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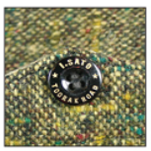

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# Digital History

## STATE OF THE FIELD REVIEW ESSAY

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STATE OF THE FIELD REVIEW ESSAY

# Digital History

MIKE JONES & ALANA PIPER

*Digital history started to flourish in Australia and New Zealand in the 2000s and early 2010s. But some of this momentum has since been lost due to ageing technologies, a lack of supporting infrastructure, funding issues, discontinued projects, and limited teaching and training opportunities. This 'state of the field' article on digital history seeks to encourage greater reflexivity in the discipline by providing a detailed overview of the local context. It highlights some of the longstanding projects that continue to dominate the digital history landscape, while also exploring newly emerging innovations, opportunities and challenges. Examining such topics as infrastructure and tool development, digital archives and repositories, big history, public history, digital methods, and teaching, the authors conclude that additional investment is required to support progress in the field, and to ensure that past projects and data remain accessible into the future.*

## Introduction

For more than seventy years scholars have claimed that historians have been slow to take advantage of computing technologies in their work.[1] As recently as 2010, Paul Turnbull concluded that many remained hesitant to embrace digital tools and methods, largely due to cost and complexity.[2] Yet in Adam Crymble's recent book *Technology and the Historian* (2021) he argues that, despite the stereotypical view of the historian working away in dusty archives,

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Except where otherwise indicated all URLs cited in this article were active as at 21 September 2023.

[1] See, for example, Murray Lawson, 'The Machine Age in Historical Research', *The American Archivist* 11, no. 2 (April 1948): 141–9, https://doi.org/10.17723/aarc.11.2.k10wv0736708370q

[2] Paul Turnbull, 'Historians, Computing and the World-Wide-Web', *Australian Historical Studies* 41, no. 2 (2010): 131–48, https://www.tandfonline.com/doi/abs/10.1080/10314611003713629

'no discipline has invested more energy and thought into making its sources and evidence publicly available, or in engaging publics through digital mediums, or transforming their pedagogic practices with the help of technology'.[3] While Crymble's analysis does not extend to Australasia (aside from a handful of mentions of Trove's digitised newspapers), with the benefit of hindsight it could be argued that Turnbull was in fact writing in the midst of a period when digital history, or at least digital humanities platforms that supported historical research, were flourishing in Australia and New Zealand.

More recently, however, Crymble's claim is starting to seem hyperbolic, at least in this part of the world. At a glance there is little sign of growth or increased energy. The term 'digital history' only appears six times across the entire run of the journal *Australian Historical Studies*, and these mentions are spread out across the last decade, rather than being clustered into the most recent years. A search of the *New Zealand Journal of History* returns only seven pieces from 2007 to 2020, two of which are reviews. The 'digital history' tag was last used on the Australian Historical Association's website in 2016. More fundamentally, the vulnerability of existing public digital information infrastructure was sharply delineated at the start of 2023, with Trove facing potential collapse due to a lack of confirmed, ongoing funding.[4] The eventual $33 million lifeline provided to it by the federal government will allow the site to be maintained into the future; but, in an evolving digital world, simple maintenance is not always enough.[5] Trove is one of many prominent digital humanities initiatives that are now more than a decade old, and which rely on ageing technologies and systems. In the past five years numerous projects and groups have been closed, discontinued, or taken offline, including long-established centres like the eScholarship Research Centre (University of Melbourne) and innovative high-profile teams like DXLab (State Library of New South Wales). Seemingly learning little from the failure of the earlier Humanities, Arts and Social Sciences Data Enhanced Virtual Laboratory (HASS DEVL), which did not gain widespread traction beyond select researchers, when the Australian Research Data Commons (ARDC) proposed its most recent HASS program of projects it was met with significant critiques that there had again been limited consultation with researchers and needless attempts to replicate already-existing tools. This weakening of the digital humanities sector necessarily has flow-on effects for the narrower field of digital history.

To argue this is not to deny recent developments in the field. The addition of digital history among the new Australian and New Zealand Standard Research Classification (ANZSRC) codes for Field of Research (FOR), introduced in 2020, suggests a distinct profile within the broader discipline. In 2022 students in the New South Wales (NSW) Higher School Certificate (HSC) examination

[3] Adam Crymble, *Technology and the Historian: Transformations in the Digital Age* (Urbana: University of Illinois Press, 2021), 1.
[4] https://trove.nla.gov.au/
[5] National Library of Australia, 'National Library welcomes announcement of ongoing Trove funding', 3 April 2023, https://trove.nla.gov.au/announcement/2023/04/03/national-library-welcomes-announcement-ongoing-trove-funding

were asked about the influence of changing technology on approaches to history. In the tertiary sector, the ARDC committed to a Humanities and Social Sciences Community Data Lab. Though the potential benefits of this for researchers (and historians in particular) remain unclear, the recognition that more support was required is notable.

This article on the state of digital history in Australia and New Zealand can perhaps go some way to encouraging greater reflexivity in the myriad everyday ways many historians are already engaging in digital history, as well as highlighting some of the newly emerging innovations, opportunities and challenges for the discipline. In doing so we have taken a broad definition of the term, borrowing from William G. Thomas III ('Digital history is an approach to examining and representing the past that works with [...] new communication technologies'[6]) and James Smithies ('the use of computational methods to analyse, understand and disseminate knowledge about the past'[7]), to look at the ways historians use digital methodologies and modes of presentation. The diversity of approaches that fall under such definitions means there will inevitably be initiatives and practitioners not explicitly covered here. Such omissions should not be taken as a judgement on the value of such projects.

## The local context

Australia and New Zealand are relatively remote in global terms, with small populations that, once outside the main centres, are sparsely distributed. This provides potentially fertile ground for digitisation and digital archival projects. There is a long tradition of technology being used to mitigate the 'tyranny of distance', most notably with the *Australian Joint Copying Project* (AJCP), established by the National Library of Australia (NLA) and the State Library of New South Wales in 1945.[8] The full AJCP collection is now available via a digital portal, and remains the world's most extensive collaborative copying project.[9] Despite such initiatives, most collections remain physical and therefore difficult to access, as do digital humanities conferences, labs and – perhaps most importantly for local take-up of such methods – training sessions in the European Union, North America, and elsewhere (though the COVID-19 pandemic has increased opportunities for remote participation).

Family, local, and public history are popular pursuits.[10] As Graeme Davison pointed out more than a decade ago in *History Australia*, digital

[6] Daniel J. Cohen *et al*., 'Interchange: The Promise of Digital History', *The Journal of American History* 95, no. 2 (2008): 454, https://doi.org/10.2307/25095630

[7] James Smithies, 'Digital History in Canterbury and New Zealand', *New Zealand Journal of History* 47, no. 2 (2013): 249.

[8] Geoffrey Blainey, *The Tyranny of Distance: How Distance Shaped Australia's History* (Sydney: Macmillan, 2001), 368.

[9] https://www.nla.gov.au/using-library/research-tools-and-resources/australian-joint-copying-project

[10] Ashley Barnwell, 'The Genealogy Craze: Authoring an Authentic Identity through Family History Research', *Life Writing* 10, no. 3 (1 September 2013): 263.

technologies – along with the influence of television shows like *Who Do You Think You Are?* – have both accelerated and consumerised the process of genealogical research for a general audience.[11] Family history groups are part of more than 1,000 historical societies and community heritage groups across Australia, with hundreds of thousands of combined participants.[12] This provides a substantial non-academic user base for platforms like Trove, DigitalNZ,[13] and *Papers Past*,[14] as well as a potential audience for participatory digital history projects and digitisation efforts, and for online histories more generally, a point we will return to later.

Universities and GLAM (galleries, libraries, archives, and museums) organisations in both countries are also heavily dependent on government funding and competitive research grants. This arguably further contributes to the focus on public histories, and blurs the boundaries between academic research infrastructure, scholarly digital history projects, and broader public and GLAM information infrastructure.[15] Writing in 2013, New Zealand public historian Jock Phillips noted that the significant majority of digitised collections used by historians were not created or mediated *by* historians; they are due to the work of librarians, archivists, and allied professionals. When Joy Damousi, as head of the Australian Academy for the Humanities, argued that humanities should 'step up to the next platform of scholarship', her examples were Trove, the Australian Data Archive, and international comparisons like Europeana.[16] Likewise, in 2022, when Frank Bongiorno wrote about 'The Humanities Laboratory' for the Academy he noted the power of Australian Newspapers Online, Trove, and the National Archives of Australia's digitised records for researchers and the general public.[17] The focus remains on historians using digitised material provided by others for relatively traditional historical research, rather than use of computational methods, new forms of analysis, or innovative digital approaches for examining, understanding, and representing knowledge about the past. Smithies has argued that, in New Zealand, the reliance on 'central government to provide us with digital assets without contributing ourselves', combined with the failure of those governments to effectively identify researcher requirements, means that the country has lagged behind other parts of the world in terms of large research infrastructure

[11] Graeme Davison, 'Speed-Relating', *History Australia* 6, no. 2 (January 2009): 43.1, https://doi.org/10.2104/ha090043

[12] 'Historical Societies', *Federation of Australian Historical Societies* (blog), https://www.history.org.au/historical-societies/ (accessed 14 February 2023).

[13] https://digitalnz.org/

[14] https://paperspast.natlib.govt.nz/

[15] Jock Phillips, "A Click to the Past: Digital History in New Zealand," New Zealand Journal of History 47, no. 2 (2013): 235.

[16] Joy Damousi, 'Humanities Must Step up to the Next Platform of Scholarship', *Australian Academy of the Humanities* (blog), 17 July 2020, https://humanities.org.au/power-of-the-humanities/humanities-must-step-up-to-the-next-platform-of-scholarship/

[17] Frank Bongiorno, 'The Humanities Laboratory', *Australian Academy of the Humanities* (blog), 9 August 2022, https://humanities.org.au/power-of-the-humanities/the-humanities-laboratory/

projects specifically designed for 'next-generation Humanities research'.[18] The same is arguably true for Australia.

Most large-scale GLAM initiatives that do emerge are based in long-established, colonial institutions. In recent decades, settler institutions and historians have gradually recognised the need to grapple with the role of governments, organisations, and individuals in acts of dispossession and genocide committed against First Nations peoples. Digital public history projects have an important role to play in publicly addressing these histories in ways that are often more accessible and impactful than popular history books, let alone scholarly monographs and journal articles.

Australia and New Zealand are not mirror images. Different demographics, distinct First Nations populations, and variant funding landscapes (the breadth of support provided by New Zealand's government history department, for example, contrasting with Australia's federal focus on sanctifying military histories) all have their effects. But the impact of these differences on the trajectory of digital history is not always clear, while the available evidence suggests the two nations remain broadly comparable. Both are characterised by public digital history projects that offer correctives to existing understandings of First Nations and colonial histories, and of other marginalised groups such as migrants, refugees, women, the disabled and children. Digital methods have also been particularly embraced in criminal justice, convict, military, urban, environmental and natural disasters, sports, and literary histories. And the two feature many parallels when it comes to contemporary challenges.

## Early projects, tools, and foundational infrastructure

Arguably the earliest digital history site still recognisably online today arrived just one year after Australia's first web server. *Bright Sparcs* (1994) was a history of science site developed by Gavan McCarthy, Tim Sherratt and colleagues based on earlier print directories of scientists, archives, and publications. *Bright Sparcs* was later combined with *Australian Science at Work* (1999) to produce the *Encyclopedia of Australian Science* (2010), which became the *Encyclopedia of Australian Science and Innovation* (2022) when Swinburne University took over hosting from the University of Melbourne (still with the involvement of McCarthy).[19]

Reference works like dictionaries and encyclopaedias were one of three key digital history resources mentioned by Jock Phillips in his survey of the field from 2001.[20] Other early examples still in use today include the *Australian Women's*

[18] Smithies, 259.
[19] https://www.eoas.info/
[20] Jock Phillips, 'History and the New Media', in *Going Public: The Changing Face of New Zealand History*, eds Bronwyn Dalley and Jock Phillips (Auckland: Auckland University Press, 2001), 141–57; see also Paul Arthur, 'Exhibiting History: The Digital Future', *ReCollections* 3, no. 1 (March 2008): 33–50.

*Register* (2000),[21] *Dictionary of New Zealand Biography* (2001),[22] *Te Ara – The Encyclopedia of New Zealand* (2005),[23] and the online *Australian Dictionary of Biography* (*ADB*) (2006).[24] In addition to reference works, the period saw the development of online archives and digital collections – *Pandora*,[25] Australia's web archive (1996), and *NZ Web Archive* (1999);[26] Tāmaki Paenga Hira Auckland War Memorial Museum's *Online Cenotaph* (database established 1996, online since 2000);[27] *Papers Past* (2001), New Zealand's digitised newspaper collection; and the digital interface to the NLA's oral history and folklore collection (2005)[28] – and thematic digital stories and exhibitions like those that form *New Zealand History* (1999).[29]

Equally significant, though mentioned less often, are the tools which continue to underpin many significant digital history initiatives. The digital archive Ara Irititja was first developed in 1994 as a FileMaker Pro database specifically designed to meet the needs of Anangu people, providing an early example of digital technology being used to step away from colonising structures and institutions.[30] It continues today in the Keeping Culture Knowledge Management System (KMS), developed from 2006.[31] In the late 1990s the Australian Science Archives Project (which became Austehc, then the eScholarship Research Centre, ESRC) developed the Online Heritage Resource Manager (OHRM), a standards-based database and web publishing tool that has provided the back end for a laundry list of digital history projects, including the *Encyclopedia of Australian Science and Innovation* and the *Australian Women's Register*; the first online version of the *Australian Dictionary of Biography*; *Chinese-Australian Historical Images in Australia*;[32] *Reason in Revolt*;[33] *eMelbourne*;[34] *eGold*;[35] *Find & Connect*;[36] and *Return, Reconcile, Renew*.[37] Heurist[38] appeared in 2005, developed by the Arts eResearch team at the University of Sydney, and has since been used for Australian-based projects including the *Dictionary of Sydney*,[39] *Gallipoli The First Day*,[40] *China Australia Heritage Corridor*,[41] *Expert Nation*,[42] *Beyond 1914*,[43] *The University*

[21] https://womenaustralia.info/
[22] https://teara.govt.nz/en/biographies
[23] https://teara.govt.nz/en
[24] https://adb.anu.edu.au/
[25] http://pandora.nla.gov.au/
[26] https://natlib.govt.nz/collections/a-z/new-zealand-web-archive/
[27] https://www.aucklandmuseum.com/war-memorial/online-cenotaph
[28] https://www.nla.gov.au/collections/what-we-collect/oral-history-and-folklore
[29] https://nzhistory.govt.nz/
[30] https://irititja.com/
[31] https://www.keepingculture.com/
[32] https://webarchive.nla.gov.au/awa/20230301154550/https://www.chia.chinesemuseum.com.au/
[33] https://www.reasoninrevolt.net.au/
[34] https://www.emelbourne.net.au/
[35] https://www.egold.net.au/
[36] https://www.findandconnect.gov.au/
[37] https://returnreconcilerenew.info/
[38] https://heuristplus.sydney.edu.au/heurist/startup/
[39] https://dictionaryofsydney.org/
[40] https://www.abc.net.au/ww1-anzac/gallipoli/
[41] https://www.heritagecorridor.org.au/

*of Tasmania and World War One*,[44] *November 1918 – Emerging from the Great War*,[45] and *Uncovering Pacific Pasts*,[46] as well as international digital history projects such as the award-winning *Digital Harlem*.[47]

Following the development of the first tools, projects, and archives, New Zealand and Australia's national libraries developed and launched two platforms which continue to dominate historical research in the digital era: DigitalNZ (2008); and Trove (2009). Smithies justifiably claimed in 2013 that 'DigitalNZ leads the world in cultural heritage metadata aggregation'.[48] More recently Trove has been described as 'arguably the best digital history research resource in the world'.[49] While neither is specifically a digital history platform, these are often the first sites historians of New Zealand or Australia will visit when exploring a topic (as Tim Sherratt, a previous manager of Trove, recently argued: 'Search itself is a research method'[50]), as well as opening up rich resources for scholars interested in transnational histories.[51]

Both Trove and DigitalNZ provide opportunities for many things beyond search. The *Prosecution Project*[52] enriches Trove's data while also using the platform's application programming interface (API) to develop and expand its own database records;[53] and Katherine Bode has used the API to develop new approaches to literary history in her work on nineteenth-century Australian newspaper fiction.[54] DigitalNZ's API has similarly opened up the platform for a range of uses. The *UC CEISMIC Canterbury Earthquake Digital Archive*[55] uses DigitalNZ for its collections search; and visitors to *The WW100 Centenary*[56] can find visual and audiovisual material related to World War I, or plot historical images on an interactive map using the *Historical New Zealand*[57] iPhone app.

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[42] https://expertnation.org/
[43] https://heuristplus.sydney.edu.au/heurist/?db=ExpertNation&ll=Beyond1914
[44] https://www.utas.edu.au/world-war-one
[45] https://connect.adelaide.edu.au/nodes/view/25530
[46] https://heuristref.net/heurist/?db=CBAP_Uncovering_Pacific_Pasts&website&id=1137
[47] http://digitalharlem.org/
[48] Smithies, 252; the same year, DigitalNZ put its new open source aggregation tool Supplejack into production – see 'About', Supplejack, n.d., https://digitalnz.github.io/supplejack/about.html
[49] Paul Kiem, 'Use of Trove in School History Classes', *History Australia* 18, no. 4 (2021): 853, https://doi.org/10.1080/14490854.2021.1993745
[50] Tim Sherratt, 'More Than Newspapers', *History Australia* 18, no. 4 (2021): 838, https://doi.org/10.1080/14490854.2021.1993744
[51] See, for example, George Bishi *et al.*, 'A Trove for Historians of Africa: Reflections from the International Studies Group and Research Associates', *History Australia* 18, no. 4 (2021): 858–63, https://doi.org/10.1080/14490854.2021.1993746
[52] https://prosecutionproject.griffith.edu.au/
[53] Cheney Brew, 'The Prosecution Project', Trove, 3 June 2020, https://trove.nla.gov.au/blog/2020/06/03/prosecution-project
[54] https://readallaboutit.com.au/; Katherine Bode, *A World of Fiction: Digital Collections and the Future of Literary History* (Ann Arbor: University of Michigan Press, 2019), https://doi.org/10.3998/mpub.8784777
[55] http://www.ceismic.org.nz/
[56] https://ww100.govt.nz/
[57] https://apps.apple.com/nz/app/historical-new-zealand/id1225481998

Yet, as the last-minute saving of Trove in 2023 indicates, digital research infrastructures remain particularly vulnerable. The lack of recurrent funding for digital humanities platforms and projects more broadly is a problem universities and partner organisations have yet to solve. The funding models set up for traditional projects normally rely on them having a clear end date for financial support, after which digital resources may not even be accessible, let alone updated.[58] The large collaborative infrastructure project *Humanities Networked Infrastructure* (HuNI)[59] – the product of a substantial initial investment – has survived for more than a decade on small pieces of funding and volunteer labour from people who believe it has continuing value. By contrast *Tinker*, a set of humanities tools launched by the HASS DEVL initiative in 2018, was quickly abandoned and the site is now offline.[60] One of the latest platforms for humanities researchers is the Time Layered Cultural Map of Australia (*TLCMap*), which provides mapping and geospatial tools, guides, and examples.[61] Following an ARC-funded first phase that brought together and improved upon existing geospatial tools, the project received some ARDC funding to support continued development. However, many of the prototypes developed have been sidelined, requiring additional funding to remain current, and for improving training and user capability.[62] *TLCMap* is now back to relying on competitive ARC grants, and without more stable funding its future remains precarious.

Some digital history resources are already inaccessible. For example, *Digital Songlines*, highlighted in Paul Arthur's 2008 survey of the field, was offline by 2011 because the group that created the project was disbanded,[63] and the URL for *1001 Leichhardts*[64] now redirects to the Queensland Museum Network's homepage. Other resources have a tenuous existence, relying on individual researchers for their ongoing maintenance, like Paul Turnbull's *South Seas*[65] or Rebe Taylor's *Stories in Stone: An Annotated History and Guide to the Collections and Papers of Ernest Westlake (1855–1922)*.[66] Likewise, *GLAM Workbench*,[67] a set of useful tools, tutorials, hacks, and Jupyter notebooks, has a key dependency on its creator Tim Sherratt. Such researcher-developed projects are frequently

[58] See, for example, Mark Finnane *et al.*, 'Sharing the Archive: Using Web Technologies for Accessing, Storing and Re-Using Historical Data', *Methodological Innovations* 11, no. 2 (2018): 1–11.
[59] https://huni.net.au/
[60] Eric Jong, 'HASS Data Enhanced Virtual Laboratory (DEVL)', Faculty of Arts, 7 April 2022, https://arts.unimelb.edu.au/research/digital-studio/projects/collaborations/hass-data-enhanced-virtual-laboratory
[61] https://tlcmap.org/
[62] 'About', *TLCMap*, 23 October 2022, https://tlcmap.org/about/
[63] Arthur; Mark Oppenneer, 'Digital Songlines Project', *The Ethnos Project* (blog), 8 December 2011, https://www.ethnosproject.org/digital-songlines-project/
[64] https://web.archive.org/web/20200229115254/https://leichhardt.qm.qld.gov.au/
[65] https://paulturnbull.org/project/southseas/
[66] The site is currently offline, with plans to restore it in the second half of 2023. Snapshots remain available via the Internet Archive: https://web.archive.org/web/20200216054023/http://www.westlakehistory.info/
[67] https://glam-workbench.net/

overlooked as part of national infrastructure programs in favour of attempts to develop centralised tools and services at large institutions.

Thirty years after the arrival of the web in Australia, a number of legacy issues need to be addressed. Requirements include: recurrent funding for humanities infrastructure and digital preservation projects; recognition that digital history and digital humanities operate as a distributed ecosystem, not just through centralised services; support for ongoing technology maintenance and development across this ecosystem; and investment from universities in building the capability (both technological and human) to maintain digital history and digital humanities projects (and complex digital research projects and outputs more broadly) in the long term. In keeping with the idea of an ecosystem, a range of solutions are required, potentially including centralised repositories,[68] longstanding services like the Australian Data Archive,[69] and involvement from the GLAM sector, along with more mature university-level research data infrastructure. To date there is little sign academic institutions are equipped to effectively manage the sorts of complex digital objects and platforms involved. Repositories for research publications, datasets, and digitised collections material are no longer enough, if indeed they ever were. Though the problem is a complex one requiring a range of coordinated developments, the need will only grow more pressing as centres are closed, projects finish, teams disband, and earlier generations of leading digital history researchers and practitioners start to transition to retirement.

## Archives and repositories

Some sustainability problems arise because historians are not trained as archivists, let alone digital preservation specialists. It is no coincidence that many of the longstanding digital resources used by historians are developed and maintained by GLAM institutions rather than universities, while some of the most resilient university-based digital history projects including *Bright Sparcs*, the *Australian Women's Register*, and *Find & Connect* were developed by archivists working at the Australian Science Archives Project and its successors. Archivists have been grappling with the preservation, documentation, access, and research challenges posed by the digital age since the 1970s.[70] In turn, historians have contributed to concurrent conversations about the relationship between archives, technology, and structures of power, including the gendered and racially determined nature of archiving in colonial countries.[71]

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[68] See, for example, Tom Denison *et al.*, 'Managing the Soft Issues in E-Research: A Role for Libraries?', *Australian Academic & Research Libraries* 38, no. 1 (2007): 1–14.

[69] https://ada.edu.au/

[70] See, for example, Kenneth Darwin, 'The Use of the Computer in Indexing Records', *Journal of the Society of Archivists* 4, no. 3 (1971): 218–29, https://doi.org/10.1080/00379817109513959; Paul D. Wilson, 'Computers and Archives – Some Random Thoughts', *Archives and Manuscripts* 4, no. 8 (1972): 11–18; David Bearman, 'Automated Access to Archival Information: Assessing Systems', *The American Archivist* 42, no. 2 (1979): 179–90; Michael Cook, *Archives and the Computer* (London: Butterworths, 1980).

Digitisation not only helps Australian and New Zealand scholars in researching international, transnational, and global histories, but also improves access to records that have ended up in local and overseas collections through processes of institutional acquisition, colonisation or migration. Taylor's *Stories in Stone* is one such example, working with archivists Gavan McCarthy and Mike Jones to make digitised, annotated records about Aboriginal stone artefacts from Tasmania held in Oxford more accessible in Australia.[72] University of Newcastle researchers have worked to recover migrant correspondence from international institutions, arguing that digitisation 'offers an alternative to the alienation created by having a singular keeping place for records with more than one natural home'.[73] Similarly, Julie McIntyre worked with librarian-archivist Kelli Stidiford on the digital return of records about the Macdonald family and their Ben Ean property in the Hunter Valley from the Central Queensland University Collection. The fact that Taylor and McIntyre collaborated with archivists is notable. Based on her experience, McIntyre questions whether historians – though successful archive end-users – are equipped to be creators of archives themselves in the ways that new technologies are now making possible.[74]

Increased accessibility is not universally considered desirable. When digitising Indigenous histories there are often tensions between the aspiration to democratise records and draw more attention to the processes of colonialism, and concerns about cultural sensitivity, individual privacy and a need to avoid reinscribing colonial values by making records available without proper interpretation or permissions. Adding to the complexity, not making records available for these reasons can also be read as gatekeeping, with stringent access requirements and a reluctance to digitise potentially frustrating Indigenous peoples in their efforts to discover more about their own family and community histories.[75]

A number of Indigenous digital libraries and archives have been created to preserve and share Indigenous knowledge in ways that better support community needs. In addition to Keeping Culture KMS already mentioned, Mukurtu Content Management System is another digital platform co-designed with Indigenous communities in Australia and North America.[76] Mukurtu includes support for cultural protocols, the inclusion of community records and multiple voices, and Traditional Knowledge Labels to provide granular access controls.[77]

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[71] Paula Hamilton and Mary Spongberg, 'Twenty Years On: Feminist Histories and Digital Media', *Women's History Review* 26, no. 5 (2017): 672.

[72] Rebe Taylor, 'A Journey of 13,033 Stones: The Westlake Collection and Papers', *Collections* 8, no. 1 (2012): 7–37.

[73] Nancy Cushing *et al.*, 'Letters to Lizzie: Archival Practice and the Entangled Worlds of Charlie Fraser', *Australian Historical Studies* 49, no. 3 (2018): 357.

[74] Julie McIntyre, 'Blank Pages, Brief Notes and Ethical Doublebinds: Micro Digitisation and the "Infinite Archive"', *Archives and Manuscripts* 44, no. 1 (2016): 2–13.

[75] Gillian Tasker and Chern Li Liew, '"Sharing My Stories": Genealogists and Participatory Heritage', *Information, Communication & Society* 23, no. 3 (2020): 389–406.

[76] https://mukurtu.org/

[77] Kimberly A. Christen, 'Mukurtu: An Indigenous Archive and Publishing Tool', 4 February 2012, https://hcommons.org/deposits/item/hc:12001/

Following experiments with Mukurtu at the Aboriginal and Torres Strait Islander Data Archive (ATSIDA) in the early 2010s,[78] a NSW Australian Mukurtu Hub has been established providing 'support for Aboriginal peoples and communities who want to manage, preserve and share their cultural heritage and knowledge'.[79] Other Australian initiatives that attempt to provide control of First Nations histories to those communities include *Storylines*,[80] a collaboration between Western Australian Indigenous communities and the State Library of Western Australia to tag and link Indigenous resources held in the library collection; *Dharug and Dharawal Resources*,[81] a collection of language and historical materials from New South Wales; and *Wumpurrani-Kari Archive*,[82] a digital image archive that prompts users to upload their own images and metadata. Such resources start to redress invisible or whitewashed Indigenous histories in mainstream collections, placing control and interpretation back in the hands of First Nations people.

*Return, Reconcile, Renew* also prioritises Indigenous access. The project documents the history of ancestral remains and repatriation from overseas museums by capturing structured information about organisations, people (including ancestors), places, and Indigenous groups. In addition to a public website, the project includes private offline knowledge bases for 'restricted or obligation-based community knowledge' accessible to three First Nations partner organisations.[83] Such projects provide an important counterpoint to the 'open data' proselytising of some digital humanities practitioners.

There are many other digital projects that have sought to create archives and digital collections of historical materials. Oral history researchers have worked for many years to develop platforms that allow users to engage with audio interviews, transcriptions, and related materials, with the NLA and innovative projects like *Australian Generations*[84] leading the way. Led by Alistair Thomson, *Australian Generations* recorded 300 life histories now available online via the NLA. As well as traditional academic outputs, the project produced a web exhibition with the wonderful title *From Glory Boxes to Grindr: Dating in Australia 1945–2015*,[85] and a book written with Anisa Puri, *Australian Lives: An Intimate History*.[86] The digital edition utilises the citation capability of the NLA's platform to link

[78] Gabrielle Gardiner and Kirsten Thorpe, 'The Aboriginal and Torres Strait Islander Data Archive: Connecting Communities and Research Data', *Language Documentation and Description* 12 (2014): 103–19.
[79] https://mukurtu-nsw.org.au/; Christen.
[80] https://storylines.slwa.wa.gov.au/welcome
[81] https://dharug.dalang.com.au/
[82] https://wumpurrarni-kari.libraries.wsu.edu/
[83] Gavan McCarthy *et al.*, 'Repatriation Knowledge in the Networked Archive of the Twenty-First Century', in *The Routledge Companion to Indigenous Repatriation*, eds Cressida Fforde *et al.*, 1st edn (London: Routledge, 2020), 637–53.
[84] https://www.monash.edu/arts/philosophical-historical-international-studies/australian-generations
[85] https://gloryboxtogrindr.com/
[86] Anisa Puri and Alistair Thomson, *Australian Lives: An Intimate History* (Melbourne: Monash University Publishing, 2017).

directly to specific sections of recordings, allowing readers to hear the voices of quoted interviewees as they move through the text.

There are many more digital archives and online collections available. But these are dwarfed by the quantities of digitised archival records, digital photographs, bibliographies, audiovisual recordings, transcriptions, and other research materials stored on hard drives, servers, and cloud storage providers by historians across Australia and New Zealand. Historians are not in the habit of sharing research materials and notes (which some are loath to describe as 'research data') publicly. New Zealand digital historian Rebecca Lenihan, writing about the data approaches the *Soldiers of Empire*[87] project took, observes that historians' habit of keeping their research private leaves their records particularly vulnerable as constant updating of technologies means that old file formats or media types often 'become unusable even by the scholars who created them'.[88]

But archives are not only a means by which historians try to preserve and understand the past; they are also key to ensuring accountability.[89] Jock Phillips writes that digital archiving of research material should not be seen as an alternative to traditional outputs like monographs, but rather as something that should accompany them so that the conclusions they offer 'can be tested against the evidence and others encouraged to explore further'.[90] At a time when public discourse is filled with debates about truth and alternative truths, and artificial intelligence (AI) tools for generating text, images and deepfake videos grow increasingly powerful, scholarly transparency and accountability are as important now as at any time in the past. Working to change the culture of history to include more open forms of digital research practice – tempered by appropriate ethical and cultural protocols, and supported by institutional and disciplinary infrastructures – can only benefit the profession and help to support its scholarly and social aims.

## Big histories, deep histories

Historian Hamish Maxwell-Stewart observes that 'Big History is a term that has particular resonance for historians of Australia – a continent with a 60,000-year record of human occupation and a geological history that extends a further 3,070 million years'.[91] Investigating broader geographies or expanses of time has become more feasible through both the digitisation of archives and the growth of technologies for analysing such digitised records. This has meant, David Armitage comments, that 'digital history can empower even junior scholars to attempt projects of a

[87] http://www.soldiersofempire.nz/
[88] Rebecca Lenihan, 'The Public Good of Digital (Academic) History', *Public History Review* 29 (2022): 188.
[89] Cassie Findlay, 'Better Off Forgetting? Essays on Archives, Public Policy and Collective Memory', *Archives and Manuscripts* 40, no. 2 (2012): 114–17.
[90] Phillips, 'A Click to the Past: Digital History in New Zealand', 232.
[91] Hamish Maxwell-Stewart, 'Big Data and Australian History', *Australian Historical Studies* 47, no. 3 (2016): 359.

scope undreamed of – and actively discouraged by – historians of recent decades'.[92]

The nature of history means working with big data is rarely straightforward. In addition to the 'three Vs' – volume (the scale of data collected), variety (the multiplicity of types of data) and velocity (the speed of collecting and processing) – there is the issue of veracity (the reliability of data).[93] Working with documents and historical records means remaining sensitive to the 'multiplicity of narrative meaning' that can attach to the same document, dependent on context and the questions being asked of it.[94] More data also does not mean data is more complete, or that results are somehow more objective.[95] While digitisation and computational analysis can be used to locate marginalised histories from large datasets, it can also serve to obscure them and further embed existing biases in these processes. The multiple interactions between researchers and data in building big data projects mean such data cannot be considered 'neutral' but the result of iterative processes of selection, modelling, defining, normalising, linking, classifying, querying, and comparing.[96] Maxwell-Stewart, one of the lead researchers on big history project *Founders and Survivors*[97] that traces the life-course histories of convicts transported to Van Diemen's Land, notes that the results can be 'decidedly messy' in ways that 'may not be immediately apparent to the end user'.[98]

Data linkage in particular has contributed to an increasing number of life-course studies of subject groups ranging from convicts to migrants to soldiers. This can enable insights with connections to ongoing policy issues around the world today. Kris Inwood and Maxwell-Stewart's recent finding that lengthy periods of solitary confinement among women transported to Van Diemen's Land led to decreased fertility and shorter life expectancies has obvious significance to the ongoing use of isolation in prisons today.[99] A criticism that is sometimes raised about big histories is that they can lose sight of the individual, resulting in histories that focus on systems and large-scale patterns while ignoring individual exceptionalism or agency. However, this is far from inevitable. Digital histories can point to exceptions as much as they can the wider trends. Indeed, this capacity, along with the rich records that digitisation has made

[92] David Armitage, 'Horizons of History', *History Australia* 12, no. 1 (2015): 220.
[93] Daniela Carlucci *et al.*, 'Towards a Data-Driven World: Challenges and Opportunities in Arts and Humanities', in *Big Data in the Arts and Humanities: Theory and Practice*, eds Giovanni Schiuma and Daniela Carlucci (Boca Raton, FL: CRC Press, 2018), 18.
[94] William E. Smythe and Maureen J. Murray, 'Owning the Story: Ethical Considerations in Narrative Research', *Ethics & Behavior* 10, no. 4 (2000): 311.
[95] Nicole Brown *et al.*, 'Mechanized Margin to Digitized Center: Black Feminism's Contributions to Combatting Erasure within the Digital Humanities', *International Journal of Humanities and Arts Computing* 10, no. 1 (2016): 111.
[96] Rik Hoekstra and Marijn Koolen, 'Data Scopes for Digital History Research', *Historical Methods* 52, no. 2 (2019): 92.
[97] https://foundersandsurvivors.com/
[98] Maxwell-Stewart, 361.
[99] Kris Inwood and Hamish Maxwell-Stewart, 'Solitary Confinement and Health and Other Life Course Outcomes for Convict Women', *History Australia* 19, no. 1 (2022): 13–33.

findable about individual persons or case studies, has contributed to an international resurgence in microhistories as much as big histories.[100] Against big data, historians of marginalised groups have drawn attention to the equal importance of nurturing approaches to 'small data' and the digitisation of small but important record sets, such as those relating to LGBTIQA + histories.[101]

Big histories also link researchers. One of the benefits and challenges of these initiatives is that they are seldom the work of an individual, nor is the data resulting from them usually hoarded away to the exclusive use of the research team. Katherine Biber notes that in this respect the *Prosecution Project*'s opening up of Australia's Supreme Court records for researchers across the humanities 'enacts a commitment to generosity, sharing, collegiality and mutual support, which in the contemporary academy are the highest values'.[102] Other projects like *SlaveVoyages*,[103] containing large datasets of Trans-Atlantic and Intra-American slave voyages and enslaved peoples, were created through large-scale international collaborations. For the first half of its history (2008–15) the project included substantial involvement from Stephen D. Behrendt and colleagues at Victoria University of Wellington, working alongside team members from the USA, United Kingdom, Brazil, and Portugal, with Behrendt holding an Advisory Board position until 2021.

Scale can also be achieved by combining existing datasets. HuNI brings together data from many Australian cultural websites and reference resources, as well as newspaper articles from Trove, museum collections, and a growing collection of Canadian data, into a platform that helps users combine, collect, connect, and contribute humanities data. More recently the *Australian Cultural Data Engine* has also sought to develop an approach to working with cultural data, incorporating many data providers also included in HuNI, along with additional archives and datasets.[104] While HuNI focuses on relationality, community-generated ontologies, and serendipitous discovery, the ACD Engine promises a focus on analysis, networks, and the socioeconomic implications of arts and cultural data.

Interest in different scales of history has also led to the development of deep histories that focus on large timescales rather than large datasets. *Marking Country*[105] is a series of map-based digital stories developed by ANU's Research Centre for Deep History, funded in part by Ann McGrath's Kathleen Fitzpatrick Laureate program *Rediscovering the Deep Human Past*. Developed in collaboration with Indigenous communities in Western Australia, Queensland and New South Wales, the stories seek to explore histories, cultural knowledge, and links to

[100] Anne-Marie Kilday and David Nash, eds, *Law, Crime and Deviance since 1700: Micro-Studies in the History of Crime* (London: Bloomsbury, 2017).
[101] Jen Jack Gieseking, 'Size Matters to Lesbians, Too: Queer Feminist Interventions into the Scale of Big Data', *The Professional Geographer* 70, no. 1 (2018): 150–6.
[102] Katherine Biber, 'Prosecution Project: Archive Review', *History Australia* 17, no. 4 (2020): 746.
[103] https://www.slavevoyages.org/
[104] https://www.acd-engine.org/
[105] https://re.anu.edu.au/

Country that go beyond the European-centred histories of Australia that have dominated since the British arrival in the late eighteenth century. Though interested in a different scale of history and challenging existing disciplinary norms, *Marking Country* does not employ big data or digital research methods and is more aligned with public and digital oral history projects.

## Changing methods

Digitisation and data extraction have facilitated more quantitative approaches to history, a discipline previously seen as a largely 'qualitative endeavour'.[106] This has perhaps influenced which historical sub-disciplines have been most active in digital history in Australia to date. There has been a focus on criminal justice records, which has enabled digital history initiatives like the *Prosecution Project* and *Founders and Survivors* to use quantitative data to test hypotheses about the factors that influenced prosecution outcomes, or affected the fates of convicts after arrival in Van Diemen's Land.[107] As with criminal and convict histories, other disciplines that already featured quantitative approaches have readily adopted digital methods, including in economic history, population and demographic studies, and sports history where familiarity with statistics – goals, wins, averages, times, medal tallies, rates of participation – has broadened into more ambitious analyses enabled by big data.[108]

Qualitative analyses have also become more quantitative through digital practices like distant reading. However, as found in a study of women's participation in surfing using Trove's digitised newspaper platform, distant reading is often still best applied in conjunction with close reading. While the authors expected that an early spike in newspaper reportage of women surfing in the 1910s was related entirely to one woman widely considered the first and only female surfer of the era, close reading revealed a number of articles related to another woman whose status as the actual first female surfer in Australia had been forgotten.[109] Others echo this need for a mixed methods approach. In an article on how quantitative analysis via Trove reveals the relative invisibility of foster care in discussions of social issues across time, Nell Musgrove notes that 'the tools developed by historians working with hard copy and microfilm

[106] Murray G. Phillips, Gary Osmond and Stephen Townsend, 'A Bird's-Eye View of the Past: Digital History, Distant Reading and Sport History', *The International Journal of the History of Sport* 32, no. 15 (2015): 1726.

[107] Mark Finnane, Andy Kaladelfos and Alana Piper, 'Sharing the Archive: Using Web Technologies for Accessing, Storing and Re-Using Historical Data', *Methodological Innovations* 11, no. 2 (2018): 1–11; James Bradley, Rebecca Kippen, Hamish Maxwell-Stewart, Janet McCalman and Sandra Silcot, 'Research Note: The Founders and Survivors Project', *The History of the Family* 15, no. 4 (2010): 467–77.

[108] Wray Vamplew, 'In Praise of Numbers: Quantitative Sports History', *The International Journal of the History of Sport* 32, no. 15 (2015): 1835–49.

[109] Phillips *et al*., 1725–40.

newspapers should not be entirely discarded'.[110] A rich qualitative understanding of the history of foster care was necessary for Musgrove to determine which terms to search for within newspapers, and explain the peaks and troughs in media coverage.

Distant reading techniques have also been developed around visual images.[111] *Real Face of White Australia* uses an array of photographs as entry point.[112] Presented with a wall of faces, visitors can then click to view the original exemption certificate that the photograph is taken from in order to learn more about the history of how the White Australia policy was enacted on individuals.[113]

Users of such digital resources face methodological issues. There is a growing literature on the need for scholars to be more explicit about their search and selection processes when using digital sources, given the way these can be driven by biases in machine algorithms for returning search results, or even prior to this by human decision-making about what documents to digitise.[114] While Trove's newspaper digitisation project is rightly considered exceptional due to its wide coverage of regional as well as metropolitan newspapers, features such as the 1954 copyright cut-off date for newspaper digitisation could discourage studies of late twentieth-century topics. Similarly, a focus on immigration certificates or criminal justice records could risk reducing the rich life stories of marginalised people to their encounters with governments, courts, and other structures of power, social regulation, and control.

Janine Solberg also warns of the false perception that technology inevitably speeds up the research process, resulting in a 'devaluation of certain kinds of historical work' or a 'research inflation' when it comes to expectations of the types and amount of research that historians are expected to undertake.[115] Historians must remain cognisant of the limitations of technology, and discuss the limitations of digital methodologies. But to do so is not to dismiss them. As observed by researchers on the *Trading Consequences*[116] project (a database mapping the transnational exchange of commodities across the long nineteenth century), historians can miss important information when searching library catalogues or working in archives, just as they can when using text mining: 'No historical

[110] Nell Musgrove, 'Twice Forgotten: Assessing the Scale and Nature of Foster Care Coverage in Australian Historical Newspapers', *The History of the Family* 25, no. 1 (2020): 88.
[111] Ian Milligan, 'Learning to See the Past at Scale: Exploring Web Archives through Hundreds of Thousands of Images', in *Seeing the Past with Computers: Experiments with Augmented Reality and Computer Vision for History*, eds Kevin Kee and Timothy Compeau (Michigan: University of Michigan Press, 2019), 116–36.
[112] http://www.realfaceofwhiteaustralia.net/
[113] Tim Sherratt and Kate Bagnall, 'The People Inside', in Kee and Compeau, 11–31.
[114] Tim Hitchcock, 'Confronting the Digital: Or How Academic History Writing Lost the Plot', *Cultural and Social History* 10, no. 1 (2015): 9–23.
[115] Janine Solberg, 'Googling the Archive: Digital Tools and the Practice of History', *Advances in the History of Rhetoric* 15, no. 1 (2012): 53–76.
[116] https://tradingconsequences.blogs.edina.ac.uk/

methodologies are perfect … In some respects, there is a tendency to hold computational tools to a higher standard than human efforts'.[117]

## Public digital history

The area where digital history so far has made the biggest impact on history-making in Australia and New Zealand is through new platforms for communicating histories to the public, including podcasts, blogs, online exhibitions, and crowdsourcing projects. Indeed, Cameron Blevins suggests that an emphasis on technology as a means for presenting history has inhibited explorations of new analytical approaches and digital methods, arguing that digital historians 'have contributed far more to public history than we have to argument-driven scholarship'.[118] Undeniably though, digital history's radical ability to engage publics in historical arguments has shifted the landscape of public history itself. In particular, it has fostered two key developments: the emergence of more participatory public histories in which audiences actively engage with historical records or the history-making process; and the increased exposure of marginalised or contested histories.

Two significant projects that illustrate the potential power of digital public histories to reshape national conversations about history are the *Find & Connect* web resource and *Colonial Frontier Massacres, 1780 to 1930*,[119] colloquially known as the Massacre Map. *Find & Connect*, first launched in 2011, was developed by a team of historians, archivists and social workers from the University of Melbourne and Australian Catholic University. Bringing together various historical resources about institutional 'care' in Australia, it seeks to empower former institutionalised children to trace and recover their own pasts, and has been adapted and updated based on feedback and information received from these users. It has also contributed to wider public understandings of previously silenced stories, including as a key source for the 2017 Royal Commission into Institutional Responses to Child Sexual Abuse. Similarly, the interactive Massacre Map, developed from 2017 by the University of Newcastle, has fostered a better understanding of the violence of colonial dispossession. *The Guardian*'s 2019 'Killing Times'[120] adaptation of the map extended the reach and impact of this work even further. The ability to see a dynamic representation of the extent of violence and explore the stories behind these numbers for themselves has been instrumental in shifting 'history wars' discussions away from debate about whether such violence

[117] Jim Clifford *et al.*, 'Geoparsing History: Locating Commodities in Ten Million Pages of Nineteenth-Century Sources', *Historical Methods* 49, no. 3 (2016): 128.
[118] Cameron Blevins, 'Digital History's Perpetual Future Tense', in *Debates in the Digital Humanities*, eds Matthew K. Gold and Lauren F. Klein (Minneapolis: University of Minnesota Press, 2016), 320.
[119] https://c21ch.newcastle.edu.au/colonialmassacres/
[120] https://www.theguardian.com/australia-news/series/the-killing-times

occurred, to how and where these histories should be handled in public recollections of the past.

There are also many historical websites that, while not participatory, have opened up conversations about difficult pasts. Many use digital mapping technologies to focus on Indigenous and colonial histories, including *Deepening Histories of Place*;[121] *Land Grants in Early Colonial Van Diemen's Land*;[122] *Dyarubbin – Mapping Aboriginal History, Culture and Stories of the Hawkesbury River NSW*;[123] *The Overland Telegraph Line: A Transcultural History*;[124] the deep history project *Marking Country*; and *Kā Huru Manu*,[125] The Ngāi Tahu Cultural Mapping Project, dedicated to mapping the traditional Māori place names and associated stories within the Ngāi Tahu rohe (tribal area). A risk associated with such projects is that they do not always remain online or fully functional over time, as is the case of *Deepening Histories of Place* at the time of writing. Another is that while such digital public histories often report on how they were initiated and developed, they rarely evaluate how well they achieved their aims in terms of transforming the public's historical consciousness.[126] When it comes to digital history projects, historians have much to learn from GLAM professionals about evaluation and impact.

Gender histories are also being opened to the public through digital history, as seen through early initiatives like the *Australian Women's Register*. However, women researchers themselves remain underrepresented in the field of digital history, despite many of the core tenets of digital humanities – openness, collaboration, relationality – speaking directly to principles of feminist approaches to history.[127] An exception tends to be in public-engagement areas of digital history, such as blogging, which see greater levels of women's participation. This includes collaborative multi-author blogs, such as *VIDA: Blog of the Australian Women's History Network*,[128] which was founded in 2016, with more than ninety-five citations of the blog detected through Google Scholar in 2022.[129] Such citation data challenges the idea that academic blogging exists wholly outside the traditional remit of scholarly knowledge production.[130] Indeed, blogging is one of the most easily embraced forms of digital public history, perhaps due to its

[121] https://cass.anu.edu.au/research/projects/deepening-histories-place
[122] https://www.arcgis.com/apps/MapJournal/index.html?appid=413d9caea63d451c928887593dfccfa7
[123] https://portal.spatial.nsw.gov.au/portal/apps/MapSeries/index.html?appid=82ae77e1d24140e48a1bc06f70f74269
[124] https://otlhistory.sa.gov.au/
[125] https://kahurumanu.co.nz/
[126] Alana Piper and Katherine Roscoe, 'Digital Crime Histories and Developing a Public Pedagogy of Criminal Justice', *International Journal of Crime, Justice and Social Democracy* 12, no. 1 (2023): 56–68.
[127] Tonya Howe, 'WWABD? Intersectional Futures in Digital History', *ABO: Interactive Journal for Women in the Arts, 1640–1830* 7, no. 2 (2017): 1–4.
[128] https://www.auswhn.org.au/blog/
[129] Ana Stevenson, Report to the AWHN, 2022.
[130] L.L. Gaillet and L. Guglielmo, *Scholarly Publication in a Changing Academic Landscape: Models for Success* (New York: Palgrave Macmillan, 2014), 45.

familiarity as a largely one-way form of communication (comments and shares notwithstanding) where historians retain their role as experts for an audience of relatively passive consumers.[131]

Podcasts are another less participatory form of digital public history – one that has proved useful for engaging the public in the histories of sensitive topics, and for exposing them to the actual processes and methodologies of historical research. In Australia, *Shooting the Past* (examining photographs as historical sources),[132] *GLAM City* (historians from UTS's Australian Centre for Public History (ACPH) in conversation with GLAM professionals),[133] and *Archive Fever* (where historians talk about archives)[134] have engaged audiences in histories and historiography; and in New Zealand, *New Zealand History*,[135] the *Aotearoa History Show*[136] and *History of Aotearoa New Zealand*,[137] among others, have explored local and national histories. Another ACPH podcast, *History Lab*,[138] eschews singular narratives and the authority of the scholarly historian. Each episode looks at the practice of history, interesting methods, the problems of finding evidence, and disagreements about interpretation, seeking to improve people's understanding of the historian's craft along with their knowledge about the past. *History Lab*'s most recent season (*The Last Outlaws*[139]) won the State Library of NSW's 2022 Digital History prize.

Other histories aim to be more immersive. Digital walking tours like the City of Sydney's urban history *Culture Walks*,[140] Hamish Sewell's *Soundtrails*,[141] and Heritage New Zealand's *High Street Stories*[142]– capturing the people and places of High Street, Christchurch, after the area was damaged in the 2010–11 earthquakes – take history into the streets. Meanwhile historically themed computer games like *Wreck Seeker*,[143] commissioned by the Australian National Maritime Museum, open up new opportunities for individuals to feel personally connected to the historical narratives they witness unfolding in game.[144] Here users play present-day researchers challenged to reconstruct the past through the evidence left behind by historic shipwrecks. Players not only engage directly with primary

[131] T. Adcock *et al.*, 'Canadian History Blogging: Reflections at the Intersection of Digital Storytelling, Academic Research, and Public Outreach', *Journal of the Canadian Historical Association* 27, no. 2 (2016): 1–39; G. Lovink, *Zero Comments: Blogging and Critical Internet Culture* (London: Routledge, 2008).
[132] https://www.abc.net.au/radionational/programs/shootingthepast
[133] https://2ser.com/glamcity/
[134] https://www.archivefeverpod.com/
[135] https://newzealandhistory.podbean.com/
[136] https://www.rnz.co.nz/programmes/the-aotearoa-history-show/podcast
[137] https://historyaotearoa.com/
[138] https://historylab.net/
[139] https://thelastoutlaws.com.au/
[140] https://www.sydneyculturewalksapp.com/
[141] https://www.soundtrails.com.au/
[142] http://www.highstreetstories.co.nz/
[143] https://www.sea.museum/explore/apps-and-games/wreck-seeker
[144] Jaume Aurell, 'Rethinking Historical Genres in the Twenty-First Century', *Rethinking History* 19, no. 2 (2015): 153; Eric Champion, *Critical Gaming: Interactive History and Virtual Heritage* (London: Routledge, 2016).

sources, from documents to objects, but are introduced to the challenges involved in critically analysing these, learning something about the process of curating history.[145]

Examples of historians using augmented and virtual reality to communicate knowledge about the past are more rare. Melbourne-based company Lithodomos VR[146] has produced some impressive recreations of the classical world, and *Virtual Angkor*[147] is a collaboration between archaeologists, historians, and virtual history specialists in Australia, Cambodia, and the United States that seeks to provide a sense of the Cambodian metropolis around 700 years ago. But it is telling that both have strong archaeological roots. Historians have for the most part not taken up technologies available through centres like the University of Canterbury's HitLab, Deakin Motion Lab, or UNSW's Centre for Interactive Cinema Research.

Participatory forms of history can also harness expertise outside of academia to better contextualise and understand archival records. In Australia, there has been particular enthusiasm for digital histories with a citizen science component in which participants transcribe, correct or annotate records. The NLA's newspaper digitisation program in particular has been heralded as 'the best example of the involvement of a wider public in research'. On the average day, users of Trove make around 100,000 corrections to the OCR-text from images of historical newspapers.[148] (New Zealand's *Papers Past*, acknowledging the demand for a similar feature, aims to implement something similar in the future.) Citizen science projects not only directly involve the public in research processes in ways that can increase their historical literacy, but can even encourage them to pursue research independently. Within the first few weeks of the *Criminal Characters*[149] project opening up Australian prison records to volunteers for transcription, some were going beyond this remit to link prison records with news articles, births, deaths and marriages data, military records, local history websites, museum objects, and more.[150]

Digital history could eventually allow for platforms that enable an ongoing interactive process whereby users become creators, with each person who has viewed a document or historical narrative adding to, problematising or contesting the interpretation provided by adding their own unique specific knowledge and viewpoints to its permanent record. The most popular example of crowdsourced historical knowledge, Wikipedia, is also perhaps the best example of the concerns raised by the prospect of increased public involvement in history-

[145] Catherine Beavis *et al.*, 'Digital Games in the Museum: Perspectives and Priorities in Videogame Design', *Learning, Media and Technology* 46, no. 3 (2021): 297.
[146] https://lithodomos.com/
[147] https://www.virtualangkor.com/
[148] Tim Hitchcock and Robert Shoemaker, 'Making History Online: The Colin Matthews Lecture for the Public Understanding of History', *Transactions of the Royal Historical Society* 25 (2015): 75–93, https://doi.org/10.1017/S0080440115000031
[149] https://criminalcharacters.com/
[150] Alana Piper, 'Digital Crowdsourcing and Public Understandings of the Past: Citizen Historians Meet Criminal Characters', *History Australia* 17, no. 3 (2020): 525–41.

making. The ways in which Wikipedia frames Australian history through both its inclusions and omissions is the subject of a current ARC Discovery project awarded to Heather Ford and Tamson Pietsch in 2022. One frequent criticism of Wikipedia has been that the site reflects systemic biases through the underrepresentation of marginalised peoples both as participant-editors and information subjects.[151] When researching the history of the Australia Paralympic Movement, Murray Phillips – noting the ableism evident in Wikipedia – decided to complement his monograph with a series of Wikipedia articles on Australian Paralympic athletes, coaches and administrators in order to reach a larger audience.[152] Perhaps rather than bewailing such popular resources, or adding to the growing landscape of abandoned or short-lived history websites, historians should be following Phillips' lead, leveraging existing popular platforms and seeking to improve the quality and range of information they provide.

## Pedagogy, teaching, and training

Digital history teaching and training in New Zealand started comparatively early. In 2005, the Ministry for Culture and Heritage launched *Te Ara*, an online Anzac Day guide, and *The Classroom* (later renamed *Te Akomanga*[153]), a digital resource for history teachers. The first tertiary Digital Humanities course in the region, at the University of Canterbury, was approved some years later, in 2012, and was offered in 2014, running in parallel with other courses that engaged in digital history.[154] Then in 2014 Sydney Shep and colleagues launched *Moving Beyond the Threshold*, a project looking at how students and teachers use digital media 'for transformative learning and improved student outcomes in history-informed subjects'.[155] It appears to be the only dedicated study of its type in New Zealand or Australia to date.

A decade further down the track, a follow-up covering both countries would provide insight into the current state of teaching in the field, something that is otherwise difficult to ascertain. Though Canterbury retains a strong digital humanities teaching profile, it appears Smithies' desire for a dedicated digital history course did not eventuate. In Australia, a shell course titled 'The Professional Historian' in the early 2010s provided an early opportunity for historians to learn about digital methods, with examples including Taylor's Westlake project, *Find & Connect*, and the *ADB*. Between 2016 and 2018 dedicated digital history courses were offered at ANU (Digital History, Digital Heritage) and

[151] Heather Ford *et al.*, 'Producing Distinction: Wikipedia and the Order of Australia' (University of Technology Sydney, 2021), https://hfordsa.github.io/who-do-we-think-we-are.html
[152] Murray G. Phillips, 'Wikipedia and History: A Worthwhile Partnership in the Digital Era?', *Rethinking History* 20, no. 4 (2016): 523–43.
[153] https://nzhistory.govt.nz/te-akomanga
[154] Smithies, 255–6.
[155] Sydney Shep, 'Moving Beyond the Threshold: Digital Literacies and Historical Thinking in New Zealand Universities', 2014, https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=5168da38b5c13fbbb3debbb79111398221addabc

Monash University (Making Digital History).[156] A 2018 survey of subjects offered to students in their honours year in history at Australian universities appears to reveal that learning more about digital history as a method was only a stated option for students at this level in one university.[157] In early 2023, it seems only the University of Newcastle offers a current subject with 'digital history' in the title – Making Digital History: Curating for Public Audiences.[158]

Drilling down further, it is clear that technology has made its way into various university history subjects, with digital methods and skills commonly mentioned as part of course learning outcomes. The University of Tasmania does the most to incorporate mentions of digital methods and technologies into history course outlines, while for some institutions digital history methods do not rate a mention. Undergraduate students are clearly being routinely exposed to digital sources; however, it is unclear from subject outlines the extent to which they are provided with explicit training in how to evaluate such sources, let alone instruction in more sophisticated methods of computational analysis. Though broader digital humanities courses are offered at a few universities, digital history as a specialisation remains on the periphery within most history degrees. Furthermore, in both New Zealand and Australia it seems that digital history teaching is often reliant on a few keen and able individuals, who often themselves lack secure employment. Tim Sherratt, Australia's foremost historian hacker, is currently employed as an Associate Professor just one day a week at the University of Canberra.[159] At Te Herenga Waka-Victoria University of Wellington, Rebecca Lenihan incorporated digital history into several subjects, later publishing on the positive responses from students to more authentic assessments that drew on digital skills they could leverage professionally, all while working as a Teaching Fellow not on permanent staff.[160]

A 2019 submission by the Australian Historical Association to the Australian Academy of Humanities about the current state of the humanities workforce identified digital literacy and technical skills as a major gap in current training of humanities researchers in Australia.[161] Little has changed since. The ongoing lack of digital humanities training in undergraduate history degrees could stem from academics who are reluctant to provide training in methods about which they themselves remain uncertain, or an unwillingness to spend limited contact hours focusing on technical skills and methods, or a false perception that as 'digital natives' most contemporary students are already

[156] On the latter course, which was sadly discontinued, see Johnny Bell *et al*., '"History Is a Conversation": Teaching Student Historians through Making Digital Histories', *History Australia* 13, no. 3 (2016): 415–30, https://doi.org/10.1080/14490854.2016.1202373

[157] Tyson Retz and Stuart Macintyre, 'The Honours Conception of History', *History Australia* 15, no. 4 (2018): 815.

[158] https://www.newcastle.edu.au/course/HIST2051

[159] Tim Sherratt, 'About Me', https://timsherratt.org/about/

[160] R. Lenihan, '"I Can Actually See Myself Using These Sorts of Things in the Future": The Case for Alternative, Authentic Undergraduate Assessments', *New Zealand Journal of History* 54, no. 1 (2020): 94–111.

[161] Joy Damousi, 'From the President', *History Australia* 16, no. 3 (2019): 433–4.

technologically literate (though research has shown these experiences do little to develop the digital literacies expected in academic settings).[162] Meanwhile, other disciplines have used digital history projects in their teaching in ways that have improved not only their digital but historical literacies. The *Criminal Characters* project has been incorporated into assessment tasks in both criminology and history courses at the University of Tasmania and University of Newcastle, with reported benefits in students' critical analysis and empathetic readings of the past.[163]

Lack of tertiary subjects and programs focused on digital history means there is no clear pipeline for producing a new generation of digital historians, with many of those currently in the sector being the product of self-learning combined with ad hoc training sessions in digital methods undertaken outside their formal studies. Whatever the cause, the effects of this inchoate training and sector include continuing difficulties encountered when trying to encourage researchers to adopt shared tools, standards and ontologies, and a lack of understanding about good data curation and research data management practices. Another danger is that isolated researchers and projects continue to reinvent the wheel, resulting in unnecessary duplication of effort, and creating significant issues for interoperability, migration, maintenance, and preservation further down the track.[164]

## Conclusions: The present and future of digital history

The latest rounds of research funding outcomes in Australia provide interesting reading. Filtering by the History, Heritage, and Archaeology field of research, the only recipient of a 2023 Linkage Infrastructure, Equipment and Facilities (LIEF) grant is *TLCMap*, which as noted earlier now relies on the competitive grants process to continue development work. In the 2022 Linkage grants one of the three funded projects is clearly digital, *Making Crime Pay* led by Maxwell-Stewart. Of the thirteen funded Discoveries in 2023, three – *Archiving Social Movements & Building Historical Literacy for a Digital Age*; *Living with Smallpox in Early Modern Britain*; and *Megalithic Connections* – appear to include digital components. For 2022 Future Fellowships, only Greta Hawes' project on storytelling networks in ancient Greece references digital work. And of the four DECRA 2023 projects funded under this FOR, none mention digital methods or outputs in their project summaries. Which is to say, some funds are going to well-established academics, but there are no new infrastructure projects in this round, and, even more

[162] W. Ng, 'Can We Teach Digital Natives Digital Literacy?', *Computers & Education* 59, no. 3 (2012): 1065–78.

[163] Vicky Nagy *et al.*, 'Citizen Social Science in the Classroom: Criminology Students' Perceptions of Prisoner Records', *Journal of Criminal Justice Education* (2023, forthcoming): 1–17, https://doi.org/10.1080/10511253.2023.2179089

[164] Nicholas Julien *et al.*, 'Introduction', in *Big Data Factories: Collaborative Approaches*, eds Sean P. Goggins *et al.* (Cham: Springer International Publishing, 2017), 1–6.

concerningly, no ARC-funded early career projects with a significant digital component.

More worrying still, this seems in keeping with the broader state of the field. Key pieces of foundational infrastructure are ageing, some continue to struggle for funding, and there are few (if any) genuinely exciting new humanities infrastructure projects underway. There is little sign of emerging initiatives as ambitious as the *ADB Online*, the *Australian Women's Register*, *SlaveVoyages*, or the oral history project *Australian Generations*, nor is there evidence of new digital history projects that are likely to have the power and impact of the Massacre Map or *Find & Connect*. Though in the mid-2010s digital history courses were starting to emerge, and in New Zealand Shep and others were studying the impact of digital media on history pedagogy, the focus on digital skills seems to have moved back into the margins. Central groups like the ARDC still seem uncertain how to provide humanities research infrastructure in a sustainable, continuing way, and humanities researchers lack cohesion as a group when responding to calls from funders.

On the whole, historians remain more comfortable with the written (or, at a push, spoken) word. In 2013, the American journal *The Public Historian* published a discussion about its own future, with talk of articles dominated by visual arguments, including maps, interactive graphics, audio, video, and multimedia; and of more radical shifts like mashups, storified Twitter conversations, podcasts, annotated videos, networks of blog posts, and open and real-time exchanges. Little of this has come to pass in either journal or ebook publishing, with occasional exceptions like *Australian Lives* still falling far short of what earlier scholars envisaged. A study of historians in 2008 found they were reluctant to publish electronically, with concerns about prestige, plagiarism, and preservation.[165] A 2019 study suggests little has changed in the years since: 'Newer modes of publishing, including multimedia options or making a book available as open access, were not seen as important according to our respondents'.[166]

Even discounting conservative notions of scholarly prestige, there are few incentives in place to drive change. The prizes offered by the Australian Historical Association and New Zealand Historical Association tend to target traditional publications, with no prizes that explicitly support digital histories comparable to, for example, the American Historical Association's Roy Rosenzweig Prize.[167] There is some funding for digital innovation available via the GLAM sector, including the State Library of Queensland's Digital Collections Catalyst grant, and the State Library of New South Wales' digital history prize. But the former is targeted at 'developers and creatives', while the latter awards documentary films like *Ablaze* and *Freeman* whose designation as 'digital history' is

[165] Margaret Stieg Dalton, 'The Publishing Experiences of Historians', *Journal of Scholarly Publishing* 39, no. 3 (2008): 197–240, https://doi.org/10.1353/scp.0.0001

[166] Agata Mrva-Montoya *et al.*, 'Understanding Australian Academic Authors in the Humanities and Social Sciences: Their Publishing Experiences, Values, and Perspectives', *Journal of Scholarly Publishing* 51, no. 1 (2019): 38–62.

[167] https://www.historians.org/awards-and-grants/awards-and-prizes/roy-rosenzweig-prize

questionable when placed alongside projects like *Dyarubbin* and *The Killing Times*. It could be argued that, when digital history achieves excellence in *history* (rather than just producing an interesting digital output) it should not need to be singled out. But the questionable status and prestige of the field within the broader discipline, and the continued focus on monographs, chapters, articles, and other linear textual outputs, means we are not there yet.

As noted in the introduction, this is not to say that there are no encouraging signs. But there are clearly still barriers in place. In 2013, James Smithies argued: 'Perhaps the biggest barrier at the moment is the unwillingness of historians to view the computers they use for work as anything more than typewriters that can connect to the internet, rather than the incredibly powerful computing machines they are'.[168] Change in the decade since has been slow. One of the issues might be that while many historians continue to use digital technologies in their professional practice, few see themselves as working in digital history, or publish reflections on their engagements with digital methods. As with the broader field of digital humanities, the problem is compounded by continued debates about definitions; as Crymble notes of digital history: 'While many people thought they knew what it meant, they may not have had the same notion of it as the person across the table'.[169] Another issue may be a perception that while large platforms like Trove and DigitalNZ, or longstanding projects like *ADB Online*, require ongoing investment, there is little need for new initiatives to support ongoing research – just for more of the same. Or we may now be in a period of consolidation before a new generation of projects emerges. Whatever the case, fostering a future for innovative, influential, and impactful digital history projects requires continuing action on a number of fronts, some of which we have tried to identify throughout this article: more discussion of methods, improved teaching and training, better infrastructure and support, more explicit recognition, and so on.

For now, projects and tools initiated prior to 2015 continue to dominate the Australian and New Zealand digital history landscapes. This suggests at the very least a lack of growth in the field in recent years, and a loss of momentum from the comparative flourishing of infrastructures, tools, projects, and initiatives seen in the 2000s and early 2010s. Digital history is not going away, but progress requires more concerted action. More troubling still, technological change, continued reliance on short-term funding, and a lack of mature preservation infrastructure may mean a backwards step, with even the recent history of digital history in danger of being lost. The future of digital history requires us to keep investing our energy in the field to manage its particular requirements, and to realise its many exciting possibilities.

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[168] Smithies, 258.
[169] Crymble, 7.

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