Digitization has come with critiques of power, bias, and legitimacy, since the institutional drive to reproduce the excessive scale of the colonial project as big data enacts its own forms of erasure.

Temit Odumosu (2020, p. S294)

Global and local power asymmetries deriving from traditional colonial frameworks undergird disciplinary silos and blind spots that distance Indigenous, Black and other racialized communities from their heritage, silencing their voices and perspectives effectively prohibiting them from narrating their own histories. Digitization of heritage typically reinforces these asymmetries as Temi Odumosu, art historian and curator, remarks in the quote above. This special issue creates intellectual space to begin to examine these issues in archaeology and digital heritage.

Social unrest during the COVID-19 pandemic, particularly in the spring of 2020, put racism, anti-Blackness and human rights at the forefront globally in the form of the Black Lives Matter movement (Flewellen et al., 2021). In the United States, these developments came in the wake of highly visible killings of Breonna Taylor, Ahmaud Arbery, George Floyd, Tony McDade, Atatiana Jefferson, Aura Rosser, Elijah McClain, amongst many others at the hands of law enforcement (Sapiens, 2020). Protestors, in response, drew attention to, and challenged the maintenance of Confederate historical monuments that have privileged Whiteness in American society through public history narratives of enslavement, colonialism and imperialism.

Public demonstrations spurred similar efforts across the globe focusing on sites that commemorate and celebrate colonial histories, as well as the individuals who benefitted from the dispossession of Indigenous and Black communities and harms to them. In 2021, for example, a statue of John A. Macdonald, Canada’s first prime minister, was removed from downtown Charlottetown in the eastern province of Prince Edward Island (Yarr, 2021), following the documentation of 215 unmarked graves of Indigenous
children at the Kamloops Indian Residential School in Kamloops, British Columbia. Macdonald authorized the implementation of the discriminatory Indian Act\textsuperscript{2} and established the state-sponsored institutions targeting Indigenous children across Canada. Some Indigenous communities are undertaking the painful work of bringing their children home, including detection of unmarked graves using ground penetrating radar (GPR) technologies (Harris et al., 2017; Simmons et al., 2020; Steeves, 2021; Supernant, 2018; Yellowhorn, 1997). These developments are part of renewed calls for an inquiry into residential schools within a human rights framework, and an investigation into the role of government and the church (all denominations) in harms to Indigenous children and communities, to collectively facilitate substantive action towards redressing continuing discrimination against Indigenous peoples in health, childcare, education and employment, judiciary and law enforcement.

In Bristol, England, the statue of Edward Colston, the slave trader, was brought down ushering renewed calls to remove one of Cecil Rhodes at Oriel College in Oxford University. The latter was a broader protest, ‘Rhodes Must Fall’, initiated in 2015 by Chumani Maxwele at the University of Cape Town in South Africa (Rhodes Must Fall Movement, 2015). That these global challenges to conventional history often take place in university contexts is no coincidence. Rather, the university context is chosen precisely because it is a racialized site of knowledge making and privilege where non-White people have been historically excluded, and where they continue to face institutional barriers and gatekeeping through the prevailing racially biased policies and practice (Ahmed, 2012, 2021; Henry et al., 2017).

Archaeology is undergoing a profound shift in the way archaeologists practice their craft. The field is often influenced by broader social movements (Franklin et al., 2020) and growing numbers of archaeologists have brought to the forefront their anti-racist and social justice efforts as reflected, for example, in a nine-part Web series in 2020 entitled ‘From the Margins to the Mainstream: Black and Indigenous Futures in Archaeology’. The series, organized by the Society of Black Archaeologists (Justin Dunnavant and Ayana Flewellen), the Indigenous Archaeology Collective (Sara Gonzalez and Ora Marek-Martinez), the Cornell Institute of Archaeology and Material Studies (Adam T. Smith), the Wenner-Gren Foundation for Anthropological Research (Danilyn Rutherford) and SAPIENS (Chip Colwell), had sponsorship from seven American university archaeology centres and an American museum. Each webinar was organized as a virtual ‘salon’ discussion where viewers witnessed four Black and/or Indigenous scholars, artists and professionals and a moderator sharing their unique perspectives on archaeology and heritage and the methods they employ in their communities and institutions. Collectively, the series demonstrates the deep link-
ages between archaeology and heritage, the connections that Indigenous and Black communities, and scholars from such descendant communities have with their heritage, and the urgency of calls for broadening of conventional archaeological interests and research. The panels were offered without cost to participants and leveraged Zoom video conferencing software and social media to enable participation from anywhere across the globe (as long as one had an internet connection, the software application, and a computer or mobile device to interact on). The sessions were also recorded and are available as resources through the SAPIENS website (https://www.sapiens.org/archaeology/black-and-indigenous-futures-in-archaeology/).

Moreover, in September 2022, Alok Kanungo and Nishaant Choksi based at the Indian Institute of Technology (IIT) Gandhinagar in Gujarat, India, and Clare Smith and Gary Jackson (Flinders University) organized an international four-day workshop on ‘Unsettling Archaeology’. The workshop drew together scholars within the Global South (ie. regions within Latin America, Asia, Africa and Oceania) and the Global North. Scholars shared how they conceptualized and developed paths for community-guided archaeology, with a particular focus on Indigenous communities. Parts of the workshop were live-streamed via Zoom, although the primary means of participation in the event was through in-person attendance. A central principle in a just and ethical archaeology is that descendant communities, to whom the archaeological heritage relates, must participate in designing archaeological research and derive benefits from such heritage projects. As workshop organizers noted, “archaeology need[s] not only be relevant to, and guided by, the communities with whom we work, but to be needed by these communities” (IITGN, 2022). In so doing, they recognize that archaeologists have typically belonged to dominant groups in a society, and that without direct intervention (eg. community participation in an anti-racist framing), we are likely to reinforce colonial practices that continue to exclude and distance descendant communities from their ancestors and heritage.

The Web series and workshop necessarily leveraged digital communication technologies to centre the voices and narratives of Indigenous, Black and other racialized scholars, and to reach and engage with a broader range of participants by crossing disciplinary and geographic boundaries. Yet, these initiatives do not explicitly address how digital technologies and tools reinforce and perpetuate existing structures of exclusion and dispossession (Watrall and Goldstein, 2022), and thus, there is a gap in examining how digital methods can facilitate redress of power differentials. This absence is reflected in the focus of the World Archaeological Congress (WAC), a key international professional organization, on the analogue ethics and politics of archaeology and heritage, to the near exclusion of digital archaeological research and heritage. Even Computer Applications

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and Quantitative Methods in Archaeology (CAA International), the pre-
miere professional organization in archaeology that almost exclusively
focuses on computing, digital tools, technologies and analyses, typically
focus little attention to on the social context of archaeology (Gupta et al.,
2022). This situation stands in contrast with initiatives and intellectual
developments in related fields, such as museum studies, history, media and
technology studies, literature and digital humanities and geography and
cartography (Benjamin, 2019; Broussard, 2018; Lucchesi, 2020; McPherson,
2012; Milun, 2001; Nakamura, 2007; Noble, 2018; Risam, 2019).

It was with this view that we, Ramona Nicholas and Neha Gupta, with
Kate Ellenberger and Susan Blair, proposed a session entitled, ‘Instruments
of Ownership in Archaeology and Digital Heritage’ under the theme of
‘Archaeological Praxis – Discrimination and Injustice’, for the WAC 2020
meetings in Prague, Czech Republic. The July 2020 meetings, however,
were postponed due to the COVID-19 pandemic. Although the conference
resumed in July 2022 with both in-person and hybrid (eg. Zoom) formats,
none of us were able to participate and as a result, we made the difficult
decision to cancel our session. This special issue developed from scholarly
interest in our proposed WAC session and a subsequent call for papers in
2021. Following Franklin and Paynter’s (2010) critical examination of
power and inequity in archaeology and the social significance of the disci-
pline, we asked authors to write about their recent or current work and
describe how their scholarship speaks to the following guiding questions:

(1) What are the existing structures of exclusion and dispossession and/
or colonial practices in your area of specialization within archaeol-
ogy and digital heritage?

(2) How do you begin to address problematic practices in archaeology
and digital heritage in terms of employing specific material, social
and/or ideological resources?

(3) What are specific ways in which your efforts begin to centre narra-
tives of Indigenous and racialized communities and amplify their
voices in the ownership of archaeology and digital heritage? Con-
sider both short term and long-term goals and aims.

As the pandemic continued into its second and third years, authors who
originally expressed enthusiastic interest in the special issue experienced
varied and consequential life changes. They included job changes, reloca-
tions, extreme exhaustion as a result of being stretched thin over many
months, care taking of loved ones, or recovering themselves and in
bereavement of those who passed from this illness and related conditions.
From our respective positions, it was clear that while no one was
untouched by this virus, the pandemic had shone critical light on acute
disparities in health care and health outcomes for Indigenous, Black and other racialized communities situated in the Global North and the Global South. In continuing this journey, we are in gratitude to authors who shared with us their pains, reliefs, joys, interests, ideas and visions, all of which are woven into, and make this collection such a special and timely contribution.

What is Archaeology and Digital Heritage?

Cultural heritage is the “cultural legacy which we receive from the past, which we live in the present and which we will pass on to future generations” and includes intangible cultural heritage or “living expressions inherited from our ancestors, such as oral traditions, performing arts, social manners, rituals, festive events, knowledge and practices related to nature and the universe, and knowledge and techniques linked to traditional crafts” (UNESCO, 2022). Digital heritage then, broadly refers to “information, creative expression, ideas and knowledge encoded for computer processing” that humans have created using various technologies and platforms, which they “want to share with others over time as well as across space” (UNESCO, 2019). Huggett et al. (2018, pp. 43–44) remark that the “subdiscipline” of digital archaeology suffers from “anxiety” and uncertainty about its place, significance and linkages with “external disciplines” and intellectual interests in the broader field of archaeology, anthropology and digital humanities (Morgan, 2022, p. 214). The making and use of digital data, technologies and tools are inextricably linked with power in local and global contexts (Rabinowitz, 2016) and reflect the interests, bias and motivations of dominant groups. We argue that without deliberate intervention, archaeological practice in the digital age will continue to reinforce and perpetuate local and global power and economic imbalances. In this context, archaeology and digital heritage refer to a specialization that deals with the conceptualization, use and development of digital and geospatial technologies in the collection and interpretation of archaeological data, communication of archaeological knowledge, and the preservation of the heritage it represents (Bevan and Lake, 2013; Garstki, 2020; Huggett, 2015; Lock, 2000; May, 2017; Watrall and Goldstein, 2022).

Digitization or the transformation of analogue items into digital forms is the process by which objects are encoded in machine language and made human-readable through specialized software and graphic displays. Digitization efforts in holding institutions such as galleries, archives, libraries and museums typically distance Indigenous, and historically excluded peoples from their heritage (Nicholas, 2017; Stobiecka, 2020), which only serves to reinforce colonial practices in archaeology. In her mindful piece,
Odumosu (2020) draws the reader’s attention to the ethics associated with the display and circulation of sensitive digital heritage, such as imagery of enslaved and colonized peoples in the Danish National Archives. She further highlights disparities in access to infrastructure needed to view digital objects, and “ownership of slavery’s afterlife” (2020, p. S296).

Scholarly interests in digital research flourished in the wake of government-sponsored initiatives during the opening decade of the twenty-first century geared towards promoting a ‘global knowledge economy’, a convergence of Web-facilitated global connectivity, developing “knowledge-based competitiveness”, and encouraging greater corporate attention to the environment and sustainability (Chouri, 2000, p. 4). Spearheaded by the United Kingdom, and settler-colonial states such as the United States, Canada, Australia and New Zealand, efforts to grow the knowledge economy included the digitization of heritage collections and consolidation of archaeological information into centralized databases (Bell, 2008; Carnaby, 2008; Kintigh, 2006; Richards, 1997; Snow et al., 2006). These initiatives resulted in the reorganization of digital data repositories, such as the Archaeology Data Service (ADS), creation of the Digital Archaeological Record (tDAR) and the Advanced Research Infrastructure for Archaeological Dataset Networking in Europe (ARIADNE), amongst others. Such top-down efforts renewed and further facilitated the questioning of skilled labour (eg. what ‘counts’ as a skill in the digital ecosystem), and the role of the labour workforce and cultural institutions when it comes to heritage.

A de-linkage exists between archaeological research and the preservation and curation of heritage. This epistemic blind spot exists in part because of the vast and varied nature of data collected by archaeologists in the course of fieldwork and long-standing efforts in communicating knowledge about the human past through museum exhibitions. Under this model, tangible heritage is valued as the public can readily engage with it and excite and inspire the next generation of professionals to seek out the past at the end of a trowel, museum display (Honerkamp and Zierden, 1997) or public history site (Blatti, 1987). Thus far, in Western nations, this practice has served the fields of archaeology, museum studies and archive and library sciences well, as reflected by specialized disciplinary (ie. silo-ed) training and employment opportunities in the private sector and cultural institutions, such as universities, museums, libraries, art galleries and government agencies, and public funding earmarked for cultural programming and activities.

But what happens to recovered tangible heritage that does not make its way into museum exhibits, or to contextual information in the form of images, drawings, maps, 3-dimensional (3D) models, field journals, faunal and botanical samples, soil samples and other associated data collected in
the course of archaeological fieldwork? What happens when textual documents and/or oral histories are analysed together with archaeological data to challenge conventional understandings of the past and reclaim narratives? One can further approach these concerns from a different but related perspective by also asking the following questions: what responsibilities does an archaeologist have to these data once publications have been prepared, when an archaeologist’s contract has ended or when their funding is exhausted? Where are these data stored? Who is included and excluded in building capacity? How might digital methods, tools and technologies facilitate historically excluded communities in staying connected with their heritage and amplify their voices, perspectives, narratives and interests through digital heritage?

This collection of papers by researchers based in colleges and universities in Canada and the United States examines these issues through the lens of historically excluded groups and situates them as central participants in and key beneficiaries of digital initiatives. The authors overlap in their intellectual concerns and motivations, and common issues that emerged include creating community digital archives and oral histories, gatekeeping and authority of cultural institutions, and research design through Indigenous data governance.

Creating Community Digital Archives and Oral Histories

Sylvia Fernández Quintanilla and Maira E. Álvarez (this volume) convincingly demonstrate the power of digital archives for trans-border communities in reclaiming their histories. Centering their work with trans-border communities along the Mexico-United States border, the authors critically examine border governance and inequities in accessing digital heritage about border communities, particularly print culture, such as newspapers. They shed light on how the structure of archives create barriers to histories of border communities and have reinforced incomplete, if not misleading, narratives about a ‘divided’ region. Archival materials are often held and owned by cultural institutions in the United States and are managed by specialists without lived experience of the region. This situation, in turn, hinders more fulsome understanding and knowledge development about trans-border and trans-national dynamics. Fernández and Álvarez thus seek to design and deploy strategies that enable communities to reclaim their histories through a digital mapping project that presents multiple stories and perspectives as sourced in newspapers in physical, microfilm and digital formats. New digital initiatives that explicitly amplify voices of historically excluded trans-border communities can thus serve to address silences
in the digital cultural record and directly challenge colonial classifications and inaccurate narratives about people on both sides of the ‘la frontera’.

In her article on the identity of the Arab American community in the United States, Hanada Al-Masri (this volume) describes the process of building a community digital oral history project focused on the identity and experiences of Arab and Muslim Americans in the aftermath of the 9/11 attacks in 2001 and growing Islamophobia in the United States. The key aim of the digital oral history project was to highlight and combat negative stereotypes, misconceptions and discrimination that Arab Americans face in the United States. Situated in the mid-western state of Ohio, Al-Masri sought to provide undergraduate students of Arabic at Denison College opportunities to engage with native speakers and create a space for enhancing the visibility of the Arab American community, their experiences, and perspectives. The recorded interviews were processed and shared on YouTube under a Creative Commons Attribution-Non-Commercial-ShareAlike 4.0 licence and on a project website hosted on Reclaim Hosting. Al-Masri notes that despite the surveillance to which Arab Americans have been subject, the narrators were enthusiastic about participating in the digital project as they saw this as a chance to share their aspirations and concerns with White Americans. These efforts begin to shift the power of narrative to the Arab American community.

**Gatekeeping and the Authority of Cultural Institutions**

Anna Cohen, Juan Carlos Fernandez-Diaz and Amanda Meeks (this volume) bring a nuanced understanding to authoritative voice in lidar-based archaeological research in Latin America. The authors argue that lidar, a remote sensing technology, has transformed archaeological research in Latin America over the past decade and geospatial technologies are welcomed into the field as a means to accurately document archaeological resources in heavily vegetated places. Yet as the authors suggest, very few local scholars publish on these data, which reflects the ongoing influence of ‘gatekeeping’ even when lidar technologies are widely used in Latin American countries. Through a meta-analysis of publication authorship on lidar-based archaeological research, Cohen et al. demonstrate that male researchers at American institutions dominate authority over these geospatial techniques and the resulting data. Women and Latin American scholars based at local Latin American institutions had limited representation, whereas the voices of Indigenous communities were not heard at all within the extant publication record. They further remark on international treaties and policies associated with lidar scans, while paying particular attention to the state of data sharing with the ‘observed country’. They suggest that lack of
clarity around international legal frameworks has adversely affected current practice, such that most, if not all, data collected by American researchers are not open (ie. publicly available). It remains unclear whether American researchers develop user agreements for sharing lidar data with local institutions and/or descendant communities as a standard component of overall research design. For Cohen et al., greater collaboration with Indigenous communities is one way to begin addressing issues over ownership of, and access to, digital geospatial data in Latin America.

In ‘Gamification of Digital Heritage as an Approach to Improving Museum and Art Gallery Engagement for Blind and Partially Sighted Visitors’, Ahlam Bavi and Neha Gupta call for ethical practice in the heritage sector that enables historically excluded communities to reconnect with their heritage. This is an ongoing and pressing issue for Indigenous and descendant communities whose tangible heritage was taken without consent and is stored or displayed in Western cultural institutions without implementation of proper cultural protocol. While the authors do not address intellectual property issues, they bring to the forefront the interests of blind and partially sighted (BPS) visitors from historically excluded communities in the development of 3D printed models of heritage. They argue that broadening the scope of ‘gamification’ for the BPS community can provide an inclusive environment for Elders from Indigenous communities who might experience reduced vision and want to handle heritage objects while explaining their cultural significance to children in the community. Bavi shares details regarding her pilot study at the Winnipeg Art Gallery in Winnipeg, Canada, to create 3D models of artworks, while observing cultural protocol associated with each artwork. The study includes BPS and able-bodied participant interaction with the 3D printed models, and the presentation of production methods and design examples of tactile models that can enhance the experience of BPS visitors.

Research Design Through Indigenous Data Governance

In their contribution, Neha Gupta, Nancy Bonneau and Michael Elvidge examine Indigenous data governance and cultural protocol as part of an effort to connect Westbank First Nation’s past, present and future. Through their collaboration, University of British Columbia (Gupta and Elvidge) and Westbank (Bonneau) archaeologists draw attention to persistent colonial structures in archaeology and digital heritage. They propose the use of open source and mobile ready digital maps to promote community decision-making about heritage and concurrently create training opportunities in digital tools and technologies within the syilx/Okanagan community. Westbank First Nation is a self-governing nation in the
Okanagan region of British Columbia, Canada, and one of eight members of the Okanagan Nation Alliance. The Westbank digital heritage project builds on existing digital infrastructures, heritage data and staff. The community can, as a result, assert ownership and protective stewardship of its heritage. Like other initiatives in this collection, the digital project is in progress and presents both opportunities and challenges in realizing its goals.

Conclusions and Next Steps

The aim of this collection of papers is to open intellectual space for conversation and encourage the development of digital projects that centre the interests and perspectives of historically excluded communities and actively seek to amplify their voices in the practice of archaeology and digital heritage. All too often, scholars focus on the exclusion and dispossession experienced by Indigenous, Black and other racialized groups. While informative, these efforts sometimes underestimate the interests of these groups in digital methods and overlook the opportunity to support initiatives that directly redress current colonial practices in archaeology and digital heritage. We hope our initial conversations will encourage deeper engagement with these concerns and promote a greater number and variety of digital projects that reconnect communities with their heritage, support them in staying connected and, to that end, build community capacity in digital methods, tools and technologies.

Notes

1. We refer to Indigenous, Black and other racialized communities in terms of the BIPOC project (www.thebipocproject.org, 2022) which highlights the “unique relationship to whiteness that Indigenous, Black (African Americans) people have, which shapes the experiences of and relationship to white supremacy for all people of color within a U.S. context”. In our usage, racialized refers to the relationship to Whiteness for all people of colour in a globalized world.

2. The Indian Act of 1876 was approved by Macdonald and remains active in Canada today. In Macdonald’s words, “…the Indian children should be withdrawn as much as possible from the parental influence, and the only way to do that would be to put them in central training industrial schools where they will acquire the habits and modes of thought of white men” (Historica Canada, 2022).
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