ARTICLE

A Digital Public Archaeology?

Lorna Richardson*

Digital Public Archaeology is a very new label for a contemporary practice, and as such has been subject to a limited amount of theoretical scrutiny. The rapid pace of change within Internet technologies has significantly expanded potential for this 'digital' form of Public Archaeology practice. Internet technologies can be used to gather contributions of 'crowd-sourced' archaeological content; to share and discuss archaeological news and discoveries; foster online community identity, situated around the topic of archaeology and wider heritage issues, or to elicit financial support. Expectations of and opportunities for social, collaborative and individual participation and interaction with cultural heritage have grown accordingly. Professional archaeological organisations are increasingly encouraged, if not required, to disseminate their grey literature reports, publications, educational resources, data-sets, images and other archaeological informatics through digital means, frequently as mandatory outputs for impact assessment and public accountability. Real-time sharing, comment and feedback of archaeological information online and via mobile technologies stand in contrast to lengthy waits for publication and wider dissemination. This paper will explore the literature on the practice of Public Archaeology in the UK, and issues associated with the development of digital public engagement in the heritage sector.

Introduction

It is over 60 years since Sir Mortimer Wheeler wrote on the duties towards dissemination that the archaeologist owes the public (Wheeler 1954: 224). It is some 40 or more years since Fritz and Plog wrote in American Antiquity that, '...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). Influenced by post-processual thought, the intervening decades have seen the topic of communication between archaeology as a discipline and the wider public move beyond a "technical exercise of dissemination" (Mer-

riman 2002: 541) to become a subject that is an accepted part of academic study within archaeology. Much of the literature on the subject defines Public Archaeology (Davis 1997: 86; Schadla-Hall 1999: 174; Ascherson 2000: 2; Merriman 2004: 2; Matsuda 2009: 69) 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. The application of the label 'Public Archaeology' is broad, deep and all-embracing. The expansion of the Internet has created space for new applications of Public Archaeology practice with accessible, sustainable and diverse cultural heritage content online (Missikoff 2006: 142).

* UCL Centre for Digital Humanities, United Kingdom
l.richardson@ucl.ac.uk

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. Public participation has been integrated into UK planning policy and planning process since the publication of the Sheffington Committee on Public Participation in Planning in 1969 (Warburton: 1997). Since the Coalition Government took power in 2010 there has been a further increase in visible political commitment to this, including statutory support for public involvement and the inclusion of lay people and communities in decisions on planning, sustainable development and local heritage (Department for Communities and Local Government, 2012). The nurturing of opportunities for public participation in many public arenas over the decades has called for the increasing need for the dissemination of information, publications, educational resources, datasets, and images digitally (Archaeological Data Service 2010; Heritage Lottery Fund 2012; Institute of Archaeologists 2012). This need is often a result of compulsory requirements for grant funding and impact assessment, and an increasing emphasis within these public bodies and professional archaeological organisations on the visibility of being publicly accountable, enabled through the use of Internet technologies.

UK Public Archaeology and Multi-Vocality

Public Archaeology as a discipline examines the relationship between past human activities and contemporary society. It critiques the process and means through which the archaeological sector influences, facilitates, limits and exposes the relationships between the past, present and future. Public Archaeology as a practice can be seen in the democratisation of communication, activity or administration; communication with the public; involvement of the public, or preservation and administration of archaeological resources for public ben-efit by voluntary or statutory organisations. Both Merriman (2004) and Matsuda (2008) have examined theoretical approaches to Public Archaeology, and for both authors, the conceptual and ethical paradigm of Public Archaeology is the renegotiation and exploration of the issues of power relations, participation, individual agency and social inequalities, through communication and dialogue between archaeological professionals and non-professional members of the general public. Copeland (2004), Hodder (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. Questioning the dominant position of the heritage professional can be an uncomfortable business for those working in the profession. According to Holtorf and Hogberg (2005: 80) there are two essential areas of knowledge that community archaeology requires its practitioners to acquire: an understanding of archaeological resources, including interpretations, and an understanding of contemporary society and its interaction with the past. Negotiation around issues of expert knowledge, ownership and control are meaningless unless communities are engaged with the management process, rather than involved as recipients of outreach work or as the end product of specific projects (Waterton 2005: 319; Emerick 2009: 104).

Organisations undertaking work that falls under the banner of 'doing Community Archaeology' are disparate, often grant-funded and, as a result, short-term. These organisations bring their own sub-disciplinary theories, traditions and practice to the Community Archaeology 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: 218), Moser et al. (2002) and Tully (2007) see

Community Archaeology as carefully managed collaboration between professional archaeological experts and amateur participants. Tully defined the practice of Community Archaeology as taking a 'top-down' approach to public participation in archaeological work, with the aim, methods and work overseen and controlled by the experts. In this context, professional undertakes archaeological work within a community context, supported by voluntary, amateur assistance, but the professional expert identifies the archaeological contexts and artefacts, oversees the data collection, processes the data and makes the final interpretations. Belford (2011: 64) argues that the 'top-down' approach to Community Archaeology maintains the expert status of the professional archaeologist, which gives voice to participants supported by the validation of these experts. Whilst this approach to participation 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. Belford (2011), however, makes a strong case that this approach only excludes individuals and groups that choose to be excluded. As Waterton (2005) and Kenny (2009) acknowledge, the prevailing political agendas of the past two UK governments - combating social exclusion, supporting social cohesion, creating a 'Big Society' - have driven resources and funding for Community Archaeology projects along this 'top-down' model. This has often taken place out of funding and administrative necessity and complicity 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.

Perkin (2010: 117) has argued that local heritage in the UK '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'. The practice of community-led 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 archaeological activity. 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 practise of public archaeology projects in the hands of the non-professionals - led by the needs of communities themselves, supported by professional archaeologists at the invitation of the community members. The issue of how far 'mainstream cultural interpreters' 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). Certainly in the UK, the extent to which Community Archaeology projects are orientated towards the archaeological interests and needs of the non-professionals in reality is questionable. Funding applications to support fieldwork require professional input and specialist equipment is expensive. Understanding where and how to undertake archaeological work relies heavily on the professional advice of local authority archaeologists (where they still exist). Professional support is usually necessary at some stage of the Community Archaeology process to deal with survey, health and safety, or post-excavation and storage, and regional research agendas tend to be aligned to academic research frameworks. The research of both Isherwood (2009) and Simpson (2010) into Community Archaeology in the UK provides further information and debate on this topic.

Digital Potential
So what can digital technologies provide for Public Archaeology? There has been a critical cultural shift in Internet use in the society. From being dominated by static websites in

the late 1990's, the Internet of 2013 encourages and supports community building, public participation and the creation of information (Castells; 1996; Flew 2008; O'Reilly 2005; Cormode & Krishnamurthy 2008). The growth of Internet technologies and the World Wide Web over the past twenty years has been encouraged by falling costs of equipment, and greater public access to broadband, wireless and mobile technology. New participatory media platforms and new methods by which to communicate through existing media online are constantly in development such as Pinterest, a pinboard-style photo-sharing site (pinterest.com) or Vine, a mobile app owned by twitter which allows users to create and post short videos (vine.com). These continual advances in communications have fundamentally and irrevocably changed the landscape and format of human interaction. For those who saw the 'democratising' and barrier-quashing potential of Internet technologies for Public Archaeology, such as McDavid (2004), Newman (2009), Richardson (2009) and Morgan & Eve (2012), the use of social and mobile media could link people with similar interests together to research, collaborate, discuss and enjoy archaeology, regardless of location, education, academic affiliation and social status.

Techno-utopians might claim that, through online communications, Internet and social media technologies can foster new dialogue, underpin new power relations and support representations of community constructed archaeological knowledge, whilst subverting archaeological data from structural control and redistributing access to cultural resources. The practice and discussion of archaeological field work and finds can take place on contemporary platforms with diverse, global audiences. Social and participatory media offer new ways for the Internet-using public to explore, appreciate and experience representations of the past in depth and with increased nuance, as an iterative process, in what has become a competitive and diverse leisure market for attention during our free time (Merriman 2004: 4). This resonates with Hodder's insistence that multi-vocality is 'an oppositional practice, capable of critically transforming archaeology' and encourages belief that the use of participatory technology can democratise enquiry (Hodder 2008: 210).

Defining the Role of a 'Digital' Public Archaeology

Digital Public Archaeology projects offer opportunities for a highly personal inter-action with the past for a worldwide audience. This 'digital' form of Public Archaeology encompasses methods for engaging the Internet-using public with archaeology through Web and mobile technologies, as well as social media applications, and the communicative process through which this engagement is mediated online. Curating a website that contains pages of hyperlinked text is no longer enough if an organisation is to take full advantage of public interest and activity in social networking, and encourage public participation in the past as it is presented online. Internet technologies currently exist that allow anyone to personally 'experience' archaeological work undertaken by others through all stages of the process, from fieldwork through post-excavation to archiving and publication, in a multitude of formats. The wide range of formats include 140 character Tweets, emails, messages to Facebook groups, videos on YouTube, photographs on an Internet-based image archive, sound recordings, online forums, downloadable reports and 3D visualisations. Internet users can also create their own archaeological content; they can explore, interpret and reuse open data, upload their own films and images, or discuss their own thoughts and theories on the archaeological material available online. Only the tangible materiality of the archaeological experience is missing.

Waterton (2005; 2010) writes of the need to rethink the concept of community and audience in light of the explosive growth

of Internet technologies and social media in the heavily-mediatised cultural sector. For heritage, this has been especially 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 2010: 5). From a heritage education perspective, Corbishley (2011: 16) demonstrates the importance of an Internet presence when accessing archaeological information, or organising the practical arrangements for visiting heritage sites.

'Digital Public Archaeology' is a very new label for a contemporary practice and as such the practice has been subject to a limited amount of theoretical scrutiny. There has been a distinct lack of critical observation of the use, extent and impact of web technologies in the archaeological sector, both professional and voluntary, especially within the academic literature. The 'rhetoric of community' (Waterton & Smith 2010: 8) in relationship to Internet technology needs unpicking. It is perhaps too optimistic to imagine that the Internet will reach the 'economically and technologically disenfranchised' (McDavid 2004: 164) - through lack of access, socioeconomic inequalities, lack of skills, geographical location or poor infrastructure, a significant number of people in the UK are marginalised from access to the Internet.

Managing Archaeological Authority
How does the archaeological authority of respected and recognisably authoritative archaeological organisations manifest itself online? As Faulkner has argued, the Public Archaeology of the heritage establishment - the power brokers, policy makers, commercial archaeological organisations and information gatekeepers - need only for 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'

(Faulkner 2000: 29). An avalanche of factors have buried public access to the archaeological process, especially since the introduction of Planning Policy Guidance 16 in November 1990 and twenty years later in the subsequent Planning Policy Statement 5: Planning and the Historic Environment of 2010. Complex Health and Safety at Work legislation, commercial sensitivities, standardisation of practice, curatorial responsibilities, equipment and archiving costs, the heavily-guarded status of the archaeologist, hierarchies and professional elitism have all contributed to restricted access to the majority of archaeological work - especially excavations - that is undertaken in the UK. 90% 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). Both Henson (2009: 117) and Waterton and Smith (2010) acknowledge that archaeology is inherently elitist, and a mutual sense of archaeological community exists within the sector itself; professional archaeologists define and delineate archaeology through policy and professional expert practice.

Despite the rise of community and collaborative archaeological projects and funding paradigms, archaeology in the English-speaking world does not 'belong to all', nor does it open itself to participation by the public as much as it could, contra Carman (2010: 151). However, in the realms of 'community' archaeology, archaeological outreach and other forms of public engagement within the archaeological practice and process, we might reasonably expect to find evidence of multi-vocality through an online presence on par with the aspirations of such projects in the non-digital sphere for inclusivity, openness and participation. The opportunity for collaborative relationships with audiences 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.

Unlike the museum sector, for example, the world of academic and commercial archaeology in the UK does not, on the whole, claim to value multiple perspectives and voices in the interpretation and public understanding of the past online. Archaeological data available on the Internet 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. Such narratives can be used to assert local identity or used to stake claims of legitimacy within politicised communities (Crooke 2010: 25). The professional identity of the UK archaeologist, as opposed to the interested 'amateur' can be highlighted through registered membership with professional organisations - such as the Institute for Archaeologists (IFA) - which requires evidence of work experience and continuing professional development. Although the IFA are in the process of opening their membership to community and voluntary archaeology groups (Institute of Field Archaeologist 2013). Affiliation with an academic institution is somewhat more difficult for community archaeology organisations, outside the duration of co-organised Public Archaeology projects. The distinction between archaeologist and non-archaeologist can be fluid online - the differences between a professor and an undergraduate on Twitter for example, can only be seen in the context of a 140-character biography - the content of which may not provide any links to identify the Tweeter as a member of a real-life institution (Richardson 2012).

The content and quality of the communication is what seems to count in an online context and many popular and informative members of the archaeological community on Twitter and Facebook are not professional academics. Credentials are not what matters to techno-utopians like Clay Shirkey: the ability to take part in peer-production of information - that is, crowd-sourcing, and the ability to make a public 'performance of competence' online - is of absolute importance (O'Neil 2009: 2). Perhaps it is a Goffmanesque performance of archaeological expertise that underlines the authoritative nature of 'being an archaeologist'. Yet these 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).

The Issue of Online Participation

The Internet as a platform, and the means through and by which people use it, has been the source of many debates about the implications of the Internet for social inequality (Dobransky & Hargittai 2012; Hargittai 2002; 2008; Hargittai & Hinnant 2008; Hargittai & Walejko 2008; Neilsen 2006; Oxford Internet Institute 2012). 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, the Internet remains a place and activity for those that have access and know how to use it. In the last quarter of 2012, over 7 million people in the UK were still without an Internet connection at home (Office for National Statistics 2012). 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, 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 2011, 156). What people can and can't find, or use, or do, on the Internet will dictate what these technologies mean to them and what economic and social capital affordances and benefits these technologies bring.

For archaeological organisations interested in exploiting Internet and mobile communication platforms for public engagement, the wider implications of these social inequali-

ties inherent in Internet technologies needs careful consideration. This is especially relevant in the context of those projects funded by the Heritage Lottery Fund and other grant-awarding bodies that expect evidence of widening participation, public engagement and impact. Negotiating platforms and roles within different social media and online communities requires differing kinds of digital literacy, and is heavily dependent on motivation, culture and context (White & Le Cornu 2011). There are many issues regarding access to technology, including access to equipment and connection, ICT skills and confidence with technology, access to institutional and social support networks online and the freedom and ability to use Internet technologies as needed. There are many subtle but important factors at work that create digital divides. As Witte & Mannon (2010: 5) and the UK Department for Business, Innovation and Skills 2011 Skills for Life Survey (2011: 4) have highlighted, there are also important and significant differences in digital literacies and Internet competencies, even amongst populations with access to computers. According to the research by the Department of Business, Innovation and Skills into adult educational attainment, one in six adults have literacy and numeracy levels that are below Entry Level 3 (equivalent to the national curriculum attainment at aged 9–11 (Department of Business, Innovation and Skills, 2011: 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 will also be affected (Anderson 2007). The 2012 National Report by English Heritage 'Heritage Counts' (English Heritage 2012) noted the rise in importance of digital media in the heritage sector, but also stated that according to their research, only 1.8% of the Internet-using public in England had ever participated in a heritage forum online, or made comments on a heritage-related website. Although these statistics from English Heritage deserve further investigation, the low levels of heritage social media participation indicated in the 2012 National Report should be a warning bell for organisations who intend to explore digital public engagement as a method of encouraging participation in their projects. An audience without the motivation, skills and preferences needed to ask questions, create content or contribute to discussions will need a significant amount of support and encouragement to engage with any archaeological information provided. A public audience with access to the Internet will not automatically guarantee that the creation of a digital Public Archaeology project will widen public participation or increase public involvement and discussion. Research suggests that the majority of online media-users still prefer to 'lurk' on digital platforms and simply read and observe without contributing (Brandtzæg, 2010). Simply observing discussion and absorbing information will still create the necessary digital footprints that can be used as evidence for public engagement and participation, and more importantly, they have intrinsic value for the user for the enjoyment of archaeological material online, and offer possibilities for informal learning.

Different levels of user participation certainly makes it more difficult for organisations to measure impact effectively if they wish to move beyond the simple use of visitor analytics data (Wilkins 2012). The real risks for UK-based Public Archaeology projects that wish to pursue an inclusive and widening participation agenda are created when the contributions received through social and participatory media are representative of only a small cross section of the project's target audiences. 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 made may represent an active, vocal online minority with sharp and experienced digital elbows.

Conclusion

There is great potential for the Internet to guide and support individuals and communities in finding their own archaeological 'voice'. Merriman writes that, 'a publicly-oriented archaeology requires that archaeologists understand the public more fully' (Merriman 2002: 563). Archaeologists need to understand and explore further public consumption and interpretation of archaeology in the media. Hortolf (2007) writes that archaeology must engage with popular culture if it is to survive. Archaeology has, as Merriman (2002: 547) argues, 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. 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 Public Archaeology.

For the archaeological sector, engaging in information-sharing and dialogue online has to begin with an understanding of how information about the past is sought, processed, received, interpreted, associated, subverted and recycled through the Internet. Archaeology's relationship with the public must involve an improved awareness of audience and a willingness to participate in dialogue. New methods are required to measure impact and well-worn paths in outreach and public engagement need to be rethought and re-examined in this light. Organisational communication policies are being adjusted and created, and the problems and financial implications of long-term multimedia storage are under review. Organisational perceptions of the ephemeral nature of these media need to be addressed. In the current era of economic austerity difficult choices lie ahead for archaeological organisations in both the public and commercial sectors which are centred on issues of allocation of public funding and private investment. As Watson and Waterton have noted, a sector that understands the benefits of engagement with the public audience will be better able to influence and direct public support for their own roles and 'arcane' interests (Watson & Waterton 2010: 1). How do we, as a discipline, converse with non-archaeologists through these Internet technologies, with relevance and academic rigour, and in a language that we can all understand?

References

Anderson, P 2007 What is web 2.0? Ideas, technologies and implications for education. Bristol: JISC. http://www.jisc.ac.uk/media/documents/techwatch/tsw0701b.pdf (accessed 26th May 2013)

Archaeological Data Service 2010 ALSF Dissemination: Benchmark Report Theme 4C. Outreach: The Sands of time, Aggregates and the public. http://archaeologydataservice.ac.uk/archives/view/alsfdisc_eh_2010/ (accessed 26th May 2013)

Ascherson, N 2000 Editorial. *Public Archaeology* 1(1), pp. 1–4.

Belford, P 2011 Archaeology, Community, and Identity in an English New Town. *The Historic Environment* 2(1), pp. 49–67. http://dx.doi.org/10.1179/175675011X12943261434602

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), pp. 940–956. http://dx.doi.org/10.1016/j.chb.2010.02.008

Carman, J 2010 Coming Full Circle: Public Archaeology as Liberal Social Programme, Then and Now. In: I. Russell & S. Koerner (eds.) *Unquiet Pasts: Risk Society, Lived Cultural Heritage, Re-designing Reflexivity.* Farnham: Ashgate Publishing Ltd, pp. 151–160.

Castells, M 1996 *The Rise of the Network Society. The Information Age: Economy, Society and Culture.* Volume 1. London, Blackwell.

Christensen, C 2011 Twitter Revolutions? Addressing Social Media and Dissent. *The Communication Review* 14(3), pp. 155–157.

Copeland, T 2004 Presenting Archaeology to the Public: Constructing Insights on-site. In: N. Merriman (ed.) *Public Archaeology*. London: Routledge, pp. 132–144.

Corbishley, M 2011 Pinning Down the Past: Archaeology, Heritage & Education Today. Woodbridge: The Boydell Press.

Cormode, G and **Krishnamurthy, B** 2008 Key differences between Web 1.0 and Web 2.0. *First Monday* 13(6), 2 June 2008. http://firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/2125/1972 (accessed: 26th May 2013)

Crooke, E 2010 The Politics of Community Heritage: Motivations, Authority and Control. *International Journal of Heritage Studies* 16(1–2), pp. 16–29. http://dx.doi.org/10.1080/13527250903441705

Crosby, A 2002 Archaeology and Vanua Development in Fiji. *World Archaeology.* 34(2), pp. 363–378.

Davis, K L 1997 Sites without Sights: Interpreting Closed Excavations. In: . J. H. Jameson (ed.) *Presenting Archaeology to the Public*. Walnut Creek: AltaMira Press, pp. 84–98.

Department for Business Innovations and Skills. 2011 Skills for Life Survey: Headline Findings. December 2011. BIS Research Paper 57. http://www.bis.gov.uk/assets/biscore/further-education-skills/docs/0-9/11-1367-2011-skills-for-life-survey-findings (accessed: 26th May 2013)

Department for Communities and Local Government. 2012. National Planning Policy Framework. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf. (accessed: 26th May 2013)

Dobransky, K and **Hargittai, E** 2012 Inquiring Minds Acquiring Wellness: Uses of Online and Offline Sources for Health Information. Health Communication. 27(4), pp. 331–343.

Emerick, K 2009 Archaeology and the Cultural Heritage Management 'Toolkit': The Example of a Community Heritage Project at Cawood, North Yorkshire. In: E. Waterton & L. Smith (eds). Taking Archaeology Out of Heritage. Cambridge: Cambridge Scholar's Publishing, pp. 91–116.

English Heritage 2012 Heritage Counts National Report. Using & Benefiting: Volunteering in the Historic Environment. http://hc.english-heritage.org.uk/National-Report/ (accessed: 26th May 2013)

Faulkner, N 2000 Archaeology from Below. *Public Archaeology* 1, pp. 21- 33.

Flew, T 2008 New Media: An Introduction (3rd ed.). Melbourne: Oxford University Press.

Fritz, J M and **Plog, F T** 1970. The Nature of Archaeological Explanation. American Antiquity 35(4), pp. 405–412.

Fulford, M 2011 The Impact of Commercial Archaeology on the UK Heritage. In: J. Curtis, M. Fulford, A. Harding & F. Reynolds (eds.) History for the Taking? Perspectives on Material Heritage. London: British Academy, pp. 33–53.

Habu, J and **Fawcett, C** 2008 Science or Narratives? Multiple Interpretations of the Sannai Maruyama Site, Japan. In: J.Habu, C. Fawcett & J. M. Matsunaga (eds.), Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies. New York: Springer, pp. 91–117.

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), pp. 1239–1244.

Hargittai, E 2008 The Digital Reproduction of Inequality. In: D. Grusky (ed). Social Stratification. Boulder, CO: Westview Press, pp. 936–944.

Hargittai, E and **Hinnant, A** 2008 Digital Inequality: Differences in Young Adults' Use of the Internet. *Communication Research* 35, pp. 602–621

Hargittai, E and **Walejko, G** 2008 The Participation Divide: Content creation and sharing in the digital age. *Information, Communication and Society* 11(2) pp. 239–256.

Henson, D 2009 What on Earth is Archaeology? In: E. Waterton and L. Smith (eds) Taking Archaeology out of Heritage. Newcastle upon Tyne: Cambridge Scholars Publishing, pp. 117–135.

Heritage Lottery Fund 2012 Evaluation: Good-practice guide. http://www.hlf.org.uk/HowToApply/goodpractice/Documents/Evaluation_Goodpractice_guidance.pdf (accessed: 26th May 2013)

Hodder, I 1999 The Archaeological Process: An Introduction. Oxford: Blackwell.

Hodder, I (ed.) 2000. Towards Reflexive Method in Archaeology: The Example of Catalhoyuk. Cambridge: McDonald Institute of Research and British Institute of Archaeology at Ankara.

Hodder, I 2004 Archaeology Beyond Dialogue. Salt Lake City: University of Utah Press.

Hodder, I 2008 Multivocality and Social Archaeology. In: J.Habu, C. Fawcett & J. M. Matsunaga (eds.), Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies. New York: Springer, pp. 196–212.

Holtorf, C 2007 Archaeology is a Brand! The Meaning of Archaeology in Contemporary Popular Culture. Oxford: Archaeopress.

Holtorf, C and **Hogberg, A** 2005 Talking People: From Community to Popular Archaeologies. Lund Archaeological Review 11- 12, pp. 79 – 88.

Institute of Archaeologists 2013 Voluntary and community archaeology group http://www.archaeologists.net/groups/voluntary (accessed: 15th August 2013)

Institute for Archaeologists 2012 Standards and guidance for stewardship of the historic environment http://www.archaeologists.net/sites/default/files/nodefiles/ifa_standards_stewardship.pdf (accessed: 26th May 2013)

Isherwood, R 2009 Community Archaeology. A study of the conceptual, political and practical issues surrounding community archaeology in the United Kingdom today. Unpublished PhD thesis, University of Manchester.

Kenny, J 2009 Unpicking Archaeology and Heritage. In E. Waterton and L. Smith (eds.) Taking Archaeology out of Heritage. Newcastle upon Tyne: Cambridge Scholars Publishing, pp. 209–229.

Liddle, P 1989 Community Archaeology in Leicestershire Museums, In E. Southworth (ed.), Public Service or Private Indulgence? The Museum Archaeologist 13. Liverpool: Society of Museum Archaeologists, pp. 44–46.

Marshall, Y 2002 What is Community Archaeology? *World Archaeology* 34(2), pp. 211–219.

Matsuda, A 2009 The Concept of 'the Public' and the Aims of Public Archaeology. Papers from the Institute of Archaeology http://pia-journal.co.uk/article/view/257/297. (accessed: 26th May 2013)

McDavid, C 2004 Towards a More Democratic Archaeology? The Internet and Public Archaeological Practise. In: N. Merriman (ed.) Public Archaeology. London: Routledge, pp. 159–187.

Merriman, N 2002 Archaeology, Heritage and Interpretation. In: B. Cunliffe, W. Davies, & C. Renfrew (eds.) Archaeology: The Widening Debate. Oxford: Oxford University Press, pp. 541–566.

Merriman, N 2004 Introduction: Diversity and Dissonance in Public Archaeology. In: N. Merriman (ed.) Public Archaeology. London: Routledge, pp. 1–17.

Missikoff, O 2006 Assessing the Role of Digital Technologies for the Development of Cultural Resources as Socio-economic Assets. In: I. Russell (ed.). Images Representations and Heritage: Moving Beyond

Modern Approaches to Archaeology. New York: Springer, pp. 139–159.

Morgan, C and **Eve, S** 2012 DIY and digital archaeology: what are you doing to participate? *World Archaeology* 44(4), pp. 521–537.

Moser, S, Glazier, D, Philips, J, El Nemer, L, Mousa, M, Richardson, S, Conner, A and **Seymour, M** 2002 Transforming Archaeology Through Practice: Strategies for Collaborative Archaeology and the Community Archaeology Project at Qusier, Egypt. *World Archaeology* 34(2) pp. 265–287.

Moshenska, G 2008 Community Archaeology From Below: A Response to Tully. *Public Archaeology* 7(1), pp. 52–53.

National Institute of Adult Continuing Education. 2011. NIACE response to the 2011 Skills for Life Survey. 1st December 2011. http://www.niace.org.uk/news/niace-response-to-the-2011-skills-forlife-survey (accessed: 26th May 2013)

Neilsen, J 2006 Participation Inequality: Encouraging More Users to Contribute.

Newman, M 2009 Devil's Advocate or Alternate Reality: Keeping Archaeology in Heritage. In: E. Waterton & L. Smith (eds). Taking Archaeology out of Heritage. Newcastle: Cambridge Scholars Publishing, pp. 170–191.

Office for National Statistics. 2012b. Internet Access Quarterly Update. 14th November 2012. http://www.ons.gov.uk/ons/rel/rdit2/internet-access-quarterlyupdate/ 2012-q3/stb-iaqu.html (accessed: 26th May 2013)

O'Neil, M 2009 Cyberchiefs Autonomy and Authority in Online Tribes. London: Pluto.

O'Reilly, T 2005 What is Web 2.0?. 30th September 2005 http://www.oreilly.com/pub/a/oreilly/tim/news/2005/09/30/what-isweb-20.html (accessed: 26th May 2013)

Oxford Internet Institute 2012. Non-users and Ex-users: Lifestage, Education and Income. 30th May 2012 http://microsites.oii.ox.ac.uk/oxis/blog/2012/non-users-and-ex-userslifestage-education-and-income (accessed: 26th May 2013)

Perkins, 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), pp. 107–122.

Pruitt, T C 2011 Authority and the production of knowledge in archaeology. PhD Thesis. University of Cambridge. http://www.dspace.cam.ac.uk/handle/1810/241365 (accessed: 27th May 2013)

Richardson, L 2009 Measuring the Success of Digital Public Archaeology: Towards a Model for Public Participation in Internet Archaeology. Unpublished M.A dissertation. University College London.

Richardson, L 2012 Twitter & Archaeology: An Archaeological Network in 140 Characters or Less. In: C. Bonacchi (ed) Archaeologists and the Digital: Towards Strategies of Engagement. London: Archetype, pp. 15–24.

Schadla-Hall, T 1999 Editorial: Public archaeology. *European Journal of Archaeology* 2(2), pp. 147–158.

Silberman, N A 2008 Virtual Viewpoints: Multivocality in the Marketed Past? In: J.Habu, C. Fawcett & J. M. Matsunaga (eds.), Evaluating Multiple Narratives: Beyond Nationalist, Colonialist, Imperialist Archaeologies. New York: Springer, pp. 138–143.

Simpson, F 2010 The Values of Community Archaeology a Comparative Assessment between the UK and USA. British Archaeological Reports. Oxford: Archaeopress.

Smith, G S 2006 The Role of Archaeology in Presenting the Past to the Public. In: I. Russell (ed.) Images, Representations and Heritage. New York: Springer, pp. 122–137.

Tully, G 2007 Community Archaeology: General Methods and Standards of Practice. *Public Archaeology* 6(3), pp. 155–187. http://dx.doi.org/10.1179/175355307X243645

Warburton, D 1997 Participatory Action in the Countryside, a Literature Review. Countryside Commission: Cheltenham.

Waterton, E 2005 Whose Sense of Place? Reconciling Archaeological Perspectives with Community Values: Cultural Landscapes in England. *International Journal of Heritage Studies* 11(4), pp. 309–325. http://dx.doi.org/10.1080/13527250500235591

Waterton, E 2010 The Advent of Digital Technologies and the Idea of Community. *Museum Management and Curatorship* 25(1), pp. 5–11.

Waterton, E and **Smith, L** 2010 The Recognition and Misrecognition of Community Heritage. *International Journal of Heritage Studies* 16(1–2), pp. 4–15. http://dx.doi.org/10.1080/13527250903441671

Watson, S and **Waterton, E** 2010 Heritage and Community Engagement. *International Journal of Heritage Studies* 16(1–2), pp. 1–3.

Wheeler, R E M 1954 Archaeology From the Earth. London: Penguin Books.

White, D and **Le Cornu, A** 2011 Visitors and Residents: A New Typology for Online Engagement. First Monday 16(9). http://www.firstmonday.org/htbin/cgiwrap/bin/ojs/index.php/fm/article/view/3171/3049 (accessed: 26th May 2013)

Wilkins, B 2012 Communication: Cracking castles and mega moats; adding value and social media. The Archaeologist 86, pp. 11–17.

Witte, J C and **Mannon, S E** 2010 The Internet and Social Inequalities. London, Routledge.