Data-bodies and data activism: Presencing women in digital heritage research

Terrie Lynn Thompson [ID]

Abstract

As *heritage-as-the-already-occurred* folds into *heritage-in-the-making* practices, temporal and spatial fluidity is made more complex by digital mediation and particularly by Big Data. Such liveliness evokes ontological, epistemological and methodological challenges. Drawing on more-than-human theorizing, this article reframes the notion of *data-bodies* to advance data activist-oriented research in heritage. Focused primarily on women, it examines how their *distributed* agency and voice with respect to data practices and the (re)makings of (digital) heritage could be amplified. I describe three methodological directions, influenced by feminist work in critical data studies, which could be employed by researchers: attuning to and becoming with data, making data physical and changing narratives. From data-bodies to haunted data, performative data curation and mapping data-bodies, and attuning to data streams and re-voicing narratives, this article contributes to discussions of how to engage critically and creatively with the datafication of digital heritage practices, knowings and ontologies.

Keywords

More-than-human, data-bodies, Big Data, research methods, digital heritage, gender, feminist critical data studies

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Introduction

Proposing an alternative paradigm for heritage studies, Bonacchi and Krzyzanska (2019) urge investigation of digital heritage ontologies to explore how the processes and outcomes of interacting with material and immaterial elements of the past in the present help to enact heritage making. In other words, how *heritage-as-the-already-occurred* folds into *heritage-in-the-making*. Such temporal and spatial fluidity in heritage making practices is made more complex by digital mediation and particularly by Big Data. I suggest that contemporary data systems not only are complex sociotechnical assemblages that attempt to *translate* human bodies, activities and lives into data points, but that human bodies *become* 'in tandem with the erratic, nonhuman temporality of the technological assemblage of which they have become an inseparable part' (Hatfield,

2020: 178). Such liveliness evokes ontological, epistemological and methodological challenges for researchers. As these data infrastructures and practices 'refashion the logic of the archive' (Agostinho et al., 2019: 423), Bonacchi and Krzyzanska (2019: 1240) press heritage researchers to consider how (big) 'data structures are configured and how they can be accessed and meaningfully interpreted'. These challenges are the point of departure for this commentary.

Drawing on more-than-human theorizing, I explore how people live with, in, through and outside their

Faculty of Social Sciences, University of Stirling, Stirling, Scotland

Corresponding author:
Terrie Lynn Thompson, Faculty of Social Sciences, University of Stirling, Stirling, Scotland.
Email: terrielynn.thompson@stir.ac.uk

data; co-mingling past, present and future. I consider how people – specifically, women – may be able to apprehend and narrate their individual and collective digitally mediated heritages and the implications of inclusion or exclusion in these data assemblages. Digital heritage practices are entangled with the politics of datafication. For example, automated timeline visualizations explore and present historical narratives while also questioning whether (big) data alone is enough to tell the stories that people wish to tell (e.g., Vane, 2019). Digital mediators, including social media – replete with tensions between curated representations and real-time context – enfold the past and present to convey changes in spaces and movements of people and things (e.g., Jones et al., 2018). Digital technologies are also employed to create purposefully fragmentary fluid, volatile and remixed narratives of the past as shown in Tringham's (2015) initial work on *Dead Women Do Tell Tales*, influenced by Manovich's (2001) foray into possibilities of database narratives Exploring the unknown/unknowable, error and vulnerability, Agostinho et al.'s (2019: 435) critical work examines how bodies and communities are 'differently affected by the encounter with big data archives'.

The Sustainable Development Goals are galvanizing global action around data. Despite the promises of the 'data turn', however, current data practices often work *on* women rather than *with* them, making them and what they do, and have done, both invisible and visible in ways that can exclude and include. This commentary focuses primarily on women, with attention to low-income countries, to examine how their *distributed* agency and voice with respect to data practices and the (re)makings of (digital) heritage could be amplified. The *About Data About Us* report asserts that 'we are all involved – often unknowingly – in its [data] creation, management, and use' (Samson et al., 2019: 4). However, this is very uneven terrain particularly when considering those who are absent, mis-represented, devalued, hypervisible, regarded as outliers or datafied under coercion. There are significant inequalities and risks associated with stereotyping, exploitation, alienation, elisions and highly selective rememberings that are increasingly prevalent in Big Data practices, and above all, for groups historically marginalized (Eubanks, 2019; Wernimont, 2019).

A more-than-human understanding views data as an assemblage, which is helpful for moving beyond notions of data as some *thing* that is, and somehow acts, on its own. Therefore, it is in, through and with such assemblages that digital heritage and research is enacted. Although this commentary focuses on 'big' data, 'small' data is also important given how both intersect and perform the other. Data streams are an intermingling of small and big data: personal, public, open, inaccessible, private, commercial and (un)official data. Questions arise about where women are in these intermingled data streams and processes, how are they and their bodies are represented, and how women may influence, leverage and/or generate such data.

Kosmala and Beall (2019: 348) suggest that framing heritage as a *process* enables critique of the sidelining *and* privileging of voices. At the same time, Hill et al. (2016: 347) argue that there is an 'urgent need for feminist critiques of Big Data, which seek to understand how gendered processes work and impact upon understandings of data'. Important here is attending to intersectionality, which examines how gender intersects with class and race. Women are often invisible *and* hypervisible in data streams. For example, the accounting of particular lives and deaths of bodies during slavery through ledgers, tables and mortality bills established that some bodies were more valuable and visible than others (e.g., Browne, 2015). Sexual and reproductive behaviour and rights are also differently enumerated. Wernimont (2019) highlights how US Census data in the 1940s began to capture age at first marriage and live-born children of only its female citizens. Noted is the importance of unofficial data to complement often sparse and selective official reporting for bodily matters such as maternal mortality (Martin et al., 2017) and violence against women (Chenou and Cepeda-Másmela, 2019; Ricaurte, 2019). Critical participatory work, such as Kosmala and Beall's (2019: 358) study on women in political protests in the shipbuilding industry found *chasms* in the dominant heritage narratives, providing details about the 'the utter absence of women's voices or stories within the prevailing historical records, punctuated by (often overlooked) fragments of information'.

And so, women's memories and active relations with the past are more difficult to enact. Engagement in the making of digital heritage is problematic if one is not present or mis-represented in circulating data streams. As marginalized people fight for the right to be counted, Wernimont (2019: 163) admits this is a double-edged sword, stating that we 'cannot simply incorporate people of color and women into mediations that have long been designed to exclude. Yet we also cannot ignore the power of the tabular account of "factual" numerical data to affect governmental, educational, and legal systems'. Such questions beckon towards data activism as both a focus and process for research enquiries.

Taking more affirmative engagement with data moves beyond critical thinking *about* technology to the strategic *use* of technology to advocate alternative data arrangements and narratives (Gutiérrez and Milan, 2019; Kennedy, 2018). In so doing, *proactive data activism* (Milan and Gutiérrez, 2015) positions

data, data streams and (re/un)datafication as not merely objects of interest but also as means through which change can be initiated. Reframing the notion of *data-bodies* could help to advance data activist-oriented research. This is a deliberate choice of terminology. Compared to data shadows, doubles, or doppelgängers, I suggest that *data-bodies* draws attention to both data *and* bodies while recognizing that data and bodies are utterly implicated in one another. Thompson et al. (forthcoming) propose thinking about *data-bodies* with a hyphen and as plural to emphasize their multiplicity, contingency and co-responsivity. I conceptualize data-bodies as a constant meshing of datafied and embodied bodies; a way that data and human bodies *together* co-constitute lived data practices and the multiple realities of datafied learning. Such a conceptualization is consistent with more-than-human sensibilities. To work with these multiple and performative thingly data-bodies is to 'do and be' in the world (Ruppert, 2012). They are political assemblages: re-embodying the data-body is one way to reclaim some power to speak with, through and as one's data. As Couldry and Mejias (2019: 334) remind, it is human beings, not their data doubles who are tethered to the discriminations that such data pointing can sometimes produce.

Data-bodies are therefore *becomings*: that is, 'gatherings of materials in movement' (Ingold, 2012: 439) and not finished artifacts. They do not float independently of everyday practices. Ongoing reckoning with data must always be 'in relation to how this data is situated in everyday environments, with other things and processes' (Pink et al., 2017: 3). However, it is important to acknowledge the extremely problematic data impasses and injustices that will not be solved merely by saying that we are connected with our data and that this garners some form of (distributed) agency. Nevertheless, it is an important starting point. As 'materialisations and extensions' of physical bodies, these data assemblages invite us to reconsider the relationship between data and 'enacting bodies and selves' (Lupton, 2018: 9).

Making the ontological shift to speak *with* things (Adams and Thompson, 2016) offers theoretical and methodological possibilities for critical research on, and with, Big Data in digital heritage and social sciences. Such research presents possibilities for foregrounding different presences of women and women's bodies. I now explore ways that researchers can engage with more performative methods in order to 'speak with things' to examine both how data is 'part of the making and shaping of bodies' and how 'the body [is] a site of data politics' (Ruppert et al., 2017: 6).

Data stories

More-than-human research sensibilities can respond to calls within digital heritage to 'decolonize collections ... by track[ing] the creation and circulation of data' (Bonacchi and Krzyzanska, 2019: 1236) and reckon with the 'archival tension between capture and exclusion' (Agostinho et al., 2019: 436). Given these challenges, how do researchers, especially non-expert data scientists, work with data stakeholders to bring into view the materiality of data that sits in databases, is massaged by algorithms, circulates through data ecosystems and interconnects with a myriad of digital devices?

I suggest three methodological directions that could be employed: attuning to and becoming with data, making data physical and changing narratives. Each of these approaches offers a shift to a more-than-human re-thinking of research practices. Heuristics by Adams and Thompson (2016) provide ways to *interview objects*. Relevant here is *tracing responses and passages* that draws on Ingold's work. Ingold's (2005: 46) notion of the meshwork offers ways to think about flows, forces and movements among people, data streams and algorithms. As beings thread their way through and among the ways of others (human and material), *passages are improvised*; each new passage lays a new line in the meshwork: 'the trails along which a life is lived' (Ingold, 2005: 47). The reflections presented here are ways to improvise passages through the data landscape – the laying of lines that engages actively with what Beer (2018) refers to as the *data gaze*. In so doing, humans do not merely interact with the materiality of data in pre-determined ways but rather *co-respond*. This framing reasserts the co-constitutive nature of data-bodies.

Attuning to and becoming with data

Being able to excavate and understand data points raises practical issues of access and ability. That said, there are ways to 'improvise passages' through data ecosystems: understanding how 'lines are laid' – the social and material relationships – that people and things have with data and its menagerie of devices, databases, algorithms and categories. Case studies in Eubanks'(2019) *Automating Inequality* are a rich illustration of how to start this process of attuning and offer productive questions that can be adapted to identify data practices and actors. For example: Think about an experience where 'big' data was used to summarize or predict something about you or made a decision that impacted your life (Eubanks, 2019: 269). How did that make you feel? What was your response? How does being seen – or not seen – by these systems impact

your life and others around you? Or in terms of heritage: How have your memories, relations and interactions with the deep to recent past been influenced by Big Data? What meaningful aspects of the past are somehow made more or less accessible by the increasing number of data streams, representations or dashboards that attempt to somehow illustrate the past?

With a sense of the actors, one can press on and examine specific and situated data practices: how data-bodies might be a way of *co-responding* in the world. Here, Bucher's (2016: 82) technographic methods help to open up the 'seemingly obscure and hidden'. There is now another series of questions to ask. I draw on Bucher's (2017: 30) approach to algorithms: 'In what situations do people become aware of algorithms [and big data]? How do they experience and make sense of these algorithms [data points and streams], given their often hidden and invisible nature?' Bucher (2017: 115) argues that the way people perceive what an algorithm is, and does, shapes their orientation toward it and although most of her participants did not know exactly what an algorithm is, most 'had more or less elaborate theories about what algorithms are and ought to be'. This finding seems to be consistent with Big Data (e.g., Samson et al., 2019). These questions help to make the digital workings a bit more visible so that it is then possible to study *intra-actions* (Barad, 2007), questioning, as Bucher (2017: 42) does, how the algorithm perceive its subjects, the extent to which it influences their sense of self, and how the way people perceive algorithms affects the logic of the system. Working through these sorts of interrogatives enables women to describe their ongoing intimacy with data-things and then through reflective analysis, to unravel the complexity of what data-bodies are and might be doing.

Attuning also notes data absences and anomalies. As a sense of one's data-bodies emerges, missing or even 'haunted' data becomes more apparent. There may be data a person wishes was less, more, differently or selectively visible. Onuoha (2016: para 1) observes that even within the spaces where 'large amounts of data are collected, there are often empty spaces where no data live': the 'missing data sets'. Now there are different passages to improvise and in this stage of attuning, one considers what is made (in)visible. Blackman's (2019: 18/24) notion of *haunted data* – an entanglement of the 'somatic, historical, technical and digital' – is an unfixing of the past and present which enables one to attune to the 'traces, deferrals, absences, and gaps and their movements' in data that operates within 'particular regimes of visibility and remembering'. Drawing on work by Derrida and Barad on hauntology, Blackman (2019: 177) likens her role to a ghost-hunter, animating traces and fragments made to exist as outliers and through re-coding allowing something new to emerge: 'It is through the connecting of fragments across space and time that a new collective storytelling machine can and could take form'.

Attuning to data starts to bring the potential performativity of embodied data to attention. Describing the social and material relations between human bodies and data fragments lends itself to analysis that considers how particular data come to matter – or not – and to whom; where women are in these data streams and processes and how they and their bodies are represented; and what aspects of being and knowing are amplified or marginalized in datafied practices and knowledges. All of which offers different possibilities for gendering social and material relatings to both the deep and recent pasts.

Making data physical

Big Data relies on translation into visualizations, from graphs to simulations to Big Data art. What work do these data representations do and how might they work harder in that hyphenated space of data-bodies to invite multiple interpretations, ways of engaging and generative contradictions in the making of digital heritage? D'Ignazio (2015: para 8/22) calls for ways to locate data visualization 'in concrete bodies and geographies'; a move consistent with a 'feminist ethics and politics of data visualization'. I therefore explore methodological entry points which enable, as Lupton (2020: 122) encourages, 'not only what humans can do with their data and how they can learn from their data, but how data make them feel, move and respond as part of the more-than-human worlds of which data selves are part'.

Big Data is emerging as a vibrant medium of performance and the creativity of 'big data art' offers rich possibilities for researchers. For example, Thorpe's (2014) performance of *A Thousand Exhausted Things* starred the MoMA database. Onuoha, a Nigerian-American artist and researcher, uses multimedia and code to call attention to the ways in which the marginalized are differently abstracted, represented and missed by sociotechnical systems. Her second instalment of *The Library of Missing Datasets 2.0,* comments on how 'black folks are both over-collected and under-represented in American datasets, featuring strongly as objects of collection but rarely as subjects with agency over collection, ownership and power' (Onuoha, 2018: para 1). *Dear Data* postcards sent over a year between Lupi and Posavec (2016) demonstrate a sort of distributed data agency in the quotidian decisions of what data to collect data and how to gather, represent, interpret, share and make it meaningful: the complex of decisions that play out in billions of data machinations and ecosystems daily. Finding, creating and intra-

acting with everyday real-world data, each postcard moves beyond data that merely 'counts' into contextualized data drawings of everyday activities that fold in and out of the past and present. Despite its smaller-scale, this method nevertheless starts to build new data fluencies alongside a flexing and coming together of data-and-bodies.

These approaches life-size data and bring it closer. They 'rematerialize data, to make it into something one can touch, feel, own, give, share and spend time with' (Wernimont, 2019: 163). Is it possible to make data-bodies even more tangible and embodied? In the *Bambanani Body Maps* project, HIV+ women from Khayalitsha (a Cape Town township) created life-size body maps that traced the contours of their bodies and were filled in with painted representations and text fragments to foreground 'materiality of the lived experience of illness' (MacGregor, 2009: 93). Albeit not digital data, the texts, images and numbers that comprised the body maps are a vibrant example of *performative data curation*. Devine (2008) explains that these body maps enabled women and researchers to document the lives and hopes that receiving treatment brought to the women in resource-limited settings, reduce the stigma towards those living with HIV/AIDS, and confront a government inert at the time to the emergency.

These evocative maps offer creative possibilities for what body mapping might accomplish if constructed with the lived experiences of datafication: the link between people and their data – their data-bodies – materialized. Such data-bodies' maps could represent and narrate women's presence/absence in data streams (past, present and future) that matter: visualize how they are 'seen' in data and would like to be seen. Some of the visuals may stay close to the original data outputs (e.g., a graph, chart, statistics) but others may be rendered more creatively. The annotations are critical counter-narratives, noting what stories specific data tell, do not tell or do not tell accurately. Data-body maps also include empty spaces to denote aspects of being that is not captured (an emptiness which is not always problematic). The novel juxtaposition of data fragments and annotations create an opportunity to engage reflexively and critically with how women might speak with and through particular representations of their data-bodies to wider publics.

Changing data narratives

While 'we all inhabit this new regime of digital data ... we don't all experience it in the same way' (Eubanks, 2019: 5). The re-embodied data-body is a response to the increasing tenacity of the digital gaze amidst a discourse of data determinism. The growing elisions and augmentations of data and human bodies invite researchers to consider data activism as research methodology. How might people speak with, through and as data-bodies to change narratives and propose alternative data imaginaries that shape and become part of digital heritage practices and artifacts? Such re-shaping includes examining and interrupting prevailing data narratives. For example, data activism can provoke a response to serious gender violence issues, exacerbated in part by lack of official data and statistics, such as the creation of a National Index of Male Violence in Argentina (Chenou and Cepeda-Másmela, 2019) and a femicide project in Mexico (Ricaurte, 2019). Drawing on different approaches, both offer rich illustrations of how deliberate use of data tactics generated new narratives constructed of highly embodied and detailed data stories.

Speaking with and through data-bodies to change narratives is illustrated by the *Our Data Bodies* (ODB) project (https://www.odbproject.org/). A combination of community-based organization, capacity building and academic research, this project offers insights into data activism as both a research methodology and a way to generate impact. Researchers studied the impact of data-driven systems on marginalized people as they worked with residents of the most historically marginalized neighbourhoods in three US cities. Stating that 'people closest to the problems have the best solutions for them', this project generated community-based activism and education around data practices to enable people to talk back – and through – their data-bodies, as well as create capacity for long-term change (Petty et al., 2018: 33). Findings highlight how these participants confront and challenge predatory data-driven systems or invasive data collection by obscuring data trails about themselves, keeping track of how they are tracked, and setting the record straight. The ODB project is a move towards seeing data-bodies as 'things' in the sense of ongoing movement and co-responsive gestures. What Ingold (2012: 431) refers to as 'a change of focus, from the "objectness" of things to the material flows and formative processes wherein they come into being and are active in the world'. It is in this loosening up that opportunities for proactive data activism emerge.

New presences

This commentary considered the mattering of data-human bodies and encourages alternative ways of thinking about human encounters with their digital data in digital heritage research practices. Understanding both the myriad of interactions between various human and nonhuman actors and the performativity of Big Data assemblages helps to illuminate, as Wernimont (2019: 14) suggests, 'the ways in which data

and interfaces are . . . always already engaged in the processes by which bodies and people have become and are becoming visible to themselves, others and nation-states'. In so doing, it is possible to see how women might influence how *heritage-as-the-already-occurred* folds into *heritage-in-the-making* in the digitally mediated present and future.

More agentic responsivity and new presences are possible. Drawing on a more-than-human view of data-bodies may enable women and digital heritage researchers to leverage new data infrastructures in ways that resonate with the aspirations of digital heritage. As data activists, there are opportunities to re-story and re-embody data-bodies to address missing data, bias, exploitation and the limits of institutional categorization and algorithmic determinism. D'Ignazio and Klein (2020: 14) remind that attending to the gendering of data practices is not only for or about women; it is about power and therefore relevant and important for everyone. Law (2009) contends that since practices are assemblages of relations that do realities, the implication – the *ontological politics* (Mol, 1999) – is that they could be assembled differently.

It is promising that there are more data literacy resources compared to five years ago. For example, the *Digital Defence Playbook*, produced by the ODB project, is a rich resource for popular education activities that can support ongoing efforts elsewhere. However, data activism is a collective undertaking and not a responsibility to be offloaded to individuals. D'Ignazio and Klein (2020: 58) argue that while compiling counter-data narratives and analysing data processes are important, this can become an 'endless loop if not accompanied by other tools of community engagement, political organizing, and protest'. The importance of engaging with the larger data infrastructures and ecosystems is essential – particularly for generating sustainable change. As Chenou and Cepeda-Másmela (2019) emphasize in their project, the collaborative partnerships between grassroots activists, social science researchers and data science experts to work with 'big enough data' and 'data from below' were essential.

From data-bodies to haunted data, performative data curation and mapping data-bodies, and attuning to data streams and re-voicing narratives this commentary contributes to discussion of how to engage critically and creatively with the datafication of digital heritage practices, knowings and ontologies: to assemble differently.

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ORCID iD

Terrie Lynn Thompson ⬦ https://orcid.org/0000-0002-8166-3791

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