

Digital humanities, digital methods, digital history, and digital outputs: History writing and the digital revolution

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Abstract

While the term “digital humanities” appears inclusive, its exact meaning remains unclear and its early association with studies in English Literature means the term has already been partially superseded by “digital methods.” However, that renaming is problematic as it emphasises the research tools used while the field itself is adjusting to include new methods, new topics, and new types of production, not just new ways of working with existing materials. Historians have long been alert to new tools as they become available to researchers. However, even as historians have revelled in the increased access to primary sources provided by digitisation and have analysed the opportunities that access offers, they have been aware of the unevenness of the digitisation process and the gaps it both creates and disguises. Issues of copyright and the ethics of creating public access to private lives have also caused historians concern. More recently, discussion about the evaluation of digital scholarship has begun. Often purely digital outputs are not formally recognised by their authors' institutions, despite having a significant online presence and contributing to scholarship. In parallel with being concerned about fairly assessing the work of peers, historians have also begun to consider how to teach (and assess) the digital skills now expected of history graduates.

1 | INTRODUCTION

In 2017, the Australian Historical Association (AHA) conference was its usual cornucopia, offering attendees access to a wide range of historical topics and approaches (Australian Historical Association, 2017). Throughout the conference historians used digital sources as a matter of course, and within the conference several sessions were devoted to digital history. The papers within those sessions reflected the diversity of historians' approaches to digital opportunities, ranging between showcasing methods, discussing ethics, and investigating topics that have arisen from the digital revolution we continue to experience unfolding. That diversity of engagement with the digital by historians is worth examining. Self-styled Digital Humanists quibble at the notion that using what are now everyday tools qualifies one to join their ranks (and perhaps the ubiquity of word processing, universal familiarity with the Internet, and the unremarkableness of including imagery obtained from various sources online in computer-projected presentations mean that some further distinction is warranted). However, this quibble is an indication that the intersection of digital history with digital humanities is a contested space. Many historians are already producing digital history, and their activities raise questions about the processes they are engaging with, the forms digital history outputs take, and the relationship between digital history and digital humanities.

The term Digital Humanities (DH) was coined by scholars of English Literature and Media Studies and while the words indicate a broad church, the field has already experienced internal dissent and schism, with some adherents turning to the terms "digital methods" and "DHSS" to better represent their scholarly approaches. The place of historians within digital humanities is at best peripheral, as demonstrated by an Australian guide to the digital humanities which includes some contributions from historians but which is dominated by the concerns of literary scholars (Arthur & Bode, 2014). The ways in which historians are engaging with the new opportunities created by cheap computing power and extraordinary connectivity are distinct from the approaches taken by members of other humanities disciplines. This engagement continues to be informed by the work of digital humanists and uses tools provided by those engaged in developing digital methods, but the significance of archives to historical enquiry and the historian's duty to interpret the past with some degree of objectivity set digital history apart. This article introduces the established field of digital humanities, critiques its manifestoes in relation to the work of historians, discusses the changing nature of archives, and explores the pragmatic issue of formal recognition for digital history outputs. It notes that academic historians dealing with the digital are seeking to engage not just themselves but also their students.

2 | THE RISE OF DIGITAL HUMANITIES AND THE EMERGENCE OF DIGITAL METHODS

In charting the emergence of digital humanities, Steven Jones argues that the bursting of the dot-com bubble in 2000 marked the beginning of a new engagement by western society with a technology whose rise had proved fallible. That new engagement, based on a sense that large corporations and institutions were no longer inevitably in charge of the Internet, encouraged ordinary users to create online content and led to the development of the tools of Web 2.0 (Jones, 2014). Jones argues that by 2005 the idea of digital humanities had solidified, with that solidification marked by the publication of *Blackwell's Companion to Digital Humanities* (Schreibman, Siemens, & Unsworth, 2004). Appropriately, that book first appeared online and a digital copy is now freely available, although the most recent edition can still be purchased in hard copy (Schreibman, Siemens, & Unsworth, 2016).

As the term digital humanities gained currency, a number of institutions created research centres (Prescott, 2016). The locations of these centres have been mapped and discussed in various contexts, with a key map produced by Melissa Terras in 2012 (O'Donnell, Walter, Gil, & Fraistat, 2016). That map showed a concentration of centres in North America (55 in total), a lesser number in Europe (42, including those in the UK), a surprising concentration in Australia (7, and 1 in New Zealand), and very few elsewhere (Terras, 2012). However, other mapping exercises, using

different criteria and conducted by scholars and centres from non-English-speaking countries have highlighted the divisions that exist within the field by illuminating (and obliterating) different sets of centres and scholars (GrinUGR research group, n.d.). Some of the differences between mapping exercises might be due to the project-based nature of much digital humanities work and its insecure funding (Fiormonte, 2014) which has encouraged a wide variety of institutional structures, making them difficult to codify (Prescott, 2016).

While the term digital humanities seems inclusive, it is not always an easy fit with the discipline of history because of history's relationship with sources, ethics, its publics, and the past. This uneasy fit is clear within the literature of digital humanities, within which debates about the nature of digital humanities itself are common, those debates extending even to include debates about whether the debates are useful (Svensson, 2016). The rise of digital humanities has produced a range of manifestoes that explore its potential and its problematic aspects and that seek to define it by its interests and by what it eschews. Burdick, Drucker, Lurenfeld, Presner, and Schnapp's (2012) *Digital Humanities* is a concise example of such a manifesto and demonstrates both the strengths and unresolvable nature of such documents. The book experiments with new ways of working that Burdick and her collaborators see as central to fully engaging with digital humanities (in their view, collaboration is itself essential; Presner, 2009). Warning of the risk of becoming trapped in new standardised methods while emerging from the forms imposed by printed text they urge that, "Digital Humanities is a production-based endeavour in which theoretical issues get tested in the design of implementations, and implementations are loci of theoretical reflection and elaboration" (Burdick et al., 2012, p. 13).

Burdick et al.'s work discusses the potential of digital humanities projects to reach a broad public and to engage with social change, and describes itself as "a guidebook for the perplexed" (p. vii). Burdick is a media scholar, and the book is rooted in the academic language of design, not history. Thus, Burdick et al.'s interest in design leads them to focus on digital methods, announcing, "The next generation of Digital Humanities work will make a contribution to theory only if it can show how to think *in* digital methods, not just *with* digital tools" (p. 92). And the rhetorical question and answer sequence "Are we all digital humanists? No. Are we carrying out the work of the humanities digitally? Routinely so" (p. 102) is an example of a less than inclusive definition of digital humanities. Yet Burdick et al. recognise continuities with traditional scholarly practices:

Digital Humanities is an extension of traditional knowledge skills and methods, not a replacement for them. Its distinctive contributions do not obliterate the insights of the past, but add and supplement the humanities' long-standing commitment to scholarly interpretation, informed research, structured argument, and dialogue within communities of practice. (p. 16)

Burdick et al.'s definition of digital humanities remains contested, a contestation deliberately encouraged by the placement online of an editable manifesto document (digitalhumanities, 2009). Thus, discussion about what "digital humanities" includes and excludes continues, and the place of history is not clear (Crompton, Lane, & Siemens, 2016; Golumbia, 2013).

3 | DIGITAL HISTORY

In contrast to the visionary statements found in DH manifestoes, definitions of digital history are rare. The American Historical Association's definition dates from 2009 (Seefeldt & Thomas, 2009) and has a pragmatic focus on the nature of sources used and outputs produced, and the associated projects page has not been updated since 2012 (University of Nebraska, 2012). Instead of producing his own definition, digital historian Gerben Zaagsma uses Wikipedia as a starting point for discussion, recognising the website's recent rehabilitation by digital scholars committed to open-access scholarship (Zaagsma, 2013). While *Wikipedia* still includes digital history within the digital humanities, its definition loosens the bounds of that area of study. Thus, *Wikipedia*'s definition states:

Digital history is the use of digital media to further historical analysis, presentation, and research. It is a branch of the Digital humanities and an extension of quantitative history, cliometrics, and computing. Digital history is commonly digital public history, concerned primarily with engaging online audiences with historical content, or, digital research methods, that further academic research. Digital history outputs include: digital archives, online presentations, interactive maps, time-lines, audio files, and virtual worlds to make history more accessible to the user. Utilising these resources the user can rapidly develop new analyses that can link to, extend, and bring to life existing histories. (Wikipedia, n.d.)

While helpful, this definition is deceptively succinct, as revealed by a discussion among leading North American digital historians about the difficulties inherent in defining digital history. Their discussion identifies a central element not made fully clear by Wikipedia's definition: "the capacity for play, manipulation, participation, and investigation by the reader" (Cohen et al., 2008, p. 454). The Wikipedia definition also excludes historical engagement with the significance of digital technology in human lives, an exclusion common in discussions of digital history and repeated here for reasons of space. However, despite the apparent newness of the field of digital history, Wikipedia's mention of cliometrics hints at a longer engagement by historians with the potential of computer technology.

Zaagsma's introduction to digital history places the emergence of what he considers merely a transitional term within its historical context. His extension of digital history back to the 1970s (and even further) fully justifies his assertion that:

'digital history' has been a part of the practice of doing history for a substantial period of time and is certainly less new than the current buzz surrounding digital humanities (DH) might suggest. (p. 4)

His view is supported by William Thomas who examines historians' use of new developments in computing power extending back to the 1940s and traces differences in approaches between North America and Europe (Thomas, 2004). William Turkel has sought to extend the notion of the digital to include writing systems themselves, arguing that, "Writing systems ... are digital in the sense that symbols are drawn from a pre-determined set and assigned meaning in the context of the other elements" (p. 291). Despite this pedigree Zaagsma expresses concern about the unwillingness of many historians to engage with digital history and seeks to debunk the notion that historians can ignore the now-digital nature of historical research:

Both the idea that 'digital history' constitutes a specific sub-discipline, existing next to other historical sub-disciplines such as cultural, social, political or gender history, as well as the idea that it should essentially be seen as an auxiliary science of history, feed into the myth that historical practice in general can be uncoupled from technological, and thus methodological, developments and that going digital is a choice, which, I cannot emphasise strongly enough, it is not. (p. 14)

Turkel (2011) warns that historians' long immersion in digitisation may in fact limit awareness of its potential uses, leaving historians using digitisation as a means of making ultimately unsatisfactory copies of traces of the past rather than as a means of conversion between desirable forms. His warning supports Burdick et al.'s (2012) contention that digital humanists must engage with design and accept that digital production is not the reproduction of pre-digital forms. Similarly, Claire Potter extolls the notion that digital and new media projects might completely reform the discipline of history. Her summary of the emergence of digital history from the perspective of a feminist historian identifies significant landmarks, including the establishment of H-Net in 1992. But, in terms of that longer history, Potter notes that cliometrics did not transform the history discipline. Instead, cliometricians tended to migrate from history departments to departments of economics. Her observation supports Zaagsma's point that history as a whole must "go digital," and Potter (2013) warns that by ghettoising digital historians, the discipline again risks choosing not to engage with technologies that could potentially serve it well.

4 | HISTORIANS AND THE DIGITAL ARCHIVE

Any exclusion of archive creation from definitions of digital humanities or digital methods is problematic for the discipline of history.¹ Historians' connections to archives are essential to their craft, and with the rise of digital production and reproduction, historians are now both creating their own virtual archives and strengthening their links with library professionals as they seek to understand the changing nature of libraries and archives. In contrast to the ideal archive pursued by library professionals, some archives created by historians have severely restricted access conditions that reflect institutional restrictions placed on the original items, although others have become new, online, public collections. **New abilities to copy sources, new availability of primary sources, and new access to archives made digital mean an awareness of archival practice is at the heart of digital history.**

Some of the new, public collections created by historians are, in digital terms, relatively old: historians have long been generous in sharing collections of documents. The *Internet History Sourcebooks Project*, a pioneer digital collection curated by Paul Halsall, came online in 1997. While venerable (for an online institution), the *Sourcebook* is also dynamic and shares the challenges all online archives face in making data accessible: ordering and presenting the vast quantity of material now available, indexing that material, weeding out lapsed URLs, and navigating copyright (Halsall, 1997). Other public archival collections have been "born digital." Grace Yeh has reflected on the ability of online archives to capture accounts and materials from marginalised communities by capturing digital copies rather than originals. In her account of producing an archive as part of undergraduate teaching, Yeh argues that institutions have yet to fully embrace digital history. She notes her institution had no protocols for collecting digital copies rather than items owned outright, accessing institutional support, resolving issues about ownership of archival material nor for giving credit for the completed work. And that issue of credit, particularly for purposes of academic promotion, remains unresolved (Yeh, 2016). Despite these issues around creating purely digital archives, the "History Harvest" movement, which uses undergraduate students to do just that, is popular in North America (History Harvest Community, n.d.).

Historians are becoming aware that digital collection may not ensure permanence or accessibility and that digitisation may actually harm the prospect of long-term preservation. Digital copies can be placed online and easily distributed, but they are inherently less stable than the physical objects they at times completely replace (Navitski, 2014). And digital forms may not be readable in the future. Already forms of technology have become redundant, demonstrating that it is not simply files and objects that require preservation, but also hardware (Galloway, 2011). A plea for funding produced by Australia's National Film & Sound Archive sets 2025 as the deadline for 70% of tape-based archival material becoming unreadable (National Film & Sound Archive, n.d.). The risks involved in interacting with what will almost certainly become legacy technology are being assessed as part of the preservation work undertaken by museums and libraries. Those in the GLAM (Galleries, Libraries, Archives, and Museums) sector are actively grappling with these issues, determined to protect the content and significance of their collections (Marchese, 2011). Issues of potential loss become particularly pronounced when archiving items that have never been analogue, and items that were once produced in analogue form but which have become digital-only and have fallen out of archival systems. The preservation of born-digital material is problematic: library professional LeFurgy's (2005) lament remains familiar: "tools and best practices for preservation are developmental; resources available to address the issue are limited; and digital content itself continues to evolve" (p. 163). With the rise of digital publishing even government publications and official documents are no longer automatically produced in hard copy, and private memories in the form of documents and photographs are also at risk (Copeland & Barreau, 2011; LeFurgy, 2005). As more processes move to digital production and their traces change, their archives must adapt or cease to capture them (Rubin, 2009).

Libraries have embraced their role in preserving and enabling access by communities to their records and culture, with Andrea Copeland and Deborah Barreau arguing it presents "an opportunity to re-examine our institutional role and perhaps reclaim it" (p. 638). Librarians have led the way in realising that technology is not in itself the most significant aspect of archive digitisation, with thought needing to be given to the underlying structures of

organisation. During the recent Trove Roadshow, librarians from the National Library of Australia (2018) realised the significance of discoverability rather than complete digitisation for some collections. Digitisation was once seen as a panacea for institutions, increasing access at the same time as reducing library storage costs, but subsequent experience has killed that dream (National Library of Australia, 2017; Russell, 2007). Digitisation even of catalogued material will never be complete, and the seeming availability of resources obscures the existence of those not scanned and placed online. Digitisation projects are not just driven by practical elements (preserving fragile documents, making popular collections more accessible, and responding to demand for access) but also by memory politics that influence what is judged worth making visible (Zaagsma, 2013). Even when huge digital archives exist and continue to expand, some voices may be irrecoverable, and the gaps within archival material may become harder to detect in the midst of apparent plenty (Rusert, 2017).

The facility of searching online can strip sources of context and provenance. Max Kemman, Martijn Kleppe and Stef Scagliola might humorously conclude that the “digital research practices of Humanities scholars in the Netherlands can be condensed to three words: Just Google it,” but they raise significant issues about introducing an unknown algorithm and uniform interface into scholarly research (2012, p. 16). While the digitisation of archives offers easy access to a vast range of resources, the removal of engagement with librarians and archivists must count as a cost to researchers as expert guides to catalogued and uncatalogued material are no longer routinely consulted (Augst, 2017; Navitski, 2014). Digitised newspaper projects undertaken by national libraries demonstrate different approaches to dealing with the issue of lost context. The National Library of New Zealand's project *Papers Past* was launched in 2001 and recently extended, (Te Puna Mātauranga o Aotearoa National Library of New Zealand, n.d.). The National Library of Australia (n.d.) launched a freely available digitised newspaper archive in 2008, which quickly developed into the Library's extensive online archive *Trove*. In both systems, the online interface allows users to search for keywords within newspaper articles, but they differ in their displays. *Papers Past* displays a clear image of the article alone (although it is possible to click through to the article in the context of a full newspaper page). *Trove* presents a machine-read (or volunteer-corrected) text of the article next to the newspaper page on which it originally appeared. Articles in *Papers Past* are more readably displayed than those in *Trove*, but the broader context is obscured, and in both interfaces, the larger context of the newspaper's day-to-day content and interests is not immediately clear. Additionally Optical Character Recognition's facilitation of keyword searching within documents privileges written language as a means of interacting with sources even as digital technology seemingly enables the rise of the image (Navitski, 2014). Documents carry traces of their original contexts that are lost with digitisation, and metadata schemes cannot hope to anticipate every need of future scholars (Turler, 2011). In addition, successful digitisation projects in some ways make all archives alike. *Trove* is seeking to become an umbrella organisation providing access to all digitised library and museum collections across Australia, but in doing so, it necessarily squashes collections into its template and affixes its search methods (National Library of Australia, 2017).

5 | PUBLISHING DIGITAL HISTORY

In a chapter addressing “Computing and the Historical Imagination,” Thomas discusses possible futures for the production of history in the digital age (2004). He raises the possibility that historical publications may continue to inhabit entirely familiar forms, even as the methodologies underpinning them undergo radical change. Still, Thomas hopes that digital publishing may create new ways of presenting and producing historical scholarship and understanding, a hope supported by current online projects that create databases or visualisations. As a result of the expansion of ways to represent historical research, associations of historians have started discussing how to assess the merits of innovative work in digital history and provide professional recognition of this form of publication. In 2015, the American Historical Association sought to address the issue of evaluating digital scholarship by producing a set of guidelines aimed at institutions. Those guidelines sought to help administrators and established historians who were

unfamiliar with some forms of digital scholarship but who needed to assess the originality and significance of publications for tenure and promotion. Such publications included digital short-form genres (including blogs), new pedagogical methods, online activism, digital platforms, and digital tools (American Historical Association, 2015). The *American Quarterly* launched a digital projects review in 2016, responding to what it saw as a need for peer review so that scholars could continue engaging with digital history without jeopardising their careers (Nesbit & Berry, 2016). However, the question of how to deal with significant but changing publications (digital projects go through numerous iterations rather than a single, definitive printing) will be a difficult one to resolve.

In Australia, it is promising that ERA 2018 will include consideration of non-traditional creative works for scholars in the HASS disciplines (University of Adelaide, n.d.). Also promising for the recognition of scholarship published outside traditional history journals is the recent abandonment of the AHA's journal ranking project. A previous ERA/HERDC ranking system privileged journals used as outlets by established, metropolitan historians. That journal ranking scheme was sufficiently contentious that it was dropped in favour of trusting to the expertise of assessors (Australian Research Council, 2015; Rowbotham, 2011). However, the recent enthusiasm of established academic publishers for such ranking systems bodes ill for the recognition of innovative forms of digital history publishing (Edwards, Fitzpatrick, Mittell, Petersen, & Stein, 2016).

Thomas's (2007) reflection on his (collaborative) 2001 engagement with digital history highlights issues that remain unresolved. Thomas and his collaborators produced an article in two forms: traditional print and electronic. Doing so raised the issue of what constituted the "actual" article, and Thomas's reflections on experimenting with form and technology while undergoing peer review are unintentionally chilling. They expose the time that needs to be devoted to design issues, the dangers of picking the "wrong" support technology, and the risk of unsympathetic readers unwilling to engage with new ways of studying and presenting history. While the article in question became highly cited Thomas perceives an ongoing reluctance among historians to engage with innovative digital versions of history that go beyond simply re-formatting a print version (2007). Yet even simple reformatting offers opportunities to present ideas more clearly as digital formats offer historians new tools in presenting their work: colour images become easy to include, as do moving ones (Edwards et al., 2016).

Historians are struggling as much as members of any other discipline with the concurrent loosening and tightening of publishing in the digital period. Engagement with online open-access publications such as the *Queensland Historical Atlas* offers the possibility of quick, widely available publication in well-designed journals presented as websites (Queensland Historical Atlas, n.d.). However, the sustainability of such models is questionable given the combination of continuing hosting costs with limited funding and institutional reluctance to recognise such publications. Some experiments with digital forms and publishing have already been abandoned, and the familiarity of broken internet links marks the way in which ease of digital reproduction cannot by itself overcome the costs associated with the continued hosting of digital content. Thus, the *Digital History Project* has not been updated recently, and the *Journal of Digital Humanities* has been on hiatus since 2014 (Digital History Project, 2012; Journal of Digital Humanities, 2011). Some online digital humanities journals continue to thrive (notably *Digital Humanities Quarterly* which has marked a decade of continuous publication); new digital journals continue to emerge (*Cultural Analytics* first appeared in 2016); and some online presence, as well as digital archiving, has become standard practice in academic publishing (Digital Humanities Quarterly, 2007; Journal of Cultural Analytics, 2016; Digital Humanities at Berkeley, n.d.).

Unfortunately, the existence of models of quick, online publication has combined with pressure on academics to publish and opened the door to unscrupulous publishers seeking to profit from vanity and desperation. Predatory journals—journals that present a veneer of legitimacy coupled with a poor or non-existent peer review process and a fee paid by authors to publish—are increasing in sophistication and their ability to impersonate legitimate journals. Generally, the hallmarks of a predatory journal are the sheer quantity of articles published, the speed and credulity of the peer review stage, and the demand for money before publication. These practices have been well documented by scholars in the sciences (Safi, 2014). Predatory journals function in part because of increasing emphasis by funding bodies and institutions on open-access publications (Australasian Open Access Strategy Group, n.d.; Creative Commons Australia, n.d.), and they are unfortunate offshoots of recent attempts to make scholarship more accessible.

6 | AND WHAT TO DO WITH STUDENTS?

The information avalanche unleashed by digitisation threatens to overwhelm students as much as established historians, and digital history is notable for considering teaching a key component of its activities (Robertson, 2014). While historians teaching within universities remain committed to the traditional skills of their discipline, digital elements have infiltrated teaching, and digital research skills are routinely instilled into students. However, with limited time allocated for student contact and for marking, historians fear squeezing out the teaching and assessment of essay writing skills (Sendziuk, 2015). In addition, students fear engaging with unfamiliar forms of assessment (Bulaitis, 2009). This caution is indirectly evident in skills guides aimed at students, such as the promisingly titled *Doing History: Research and Writing in the Digital Age*. That guide is clearly focussed on the production of traditional history outputs (essays of various types and conference papers), devoting only a page to "writing for the Web." Reflecting the general practice of historians, the guide details the use of online sources and archives, extolls the virtues of journal databases, and suggests sources of software to help with notetaking, while still reproducing examples of handwritten note cards (Galgano, Arndt, & Hyser, 2013).

In addition, innovative teaching projects in digital history are emerging. Paul Sendziuk has argued that new types of group assessment may reduce the time required to assess students while improving their historical understanding (Sendziuk, 2015). In particular, he has described his development of a "Museum Exhibition Group Project" and while he does not present it as digital history the production of what he describes as a virtual museum draws on digital forms of historical research and presentation (Sendziuk, 2007). Sendziuk's project is cleverly designed to avoid untoward demands on the time of teaching staff. The connection between museum work and digital history teaching also emerges in a teaching project described by Johnny Bell, Rebecca Carland, Peg Fraser, and Alistair Thomson, although that project may not continue as it requires "higher staff and resource costs than usual" (2016, p. 420). Domenico Fiormonte argues that, as a whole, digital humanities is under-represented in undergraduate teaching relative to the number of academics it engages, a situation that reflects a project-based approach based on impermanent funding (Fiormonte, 2014). In contrast, some academics have found ways to include their own digital history projects within undergraduate courses, providing themselves with a useful workforce while teaching skills that are clearly in demand.²

Without exception, history students are now trained to find and retrieve material stored in digital repositories and students engage with new, online resources as a matter of course. The cultural transformation that has taken place as Web content is routinely created by users rather than by authorities has reduced the naivety of undergraduate students when dealing with the Internet, although guidance is still required as is flexibility on the part of teaching staff in adjusting to constantly evolving tools. That adjustment is supported by a range of websites that offer examples of undergraduate digital history training such as one hosted by the American Historical Association (American Historical Association, 2016). More can be found with a Google search, and book-length guides also exist (Battershill & Ross, 2017; Kee, 2014). However, students need training beyond the use of digital tools, and they must be alerted to the requirement of digital humanities projects to reduce sources to data (particularly in the production of compelling visualisations), to the obscuring of absence and silence by apparent plenty within digital archives, to the risks of losing context when using digital materials, and to the continuing need for historical imagination when attempting to understand the past.

7 | CONCLUSION

Digital history has already become ubiquitous. History's concern with sources, and with not jeopardising the merits of research by neglecting relevant evidence, means that historians cannot ignore the changes taking place in libraries, archives, and museums. Digital copying tools have vastly extended access and have provided historians with new opportunities to experiment with creating their own primary source collections. Such experiments have deepened

engagements with established archives and forced historians to engage with questions of absence and silence in the digital world.

Awareness of new resources and the need to deal with them links digital history to digital humanities more generally, but digital history distinguishes itself in interesting ways. It has largely avoided becoming bogged down in doctrinal disputes, instead focussing on expanded access to sources and to new methods of extracting meaning from them. The pragmatic tendencies of historians have aided this process, and digital history is distinctive in its commitment to including undergraduate students in exploration of new digital opportunities.

However, digital history is still in the process of establishing protocols for dealing with digital outputs. The need for professional recognition hampers experimentation with form and the continuing evolution of digital projects makes them time consuming in comparison to completed traditional publications. History must meet the challenge of incorporating and rewarding digital endeavours, but without losing its traditional strength of critical analysis.

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ENDNOTES

- ¹ Recent work within the digital humanities has discussed the significance of archive creation as a scholarly activity, but the recognition of archive as output is contested. For example, the inclusion of primary source material useful for demographic analysis within a collection titled *Slave Biographies* was deemed inappropriate by a literary scholar and the way in which such data are necessary for biographical research was not discussed: Britt Rusert, 'New World: The Impact of Digitization on the Study of Slavery', *American Literary History*, 29/2 (2017), 267–86. Perhaps history can follow developments in the sciences which have led to the recognition of data sets as research outputs, an idea which might apply to newly created archives: ANDS (Australian National Data Service), (n.d.), Data Citation, <<http://www.ands.org.au/working-with-data/citation-and-identifiers/data-citation>>, accessed 15 Oct. 2017.
- ² In contrast to positive student feedback reported by Sendziuk and Bell, such use of a student workforce, even when paid, has been critiqued from within and may remain an atomising experience for those involved: Katrina Anderson et al., 'Student Labour and Training in Digital Humanities', *DHQ: Digital Humanities Quarterly*, 10/1 (2016). The digital serfs that make available the current plethora of digital materials are in a different position to undergraduate students receiving skills training: Rusert, 'New World: The Impact of Digitization on the Study of Slavery'. (Beyond the use of students and paid workers, volunteers make large contributions to digitisation projects such as *Trove*. *Zooniverse* demonstrates the ability of those with digital projects to attract volunteer labourers by making digital drudge work an appealing hobby.)

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