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Digital Public Archaeology

Abstract: This essay introduces Digital Public Archaeology and its relation with neighboring fields of research and practice. This is achieved by reviewing, exemplifying and critically reflecting upon a selection of relevant themes, including traditions, modes of digital engagement, crowdsourcing, 3D visualisation and simulation, and data science.

Keywords: public archaeology, digital engagement, data science, participation, representation, 3D, crowdsourcing, value

Traditions

Definitions of Public Archaeology are varied and variable. However, in recent years, there has been increasing agreement to frame this field as concerned with researching the relationship between archaeology and society, with the aim of improving such a relationship.¹ Within Public archaeology, the term Digital Public Archaeology (DPA) has often been utilized to refer to studies and practices that reflect on the impact and implications of the Internet, web platforms, digital technologies and devices to engage individuals and groups with archaeology-themed content, and to study these interactions, their dynamics and values.² Numerous publications have discussed the nature of the ‘public’ in public archaeology, stressing for example the three meanings of ‘people,’ ‘state’ and ‘public opinion’³ and, arguably, similar reflections could apply to DPA research and practice. Our conceptualization of the public is crucial in both defining and revealing the kinds of relationships that ‘traditional experts’ wish to establish with other citizens, as powerfully explained by Andrew Bevan’s essay on “Value, Authority and the Open Society.”⁴ In this chapter, I will draw primarily from significant examples emerging from Anglophone practice and scholarship, partly because this has been proactive in undertaking pioneering research in the field and partly as a result of the personal and professional focus of my own work.

⁴ Bevan, “Value, Authority and the Open Society.”

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Because of the theoretical and methodological apparatus it draws upon, Digital Public Archaeology is in dialogue with a number of neighboring traditions, while retaining distinct features. For example, it often operates in synergy with computational archaeology, which has been exploring the potential of computer applications to answer questions about the human past.\(^5\) Online citizen science, the practice of collaborating with citizen researchers to undertake scientific investigations,\(^6\) is also a close ally of DPA to the point that the latter has sometimes been defined as online citizen archaeology, particularly in the context of crowdsourcing agendas and projects (see Crowdsourcing section below, for specific examples). Online citizen archaeology fully expresses the interlinking and interfacing between computational archaeology and public archaeology. The first is in fact leveraged in order to develop platforms and modular crowdsourcing templates useful to produce specific kinds of data of high research quality. Public archaeology feeds into this process, by reflecting on the dynamic tensions between public engagement and community development practices, on the one hand, and technical implementation and quality control on the other. Digital humanities are a further adjacent field, intent on experimenting with and testing methods for the digitization and analysis of data sources in the humanities.\(^7\) Even stronger, perhaps, is the relationship between DPA and digital heritage, which is in the process of shifting from an original and more exclusive interest in digital heritage interpretation such as that expressed by Ross Parry’s work\(^8\) to a broader scope comprising the use of data generated by and through web infrastructures to examine how the past is being incorporated in present-day society.\(^9\)

The difference between digital heritage and DPA deserves further attention and reflection. The former looks at the public experience and understanding of the past as mediated by and researched through digital means, while the latter concentrates on the appropriation of archaeological resources, methods, research and findings about the past by people who do not have professional training in archaeology. Digital heritage and DPA can intersect, especially when digital heritage examines the wider impact of expert practice in archaeology and how archaeological sites, museums and materials are ‘lived’ by contemporaries. Although they do not perfectly coincide, they can integrate and enhance each other substantially. Digital heritage can

\(^{5}\) For example, see A. Bevan and M. Lake, eds, *Computational Approaches to Archaeological Spaces* (Walnut Creek, CA: Left Coast Press, 2013).


\(^{9}\) Bonacchi, and Kryzanska, “Digital Heritage Research Re-theorised.”
provide DPA with a broader context in which to inscribe its research, and DPA can help digital heritage to move beyond a stress on ‘heritage discourse,’ to more deeply consider the nuances of uses of the past by people who operate in different social, socio-cultural and physical contexts. Laurajane Smith’s notion of Authorised Heritage Discourse has been extremely useful to develop critical views of “officially sanctioned” heritage, but has been sometimes critiqued as being perhaps too monolithic and not recognising individual and networked agency to a sufficient extent.

Practices

As I have I stressed elsewhere before, digital transformations should be carefully studied with an approach that remains sceptical towards both digital utopias and digital dystopias and acknowledges the substantive interdisciplinary literature that exist on this topic. Understanding the impact of the Internet and digital technologies in public archaeology entails delving in matters of technicity, “technology considered in its efficacy or operating functioning.”

In my “Digital Media in Public Archaeology” piece, written for the Key Concept in Public Archaeology textbook edited by Gabriel Moshenska, I argued that digital media can activate two possible modes of communication, both viable and employed for DPA purposes in different combinations, a participatory mode and a broadcasting mode. The first welcomes and facilitates citizen’s involvement in the creation of archaeological data, information and interpretations, whilst the second does not. Whether one mode or another is preferred depends on the types of relationships that the initiators wish to establish as well as on the particular affordances of the platforms and tools that are chosen. Research undertaken by Lorna Richardson for the UK in particular has proven that, at least up to 2013, the majority of archaeological organizations still prioritized hierarchical kinds of relationships and were less inclined to embrace participatory forms of engagement. It should be

14 Bonacchi, “Digital Media in Public Archaeology.”
15 Bevan, “Value, Authority and the Open Society.”
noted that the latter also often require greater time, staff, skills and funds to be fully successful, and the limited availability of both can be a deciding factor for cultural institutions. Notwithstanding this overall trend, efforts have been made by some professionals and organisations to develop more critically informed kinds of digital interpretations, often inviting or responding to inputs external to the ‘academy.’ Examples range widely from the work undertaken at the British Museum and the Fitzwilliam Museum, University of Cambridge, at the forefront of 3D modelling, 3D printing and open GLAM (Galleries, Libraries, Archives and Museums), or by the many cases where crowdsourcing was attempted as a way of enabling a new and different way of enjoying archaeological museum collections (e.g. Mary Rose Trust Museum, Egyptian Museum, Petrie Museum, etc.). Recent DPA literature and active projects express a concern with a rich array of themes. Here I highlight three areas that are foci of current research and practice in the UK, US and Europe.

Crowdsourcing

Crowdsourcing undertakings have been inviting citizens’ input in the generation and – less frequently – in the analysis and interpretation of open archaeological and heritage data through bespoke websites, social media and forum technology. The first project to apply crowdsourcing in archaeology has been Field Expedition: Mongolia. Funded by the National Geographic, it asked for help with the identification of archaeological features online in search for Genghis Khan’s Tomb.17 Similarly, through the more recent GlobalXplorer,18 anyone with interest and an Internet connection can inspect satellite imagery to identify threats to heritage sites around the world. Partly developing from ideas and collaborations linked to the Portable Antiquities Scheme, which has been implemented in the UK regions of England and Wales,19 MicroPasts20 has leveraged

20 https://crowdsourced.micropasts.org. MicroPasts is a project originally developed as a collaboration between the UCL Institute of Archaeology and the British Museum, and now also involving the University of Stirling and the Fitzwilliam Museum, University of Cambridge. As part of this ‘citizen archaeology’ project, funded by the UK Arts and Humanities Research Council, the team developed an award-winning crowdsourcing platform and other web resources for the co-production and micro-financing of archaeological, historical and heritage research together with an unknown crowd of online participants.
crowd-based methods to co-produce archaeological, historical and heritage open data of research-quality, working with online contributors.\textsuperscript{21} The project also briefly experimented with a crowd-funding component committed to micro-finance research into the human past that did not entail excavations and was designed jointly by ‘traditional’ researchers based in bespoke heritage institutions and communities.\textsuperscript{22} Crowd-funded community archaeology centred on excavations has instead been pioneered, in the UK, by the social venture company DigVentures since 2012.\textsuperscript{23} Research linked to these and other projects of the same kind, together with more theoretical publications, has explored various intellectual and ethical issues. For example, Morgan and Pallascio have written about online remediations and the Trans-Atlantic slave trade, describing the potentially problematic nature of collaborative cultures revolving around difficult and contested heritage sites.\textsuperscript{24} Others have underlined the danger that crowdsourcing might lead to homogenized narratives and undermine minority voices,\textsuperscript{25} and fuel neoliberal agendas based on the exploitation of unpaid labor – offered to help with specific heritage conservation, management and interpretation tasks that could otherwise be completed by remunerated workers.\textsuperscript{26} More generally, digital DIY (Do It Yourself) has been reviewed in opposite ways, both as a means of empowerment and “punk archaeology,”\textsuperscript{27} and as an illusorily democratic tool that excludes many more than it ‘frees.’\textsuperscript{28}

\section*{3D Visualization and Simulation}

Under the umbrella of 3D visualization and simulation we can include long-standing and sustained interest in 3D modelling for public communication purposes. Recent

\begin{thebibliography}{9}
\bibitem{23} https://digventures.com.
\bibitem{26} Perry and Beale, “The Social Web and Archaeology’s Restructuring.”
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projects in the UK have included, for example, ACCORD and HeritageTogether, with their focus on community co-creation of 3D scans of heritage sites and objects.\textsuperscript{29} Both projects aimed to involve communities in different parts of the UK in the selection of heritage objects to 3D model and – in the case of ACCORD – also in conversations around the meanings they assigned to the scans and their perceived ‘authenticity.’ Amongst other things, these research ventures have generated novel insights and understanding of the social value of 3D visualization and of the public’s perception of authenticity and ‘realness’ of digital records, compared to original artefacts and other physical counterparts such as 3D prints.\textsuperscript{30} The place of 3D records in museum collecting has been increasingly researched, and so have their uses for purposes that span the design of digital interpretations on websites, in gallery spaces and on site, sometimes as part of Augmented and Virtual Reality Environments.\textsuperscript{31} The latter are linked with the development of gaming, which remains an important strand of digital public archaeology today.\textsuperscript{32} Attention has also been devoted to better understand the shifts in archaeological practice and narrative that all of these technological possibilities have been unlocking, also a result of more distributed and shared opportunities for


digital creativity. These opportunities can be seized by those who have, not only interest, but also the time, skills, literacy and devices to participate.

Data Science

Data science in public archaeology is a newer and comparatively less established strand of DPA than digital cultural engagement. It results from an emerging realization that the web sites and methods facilitating public interaction can provide insights into participant profiles and behavior. The ‘deluge’ of data points generated by web infrastructures at the time of a strongly interconnected and collaborative web is thus demanding substantial and widespread upskilling of DPA researchers in coding, quantitative methods and open science. Efforts of this kind are still in their infancy, with few but notable examples. For instance, Ben Marwick has developed and published Free and Open Source Software workflows for the extraction and analysis of tweets, using R to understand how Twitter supports conversations during anthropological conferences. Shawn Graham has applied data science to the analysis of archaeological blogging and, with Huffer, he has investigated textual data from Instagram posts to explore how human remains are valued and traded. Chiara Zuanni has researched the archaeological ‘audiences’ of social media looking particularly at Twitter. The author, with colleagues, has drawn on a ‘big dataset’ of Facebook

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34 See, for example, Bonacchi, “Digital Media in Public Archaeology” and Bonacchi et al. “Digital Heritage Research Re-theorised,” for a discussion of the relationships between inequality in participation, socio-demographic characteristics and motivations of participants.


Towards the Future

This short essay has intended to provide a first and simple point of access to some of the key trends in Digital Public Archaeology research and practice today. Looking to the future, I suggest that there are four main directions that could be prioritized to further advance DPA. Firstly, the debates that have been occurring so far are still primarily concerned with the UK, Northern America and Australia; it would be helpful to ensure that this valuable work is integrated with discussions that extend beyond Anglophone countries and academic circles. Secondly, it could be useful to further strengthen existing synergies and collaborations between DPA, on the one hand, and both digital heritage and computational archaeology, on the other. Thirdly, it is precisely this empirical engagement with technicity that should be brought to the fore in combination with, and not as an alternative to, robust theoretical grounding. Fourthly and finally, more extensive, larger-scale studies would be important to advance and detail our current understanding of the democratic and undemocratic, inclusive and exclusive, progressive and regressive stances of Digital Public Archaeology. Indeed, from this point of view, DPA has still to express much of its potential as an activist practice, undertaken in the public interest but also working in collaboration with people to determine what that public interest should be and the most appropriate and effective ways to actualize it. The public in Public Archaeology has been variously debated, and broken down into three core facets: the state, the people and the public opinion. Digital methods allow us to establish new synergies and more participatory communications and programs of activities, within the limits of the social geographies of digital literacies and uptake and of the resources that are available to archaeologists and heritage institutions.

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Bibliography


