courtright, C. (2003). Group behaviour and learning in electronic forums: A sociotechnical approach. *The Information Society*, 19(3), 221-235.
- Kojan, D. (2008). Paths of power and politics: Historical narratives at the Bolivian site of Tiwanaku. In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 69-85. New York: Springer.
- Kommers, P. (2006). Editorial: From isolated islands towards interlinked communities. *International Journal of Web-Based Communities*, 2(2) 131-132.

- König, R. (2012). Wikipedia. *Information, Communication & Society*, 16(2), 160-177.
- Korda, H., & Itani, Z. (2013). Harnessing social media for health promotion and behavior change. *Health Promotion Practice*, 14(1), 15-23.
- Koski, J. (2001). Reflections on information glut and other issues in knowledge productivity. *Futures*, 33, 483-495.
- Kozinets, R. V. (1998). On netnography: Initial reflections on consumer research investigations of cyberculture. In: Alba, J. W. & Hutchinson, J. W. (Eds.), *NA - Advances In Consumer Research Volume 25*, 366-371. Provo, UT: Association for Consumer Research.
- Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research*, 39, 61-72.
- Kozinets, R. V. (2010). *Netnography: Doing Ethnographic Research Online*. London: Sage.
- Kreuter, F., Couper, M., & Lyberg, L. (2010). The use of paradata to monitor and manage survey data collection. *Proceedings of the Joint Statistical Meetings 2010, Section on Survey Research Methods*, 282-296. Alexandria, VA: American Statistical Association. Retrieved from: [https://www.amstat.org/sections/srms/Proceedings/y2010/Files/306107\\_55863.pdf](https://www.amstat.org/sections/srms/Proceedings/y2010/Files/306107_55863.pdf). Date accessed: 25 January 2014.
- Krotoski, A. (2010). Introduction to the special issue: Research ethics in online communities. *International Journal of Internet Research Ethics*, 3(1), 1-5.
- Kulik, K. (2006). Archaeology and British Television. *Public Archaeology*, 5(2), 75-90.
- Kumar, A., Gupta, S. K., Rai, A. K., & Sinha, S. (2013). Social Networking Sites and Their Security Issues. *International Journal of Scientific and Research Publications*, 3(4), 1-5. [Online] Retrieved from: <http://www.ijsrp.org/research-paper-0413.php?rp=P161039#citation>. Date accessed: 4 April 2014.
- Kumar, K. (2003). *The Making of English National Identity*. Cambridge: Cambridge University Press.
- Lake, M. (2012). Open archaeology. *World Archaeology*, 44(4), 471-478.
- Landman, M. P., Shelton, J., Kauffmann, R. M., & Dattilo, J. B. (2010). Guidelines for maintaining a professional compass in the era of social networking. *Journal of Surgical Education*, 67(6), 381-386.
- Lanham, R.A. (1995). Digital literacy. *Scientific American*, 273(3), 198-200.

- Lanier, J. (2006). Digital Maoism: The hazards of the new online collectivism. *An Edge Original Essay. Edge: The Third Culture*. [Online] 30 May 2006. Retrieved from: <http://www.edge.org/digital-maoism-the-hazards-of-the-new-online-collectivism>. Date accessed: 3 December 2012.
- Lanier, J. (2010). *You are Not a Gadget: A Manifesto*. New York: Alfred A. Knopf.
- Larsen, L., Harlan, S., Bolin, B., Hackett, E. J., Hope, D., Kirby, A., Nelson, A., Rex, T. R., & Wolf, S. (2004). Bonding and bridging: Understanding the relationship between social capital and civic action. *Journal of Planning Education and Research*, 24(1), 64-77.
- Leadbeater, C., & Miller, P. (2004). *The Pro-Am Revolution: How Enthusiasts are changing our Economy and Society*. London: Demos. [Online] Retrieved from: [www.demos.co.uk/files/proamrevolutionfinal.pdf?1240939425](http://www.demos.co.uk/files/proamrevolutionfinal.pdf?1240939425). Date accessed: 15 October 2013.
- Leary, M. R., & Kowalski, R. M. (1990). Impression Management: A Literature Review and Two-Component Model. *Psychological Bulletin*, 107(1), 34-47.
- Lee, T. T., & Wei, L. (2008). How newspaper readership affects political participation. *Newspaper Research Journal*, 29, 8-23.
- Leetaru, K., Wang, S., Cao, G., Padmanabhan, A., & Shook, E. (2013). Mapping the global Twitter heartbeat: The geography of Twitter. *First Monday*, 18(5). [Online] Retrieved from: <http://firstmonday.org/article/view/4366/3654>. Date accessed: 1 February 2014.
- Leone, M. P., Potter Jr., P. B., & Shackel, P. A. (1987). Toward A Critical Archaeology. *Current Anthropology*, 28, 283-292.
- Levene, M. (2011). *An introduction to search engines and web navigation*. Hoboken, NJ: John Wiley & Sons.
- Lewandowski, D. (2008a). Problems with the use of Web search engines to find results in foreign languages. *Online Information Review*, 32(5), 668-672.
- Lewandowski, D. (2008b). Search engine user behaviour: How can users be guided to quality content? *Information Services and Use*, 28(3), 261-268.
- Lewandowski, D., & Mayr, P. (2007). Exploring the academic invisible Web. *Library Hi Tech*, 24(4), 529-539.
- Liddle, P. (1989). Community archaeology in Leicestershire museums. In: Southworth, E. (Ed.), *Public Service or Private Indulgence? The Museum Archaeologist*, 13, 44-46. Liverpool: Society of Museum Archaeologists.
- Lievrouw, L. A. (2004). What's changed about new media? Introduction to the fifth anniversary issue of *New Media & Society*. *New Media & Society*, 6(1), 9-15.
- Lievrouw, L. A. (2010). Social media and the production of knowledge: A return to little science? *Social Epistemology*, 24(3), 219-237.

- Lievrouw, L.A. (2012). The next decade in Internet time. *Information, Communication & Society*, 15(5), 616-638.
- Lievrouw, L. A., & Livingstone, S. (2002). Editorial introduction. In: Lievrouw, L. A., & Livingstone, S. (Eds.), *Handbook of New Media: Social Shaping and Social Consequences of ICT*, 1-15. London: Sage.
- Lin, W., & Van Ryzin, G. G. (2012). Web and mail surveys: An experimental comparison of methods for nonprofit research. *Nonprofit and Voluntary Sector Quarterly*, 41(6), 1014-1028.
- Lincolnshire County Council. (2012). *Archaeology Handbook*. [Online] June 2012. Retrieved from: <http://www.lincolnshire.gov.uk/residents/environment-and-planning/conservation/archaeology/lincolnshire-archaeological-handbook/>. Date accessed: 3 October 2013.
- Lingard, L., Albert, M., & Levinson, W. (2008). Qualitative research: Grounded theory, mixed methods, and action research. *British Medical Journal*, 337(7667), 459-461.
- Little, B. J., & Shackel, P. A. (Eds.). (2007). *Archaeology as a Tool of Civic Engagement*. Lanham, MD: Altamira Press.
- Liu, P., Tang, J., & Wang, T. (2013). Information current in Twitter: Which brings hot events to the world. In: *WWW 2013: Proceedings of the 22nd International Conference on World Wide Web Companion*, 111-112. Retrieved from: <http://dl.acm.org/citation.cfm?id=2487839>. Date accessed: 28 March 2014.
- Local Government Association. (2013). *Government Deepens Impact of Cuts on Local Services*. [Online] 7 August 2013. Retrieved from: [http://www.local.gov.uk/Media-Releases/-/Journal\\_Content/56/10180/4094313/News#Sthash.Jo11ixzz.Dpuf](http://www.local.gov.uk/Media-Releases/-/Journal_Content/56/10180/4094313/News#Sthash.Jo11ixzz.Dpuf). Date accessed: 1 February 2014.
- Local History Online. (2014). Directory of Local History and Allied Societies. [Online]. Retrieved from: <http://www.local-history.co.uk/Groups>. Date accessed: 19 March 2014.
- Lock, G. (2003). *Using Computers in Archaeology: Towards Virtual Pasts*. London: Routledge.
- Lock, G. (2008). A Professional Mockery. *British Archaeology*, 101, 36-37.
- Loury, G. C. (1977). A dynamic theory of racial income differences. In: Wallace, P. A., & La Mond, A. M. (Eds.), *Women, Minorities and Employment Discrimination*, 153-186. Lexington, MA: Heath.
- Loury, G. C. (1981). Intergenerational transfers and the distribution of earnings. *Econometrica*, 49(4), 843-867.



- Lovejoy, K., & Saxton, G. D. (2012). Information, community, and action: How non-profit organizations use social media. *Journal of Computer-Mediated Communication*, 17(3), 337-353.
- Lovnik, G. (2011). *Networks without a Cause: A Critique of Social Media*. Cambridge: Polity Press.
- Lucassen, T., Muilwijk, R., Noordzij, M. L., & Schraagen, J. M. (2013). Topic Familiarity and information skills in online credibility evaluation. *Journal of the American Society for Information Science and Technology*, 64(2), 254-264.
- Lucassen, T., & Schraagen, J. M. (2011). Factual accuracy and trust in information: The role of expertise. *Journal of the American Society for Information Science and Technology*, 62(7), 1232-1242.
- MacArthur, M. (2011). Get real! The role of objects in the Digital Age. In: Adair, B., Filene, B., & Colossi, L. (Eds.), *Letting Go? Sharing Historical Authority in a User-Generated World*, 56-67. Walnut Creek: Left Coast Press.
- Macdonald, K. M. (1995). *The Sociology of the Professions*. London: Sage.
- Macdonald, S. (2002). *Behind the Scenes at the Science Museum*. Oxford: Berg.
- Madhavan, J., Halevy, A. Y., Cohen, S., Dong, X. L., Jeffery, S. R., Ko, D., & Yu, C. (2006). Structured Data Meets the Web: A Few Observations. *IEEE Data Engineering Bulletin*, 29(4), 19-26.
- Madhavan, J., Ko, D., Kot, L., Ganapathy, V., Rasmussen, A., & Halevy, A. (2008). Google's deep web crawl. *Proceedings of the VLDB Endowment*, 1(2), 1241-1252.
- Mainka, A., Hartmann, S., Stock, W. G., & Peters, I. (2014). Government and Social Media: A Case Study of 31 Informational World Cities. In: *Proceedings of the 47th Hawaii International Conference on System Sciences*, 1715-1724. Retrieved from: <http://arxiv.org/abs/1401.4533>. Date accessed: 30 March 2014.
- Manski, C. F. (1993). Identification of endogenous social effects: The reflection problem. *The Review of Economic Studies*, 60(3), 531-542.
- Maney Publishing. (2014). *Subscriptions and access information*. [Online] Retrieved from: <http://www.maneyonline.com/pricing/pua>. Date accessed: 18 March 2014.
- Marsden, P., & Lin, N. (Eds.). (1982). *Social Structure and Network Analysis*. Beverly Hills, CA: Sage.
- Marsden, S. (2013). Internet troll who abused Mary Beard apologises after threat to tell his mother. *The Daily Telegraph*. [Online]. 29 July 2013. Retrieved from: <http://www.telegraph.co.uk/news/uknews/law-and-order/10209643/Internet-troll-who-abused-Mary-Beard-apologises-after-threat-to-tell-his-mother.html>. Date accessed: 18 March 2014.

- Marshall, Y. (2002). What is community archaeology? *World Archaeology*, 34(2), 211-219.
- Marwick, A. E., & Boyd, D. (2010). I tweet honesty, I tweet passionately: Twitter users, context collapse, and the imagined audience. *New Media & Society*, 13(1), 114-133.
- Marwick, B. (2013). *A distant reading of the Day of Archaeology*. [Online] Retrieved from: <https://github.com/benmarwick/dayofarchaeology>. Date accessed: 10 December 2013.
- Marwick, B. (2013). Discovery of emergent issues and controversies in anthropology using text mining, topic modelling, and social network analysis of microblog content. In: Zhao Y., & Cen Y. (Eds.), *Data Mining Applications with R*. Philadelphia, PA: Academic Press, Elsevier.
- Marwick, B. Bmarwick@uw.edu (2014). Doa in Undergrad Assignments [Email]. Message to Lorna Richardson (L.Richardson@ucl.ac.uk). Sent Thursday 9th January 2014: 19:42.
- Mass Observation. (2013). *A Brief History*. [Online] Retrieved from: [http://www.massobs.org.uk/menu\\_about\\_mass\\_observation.htm](http://www.massobs.org.uk/menu_about_mass_observation.htm). Date accessed: 9 October 2013.
- Matless, D. (1998). *Landscape and Englishness*. London: Reaktion.
- Matsuda, A. (2004). The concept of 'The public' and the aims of public archaeology. *Papers from the Institute of Archaeology*, 15, 90-97. Retrieved from: <http://dx.doi.org/10.5334/pia.224>. Date accessed: 8 February 2014.
- Matsuda, A., & Okamura, K. (2011). Introduction: New perspectives in global public archaeology. In: Matsuda, A., & Okamura, K. (Eds.), *New Perspectives in Global Public Archaeology*, 1-18. London: Springer.
- Matthews, C. N. (2009). Is archaeology political? Transformative praxis within and against the boundaries of archaeology. *The Public Historian*, 31(2), 79-90.
- Maxwell, J. A. (2005). *Qualitative Research Design: An Interactive Approach* (2nd Ed.). Thousand Oaks, CA: Sage.
- Maykut, P., & Morehouse, R. (1994). *Beginning Qualitative Research: A Philosophic and Practical Guide*. London: Farmer Press.
- Mazali, T. (2011). Social media as a new public sphere. *Leonardo*, 44(3), 290-291.
- McDavid, C. (1997). *Archaeology as Cultural Critique: A Pragmatic Framework for Community Collaboration in the Public Interpretation of the Archaeology of a Southern Plantation*. Paper read at Annual Meetings of the American Anthropology Association, at Washington, D.C.

- McDavid, C. (1998). *Levi Jordan Plantation*. [Online] Retrieved from: <http://www.webarchaeology.com/html/Default.htm>. Date accessed: 19 November 2012.
- McDavid, C. (2004). Towards a more democratic archaeology? The Internet and public archaeological practice. In: Merriman, N. (Ed.), *Public Archaeology*, 159-187. London: Routledge.
- McDavid, C., & McGhee, F. (2010). Commentary: Cultural Resource Management, public archaeology, and advocacy. In: Lydon, J., & Rizvi, U. Z. (Eds.), *Handbook of Postcolonial Archaeology*, 481-494. Walnut Creek: Left Coast Press.
- McGimsey, C. R. (1972). *Public Archeology*. New York: Seminar Press.
- McGuire, R. (2008). *Archaeology as Political Action*. Berkeley: University Of California Press.
- McKee, H., & Porter, J. (2009). *The Ethics of Internet Research: A Rhetorical, Case-Based Process*. New York: Peter Lang.
- McKnight, H., & Kacmar, C. (2006). Factors of information credibility for an Internet advice site. In: *Proceedings of the 39th Annual Hawaii International Conference on System Sciences*, 6, 113b. Retrieved from: [http://ieeexplore.ieee.org/xpls/abs\\_all.jsp?arnumber=1579516&tag=1](http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=1579516&tag=1). Date accessed: 24 March 2014.
- McManamon, F. P. (2000). The protection of archaeological resources in the United States: Reconciling preservation with contemporary society. In: Hatton, A., & McManamon, F. P. (Eds.), *Cultural Resource Management in Contemporary Society: Perspectives on Managing and Preserving the Past*, 40-54. London: Routledge.
- McNamara, P. (2013). Twitter's 'Crippling' API Changes Kill Twit Cleaner; Users in 'Grief'. Buzzblog. *Network World*. [Online] 13 March 2013. Retrieved from: [www.networkworld.com/community/blog/twitter-s-crippling-api-changes-kill-twit-cleaner-user](http://www.networkworld.com/community/blog/twitter-s-crippling-api-changes-kill-twit-cleaner-user). Date accessed: 5 January 2014.
- McPherson, M., Smith-Lovin, L., & Cook, J. M. (2001). Birds of a feather: Homophily in social networks. *Annual Review of Sociology*, 27(1), 415-444.
- Merrifield, A. (2011). Crowd politics or, 'Here comes everybuddy'. *New Left Review*, 71, 103-114.
- Merriman, N. (2000). The crisis of representation in archaeological museums. In Hatton, A., & McManamon, A. P. (Eds.), *Cultural Resource Management in Contemporary Society*, 300-309. London: Routledge.
- Merriman, N. (2002). Archaeology, heritage and interpretation. In: Cunliffe, B., Davies, W., & Renfrew, C. (Eds.), *Archaeology: The Widening Debate*, 541-566. Oxford: Oxford University Press.

- Merriman, N. (2004). Introduction: Diversity and dissonance in public archaeology. In: Merriman, N. (Ed.), *Public Archaeology*, 1-17. London: Routledge.
- Merriman, N., & Swain, H. (1999). Archaeological archives: Serving the public interest? *European Journal of Archaeology*, 2(2), 249-267.
- Metzger, M. J. (2007). Making sense of credibility on the Web: Models for evaluating online information and recommendations for future research. *Journal of the American Society for Information Science and Technology*, 58(13), 2078-2091.
- Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of Communication*, 60(3), 413-439.
- Metzger, M. J., Flanagin, A. J., & Zwarun, L. (2003). College student Web use, perceptions of information credibility, and verification behaviour. *Computers & Education*, 41(3), 271-290. Retrieved from: [http://dx.doi.org/10.1016/S0360-1315\(03\)00049-6](http://dx.doi.org/10.1016/S0360-1315(03)00049-6). Date accessed: 5 February 2014.
- Miles, D. (2005). *The Tribes of Britain. Who Are We and Where Do We Come From?* London: Phoenix.
- Miller, C., & Bartlett, J. (2012). 'Digital fluency': Towards young people's critical use of the Internet. *Journal of Information Literacy*, 6(2), 35-55. Retrieved from: <http://ojs.lboro.ac.uk/ojs/index.php/JIL/article/view/PRA-V6-I2-2012-3>. Date accessed: 3 March 2014.
- Miller, G. (2011). Social Scientists Wade Into the Tweet Stream. *Science*, 333(6051), 1814-1815. Retrieved from: DOI: 10.1126/science.333.6051.1814. Date accessed: 27 March 2014.
- Miller, N. (2012). Who has the right to a Twitter account and its followers? *Journal of Intellectual Property Law & Practice*. 7(1), 39-43.
- Missikoff, O. (2006). Assessing the role of digital technologies for the development of cultural resources as socio-economic assets. In: Russell, I. (Ed.), *Images, Representations and Heritage: Moving beyond Modern Approaches to Archaeology*, 139-159. New York: Springer.
- Miller-Rushing, A, Primack, R., & Bonney, R. (2012). The history of public participation in ecological research. *Frontiers in Ecology and the Environment*. 10(6), 285-290.
- Mocanu, D., Baronchelli, A., Perra, N., Gonçalves, B., Zhang Q., & Vespignani, A. (2013). The Twitter of Babel: Mapping world languages through microblogging platforms. *PLoS ONE*. 8(4): E61981. Retrieved from DOI: 10.1371/journal.pone.0061981. Date accessed: 2 February 2014.

- Moretti, F. (2005). *Graphs, Maps, Trees: Abstract Models for a Literary History*. London: Verso.
- Moretti, F. (2013). *Distant Reading*. London: Verso.
- Morgan, C., & Eve S. (2012). DIY and digital archaeology: What are you doing to participate? *World Archaeology*, 44(4), 521-537.
- Morozov, E. (2011). *The Net Delusion: The Dark Side of Internet Freedom*. New York: Public Affairs Books.
- Morris, M., Counts, S., Roseway, A., Hoff, A., & Schwarz, J. (2012). Tweeting is believing? Understanding microblog credibility perceptions. *CSCW '12: Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work*, 441-450. New York: ACM
- Morris, M. R., Teevan, J., & Panovich, K. (2010). A comparison of information seeking using search engines and social networks. In: *Proceedings of the fourth International Conference on Weblogs and Social Media (ICWSM-10)*, 23-26. Retrieved from: [http://www.docunator.com/bigdata/2/1367071011\\_6edeb409cc/icwsm10.pdf](http://www.docunator.com/bigdata/2/1367071011_6edeb409cc/icwsm10.pdf). Date accessed: 28 March 2014.
- Moser, S., Glazier, D., Philips, J. E., El Nemr, L. N., Mousa, M. S., Aiesh, R. N., Richardson, S., Conner, A. & Seymour, M. (2002). Transforming archaeology through practice: Strategies for collaborative archaeology and the community archaeology project at Quseir, Egypt. *World Archaeology*, 34(2), 265-287.
- Moshenska, G. (2006). The archaeological uncanny. *Public Archaeology*, 5(2), 91-99.
- Moshenska, G. (2008). Community archaeology from below: A response to Tully. *Public Archaeology*, 7(1), 52-53.
- Moshenska, G. (2009). Beyond the viewing platform: Excavations and audiences. *Archaeological Review from Cambridge*, 24(1), 39-53.
- Moshenska, G. (2010). What is public archaeology? *Present Pasts*, 1(1), 46-48.
- Moshenska, G. (2013). The archaeological gaze. In: González-Ruibal, A (Ed.), *Reclaiming Archaeology: Beyond the Tropes of Modernity*, 211-219. London: Routledge.
- Moshenska, G., & Dhanjal, S. (2012). Introduction: Thinking about, talking about, and doing community archaeology. In: Moshenska, G., & Dhanjal, S. (Eds.), *Community Archaeology: Themes, Methods and Practices*, 1-5. Oxford: Oxbow.
- Moshenska, G., Dhanjal, S., & Cooper, D. (2011). Building sustainability in community archaeology: The Hendon School archaeology project. *Archaeology International*, 13, 94-100.

- Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2008). *Digital Citizenship: The Internet, Society, and Participation*. Cambridge, MA: MIT Press.
- Mossberger, K., Tolbert, C. J., & Stansbury, M. (2003). *Virtual Inequality: Beyond the Digital Divide*. Washington, DC: Georgetown University Press.
- Mostaghimi, A., & Crotty, B. H. (2011). Professionalism in the digital age. *Annals of Internal Medicine*, 154(8), 560-562.
- Moreno, L. & Martinez, P. (2013). Overlapping factors in search engine optimization and web accessibility. *Online Information Review*, 37(4), 564-580.
- Moyle, M. (2011). Manuscript transcription by crowdsourcing: Transcribe Bentham. *Liber Quarterly*, 20(3-4), 347-356.
- Museums Association. (2013). *For Me*. [Online]. Retrieved from: <http://www.museumsassociation.org/join/for-me>. Date accessed: 18 October 2013.
- Mustonen-Ollila, E., & Lyytinen, K. (2003). Why organizations adopt information system process innovations: a longitudinal study using Diffusion of Innovation theory. *Information Systems Journal*, 13(3), 275-297.
- Nakamura, L., & Chow-White, P. A. (Eds.). (2011). *Race after the Internet*. Abingdon, Oxon: Routledge.
- Narayan, D. & Cassidy, M. F. (2001). A Dimensional Approach to Measuring Social Capital: Development and Validation of a Social Capital Inventory. *Current Sociology*. 49(2), 59-102.
- National Co-ordinating Centre for Public Engagement. (2014). *What is Public Engagement?* [Online] Retrieved from: <https://www.publicengagement.ac.uk/what>. Date accessed: 4 April 2014.
- National Institute of Adult Continuing Education. (2011). *NIACE Response to the 2011 Skills for Life Survey*. [Online] 1 December 2011. Retrieved from: <http://www.niace.org.uk/news/niace-response-to-the-2011-skills-for-life-survey>. Date accessed: 10 December 2011.
- National Trust. (2005). *Vital Volunteers*. Swindon: The National Trust.
- Naughton, J. (2000). *A Brief History of the Future: Origins of the Internet*. London: Phoenix Press.
- Naughton, J. (2012). *From Gutenberg to Zuckerberg: What You Really Need to Know About the Internet*. London: Quercus Books.
- Neal, C., & Roskams, S. (2013). Authority and Community: Reflections on archaeological practice at Heslington East, York. *The Historic Environment*, 2(4), 139-155.

Neiger, B. L., Thackeray, R., Van Wagenen, S. A., Hanson, C. L., West, J. H., Barnes, M. D., & Fagen, M. C. (2012). Use of social media in health promotion purposes, key performance indicators, and evaluation metrics. *Health Promotion Practice*, 13(2), 159-164.

Nelson, M. R. (2005). Exploring consumer response to "Advergaming." In: Haugtvedt, C. P., Machleit, K. A., & Yalch, R. (Eds.), *Online Consumer Psychology: Understanding and Influencing Consumer Behavior in the Virtual World*, 167-194. London: Psychology Press.

Newman, A., & McLean, F. (1998). Heritage builds communities: The application of heritage resources to the problems of social exclusion. *International Journal of Heritage Studies*, 4(3), 143-153.

Newman, M. (2009). Devil's advocate or alternate reality: Keeping archaeology in heritage. In: Waterton, E., & Smith L. (Eds.), *Taking Archaeology out of Heritage*, 170-191. Newcastle upon Tyne: Cambridge Scholars Publishing.

Nicolaas, G. (2011) *Survey Paradata: A Review*. National Centre for Research Methods. [Online] Retrieved from: <http://eprints.ncrm.ac.uk/1719/>. Date accessed: 20 January 2014.

Nielsen, J. (2006). Participation inequality: Encouraging more users to contribute. *Jakob Nielsen's Alertbox*. [Online] 9 October 2006. Retrieved from: [http://www.useit.com/alertbox/participation\\_inequality.html](http://www.useit.com/alertbox/participation_inequality.html). Date accessed: 14 January 2011.

Nonnecke, B., & Preece, J. (2000). Lurker demographics: Counting the silent. In: *Proceedings of the ACM CHI 2000: Human Factors in Computing Systems Conference*, 73-80. The Hague, Netherlands: Association for Computing Machinery (ACM).

Nonnecke, B., Preece, J., & Andrews, D. (2004). What lurkers and posters think of each other. *Internet and the Digital Economy Track of the Thirty-Seventh Hawaii International Conference on System Sciences (HICSS-37)*. Retrieved from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.90.1527&rep=rep1&type=pdf>. Date accessed: 28 March 2014.

Normark, J. (2012). Osmanagic and Mayanism. *AP: Online Journal in Public Archaeology*, 2, 35-37. Retrieved from: <http://www.arqueologiapublica.es/descargas/1337973664.pdf>. Date accessed: 24 March 2014.

Northern Ireland Sites & Monuments Record. (2013). *Search for Site Code Fer 211:061*. Retrieved from: <http://apps.ehnsi.gov.uk/ambit/details.aspx?monid=10154>. Date accessed: 12 August 2013.

- Nunberg, G. (2003). As Google goes, so goes the nation. *The New York Times*. [Online] 18 May 2003. Retrieved from: <http://www.nytimes.com/2003/05/18/weekinreview/18NUNB.html>. Date accessed: 1 January 2013.
- OASIS Project. (2013). *Online AccesS to the Index of archaeological investigationS*. [Online] Retrieved from: <http://oasis.ac.uk/england/>. Date accessed: 2 November 2013.
- ObjectPlanet, Inc. (2014). *Opinio*. Retrieved from: <http://www.objectplanet.com/opinio>. Date accessed: 18 March 2014.
- Ofcom. (2008). Social Networking. A Quantitative and Qualitative Research Report into Attitudes, Behaviours and Use. Office of Communication (Ofcom) Research Document. [Online] Retrieved from: <http://stakeholders.ofcom.org.uk/binaries/research/media-literacy/report1.pdf>. Date accessed: 2 January 2013.
- Ofcom. (2012a). *Infrastructure Report: 2012 Update*. Office of Communication (Ofcom). [Online] Retrieved from: <http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/infrastructure-report/infrastructure-report-2012.pdf>. Date accessed: 10 December 2012
- Ofcom. (2012b). *Communications Market Report 2012*. Office of Communication (Ofcom) Research Document. [Online] Retrieved from: [http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/CMR\\_UK\\_2012.pdf](http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/CMR_UK_2012.pdf). Date accessed: 10 December 2012.
- Office for National Statistics. (2012a). *Internet Access: Households and Individuals, 2012*. London: Office for National Statistics Statistical Bulletin. [Online] Retrieved from: [http://www.ons.gov.uk/ons/dcp171778\\_275775.pdf](http://www.ons.gov.uk/ons/dcp171778_275775.pdf). Date accessed: 24 August 2012.
- Office for National Statistics. (2012b). *Internet Access Quarterly Update*. London: Office for National Statistics Statistical Bulletin. [Online] 14 November 2012. Retrieved from: <http://www.ons.gov.uk/ons/rel/rdit2/internet-access-quarterly-update/2012-q3/stb-iaqu.html>. Date accessed: 12 December 2012.
- Office for Public Management. (2005). *Camden Social Capital Survey 2005*. London: OPM.
- Ogden, J. (2011). Day of Archaeology Logo Competition, Open Archaeology. [Online] 6 May 2011. Retrieved from: <https://lists.okfn.org/pipermail/open-archaeology/2011-May/000178.html>. Date accessed: 12 January 2014.
- Oinas-Kukkonen, H. (2008). Network analysis and crowds of people as sources of new organisational knowledge. In: Koohang, A., Harman, K., & Britz, J. (Eds.), *Knowledge Management: Theoretical Foundations*, 173-189. Santa Rosa, CA: Informing Science Press.



Old Oswestry Iron Age Hillfort Campaign Petition. (2013). [Online] Retrieved from: <https://www.change.org/petitions/request-that-shropshire-council-withdraw-proposals-to-build-houses-alongside-old-oswestry-iron-age-hillfort>. Date accessed: 19 September 2013.

Old Oswestry Hillfort Facebook Page. (2014). [Online] Retrieved from: <https://www.facebook.com/OldOswestryHillfort>. Date accessed: 19 September 2013.

O'Neil, M. (2006). *Weblogs and authority*. Refereed paper presented to Blogtalk Downunder, University of Technology, Sydney. 19-22nd May 2006. [Online] Retrieved from: <http://incsub.org/blogtalk/images/O'Neil.Blogtalk.revised.rt>. Date accessed: 10 October 2011.

O'Neil, M. (2009). *Cyberchiefs. Autonomy and Authority in Online Tribes*. London: Pluto.

O'Neil, M. (2010). Shirky and Sanger, or the costs of crowdsourcing. *Journal of Science Communication*, 9(1), 1-6.

Online Dickens Project. (2013). *The Online Text Correction Project (OTC)*. [Online] Retrieved from: <http://www.djo.org.uk/about-us/community-projects/online-text-correction.html>. Date accessed: 16 November 2013.

Oomen, J., & Aroyo, L. (2011). Crowdsourcing in the cultural heritage domain: Opportunities and challenges. In: *Proceedings of the 5th International Conference on Communities and Technologies (C&T '11)*, 138-149. New York: Association for Computing Machinery (ACM). [Online]. Retrieved from: <http://www.cs.vu.nl/~marieke/OomenAroyoCT2011.pdf>. Date accessed: 9 October 2013.

Open University. (2012). *Digital and Information Literacy Framework*. [Online] Retrieved from: <http://www.open.ac.uk/libraryservices/subsites/dilframework/>. Date accessed: 29 January 2014.

O'Reilly, T. (2005). *What Is Web 2.0?* [Online] 30 September 2005. Retrieved from: <http://www.oreilly.com/web2/archive/what-is-web-20.html>. Date accessed: 16 November 2012.

Orr, A. (2011). Revolution 2.0: Wael Ghonim Thanks Mark Zuckerberg for His Part in the Egyptian Revolution. *Technorati*. [Online] 11 February 2011. Retrieved from: <http://technorati.com/politics/article/revolution-20-wael-ghonim-thanks-mark/>. Date accessed: 26 October 2012.

Ortega, J. F. (2009). *Wikipedia: A Quantitative Analysis*. Ph.D. Thesis, Universidad Rey Juan Carlos, Madrid. [Online] Retrieved from: <http://felipeortega.net/sites/default/files/thesis-jfelipe.pdf>. Date accessed: 11 October 2013.

- Ortega Egea, J. M., Recio Menéndez, M., & Román González, M. V. (2007). Diffusion and usage patterns of Internet services in the European Union. *Information Research*, 12(2), Paper 302. Retrieved from: <http://informationr.net/ir/12-2/paper302.html>. Date accessed: 2 January 2013.
- O'Sullivan, A. (1998). *The Archaeology of Lake Settlement in Ireland*. Dublin: Discovery Programme.
- Oswestry 21 Community Voices. (2013). *New Housing near Old Oswestry Hillfort*. [Online] Retrieved from: <http://www.oswestry21.com/?p=4378>. Date accessed: 19 September 2013.
- Owens, T. (2012). *The Crowd and the Library*. [Online] 20 May 2012. Retrieved from: <http://www.trevorowens.org/2012/05/the-crowd-and-the-library/>. Date accessed: 15 October 2013.
- Oxford Internet Institute. (2012). *Non-Users and Ex-Users: Lifestage, Education and Income*. [Online] 30 May 2012. Retrieved from: <http://oxis.oii.ox.ac.uk/blog/non-users-and-ex-users-looking-lifestage-education-and-income>. Date accessed: 20 November 2012.
- Paek, H-J., Hove, T. & Cole, R. T. (2013). A Multi-method Approach to Evaluating Social Media Campaign Effectiveness. In: *46th Hawaii International Conference on System Sciences (HICSS)*, 1570-1579. Washington, DC : IEEE Computer Society. Retrieved from: [http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6480029&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs\\_all.jsp%3Farnumber%3D6480029](http://ieeexplore.ieee.org/xpl/login.jsp?tp=&arnumber=6480029&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6480029). Date accessed: 30 March 2014.
- PalaeoBabble. (2014). *Homepage*. [Online] Retrieved from: <http://michaelsheiser.com/PaleoBabble/>. Date accessed: 7 February 2014.
- PaleoResearch Institute. (2014). *Phytolith and Starch Analysis*. [Online] Retrieved from: <http://www.paleoresearch.com/services/phytoliths.html>. Date accessed: 1 February 2014.
- Park, Y. J. (2013). Digital literacy and privacy behavior online. *Communication Research*, 40(2), 215-236.
- Pateman, C. (1970). *Participation and Democratic Theory*. Cambridge: Cambridge University Press.
- Paxman, J. (1999). *The English: A Portrait of a People*. Harmondsworth: Penguin.
- Perkin, C. (2010). Beyond the rhetoric: Negotiating the politics and realising the potential of community-driven heritage engagement. *International Journal of Heritage Studies*, 16(1-2), 107-122.
- Perks, R., & Thompson, A. (2006). *The Oral History Reader*. London: Routledge.

- Perry, S. (2013). *Gender and Digital Culture*. Weblog for the Gender and Digital Culture Project. [Online]. Retrieved from: <http://saraperry.wordpress.com/2013/03/08/gender-and-digital-culture/>. Date accessed: 24 January 2014.
- Petersen, S. (2008). Loser generated content: From participation to exploitation. *First Monday*, 13(3). [Online] 3 March 2008. Retrieved from: <http://www.uic.edu/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2141/1948>. Date accessed: 16 November 2012.
- Pett, D. (2013). Tinkering with the Machine and Linking Data. *Day of Archaeology*. [Online] 1 August 2013. Retrieved from: <http://www.dayofarchaeology.com/tinkering-with-the-machine-and-linking-data/>. Date accessed: 20 January 2014.
- Pett, D., & Bonacchi, C. (2012). Conclusions. In: Bonacchi, C. (Ed.), *Archaeology and Digital Communication. Towards Strategies of Public Engagement*, 126-130. London: Archetype Publications.
- Pfister, D. S. (2011). Networked expertise in the era of many-to-many communication: On Wikipedia and invention. *Social Epistemology*, 25(3), 217-231.
- Phelan, O., McCarthy, K., & Smyth, B. (2009). Using Twitter to recommend real-time topical news. In: *Proceedings of the Third ACM Conference on Recommender Systems (RecSys '09)*, 385-388. New York: Association for Computing Machinery (ACM). Retrieved from: <http://doi.acm.org/10.1145/1639714.1639794>. Date accessed: 23 March 2011.
- Piccini, A. A. (2006). *Television Heritages: Heritage Counts*. Council for British Archaeology: English Heritage.
- Piccini, A. A. (2010). The stuff of dreams: Archaeology, audience and becoming material. In: Russell, I., & Koerner, S. (Eds.), *Unquiet Pasts: Risk Society, Lived Cultural Heritage, Re-Designing Reflexivity*, 305-326. Farnham: Ashgate Publishing Ltd.
- Pickard, A. (2013). *Research Methods in Information*. (2nd Ed.). London: Facet Publishing.
- Pieczka, M., & Escobar, O. (2013). Dialogue and science: Innovation in policy-making and the discourse of public engagement in the UK. *Science and Public Policy*, 40(1), 113-126.
- Pitts, M. (2012a). From the editor. *British Archaeology*, 125, 3.
- Pitts, M. (2012b). Why was a major site "Lost" in an Irish bog? *British Archaeology*, 126, 7.
- Pitts, M. (2012c). "Nothing of any significance was unearthed." *British Archaeology*, 127, 7.

- Popescu, A-M., & Pennacchiotti, M. (2010). Detecting controversial events from Twitter. In: Huang, J., Koudas, N., Jones, G. J. F., Wu, X., Collins-Thompson K., & An, A. (Eds.), *Proceedings of the 19th ACM International Conference on Information and Knowledge Management (CIKM '10)*, 1873-1876. New York: Association for Computing Machinery (ACM). Retrieved from: <http://dx.doi.org/10.1145/1871437.1871439>. Date accessed: 5 February 2014.
- Portable Antiquities Scheme (2013). *Homepage*. [Online] Retrieved from: <http://finds.org.uk>. Date accessed: 20 September 2013.
- Portes, A. (2000). Social capital: Its origins and applications in modern sociology. In: Lesser, E. (Ed.), *Knowledge and Social Capital: Foundations and Applications*, 43-68. Boston: Butterworth Heinemann.
- Preece, J., Nonnecke, B., & Andrews, D. (2004). The top five reasons for lurking: Improving community experiences for everyone. *Computers in Human Behavior*, 20(2), 201-223.
- Priego, E. (2012a). On academic live-tweeting & other threats. *Humanities, Arts, Science, Technology Alliance and Collaboratory (HASTAC) Weblog*. [Online] 10 February 2012. Retrieved from: <https://www.hastac.org/blogs/ernesto-priego/2012/10/02/academic-live-tweeting-other-threats>. Date accessed: 25 January 2014.
- Priego, E. (2012b). Live-tweeting at academic conferences: 10 rules of thumb. *The Guardian*. 3 October 2012. Retrieved from: [www.theguardian.com/higher-education-network/blog/2012/oct/03/ethics-live-tweeting-academic-conferences](http://www.theguardian.com/higher-education-network/blog/2012/oct/03/ethics-live-tweeting-academic-conferences). Date accessed: 24 March 2014.
- Pruitt, T. C. (2011). *Authority and the Production of Knowledge in Archaeology*. Ph.D. Thesis: University Of Cambridge. [Online]. Retrieved from: <http://www.dspace.cam.ac.uk/handle/1810/241365>. Date accessed: 27 May 2013.
- Public Archaeology Group, The. (2013). *EAA 2013 - First Event*. [Online]. Retrieved from <http://centralpag.blogspot.co.uk/2013/05/eaa-2013-first-event.html>. Date accessed: 25 December 2013.
- Purser, M. (2012). Emptying the magician's hat: Participatory GIS-based research in Fiji. In: Skeates, R., McDavid, C., & Carman, J. (Eds.), *The Oxford Handbook of Public Archaeology*, 496-512. Oxford: Oxford University Press.
- Putnam, R. D. (1995). Bowling alone: America's declining social capital. *Journal of Democracy*, 6(1), 65-78.
- Putnam, R. D. (2001). *Bowling Alone: The Collapse and Revival of American Community*. New York: Simon & Schuster.
- Pyburn, K. A. (2009). Practising archaeology - As if it really matters. *Public Archaeology*, 8(2-3), 161-175.

- QSR International. (2014). *NVivo*. [Online] Retrieved from: [http://www.qsrinternational.com/products\\_nvivo.aspx](http://www.qsrinternational.com/products_nvivo.aspx). Date accessed: 23 January 2014.
- Rahtz, P. A. (1974). Rescue digging past and present. In: Rahtz, P. A. (Ed.), *Rescue Archaeology*, 53-72. Harmondsworth: Penguin.
- Rainie, L., & Wellman, B. (2012). *Networked: The New Social Operating System*. Cambridge, MA: MIT Press.
- Rassool, C. (2010). Power, knowledge and the politics of public pasts. *African Studies*, 69(1), 79-101.
- Rawlinson, K. (2012). Universal Jobmatch Website at the centre of security concerns. *The Independent*. [Online] 21 December 2012. Retrieved from: <http://www.independent.co.uk/news/uk/politics/unemployed-to-be-forced-to-sign-up-to-universal-jobmatch-website-at-the-centre-of-security-concerns-8427546.html>. Date accessed: 28 December 2012.
- Raz, J. (1990). *Authority*. New York: New York University Press.
- Reich, S. (2010). Adolescents' sense of community on Myspace and Facebook: A mixed methods approach. *Journal of Community Psychology*, 38(6), 688-705.
- Reid, P. (2008). Community archaeology: From the grassroots. *Current Archaeology*, 216, 21. Retrieved from: <http://www.archaeology.co.uk/blog/opinion/community-archaeology-from-the-grassroots.htm>. Date accessed: 1 February 2012.
- Reinhardt, W., Ebner, M., Beham, G., & Costa, C. (2009). How people are using Twitter during conferences. In: Hornung-Prähauser, V., & Luckmann, M. (Eds.), *Creativity and Innovation Competencies on the Web*. Proceedings of 5. EduMedia 2009, 145-156. [Online] Retrieved from: <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.148.1238&rep=rep1&type=pdf>. Date accessed: 13 April 2011.
- RESCUE: The British Archaeological Trust. (2014). *Homepage* [Online] Retrieved from: <http://rescue-archaeology.org.uk/>. Date accessed: 15 January 2014.
- Research Excellence Framework. (2013). *Assessment criteria and level definitions*. [Online] Retrieved from: <http://www.ref.ac.uk/panels/assessmentcriteriaandleveldefinitions/>. Date accessed: 28 March 2014.
- Rhinegold, H. (1993). *The Virtual Community: Homesteading on the Electronic Frontier (1st Edition)*. Reading, MA: Addison-Wesley.
- Rhinegold, H. (2012). *Net Smart: How to Thrive Online*. Cambridge, MA: MIT Press.
- Richards, J. D. (2002). Digital preservation and access. *European Journal of Archaeology*, 5(3), 343-366.

- Richards, J., Austin, T., & Hardman, C. (2010). Forum Covering the Costs of Digital Curation. *Heritage & Society*, 3(2), 255-263.
- Richardson, L. (2009). *Measuring the Success of Digital Public Archaeology: Towards a Model for Public Participation in Internet Archaeology*. MA Dissertation: University College London. Retrieved from: [https://www.academia.edu/6387276/Measuring\\_the\\_Success\\_of\\_Digital\\_Public\\_Archaeology\\_Towards\\_a\\_Model\\_for\\_Public\\_Participation\\_in\\_Internet\\_Archaeology](https://www.academia.edu/6387276/Measuring_the_Success_of_Digital_Public_Archaeology_Towards_a_Model_for_Public_Participation_in_Internet_Archaeology). Date accessed: 4 April 2014.
- Richardson, L. (2011). An entrée, or dabbling with netnography. *Digital Public Archaeology*. [Online] 4 April 2011. Retrieved from: <http://digipubarch.org/2011/04/04/hello-world/>. Date accessed: 6 January 2014.
- Richardson, L. (2012a). Twitter and archaeology: An archaeological network in 140 characters or less. In: Bonacchi, C. (Ed.), *Archaeologists and the Digital: Towards Strategies of Engagement*, 15-24. London: Archetype.
- Richardson, L. (2012b) Dayofarchaeology@Gmail.Com. Day of Archaeology & Archiving [Email]. Message to All Participants. Sent 22nd June 2012: 16.12.
- Richardson, L. (2013). A Digital Public Archaeology? *Papers from the Institute of Archaeology*. 23(1), 1-12.
- Ridge, M. (2012). Frequently asked questions about crowdsourcing in cultural heritage. *Open Objects*. [Online] 3 June 2012. Retrieved from: <http://openobjects.blogspot.co.uk/2012/06/frequently-asked-questions-about.html>. Date accessed: 15 October 2013.
- Rieh, S. Y. (2004). On the Web at home: Information seeking and Web searching in the home environment. *Journal of the American Society for Information Science and Technology*, 55(8), 743-753.
- Ritchie, D. A. (2012). *Oxford Handbook of Oral History*. Oxford: Oxford University Press.
- Ritzer, G., & Jurgenson, N. (2010). Production, consumption, prosumption. *Journal of Consumer Culture*, 10(1), 13-36.
- Robinson, R., & Picard, D. (2006). *Tourism, Culture and Sustainable Development*. Paris: UNESCO. [Online] Retrieved from: <http://unesdoc.unesco.org/images/0014/001475/147578e.pdf>. Date accessed: 19 January 2014.
- Rodden, J. (2006). Reputation and its vicissitudes. *Society*, 43(3), 75-80.
- Rodman, M. C. (1992). Empowering place: Multilocality and multivocality. *American Anthropologist (New Series)*, 94(3), 640-656. Retrieved from: <http://www.jstor.org/stable/680566>. Date accessed: 20 February 2014.
- Rogers, E. M. (1962). *Diffusion of Innovations*. New York: The Free Press.

- Rogers, E. M. (2010). *Diffusion of innovations*. New York: Simon and Schuster.
- Rogers, T. (2012). Are we on information overload? *Salon*. [Online] 1 January 2012. Retrieved from: [http://www.salon.com/2012/01/01/are\\_we\\_on\\_information\\_overload/](http://www.salon.com/2012/01/01/are_we_on_information_overload/). Date accessed: 4 December 2012.
- Rosen, R. J., Manning, C. D., & Harrell, L. J. (1999). *Controlling nonresponse in the current employment statistics survey*. International Conference on Survey Nonresponse (ICSN), 1999. Retrieved from: [http://www.websm.org/uploadi/editor/Rosen\\_1999\\_Controlling\\_Nonresponse.doc](http://www.websm.org/uploadi/editor/Rosen_1999_Controlling_Nonresponse.doc). Date accessed: 24 March 2014.
- Ross, C., Terras, M., Warwick, C., & Welsh, A. (2010). Enabled backchannel: Conference Twitter use by digital humanists. *Journal of Documentation*, 67(2), 214-237.
- Rowlands, I., Nicholas, D., Williams, P., Huntington, P., Fieldhouse, M., Gunter, B., Withey, R., Jamali, H. R., Dobrowolski, T., & Tenopir, C. (2008). The Google generation: the information behaviour of the researcher of the future. *Aslib Proceedings*, 60(4), 290-310.
- Royal Commission on Ancient and Historical Monuments of Scotland. (2011). *Scotland's Rural Past: Community Archaeology in Action*. Edinburgh: Royal Commission on Ancient and Historical Monuments of Scotland.
- Royal Commission on Ancient and Historical Monuments of Scotland. (2014a). *About Us*. [Online] Retrieved from: <http://www.rcahms.gov.uk/about-us/about-us>. Date accessed: 15 January 2014.
- Royal Commission on Ancient and Historical Monuments of Scotland. (2014b). *Future RCAHMS*. [Online] Retrieved from: [http://www.rcahms.gov.uk/rcahms\\_media/files/news/future\\_rcahms.pdf](http://www.rcahms.gov.uk/rcahms_media/files/news/future_rcahms.pdf). Date accessed: 15 January 2014.
- Royal Museums Greenwich. (2013). *John Harrison and the Longitude Problem*. [Online] Retrieved from: <http://www.rmg.co.uk/Harrison>. Date accessed: 9 October 2013.
- Ruef, M. (2002). Strong ties, weak ties and islands: Structural and cultural predictors of organizational innovation. *Industrial and Corporate Change*, 11(3), 427-449.
- Russell, M. (Ed.). (2002). *Digging Holes in Popular Culture: Archaeology and Science Fiction*. Oxford: Oxbow.
- Russo, A. (2011). Transformations in cultural communication: Social media, cultural exchange, and creative connections. *Curator: the museum journal*, 54(3), 327-346.

- Sahu, K. R., & Dubey, J. (2014). A Survey on Phishing Attacks. *International Journal of Computer Applications*, 88(10), 42-45.
- Samuel, R. (2012). *Theatres of Memory: Past and Present in Contemporary Culture*. London: Verso Books.
- Saunders, A., & Moles, K. (2013). The spatial practice of public engagement: 'doing' geography in the South Wales valleys. *Social & Cultural Geography*, 14(1), 23-40.
- SAVE Britain's Heritage. (2014). [Online] Retrieved from: <http://www.savebritainsheritage.org/>. Date accessed: 1 February 2014.
- Save Hubberston Fort. (2014). [Online] Retrieved from: <http://www.gopetition.com/petitions/save-hubberston-fort/sign.html>. Date accessed: 1 February 2014.
- Save The Cromwell Museum. (2014). [Online] Retrieved from: <http://savethecromwellmuseum.org/>. Date accessed: 1 February 2014.
- Schadla-Hall, T. (1996). What are we groping for? *MDA Information*, 2(4).
- Schadla-Hall, T. (1999). Editorial: Public archaeology. *European Journal of Archaeology*, 2(2), 147-158.
- Schadla-Hall, T. (2004). The comforts of unreason. In: Merriman, N. (Ed.), *Public Archaeology*, 255-271. London: Routledge.
- Schadla-Hall, T., Moshenska, G., & Thornton, A. (2010) Editorial. *Public Archaeology*, 9(2), 62-63.
- Schapp, A. (2002). Between antiquarians and archaeologists - Continuities and ruptures. *Antiquity*, 76, 134-140.
- Schau, H. J., & Gilly, M. C. (2003). Are we what we post? The presentation of self in the personal Webspaces. *Journal of Consumer Research*, 30(4), 385-404.
- Scherpenzeel, A. C., & Das, M. (2011). "True" longitudinal and probability-based Internet panels: Evidence from the Netherlands. In: Dad, M., Ester, P., & Kaczmirek, L. (Eds.), *Social and Behavioural Research and the Internet*, 76-104. London: Routledge.
- Schmierbach, M., & Oeldorf-Hirsch, A. (2012). A little bird told me, so I didn't believe it: Twitter, credibility, and issue perceptions. *Communication Quarterly*, 60(3), 317-337.
- Scholz, T. (Ed.). (2013). *Digital Labour: The Internet as Playground and Factory*. New York: Routledge.
- Schonlau, M., Fricker, R. D. & Elliott, M. N. (2001). *Conducting Research Surveys via E-Mail and the Web*. Santa Monica, CA: Rand Corporation.



- Schrock, A. (2010). *Are you what you tweet? Warranting trustworthiness on Twitter*. Paper presented at The Annual Meeting of the Association for Education in Journalism and Mass Communication, Denver, Colorado, August 4, 2010. Retrieved from: [http://usc.academia.edu/aschrock/Papers/198931/Are\\_You\\_What\\_You\\_Tweet\\_Warranting\\_Trustworthiness\\_on\\_Twitter](http://usc.academia.edu/aschrock/Papers/198931/Are_You_What_You_Tweet_Warranting_Trustworthiness_on_Twitter). Date accessed: 30 April 2011.
- Schouten, B., Cobben, F., Bethlehem, J. (2009). Indicators for the representativeness of survey response. *Survey Methodology*, 35(1), 101-113.
- Schuler D. (1996). *New Community Networks: Wired for Change*. Reading, MA: Addison-Wesley
- Schwarz, J., & Morris, M. R. (2011). Augmenting Web pages and search results to support credibility assessment. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*, 1245-1254. New York: ACM Press.
- Scottish Crannog Centre. (2013). *What is a Crannog?* [Online] Retrieved from: [http://www.crannog.co.uk/docs/what\\_is\\_a\\_crannog/what\\_is\\_a\\_crannog.html](http://www.crannog.co.uk/docs/what_is_a_crannog/what_is_a_crannog.html). Date accessed: 5 July 2013.
- Segev, E. (2008). Search engines and power: A politics of online (mis-) information. *Webology*, 5(2), Article 54. [Online] Retrieved from: <http://www.webology.org/2008/v5n2/a54.html>. Date accessed: 1 January 2013.
- Seastrom, M., Chapman, C., & Mulligan, G. (2008). The impact of privacy breaches on survey participation in a national longitudinal survey. In: *Proceedings of the Section on Survey Research Methods, American Statistical Association*, 241-249. Alexandria, VA: American Statistical Association.
- Sennett, R. (1981) *Authority*. New York: Vintage.
- Serra Cantallops, A., & Salvi, F. (2014). New consumer behavior: A review of research on eWOM and hotels. *International Journal of Hospitality Management*, 36, 41-51.
- Seyedarabi, F. (2011). Personalization: An emerging direction for tackling the Web searching barriers faced by teachers when searching for educational resources. *Webology*, 8(2), Article 90. [Online] Retrieved from: <http://www.webology.org/2011/v8n2/a90.html>. Date accessed: 1 January 2013.
- Shackel, P. A., & Chambers, E. J. (Eds.). (2004). *Places in Mind: Public Archaeology as Applied Archaeology*. London: Routledge.
- Shah, V., Kwak, N., Lance, R., & Dhavan, H. (2001). "Connecting" and "Disconnecting" with civic life: patterns of Internet use and the production of social capital. *Political Communication*, 18(2), 141-162.
- Shanks, M., & Tilley, C. (1987). *Re-Constructing Archaeology*. London: Routledge.

- Shanteau, J. (1992). The psychology of experts: An alternative view. In: Wright, G., & Bolger, F. (Eds.), *Expertise and Decision Support*, 11-23. New York: Plenum Press.
- Sharf, B. (1999). Beyond netiquette: The ethics of doing naturalistic discourse research on the Internet. In: Jones, S. (Ed.), *Doing Internet Research: Critical Issues and Methods for Examining the Net*, 243-256. London: Sage.
- Sheehan, K. B. (2002). Towards a typology of Internet users and online privacy concerns. *The Information Society*, 18(1), 21-32.
- Shirky, C. (2008). *Here Comes Everybody: The Power of Organizing without Organizations*. New York: Penguin.
- Shropshire Star (2013). *Group To Protect Oswestry Hill-Fort Revived*. [Online] 10 August 2013. Retrieved from: <http://www.shropshirestar.com/news/2012/08/10/group-to-protect-oswestry-hill-fort-revived/>. Date accessed: 19 September 2013.
- Silberman, N. A. (2008). Virtual viewpoints: Multivocality in the marketed past? In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 138-143. New York: Springer.
- de Silva, M., & Henderson, J. (2011). Sustainability in conservation practice. *Journal of the Institute of Conservation*, 34(1), 5-15.
- Silverstone, R. (2006). Domesticating domestication: Reflections on the life of a concept. In: Berker, T., Hartmann, M., Punie, Y., & Ward, K. J. (Eds.), *The Domestication of Media and Technology*, 229-248. Maidenhead: Open University Press.
- Simon, N. (2011). Participatory design and the future of museums. In: Adair, B., Filene, B., & Colossi, L. (Eds.), *Letting Go? Sharing Historical Authority in a User-Generated World*, 18-33. Walnut Creek: Left Coast Press.
- Simpson, F. (2010). *The Values of Community Archaeology: A Comparative Assessment between the UK and USA*. Oxford: Archaeopress.
- Simpson, F., & Williams, H. (2008). Evaluating community archaeology in the UK. *Public Archaeology*, 7(2), 69-90.
- Sinclair, A. (2010). The end of a golden age? The impending effects of the economic collapse on archaeology in higher education in the United Kingdom. In: Curtis, J., Fulford, M., Harding, A. & Reynolds, F. (Eds.), *History for the Taking? Perspectives on Material Heritage*, 31-44. London: British Academy.
- Singer, E., & Couper, M. P. (2010). Ethical considerations in Internet surveys. In: Das, M., Ester, P., & Kaczmirek, L. (Eds.), *Social and Behavioral Research and the Internet: Advances in Applied Methods and Research Strategies*, 133-162. Oxford: Taylor and Francis.

- Siisiäinen, M. (2000). *Two concepts of social capital: Bourdieu vs. Putnam*. Paper presented at International Society for Third-sector Research (ISTR) Fourth International Conference "The Third Sector: For what and for whom?" Trinity College, Dublin, Ireland. July 5-8, 2000. Retrieved from: <http://dlc.dlib.indiana.edu/dlc/bitstream/handle/10535/7661/siisiainen.pdf>. Date accessed: 20 September 2013.
- Skeates, R., McDavid, C., & Carman, J. (Eds.). (2012). *The Oxford Handbook of Public Archaeology*. Oxford: Oxford University Press.
- Smardz, K. (1997). The Past Through Tomorrow: Interpreting Toronto's heritage to a multi-cultural public. In: Jameson, J. (Ed.), *Presenting Archaeology to the Public: Digging for Truths*, 101-111. Walnut Creek: AltaMira Press.
- Smardz, K. E., & Smith, S. J. (Eds.). (2000). *The Archaeology Education Handbook: Sharing the Past with Kids*. Thousand Oaks, CA: AltaMira Press.
- Smith, G. S. (2006). The role of archaeology in presenting the past to the public. In Russell, I. (Ed.), *Images, Representations and Heritage*, 122-137. New York: Springer.
- Smith, L. J. (2009). *Class, heritage and the negotiation of place*. Conference paper presented to the 'Missing Out On Heritage: Socio-Economic Status and Heritage Participation' Conference, English Heritage, March 2009. [Online] Retrieved from: [http://anu.academia.edu/laurajanesmith/papers/312429/Class\\_heritage\\_and\\_the\\_negotiation\\_of\\_place](http://anu.academia.edu/laurajanesmith/papers/312429/Class_heritage_and_the_negotiation_of_place). Date accessed: 2 May 2012.
- Smith, L. and Waterton, E. (2009) *Heritage, Communities and Archaeology*. London: Gerald Duckworth & Co.
- Smith, M. A., & Kollock, P. (Eds.). (1999). *Communities in Cyberspace*. Boulder, CO: Westview.
- Smyth, J. D., & Pearson, J. E. (2011). Internet survey methods: A review of strengths, weaknesses, and innovations. In: Das, M., Ester, P., & Kaczmirek, L. (Eds.), *Social and Behavioural Research and the Internet*, 11-44. London: Routledge.
- Snaveley, L., & Cooper, N. (1997). The information literacy debate. *Journal of Academic Librarianship*, 23(1), 9-20.
- Society of College, National and University Libraries. (1999). *Briefing Paper: Information Skills in Higher Education*. [Online] Retrieved from: [http://www.sconul.ac.uk/sites/default/files/documents/Seven\\_pillars2.pdf](http://www.sconul.ac.uk/sites/default/files/documents/Seven_pillars2.pdf). Date accessed: 29 January 2014.
- Soffer, R. N. (1982). Why do disciplines fail? The strange case of British sociology. *The English Historical Review*, 97(385), 767-802.

Speight, S. (2003). Localising history 1940-1965: The extra-mural contribution. *Journal of Educational Administration and History*, 35(1), 51-64.

Starbird, K., Palen, L., Hughes, A. L. & Vieweg, S. (2010). Chatter on The Red: What hazards threat reveals about the social life of microblogged information. In: *CSCW '10: Proceedings of the 2010 ACM Conference on Computer Supported Cooperative Work*, 241-250. New York: Association for Computing Machinery (ACM). Retrieved from: [https://www.cs.colorado.edu/~palen/chatter\\_on\\_the\\_red.pdf](https://www.cs.colorado.edu/~palen/chatter_on_the_red.pdf). Date accessed: 5 February 2014.

Steel, P. (2013). Cuts survey 2013: Paid jobs lost to volunteers. *Museums Association*. [Online] 30 September 2013. Retrieved from: <http://www.museumsassociation.org/news/30092013-cuts-survey-2013-paid-jobs-in-museums-lost-to-volunteers>. Date accessed: 3 March 2014.

Stein, L. (2013). Policy and Participation on Social Media: The Cases of YouTube, Facebook, and Wikipedia. *Communication, Culture & Critique*, 6(3), 353-371.

Stein, R. (2012). *Is Your Community Better Off because it has a Museum? Final Thoughts about Participatory Culture (part III)*. Indianapolis Museum of Art. [Online] 3 November 2011. Retrieved from: <http://www.imamuseum.org/blog/2011/11/03/is-your-community-better-off-because-it-has-a-museum-final-thoughts-about-participatory-culture-part-iii/>. Date accessed: 25 April 2012.

Steinberg, D. H. (2004). Search: The current and next big thing. *O'Reilly*. [Online] 10 August 2004. Retrieved from: <http://www.oreilynet.com/pub/a/network/2004/10/08/search.html>. Date accessed: 1 January 2013.

Stilgoe, J., Lock, S. J., & Wilsdon, J. (2014). Why should we promote public engagement with science? *Public Understanding of Science*, 23(1), 4-15.

Stocker, R. (1999). Are academics irrelevant? Roles for scholars in participatory research. *American Behavioural Scientist*, 42(5), 840-854. Retrieved from: <http://abs.sagepub.com/Content/42/5/840.full.pdf+html>. Date accessed: 2 January 2012.

Stone, S. (1982). Humanities scholars: Information needs and uses. *Journal of Documentation*, 38(4), 292-313.

Strauss, A. L. (1987). *Qualitative analysis for social scientists*. Cambridge: Cambridge University Press.

Strauss, A. L. (1993). *Continual Permutations of Action*. New York: Aldine de Gruyter

Strauss, A. L., & Corbin, J. (1990). *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Thousand Oaks, CA: Sage.

- Strauss, A. L., & Corbin, J. (1997). *Grounded Theory in Practice*. Thousand Oaks, CA: Sage.
- Strauss, A. L., & Corbin, J. (1998). *Basics of Qualitative Research*. Newbury Park, CA: Sage.
- Surowiecki, J. (2005). *The Wisdom of Crowds: Why the Many are Smarter than the Few*. London: Abacus.
- Swain, H. (2006). Archaeological Archives in Britain and the Development of the London Archaeological Archive and Research Centre. In: *Of the Past, for the Future: Integrating Archaeology and Conservation, Proceedings of the Conservation Theme at the 5th World Archaeological Congress*, 211-215. Getty Publications.  
Retrieved from:  
[http://www.getty.edu/conservation/publications\\_resources/pdf\\_publications/pdf/past\\_future\\_part7\\_thru\\_part9.pdf](http://www.getty.edu/conservation/publications_resources/pdf_publications/pdf/past_future_part7_thru_part9.pdf). Date accessed: 4 April 2014.
- Takhteyev, Y., Gruzd, A., & Wellman B. (2012). Geography of Twitter networks. *Social Networks*, 34(1), 73-81.
- Tang, J., Lou, T., & Kleinberg, J. (2012). Inferring Social Ties across Heterogenous Networks. [Online] *Proceedings of WSDM '12: The 5th ACM Conference on Web Search and Data Mining*, 743-752. New York: Association for Computing Machinery. Retrieved from:  
<http://www.cs.cornell.edu/Home/kleinber/wsdm12-links.pdf>. Date accessed: 2 October 2013.
- Tanner, S. (2012). *Measuring the Impact of Digital Resources: The Balanced Value Impact Model*. [Online] Retrieved from:  
<http://www.kdcs.kcl.ac.uk/innovation/impact.html>. Date accessed: 24 January 2014.
- Terras, M. (2010). Digital curiosities: Resource creation via amateur digitization. *Literary and Linguistic Computing*, 25(4), 425-438.
- Terras, M. (2011). The digital wunderkammer: Flickr as a platform for amateur cultural and heritage content. *Library Trends*, 59(4), 686-706.
- Thames Discovery Programme. (2014). *The Thames Discovery Programme*. [Online] Retrieved from: <http://www.thamesdiscovery.org/>. Date accessed: 18 March 2014.
- Thiele, O., & Kaczmirek, L. (2010). Security and data protection: Collection, storage, feedback in Internet research. In: Gosling, S. D., & Johnson, J. A., (Eds.), *Advanced Methods for Behavioral Research on the Internet*, 235-253. Washington: American Psychological Association.
- Thomas, C. (1974). Archaeology in Britain 1973. In: Rahtz, P. A. (Ed.) *Rescue Archaeology*, 3-15. Harmondsworth: Penguin.

- Thomas, C. (2004). The authority of democracy. *Journal of Political Philosophy*, 12(3), 245-270.
- Thomas, C. (2011). Democratic legitimacy and international institutions. In: Besson, S., & Tasiolas, J. (Eds.), *The Philosophy of International Law*, 119-137. Oxford: Oxford University Press.
- Thomas, J. (1995). Where are we now? Archaeological theory in the 1990s. In: Ucko, P.J. (Ed.), *Theory in Archaeology: A World Perspective*, 343-362. London: Routledge.
- Thomas-Jones, A. (2010). *The Host in the Machine: Examining the Digital in the Social*. Witney: Chandos Publishing.
- Thompson, C. (2008). *Brave new world of digital intimacy*. *The New York Times*. [Online] 7 September 2008. Retrieved from: <http://www.nytimes.com/2008/09/07/magazine/07awareness-t.html>. Date accessed: 2 April 2011.
- Thumin, N. (2012). *Self-Representation and Digital Culture*. London: Palgrave Macmillan.
- Tilley, C. (1991). *Material Culture and Text: The Art of Ambiguity*. London: Routledge.
- Tönnies, F. (2001). *Community and Civil Society*. Harris, J. (Ed.). Cambridge: Cambridge University Press.
- Transcribe Bentham. (2013). *Welcome To Transcribe Bentham*. [Online] Retrieved from <http://blogs.ucl.ac.uk/transcribe-bentham/>. Date accessed: 9 October 2013.
- Trappers, A. (2008). Using the Internet in anthropological research: Possibilities, controversies and illustrations. *Kolor*, 8(2), 19-29.
- Treré, E. (2011). *Studying media practices in social movements*. Community Informatics Research Network (CIRN) Conference 2011. Monash Centre, Prato, Italy: 9-11 November 2011. [Online]. Retrieved from: [http://academia.edu/1234227/studying\\_media\\_practices\\_in\\_social\\_movements](http://academia.edu/1234227/studying_media_practices_in_social_movements). Date accessed: 7 July 2013.
- Trigger, B. G. (1984). Alternative archaeologies: Nationalist, colonialist, imperialist. *Man*, 19(3), 355-370.
- Trigger, B. G. (2008). "Alternative archaeologies" in historical perspective. In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 187-195. New York: Springer.
- Tripp, T. M., & Gregoire, Y. (2011). When Unhappy Customers Strike Back On the Internet. *MIT Sloan Management Review*, 52(3), 37-44.

- Tudhope, D., May, K., Binding, C., & Vlachdis, A. (2011). Connecting archaeological data and grey literature via semantic cross search. *Internet Archaeology*, 30. [Online] Retrieved from: <http://dx.doi.org/10.11141/ia.30.5>. Date accessed: 18 November 2013.
- Tully, G. (2007). Community archaeology: General methods and standards of practice. *Public Archaeology*, 6(3), 155-187.
- Turkle, S. (1997). *Life on the Screen: Identity in the Age of the Internet*. New York: Touchstone.
- Tweetreach. (2014). *How Far Did Your Tweet Travel?* [Online] Retrieved from <http://tweetreach.com/>. Date accessed: 5 January 2014.
- Twitter. (2013). *About Twitter*. [Online] Retrieved from: <http://twitter.com/>. Date accessed: 1 December 2013.
- Twitter. (2014a). *Changes coming in version 1.1 of the Twitter API*. Twitter Developers Website. [Online] 2 July 2013. Retrieved from: <https://dev.twitter.com/blog/changes-coming-to-twitter-api>. Date accessed: 5 January 2014.
- Twitter. (2014b). *Certified Products Program*. Twitter Developers Website. [Online] December 18, 2013. Retrieved from: <https://dev.twitter.com/programs/twitter-certified-products/>. Date accessed: 5 January 2014.
- Twitter. (2014c). *Frequently Asked Questions*. Twitter Developers Website. [Online] Retrieved from: <https://dev.twitter.com/docs/faq>. Date accessed: 5 January 2014.
- Twitter Advertising Blog. (2013). *New Compete Study: Primary Mobile Users on Twitter*. [Online] 11 February 2013. Retrieved from <https://blog.twitter.com/2013/new-competite-study-primary-mobile-users-on-twitter>. Date accessed: 5 February 2014.
- Twitter Help Centre. (2014). *Editing Your Profile*. [Online] Retrieved from <https://support.twitter.com/groups/51-me/topics/206-profile-settings/articles/127871-editing-your-profile#>. Date accessed: 6 February 2014.
- Ucko, P. J. (1990). Foreword. In: Gathercole, P., & Lowenthal, D. (Eds.), *The Politics of the Past*, ix-xxi. London: Unwin Hyman.
- Ucko, P. J. (Ed.). (1995). *Theory in Archaeology: A World Perspective*. London: Routledge.
- Ucko, P. J. (1997). *Academic Freedom and Apartheid*. London: Duckworth.

- UCL Information Services Division. (2014). *Opinio - E-Learning Support for Students*. [Online] Retrieved from: <http://wiki.ucl.ac.uk/display/ELearningStudentSupport/Opinio>. Date accessed: 5 January 2014.
- UCL Research Ethics Committee. (2013). *Accepted Ethical Standards*. [Online] Retrieved from: <http://ethics.grad.ucl.ac.uk/accepted-ethical-standards.php>. Date accessed: 19 November 2013.
- UK Online Centres. (2012). *Helping Communities Tackle Social and Digital Exclusion*. [Online] Retrieved from: <http://www.ukonlinecentres.com/>. Date accessed: 20 November 2012.
- UNESCO. (2003). *The Prague Declaration*. "Towards an Information Literate Society." [Online] Retrieved from: <http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/praguedeclaration.pdf>. Date accessed: 29 January 2014.
- Union Metrics Historical@Unionmetrics.Com (2013) Tweetreach Historical Analytics For #Pubarch #Archaeology #Archeology #Commarch #Communityarchaeology [Email]. Message To Lorna Richardson (L.Richardson@Ucl.Ac.Uk). Sent 6 November 2013: 18.07pm.
- University and College Union (UCU). (2011). *New Analysis Highlights the Great Education Divide across Britain*. [Online] 22 July 2011. Retrieved from: <http://www.ucu.org.uk/index.cfm?articleid=5676>. Date accessed: 3 February 2013.
- University of Bristol Centre for Public Engagement. (2013). *Know Your Bristol*. [Online] Retrieved from: <http://www.bristol.ac.uk/public-engagement/projects/other-projects/know-your-bristol/>. Date accessed: 14 October 2013.
- University of Oxford Archaeology Department. (2014). *Hillforts Atlas Project: Project Aims*. [Online] Retrieved from: <http://www.arch.ox.ac.uk/hillforts-aims.html>. Date accessed: 2 February 2014.
- University Of Salford. (2013). *Digs In Your Community*. [Online] Retrieved from: <http://www.salford.ac.uk/cst/research/applied-archaeology/community-engagement>. Date accessed: 2 November 2013.
- UrCrowdsourc. (2013). *About*. [Online] Retrieved from: <http://urcrowdsourc.org/omeka/about>. Date accessed: 14 October 2013.
- Vasagar, J. (2010). Universities alarmed by 40% cut to teaching budgets. *The Guardian*. [Online] October 20, 2010. Retrieved from: <http://www.guardian.co.uk/education/2010/oct/20/spending-review-university-teaching-cuts>. Date accessed: 2 November 2011.



- Vazire, S., & Gosling, S. D. (2004). e-Perceptions: Personality impressions based on personal websites. *Journal of Personality and Social Psychology*, 87(1), 123-132.
- Veenstra, A. S., Iyer, N., Hossain, M. D., & Park, J. (2014). Time, place, technology: Twitter as an information source in the Wisconsin labor protests. *Computers in Human Behavior*, 31, 65-72.
- Vetter, J. (2011). Lay observers, telegraph lines, and Kansas weather: The field network as a mode of knowledge production. *Science in Context*, 24(2), 259-280.
- Virkus, S. (2003). Information literacy in Europe: A literature review. *Information Research*, 8(4), 159. Retrieved from: <http://informationr.net/ir/8-4/paper159.html>. Date accessed: 2 February 2014.
- VisitEngland. (2013). *Visitor Attraction Trends in England 2012*. London: English Heritage.
- Von Däniken, E. (1970). *Chariots of the Gods?* New York: Bantam Books.
- Wakeman, W. E. (1873). Observations on the principal crannogs of Fermanagh. *Journal of the Royal Historical and Archaeological Association of Ireland* (4th Series), 2(2), 305-24. Retrieved from: <http://www.jstor.org/stable/25506623>. Date accessed: 15 December 2013.
- Wallis, R. J. (2003). *Shamans/Neo-Shamans: Ecstasy, Alternative Archaeologies and Contemporary Pagans*. London: Routledge.
- Walsh, K. (1992). *The Representation of the Past*. London: Routledge.
- Walther, J. (2002). Interpersonal effects in mediated interaction: A relational perspective. *Communication Research*, 19, 52-90.
- Wang, H., Chung, J. E., Park, N., McLaughlin, M. L., & Fulk, J. (2012). Understanding online community participation: A technology acceptance perspective. *Communication Research*, 39(6), 781-801.
- Warburton, D. (1997). *Participatory Action in the Countryside: A Literature Review*. Cheltenham: Countryside Commission.
- Warden, P. (2011). Twitter Sets A Price For Tweets. *ReadWrite*. [Online] 8 February 2011. Retrieved from: <http://www.readwriteweb.com/hack/2011/02/twitter-sets-a-price-for-tweet.php>. Date accessed: 5 January 2014.
- Wareham, J., Levy, A., & Shi, W. (2004). Wireless diffusion and mobile computing: Implications for the digital divide. *Telecommunications Policy*, 28(6), 439-457.
- Warren, A. M., Sulaiman, A., & Jaafar, N. I. (2014). Facebook: The enabler of online civic engagement for activists. *Computers in Human Behaviour*, 32, 284-289.

Warren, M. R., Thompson, J. P., & Saegert, S. (2001). The role of social capital in combating poverty. In: Warren, M. R., Thompson, J. P., & Saegert, S. (Eds.), *Social Capital and Poor Communities*, 1-28. New York: Russell Sage Foundation.

Warwick, C., Terras, M., Huntington, P., & Pappa, N. (2008). If you build it will they come? The LAIRAH study: Quantifying the use of online resources in the arts and humanities through statistical analysis of user log data. *Literary and Linguistic Computing*, 23(1), 85-102.

Wasko, M. M., & Faraj, S. (2005). Why should I share? Examining social capital and knowledge contribution in electronic networks of practice. *MIS Quarterly*, 29(1), 35-57.

Waterton, E. (2005). Whose sense of place? Reconciling archaeological perspectives with community values: Cultural landscapes in England. *International Journal of Heritage Studies*, 11(4), 309-325.

Waterton, E. (2010a). The advent of digital technologies and the idea of community. *Museum Management and Curatorship*, 25(1), 5-11.

Waterton, E. (2010b) *Politics, Policy and the Discourses of Heritage in Britain*. Basingstoke, Hampshire: Palgrave Macmillan.

Waterton, E., & Smith, L. (2010). The recognition and misrecognition of community heritage. *International Journal of Heritage Studies*, 16(1-2), 4-15.

Watkins, S. C. (2009). *The Young and the Digital: What the Migration to Social Network Sites, Games, and Anytime, Anywhere Media Means for Our Future*. Boston: Beacon Press.

Watson, S., & Waterton, E. (2010). Heritage and community engagement. *International Journal of Heritage Studies*, 16(1-2), 1-3.

Waveney Valley Community Archaeology Group. (2014). *About Us*. [Online] Retrieved from: <http://waveneyarchaeology.org/>. Date accessed: 24 March 2014.

Web Ecology Project. (2011). *140 Kit*. [Online] Retrieved from: [http://140kit.com/documents/Regarding\\_Api\\_Change.pdf](http://140kit.com/documents/Regarding_Api_Change.pdf). Date accessed: 13 April 2011.

Weber, L. M., Loumakis, A., & Bergman, J. (2003). Who participates and why? An analysis of citizens on the Internet and the mass public. *Social Science Computer Review*, 21(1), 26-42.

Weber, M. (1930). *The Protestant Ethic and the Spirit of Capitalism*. London: George Allen & Unwin.

Weber, M. (1978). *Economy and Society: An Outline of Interpretive Sociology*. Roth G. & Wittich, C. (Eds.). Berkeley CA: University Of California Press.

- Webster F. (1995). *Theories of the Information Society*. London/New York: Routledge
- Weenig, M. W., & Midden, C. J. (1991). Communication network influences on information diffusion and persuasion. *Journal of Personality and Social Psychology*, 61(5), 734-742.
- Weinberger, D. (2011). *Too Big to Know*. New York: Basic Books.
- Weir, G. R. S., Toolan, F. & Seemed, D. (2011). The threats of social networking: Old wine in new bottles? *Information Security Technical Report*, 16(2), 38-43.
- Wellman, B. (1982). Studying personal communities. In: Marsden, P., & Lin, N. (Eds.), *Social Structure and Network Analysis*. Beverley Hills, CA: Sage.
- Wellman, B. (1992). How to use SAS to Study Egocentric Networks. *Cultural Anthropology Methods*, 4(2), 6-12.
- Wellman, B. (2001). Physical place and cyberspace. *International Journal of Urban and Regional Research*, 25(2), 227-252.
- Wellman, B., & Gulia, M. (1999). Virtual communities as communities: Net surfers don't ride alone. In: Smith, M. A., & Kollock, P. (Eds.), *Communities in Cyberspace*, 163-190. London: Routledge.
- Wessels, B. (2009). *Understanding the Internet: a socio-cultural perspective*. Basingstoke: Palgrave.
- Wessels, B. (2013). The reproduction and reconfiguration of inequality: differentiation and class, status and power in the dynamics of digital divides. In: Ragnedda, M., & Muschert, G. W. (Eds.), *The Digital Divide: The Internet and Social Inequality in International Perspective*, 17-28. London: Routledge.
- West, C. (2013). The thing is...: a new model for encouraging diverse opinions in museum outreach. *Museum Management and Curatorship*, 28(1), 107-123.
- Wheeler, R. E. M. (1955). *Still Digging: interleaves from an antiquary's notebook*. London: Michael Joseph.
- Wheeler, R. E. M. (1956). *Archaeology from the Earth*. Harmondsworth: Penguin.
- Whimster, S. (Ed.). (2004). *The Essential Weber: A Reader*. London: Routledge.
- White, D., & Le Cornu, A. (2011). Visitors and residents: A new typology for online engagement. *First Monday*, 16(9). [Online] Retrieved from: <http://www.firstmonday.org/article/view/3171/3049>. Date accessed: 6 September 2011.
- Wickson, F., Delgado, A. & Kjølberg, K. L. (2010). Who or What is 'The Public'? *Nature Nanotechnology*, 5(11), 757-758.

- Wiggins, A., & Crowston, K. (2011). *From conservation to crowdsourcing: A typology of citizen science*. 44th Hawaii International Conference on System Sciences (HICSS). [Online] Retrieved from: <http://ieeexplore.ieee.org/xpl/ArticleDetails.jsp?arnumber=5718708>. Date accessed: 9 October 2013.
- Wikipedia. (2014). *Hashtag*. [Online] Retrieved from: <http://en.wikipedia.org/wiki/Hashtag>. Date accessed: 24 March 2014.
- Wilensky, H. L. (1964). The professionalization of everyone? *American Journal of Sociology*, 70(2), 137-158.
- Williams, S. (1987). Fantastic archaeology: What should we do about it? In: Harrold, F. B., & Eve, R. A. (Eds.), *Cult Archaeology and Creationism*, 124-133. Iowa City: University of Iowa Press.
- Willmott, P. (1986). *Social Networks, Informal Care and Public Policy*. London: Policy Studies Institute.
- Wiles, R., Crow, G., & Pain, H. (2011). Innovation in Qualitative Research Methods. *Qualitative Research*, 11(5), 587-604.
- Wilkins, B. (2012). Communication: Cracking castles and mega moats; Adding value and social media. *The Archaeologist*, 86, 11-17.
- Wilson, T. D. (1999). Models in information behaviour research. *Journal of Documentation*, 55(3), 249-270.
- Wintour, P. (2012). Unemployed to be forced to Use Government Job Website. *The Guardian*. [Online] 20 December 2012. Retrieved from: <http://www.guardian.co.uk/politics/2012/dec/20/unemployed-forced-government-job-website>. Date accessed: 28 December 2012.
- Witte, J. C. & Mannon, S. E. (2010). *The Internet and Social Inequalities*. London: Routledge.
- Wahlgren, H., & Svanberg, F. (2008). Public archaeology as renewer of the historical museum. *Public Archaeology*, 7(4), 241-258.
- Wolle, A-C, & Tringham, R. E. (2000). Mutliple Catalhöyüks on the worldwide web. In: Hodder. I. (Ed.), *Towards Reflexive Method in Archaeology: The Example of Catalhöyük*, 207-218. Cambridge: McDonald Institute of Research and British Institute of Archaeology at Ankara.
- World Archaeological Congress (WAC). (2013). *About WAC*. [Online] Retrieved from: <http://www.worldarchaeologicalcongress.org/about-wac>. Date accessed: 25 December 2013.
- World Bank. (2011). *Social Capital*. [Online] Retrieved from: <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTSOCIALDEVELOPMENT/EXTTSOCIALCAPITAL/0,,menuPK:401021~pagePK:149018~piPK:149093~thesitePK:401015,00.html>. Date accessed: 19 September 2013.

- Wright, A. (2008). Searching the deep web. *Communications of the Association of Computing Machinery*, 51(10), 14-15.
- Wyatt, D. (2013). Twitter troll forced to apologise after calling historian Mary Beard a 'Filthy old slut'. *The Independent*. [Online] 30 July 2013. Retrieved from: <http://www.independent.co.uk/arts-entertainment/tv/news/twitter-troll-forced-to-apologise-after-calling-historian-mary-beard-a-filthy-old-slut-8737641.html>. Date accessed: 24 January 2014.
- Wylie, A. (2008). The integrity of narratives: Deliberative practice, pluralism and multivocality. In: Habu, J., Fawcett, C., & Matsunaga, J. M. (Eds.), *Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies*, 201-212. New York: Springer.
- Wynne, B. (1992). Public understanding of science research: New horizons or hall of mirrors? *Public Understanding of Science*, 1(1), 37-43.
- Xenitidou, M., & Gilbert, N. (2009). *Innovations in Social Science Research Methods*. ESRC National Centre for Research Methods Report. Guildford: University of Surrey. Retrieved from: [http://eprints.ncrm.ac.uk/804/1/ISSRM\\_Report\\_Public.pdf](http://eprints.ncrm.ac.uk/804/1/ISSRM_Report_Public.pdf). Date accessed: 24 March 2014.
- Xie, H. I. (2003). Supporting ease-of-use and user control: Desired features and structure of Web-based online IR systems. *Information Processing & Management*, 39(6), 899-922.
- Yang, L. X., Yang, X., Liu, J., Zhu, Q., & Gan, C. (2013). Epidemics of computer viruses: a complex-network approach. *Applied Mathematics and Computation*, 219(16), 8705-8717.
- Yar, M. (2004). Editorial: 'Community' Past, Present, and Future. *Social Issues*, 2(1). Retrieved from: <http://www.whb.co.uk/socialissues/indexvol2.htm>. Date accessed: 3 March 2014.
- Yardi, S., Romero, D., Schoenebeck, G., & Boyd, D. (2010). Detecting spam in a Twitter Network. *First Monday*, 15(1). [Online] Retrieved from: <http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/279>. Date accessed: 5 February 2014.
- Zeldes, N. (2009). How to beat information overload. *IEEE Spectrum*. [Online] 30 September 2009. Retrieved from: <http://spectrum.ieee.org/computing/it/how-to-beat-information-overload/0>. Date accessed: 4 December 2012.
- Zia-Ebrahimi, R. (2010). Bombard Iran...with broadband. *The Guardian*. [Online] 24 February 2010. Retrieved from: <http://www.guardian.co.uk/commentisfree/2010/feb/24/iran-protest-internet-satellite>. Date accessed: 3 December 2012.

Zickuhr, K., & Smith, A. (2012). *Digital Differences*. *Pew Internet Report*. [Online] 13 April 2012. Retrieved from <http://pewinternet.org/reports/2012/digital-differences.aspx>. Date accessed: 4 December 2012.

Zurkowski, P. G. (1974). *The Information Service Environment: Relationships and Priorities*. National Commission on Libraries and Information Science, Washington, DC. National Program for Library and Information Services. Retrieved from: <http://eric.ed.gov/?id=ED100391>. Date accessed: 24 March 2014.