

Exploring an Authorized Science Heritage Discourse in Science Museum Exhibitions: Leaflet 1981-1697 / Smallpox Baby Revisited

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Abstract

Based on research in two exhibitions in the Science Museum in London, UK, this paper examines how science and society relationships are constructed through the display of one specific object, a World Health Organisation leaflet about smallpox in Africa. I trace the display of this leaflet through two exhibitions about medicine, 40 years apart. Drawing on Laurajane Smith's concept of the authorized heritage discourse and work in Black Studies and Science and Technology Studies, I analyse the display of the leaflet, the stories it is used to tell, and the modes of relation these stories contribute to. Rather than trying to evaluate which exhibition does a better job displaying the leaflet, in this paper I argue that both displays were enmeshed with and reproduce an authorized *science* heritage discourse. I show how nationalistic and celebratory stories about science set up racialized and colonial modes of relation. I suggest counter-stories, not least critically engaging with the ever-present shadow of colonialism, present museums with valuable opportunities for decolonial approaches.

Keywords: Museums, science and technology studies, representation, decolonial, smallpox, history of medicine, colonialism, racism, authorized science heritage discourse

Introduction

A baby stares out from a brightly coloured photograph on display in a medical gallery, over the shoulder of a woman whose face we cannot see. Both baby and woman are Black, the woman wears a green patterned headwrap, face turned away from the camera. What we can see is the baby's face, covered in smallpox pustules, and the word "SMALLPOX" stretches in capital letters across the top of the whole image. This photograph forms the front cover of a World Health Organisation (WHO) leaflet used, the label tells us, in the 1970s to diagnose smallpox in Africa. The leaflet is the size of four A4 pages, folded concertina style. It has been on display in London's Science Museum in the UK almost continuously since 1981. In this paper, by analysing two displays of this leaflet, I suggest we can trace how power operates in museums to tell certain stories about science and society, while obscuring others.

I am interested in the old sociological question of what kinds of work museums and their exhibitions do in our societies. On one hand, the smallpox leaflet very literally represents seriously ill Black babies. On the other hand, the leaflet also represents a celebratory story about modern Western science. I am interested in how these seemingly different stories fold into one another. Or to put it another way, drawing on research in Museum Studies, Science and Technology Studies (STS), and Black Studies, it is important to understand how science and society relationships are co-constructed through cultural practices such as museum exhibitions (Latour and Woolgar 2013; Hartman 2007; Smith 2006). Museum displays are always open to multiple readings. But exhibition design choices, interpretative texts, and the relationships between adjacent objects, create particular narratives (Hooper-Greenhill 1992). In this paper I ask how we might understand one specific museum object – a WHO Smallpox diagnosis leaflet – its display, what modes of relation it is embedded in and, what stories it, in turn, contributes to.

This study focused on one object because its long-term display in two major exhibitions allows insight into how change both does and does not happen in museums.

Of course, with a focus on one object, analytic breadth is sacrificed in favour of detail and depth. But a deep dive into one object offers a lot to decolonial studies and practices in museums. I examine the context of the leaflet's exhibition, its immediate exhibition surroundings and interpretive texts, as well as any other archival material available and the broader historic contexts within which it sits.

In this paper I elaborate on Laurajane Smith's (2006) concept of the authorized heritage discourse (AHD), along with work in Black Studies and STS, to trace what I call an authorized *science* heritage discourse. Working with Black Studies I discuss how racism and colonialism shape archives, knowledge, and knowers by setting up what Zakiyyah Iman Jackson (2020: 36) calls 'modes of being'. I adapt that idea here to think specifically about modes of relation: in other words, how museums create relationships between objects, people, and forms of knowledge that set out certain parameters for how we might relate to one another, as well as how we relate to those objects and knowledges. I use STS to think about how relationships between science and society are constructed, by whom, and to what ends. I suggest that the outlines of an authorized *science* heritage discourse can be sketched in how stories about science, heritage, and contemporary politics are woven together in particular ways. Contributing to decolonial studies of science and museums, I argue the leaflet and its display represent particular economies of value about who counts, and whose knowledge and practices count. Specifically, through the analysis below, I suggest the leaflet and its display are embedded in particular modes of relation – white medical saviourism, colonialism, racism – and in their own turn reiterate these racialized, Eurocentric social hierarchies. What I hope to show is that thinking critically about the display of one object helps us to examine how science and society relationships are co-constructed through an authorized *science* heritage discourse in museums, and that this discourse narrows the parameters of the stories that get told since it is embedded within and reproduces structural inequalities. I also suggest that decolonial, anti-racist counter-stories are available and are valuable for disrupting the status quo of whose stories and knowledge matter in science and society relationships.

Research on the politics of science stories in museums

How might we understand encounters with museum objects? In this paper I draw across scholarship in museum studies, Black Studies, and STS to think in detail about one object, in one science museum, and its display in two separate exhibitions. As research on both museums and science shows, neither of these fields exist without socio-historic and political contexts, and both are bound up with the power and politics of dominant groups (Smith 2017; Levin 2010; Benjamin 2017; TallBear 2013). It has been well established, for instance, that medical exhibitions – such as the two in which I encountered leaflet 1981-1697/smallpox baby – can tell troubling, sometimes extremely problematic, ableist, racist, sexist, classist, homophobic, transphobic, and other discriminatory stories (Parry 2021; Sandell et al. 2010; Coleborne and MacKinnon 2017). Research suggests this is also true for science exhibitions and science museums more broadly (Cassidy et al. 2016; Bevan and Ramos 2022; Dawson et al. 2024; Dawson et al. 2019). That these problems persist even in the face of scholarship and practice about collaborative, participatory ways of working, speaks to the considerable influence of structural inequalities in both museums and the sciences (Apaydin 2022; Epstein 1995; Bunning 2020).

In this paper I build on Smith's (2006) concept of the AHD, alongside ideas about racialization, colonialism, and science. The AHD concept provides a useful way to think about how dominant cultural practices shape exhibit possibilities in museums. Working across a range of heritage sites, practices and countries, Smith (2006) found that professionalized heritage practices protected dominant cultural practices, and the values of dominant social groups, regardless of the content or objects on display. Smith termed these heritage practices the AHD (2006). In referring to these practices as *authorized* she does not mean that all museum and heritage professionals explicitly agree that the stories, objects, stately homes or statues that reflect the lives of dominant groups are the only ones that matter, or that there

is no resistance to these discourses. Rather, she argues the AHD is the dominant discourse or framework that organizes how heritage is constructed and understood (Smith 2006). Smith argues the AHD travels through training practices, organisational, national, and international heritage policies, as well as assumptions built into day-to-day practices.

I focus here on three elements of Smith's (2006) AHD concept. First, that the AHD is shaped by dominant groups. Here Smith (2006) noted the AHD has specific nationalistic elements; objects or sites deemed important forms of national heritage are preserved, ideally untouched, for the benefit of future generations. The items and sites deemed suitable for preservation typically tell success stories about the nation that preserves them. Second, the AHD privileges material sites or objects as the most valued forms of heritage, a process controlled by heritage professionals through practices of conservation, preservation, and the leverage of qualifications, guidelines and policies about how heritage should be governed (for an example of how this happens in practice, see Onciul (2015)). And third, as Smith has argued, the AHD promotes 'nationalising stories that simply do not reflect the cultural or social experiences of subaltern groups' (2006: 36). The concept of AHD is backed up by scholarship across museum- and cultural-studies, suggesting that museums and other heritage organisations play powerful roles in constructing and, crucially, potentially transforming, social hierarchies (McGuigan 1996; Candlin et al. 2022; Sandell and Nightingale 2012). Smith's concept of the AHD is useful because it helps us understand how, despite years of work by museums, museum professionals, activists and scholars, minoritized groups continue to be under-represented, problematically represented, invisibilized, or excluded from spaces of dominant culture and the stories told therein (Smith 2006, 2010, 2017). As many scholars have noted, minoritized groups still struggle for recognition, appropriate representation, voice, or power in cultural and heritage spaces, including museums (Hall 1993; Sandell 2007; Sepúlveda dos Santos 2005; Dawson 2019). In the context of what UK newspapers currently term the "culture wars", we should remember, as cultural theorist Stuart Hall reminded us over 30 years ago, that competing claims for control over cultural practices are embedded in an ongoing 'struggle over cultural hegemony' (Hall 1993:106; Mance 2022). Smith's (2006) work demonstrates how the AHD shapes this struggle; it naturalizes the choice of what counts as heritage by dominant groups, naturalizes the reification of dominant identities, histories, and practices of dominant groups, and as a result, naturalizes the construction of social hierarchies through the regulation of heritage.

Thinking with Black Studies, forms of racism embedded in museum practices can create significant tensions when material culture, immaterial heritage, bodies, images, texts, or stories from non-dominant groups become part of a museum. While of course this is not always the case in every museum, exhibition or programme, it happens enough that studies have examined what is at stake, whether in terms of race/ethnicity, gender, sexuality, disability, or other structural inequalities (Ruffins 1997; Sandell et al. 2010; Dixon 2016; Levin 2010). For instance, as Michele Wallace (1997) and Zakiyyah Iman Jackson (2020) have argued, when Western museums collect and display material cultures, art, natural history, or science from African countries, the struggle over whose stories are told and how, is one that is so inflected by naturalized hierarchies of colonialism, racism, and white supremacy that any sense of these inequalities is frequently whitewashed from view. As Katherine McKittrick (2014) notes when drawing upon Black Studies, that is to say, from such colonial and racist perspectives, Black life is too often framed negatively, as death. Of course, as Black Studies scholars have shown, racism goes deeper than representation and narrative. As Saidiya Hartman (2007), Christina Sharpe (2016), and Josie Gill, Catriona McKenzie, and Emma Lightfoot (2019) have shown, the socio-historic and political contexts of colonialism and enslavement have created such partial archives that, for certain groups, material artefacts and records are entirely absent in museums and heritage spaces. Here we can see the poignancy of Wallace's (1997) argument that we might better understand museums as ruins not records.

How does science fit in here? Bruno Latour (1987) argued that science and society are co-constructed and cannot be separated. Through his influential studies of laboratories, Latour and his colleagues argued that science (broadly defined here as scientific communities, knowledge, and skills, as well as their applications) was forged in and through all the political, social, and cultural forces at play in our societies (Latour 1987, 2012; Latour and Woolgar 2013).

Any study of science is therefore inevitably also one of society, culture, history, and politics.

STS researchers have long argued that science can be understood as a series of situated narratives within and beyond laboratories or, in Donna Haraway's words (1992: 4), 'scientific practice is above all a story-telling practice in the sense of historically specific practices of interpretation and testimony'. This perspective is useful because it gives us a way to consider the political, cultural, social, material, and affective contexts of particular science stories, as well as the work that those stories do in our societies.

Notably, STS scholars have found that science stories become strangely more authoritative and conservative beyond laboratories (McNeil 2007; Erickson 2016). This is especially the case when science stories come into public contact with stories about racialization, colonialism, gender, and other structural inequalities (McNeil 2007; Long et al. 2010; Cassidy et al. 2016; Roberson and Orthia 2021; Rasekoala 2023). In other words, specific stories are told about science, stories that tend to reiterate and reproduce structural inequalities rather than ameliorate them. As a result, STS scholars have argued that science is fundamentally co-constructed with racism, sexism, colonialism, and other intersecting structural inequalities through these public narratives (Haraway 1992; McNeil 2007; Nelson 2016). We see these narratives today in public stories about genetics and indigeneity in the US, legislation banning plastic straws, digital development agendas in Kenya, and on the opposite African coast, stories of toxicology and public health in Senegal (Wong 2019; TallBear 2013; Wahome 2023; Tousignant 2018).

Building on the work of other scholars that have drawn upon both Museum Studies and STS, I suggest STS arguments about laboratory science as social, cultural, and political practice extend to science stories in museums (Macdonald 2002; Cassidy et al. 2016; Dawson 2019; Armstrong 2022; McNeil 2007; Haraway 1992). Indeed, as Laurie Waller (2017: 194) argued, exhibitions in science museums can be understood as 'settings where the relations between science and society are materially tested and ordered in curatorial practice'. An exhibition about science operates within a web of pre-existing socio-historic and political contexts, and, crucially, can reproduce, challenge, transgress, or radically revise these contexts. Science museums demarcate the epistemic space of science and history (which forms of knowledge count), as well as whose stories are told and by whom (who counts) (Gieryn 1998; Macdonald 2002). Thinking about exhibitions in this way helps us to position display practices as part of the co-construction of science and society, with all the politics that entails (Macdonald 2002; Hall 2013).

If Latour (1987; 2012) is right and science and society are mutually entangled, by thinking with Black Studies scholars we can expect to understand that entanglement as including processes of racialization. Despite the huge growth in the number of museums in the UK over the past 60 years, and the dominant roles they continue to play in the British cultural landscape, we know remarkably little about how race/ethnicity and science are co-constructed in these spaces, or what modes of relation these museum practices generate (Candlin et al. 2022; Dawson et al. 2024). In what follows I examine one particular museum object – leaflet 1981-1697/smallpox baby – and its display in two exhibitions, to trace what I suggest is an authorized *science* heritage discourse.

The leaflet and a note on methods

The leaflet at the centre of this paper is numbered 1981-1697 in the Science Museum's catalogue and titled in that catalogue as 'World Health Organisation leaflet about smallpox'. Not knowing this sooner, it has long been called "smallpox baby" in my mind since, despite multiple efforts, I failed to trace the name of the child, their mother, or anything else about them in any archive (see Dawson, forthcoming). I use both titles in combination here – "leaflet 1981-1697/smallpox baby" – to restore to the numeric name a sense that there are people involved in objects like these. There are the people in the artefact image, the photographers, those who produced the leaflet as a medical tool, the museum professionals who collected and displayed the object, and me, the researcher writing about it. It is common in museum journals to reproduce images of objects and their display, especially in comparative analyses of exhibitions, and I appreciate this has certain advantages. However, drawing on scholarship

from Black Studies that calls for an end to the reproduction of distressing images of Black people under the guise of anti-racist work, I do not reproduce images of leaflet 1981-1697/smallpox baby here (McKittrick 2020). The image on the front of the leaflet can be found online with the catalogue number provided in this paper, should you wish to see it while reading.

This paper draws on qualitative, ethnographic research from the UK, the seeds for which were sown in an earlier project. I first encountered leaflet 1981-1697/smallpox baby in 2013, where the leaflet stood out because it distressed young people involved in a research project (Dawson et al. 2019; Archer et al. 2016). A decade later I returned to leaflet 1981-1697/smallpox baby – re-encountering it as part of a new display that lasted between 2022 and 2023 – in order to examine what work its display does in the context of science and society relationships. In exploring leaflet 1981-1697/smallpox baby in detail, I was supported by museum staff who shared virtual tours of the earlier gallery, which had closed in the decade between my initial encounters with the leaflet and the research discussed here.¹ Museum staff also searched their internal archive of past exhibitions for information about the leaflet. The analysis below draws on fieldnotes about the building, exhibition, specific galleries, displays, design choices, interpretive texts, and adjacent displays. Fieldnotes were made during several visits to leaflet 1981-1697/smallpox baby in 2022 and 2023, both in situ within the new exhibition and its various online homes, and carried out in line with university research ethics policies (STSEth268).

Exhibitions of the 1981-1697/ smallpox baby leaflet

Leaflet 1981-1697/smallpox baby has been twice displayed in exhibitions about medicine in London's Science Museum. The image from the front cover also appears in colour in the museums' online catalogue, and in black and white in the WHO's online photographic archive where, when I last looked on 22 February 2023, it had gained 243 views. On the Science Museum website the leaflet is described as cardboard, with three sentences explaining that it was used in the WHO smallpox campaign in Africa. It is not possible to use the website to find out how many pages the leaflet contains or to look at any of the images inside it.

In what follows I concentrate on the two exhibitions at the Science Museum. Drawing again on Macdonald (2002: 17), and what she describes as 'the struggle with revision' when redeveloping exhibitions, in the analysis below I trace how leaflet 1981-1697/smallpox baby was enmeshed in similar narratives in both exhibitions. While there were, of course, many changes in design, text, physical location, lighting, and so on between the two exhibitions, I suggest the display of leaflet 1981-1697/smallpox baby both operated within and reinscribed an authorized *science* heritage discourse in both, a discourse that set up racialized and colonial modes of relation.

***The Science and Art of Medicine* exhibition: 18 December 1981–20 September 2015**

The first exhibition of leaflet 1981-1697/smallpox baby in the Science Museum was titled *The Science and Art of Medicine* with the sub-title *The Story of Medicine Told Through the World's Most Remarkable Medical Collection*. The name hints towards the function of the exhibition, which was to showcase what the organizers had termed the most "remarkable" medical collection in the world. The exhibition opened to the public in 1981, hot on the footsteps of the 1980 opening of a gallery of medicine-themed dioramas, and ran for 34 years (Bond et al. 2020).² Both the 1980 and 1981 galleries were considered significant enough for each to be given a newly built floor within the museum: a fourth floor for the 1980 gallery and a fifth floor for the 1981 gallery (Rooney 2010). As a result, in the spring of 2013 I climbed up many sets of stairs, as part of that previous research project, to reach the museum's fifth floor, where I first encountered leaflet 1981-1697/smallpox baby.

The Science Museum's two medical exhibitions from the early 1980s were built to house the extensive collection of Henry Wellcome, which were loaned permanently to the museum in 1976 (Bond et al. 2020). This transfer was significant, enormously expanding the Science Museum's collection in a new area (Boon 2010). Henry Wellcome's wider collection was used to found the Wellcome Trust, a UK-based charitable foundation with a focus on health and medicine. Notably, the Wellcome Trust funded a lot of science communication

activity in the UK from the late 1970s to 2022, shaping much of what went on as a result, with a bias towards biological sciences in public science communication activities. Indeed, as Emily Scott-Dearing has noted,³ the medicine galleries represented a significant shift in the collecting and display practices of the Science Museum in the 1980s, which had previously focused on objects relating to the development and/or demonstration of the physical sciences and their applications. In these two galleries, opened a year apart, health and biology were to be represented in large-scale, permanent exhibitions for the first time. Notably, these exhibitions were developed and opened during a period of what staff at the time saw as representing significant institutional restructuring and organisational change (Macdonald 2002; Boon 2010). Both exhibitions were described by Science Museum staff in their own writing as significantly different in style to earlier displays of medical objects in Wellcome's own exhibitions, drawing instead on object-rich and immersive exhibition practices popular in museums at the time (Bond et al. 2020; Rooney 2010; Boon 2010).

In *The Science and Art of Medicine* objects from all over the world were displayed, ranging from the very old to those from recent history of the time such as leaflet 1981-1697/smallpox baby. The Science Museum undertook work to add their medical collection following the acquisition of Wellcome's collection, to update it with newer objects (Bond et al. 2020; Boon 2010). The exhibition was chronologically laid out, but visiting with groups of young people in 2013, it was hard to read a timeline into the space (Archer et al. 2016; Dawson et al. 2019). The exhibition was designed to consist of a series of maze-like paths between display cases, within which the students we were with played hide and seek. Cases were thematically related to those around them, were typically glass and often included internal shelves. Most cases were organized in object-rich displays, with a few of the more iconic objects, such as a robotic arm, displayed alone for effect. The exhibition was developed long enough ago that many of those involved have since retired. The museum's own Z archive – an internal archive of previous exhibitions – held nothing about leaflet 1981-1697/smallpox baby, nothing about why it was chosen for the collection, and nothing about its display.

In the earlier exhibition, leaflet 1981-1697/smallpox baby was displayed flat on the floor of the bottom of a glass display case, in the back, right-hand corner, about two foot off the gallery floor, a way into the exhibition space. Here the leaflet was displayed amongst several other items as part of a collection of objects, of which none were a main focal point. The whole image, photograph, and title were about the size of an A4 piece of paper, and at that time it was impossible to see what was inside it. The photograph of the woman and child took up most of the front cover of the brightly coloured leaflet. The cover had a white border, titled 'SMALLPOX, a pictorial guide to diagnosis', on a bright blue box with black text, while the photograph of the woman and child below took up most of the space. The bright blue colour at the top of the leaflet contrasted with equally bold, red ceramic tiles that made up the base of the display case, a bright split-complementary colour scheme in an otherwise relatively dimly-lit gallery.

Let's zoom out to look at the physical context of the whole display case. Leaflet 1981-1697/smallpox baby was in a glass case titled 'Third World Health'. The larger text panel at the top gave information about both smallpox and malaria in Africa. The top half of the case was about malaria, illustrated with Western medical science objects, while the bottom half focused on smallpox and a second set of objects representing the intervention of Western medicine in Africa. Leaflet 1981-1697/smallpox baby sat behind other objects about smallpox in Africa, including an inoculation gun, a padded briefcase containing medical equipment, and other museum labels. Leaflet 1981-1697/smallpox baby was the largest image of people in the case. The label closest to the leaflet and most obviously linked to it by sheer proximity read: 'Education about smallpox. World Health Organisation, c. 1970. Pamphlet shows the differences between smallpox and chickenpox, and was used in Africa during the smallpox eradication campaign. Inventory 1981-1697'. Unlike the later exhibition, no specific country was linked to the leaflet, only the continent of Africa. Notably, at the time the exhibition was being put together, the late 70s and early 80s, this leaflet from the early 1970s was a piece of relatively recent history. Indeed, judging from the accession number (1981-1697) it was collected for this exhibition by curators at the Science Museum, and as we know from the online catalogue, comes from the Science Museum collection, not the loaned Wellcome

Collection. No information was given about the people in the photograph or the photographer.

As Macdonald (2002: 4) argued in her book about exhibition practices in London's Science Museum, it is important to consider 'the ways in which "science" was imagined into public display'. As her in-depth, ethnographic study of the Science Museum amply demonstrated, arguments about how to portray science were a common feature of exhibition development. Science means different things to different people, even within one museum, which exhibit developers actively negotiate in their work. Despite grappling with the nuances and complexities of science, Macdonald's (2002) study found exhibitions ultimately presented science as less controversial and more homogenous than exhibition developers had initially intended. In other words, once on public display, science was imagined through exhibitions as relatively authoritative and uncontroversial. To this I would add it is also important to think about the ways that society is imagined through displays *at the same time* as we think about how science is imagined.

If we start with the museum context for leaflet 1981-1697/smallpox baby, we know it was part of a significant thematic shift for the museum, one that doubled the size of the collection, resulted in two large, new galleries and must have represented a significant investment (Boon 2010; Bond et al. 2020; Rooney 2010). If we turn to the *The Science and Art of Medicine* exhibition, we find a chronological inventory of medical progress as seen primarily through the lens of British and European scientific accomplishments (Boon, 2010; Rooney, 2010). If we zoom in to look at the specific display case, we see that leaflet 1981-1697/smallpox baby was one of several objects lined up to tell a story about infectious disease in Africa (malaria and smallpox), and the attempts of Western medicine to address them.

I suggest this case operated with a narrative that framed medical treatments for illnesses in Africa as a European achievement, on a continuum of Western scientific progress, along a line of British achievements stretching backwards to Jenner's smallpox inoculations, and stretching forward to robotic arms displayed in the same room. This, I suggest, is the authorized *science* heritage discourse at work. Science heritage is inextricably linked to European colonialism, and this heritage was framed in terms of progress, moral authority, epistemological superiority, and technical achievement. Making clear the damage, pain and destruction wrought by European colonialism was not part of the display narrative, as other researchers have noted in other museum exhibitions (Dixon 2016; Bunning 2020; Edwards and Mead 2015).

Although ostensibly about Africa, the case that housed leaflet 1981-1697/smallpox baby described a history of science steeped in colonial modes of relation, while rendering colonialism invisible. The history of science presented in the display case was an explicitly triumphant narrative about British, modern Western medical science saving African lives. The flip side of this story meant the whole continent of Africa was represented as helpless and burdened by infectious diseases. Medical support from the WHO smallpox intervention was framed as White saviourism.¹ This narrative is extraordinarily illustrated by the image on the front of leaflet 1981-1697/smallpox baby – a baby's scarred face. Thinking with scholars of decolonial museum practice, I suggest we can read the story told by this display case, and by the display of this leaflet, as one embedded within a colonial framework of Western medical, scientific, and technological superiority, as well as moral authority (Das and Lowe 2018). In short, read from the contemporary vantage point, one reading of this earlier display of leaflet 1981-1697/smallpox baby is, I suggest, a textbook story of colonial, white, medical saviourism (Brockway 2002; Schneider 2009).

¹ White saviourism refers to a series of racialized myths constructed before, during, and after colonialism whereby invasive, extractive, and otherwise punitive behaviours of white Europeans in countries they sought to colonize were framed as beneficial (Wall 2024). These acts of apparent generosity included introducing various forms of Western science and medicine to colonized countries and peoples. Today a great deal of scholarship demonstrates unequivocally how far from beneficial these acts of white saviourism were for colonized people (McKittrick 2020; Hartman 2007; Brockway 2002; Schneider 2009).

'Medicine: The Wellcome Galleries': 16 November 2019 - ongoing

The medical collection moved to the more prominent first floor of the Science Museum and re-opened in 2019, taking up a much larger exhibition space spanning five galleries.⁴ The exhibition, newly titled *Medicine: The Wellcome Galleries*, again showcased many items from Henry Wellcome's collection alongside the Science Museum's own collection. Like before, the redisplay represented an important investment for the museum and was, according to the curatorial team, made to last approximately 25 years (Bond et al. 2020). As before, the new exhibition was framed as significantly different to what had come earlier. In writing about the project, the curatorial team described their move away from chronological narratives, instead creating patient-centric rather than techno-centric stories, and used the museum's participatory framework, specifically those 'that straddle collaboration and co-creation' (Bond et al. 2020: para.16). My fieldnotes show that this work can be seen in the new exhibition. Across the spacious galleries there were several examples of patient and community voices, international perspectives, and even explicit mention of racialized health inequalities. But as I discuss below, the redisplay of leaflet 1981-1697/smallpox baby echoed elements of how it was displayed before, embedded within and reasserting colonial modes of relation while telling a specific, Eurocentric, celebration-of-science story.

In the new exhibition leaflet 1981-1697/smallpox baby was displayed more prominently than before in part of a mezzanine gallery overlooking the iconic and enormous, silvery aeroplane hung over the top of the museum's flagship, ground-floor gallery, Making the Modern World. Leaflet 1981-1697/smallpox baby and its accompanying text were displayed in the central part of a five-section display case, about a meter high. The leaflet was displayed front and centre in the new display, not as ephemera, part of an object-rich display, or to provide a brightly coloured background, but as a key object within the case's narrative. The gallery leaflet 1981-1697/smallpox baby was displayed in was titled 'Medicine and Communities' and focused on public health. This time leaflet 1981-1697/smallpox baby was displayed open, with its striking front cover hidden, but three equally striking pages open (which meant it took me a while to find it, I initially thought it was not on display). Instead of seeing a baby's face over the shoulder of a woman we might assume was their mother, visitors now see the equally striking faces of *four* babies, as well as two sets of hands and two sets of feet. The Black babies are referred to as patients and, as with the child on the front cover, I was unable to trace anything about them or the photographer(s) (see Dawson, forthcoming).

The museum text that accompanied leaflet 1981-1697/smallpox baby was towards the front of the display case, grouped with other numbered label texts about the objects in the case. It was titled, in uppercase, '5: LEAFLET ON SMALLPOX 1970-1971'. This time slightly more text was given to contextualize the leaflet, but the new text told a story that echoed the former:

The World Health Organisation distributed vividly illustrated public information leaflets such as this to areas affected by smallpox. In 1966 it had started a project to vaccinate anyone who came into contact with the disease. This stopped it being transmitted between communities. Fourteen years later the global eradication of smallpox was confirmed.

This time the leaflet was located as from the Democratic Republic of Congo (DRC) in smaller text at the bottom of the interpretation panel.

The three A4-sized pages revealed inside the leaflet detail the different stages of smallpox pustules, with colour images of Black toddlers faces, hands, and feet against a white background, next to text boxes with brief, clinical descriptions of the stage and level of infectiousness represented by the pustules on the children's bodies. Surprisingly, the leaflet text is written in English despite French being the official, institutional language of the multilingual DRC, formerly colonized by Belgium. The text focuses entirely on smallpox symptoms – how they might appear, what they might be mistaken for (notoriously, the less deadly chickenpox) – infectiousness, and pustule stages. The leaflet's role as a clinical diagnostic tool was more apparent than before, given that pages inside it were displayed open. In the parts of the leaflet available for visitors to see, nothing more than these photographs and brief, clinical sentences appear.

Let's zoom out again to the larger display surrounding the leaflet. In the new exhibition, leaflet 1981-1697/smallpox baby was no longer in a case focusing explicitly on 'Third World Health'. Instead, it was explicitly bookended by stories about Britain. The area of the exhibition was titled 'FIGHTING INFECTIOUS DISEASES', on a panel which jutted out from a white plinth in the middle of the gallery space. The first three sections of the five-part display case, including and to the left of leaflet 1981-1697/smallpox baby, were titled 'SMALLPOX ERADICATION', and the two to the right 'COVID19 – A NEW PANDEMIC' (uppercase in original). Chronologically the cases move from left to right, starting with the history of smallpox in the UK, moving to the eradication of smallpox in Africa, ending with the recent history of British vaccinations for COVID 19.

This time the faces of ill Black babies were no longer the only people on display. Immediately to the left of leaflet 1981-1697/smallpox baby, within the same display case, were images of a White man's face covered in smallpox scars and a series of paintings of smallpox blisters on White skin. Leaflet 1981-1697/smallpox baby was also no longer the only representation of people from the global majority in this part of the exhibition or the exhibition as a whole. Facing the case, on the other side of a bench, was a display about polio vaccination campaigns in India, which featured medical objects and a film showing Indian doctors and community health organizers delivering polio vaccines.

Nonetheless, almost 40 years after its initial display, we can see the authorized *science* heritage discourse at play again with leaflet 1981-1697/smallpox baby, telling a very particular story about medicine, science, and racialization, one whose colonial roots continued to shape the narrative. Indeed, as Smith (2006: 30) argues, the AHD shapes how heritage is preserved and displayed 'within the narrative of nation', which we see in this example. The display of leaflet 1981-1697/smallpox baby was bookended by British medical successes: inoculation against smallpox in the past and the development of a COVID 19 vaccine more recently. The interpretive text notes, for instance, that the University of Oxford/AstraZenica COVID-19 vaccine was developed 'in under a year' as part of the 'fight' against the virus; the celebrated vaccine is the British one, made in what the text implies is record-breaking time, while other vaccines and medical treatments for COVID-19 do not figure. The five-part exhibition case also displays historic paintings that place White British people with smallpox firmly in the distant past. These images contrast with the evidently more recent history of smallpox in the DRC, as highlighted by the vivid, modern colour photographs of Black babies. Standing in this space we can read a story that tells a triumphant, nationalistic tale about scientific and technical progress in the "fight" against infectious disease and the success of modern, Western (British) medicine both in the UK and around the world, echoing elements of the White saviour narrative of the earlier exhibition. Of course, limiting and preventing the spread of devastating infectious diseases has been and remains incredibly valuable. As I discuss below however, there is more than one story here.

The authorized *science* heritage discourse and the political lives of museum objects

How might we understand these displays of leaflet 1981-1697/smallpox baby in a Science Museum in London over almost 40 years? In this final section I trace the outline of an authorized *science* heritage discourse through the two exhibitions by returning to both what is in and what lies beyond the stories invoked by the display of leaflet 1981-1697/smallpox baby.

Starting with what *is* displayed, leaflet 1981-1697/smallpox baby has been displayed amidst two extremely positive narratives about the history and contemporary practices of modern Western science and medicine. As Bud (2010: 253) noted, the collections of the Science Museum and those items selected for display, were chosen as emblematic of scientific progress, ingenuity, and apparent importance with a view to, as he put it, 'celebrating the importance of science'. Thinking with decolonial museum scholars, it is crucial that we consider the ramifications of these choices about representing science (Das and Lowe 2018; Dixon 2012; El-Tayeb 2020). It should perhaps come as no surprise that the displays of leaflet 1981-1697/smallpox baby were embroiled in narratives that celebrate the best of science from a British perspective.

Here we see what Smith (2006: 30) described as the nationalistic and universalizing capacity of the AHD, which at first seems somewhat contradictory 'drawing as it does on the narrative of nation and the universality of world heritage'. This element of the AHD accounts for why an object about the Democratic Republic of Congo appears in the middle of a display case otherwise focused on the UK. What might be seen as a tension between the celebration of nationalistic narratives on one hand, and world heritage on the other, can be understood if we think about the specific relationships at play. In particular, the colonial relationships that link Britain to many other parts of the world, not least through the WHO. As such, we can see that in setting out both nationalistic and universalizing "world" heritage narratives about the history of science the AHD, or authorized *science* heritage discourse in this case, sets up colonial modes of relation (El-Tayeb 2020; Smith 2006; Sharpe 2016; Jackson 2020). Here the English language text of a medical, diagnostic tool from an officially Francophone country is a clue to the underlying colonial mode of relation, as well as to why this object may have ended up in a British museum, given their monolingual tendencies (Dawson 2019).

Leaflet 1981-1697/smallpox baby forms part of a positive story about medicine, science, Britain, and the Western, Global North, despite or perhaps *because of* the upsetting images in the leaflet and the tragic history of smallpox in Africa,ⁱⁱ which form the actual subject of the leaflet. Here Smith (2006) is useful again for thinking about the function of heritage practices. Smith argued that the AHD frames heritage as positive in relation to the interests of dominant groups in the present. Thus, even when the heritage in question involves war crimes or other atrocities – in our case very ill babies – these are represented as successfully overcome, typically through the efforts of dominant groups. This, Smith (2006: 29) argues, 'is because "heritage" is seen to represent all that is good and important about the past, which has contributed to the development of the cultural character of the moment'. Hence, with leaflet 1981-1697/smallpox baby, the eradication of smallpox (thanks to modern Western medicine) is what is being celebrated, even though the object on display shows extremely unwell Black toddlers from the DRC. We see here an example of McKittrick's (2014) theory that Black life can only be conceptualized as death within the confines of racist societies, even within a leaflet about saving lives. Thus, colonial modes of relation are set out through these displays that tell a resolutely positive story about the epistemic, technical and moral superiority of British scientific and medical advancement, while other stories slide out of view.

What about those other stories? Scholars in Black Studies have long argued for reaching beyond the archive to pursue counter-stories that decentre dominant perspectives (Sharpe 2016; Hartman 2007; McKittrick 2020). Let's zoom out one last time, to think about what's missing. If we look at the history of smallpox – the most explicit context given for leaflet 1981-1697/smallpox baby in both the exhibitions analysed above – two themes stand out through their absence. First, that Europeans were not the first people to develop effective treatments for smallpox, and second, that European colonialism and modern Western science and medicine were and remain mutually constitutive.

First, given the long and international history of smallpox, it is not surprising that Europeans were *not* the first people to develop treatments for it. Practices of smallpox inoculation were used around the world, famously recorded in China and amongst enslaved West African people in the Caribbean and North American, before similar European innovations (Mitchell 2023; Schneider 2009).⁵ These histories displace Europeans from the centre of

ⁱⁱ The colonial history of smallpox in Africa is complicated, contested, and increasingly a focus for decolonial research on the history of medicine. Initial scholarship on colonial administrations' public health campaigns to eradicate smallpox in the 1960s and 1970s told stories of huge, internationally significant success, a story many people are familiar with (Schneider 2009). More recent scholarship has contested these positive accounts, noting instead the damage experienced by people at the hands of public health programmes, and the long-tail of mistrust engendered by these practices (Lowes and Montero 2021). Indeed, studies of colonial smallpox public health campaigns from the eighteenth century onwards suggest that while many people died of smallpox, it was only after settler colonialism began in Africa that attempts to manage smallpox began (Kochhar 2011). As Lowes and Montero (2021) conclude, while evidently stopping such a horrible disease is beneficial, the manner in which smallpox was managed in colonized and formerly colonized countries was extremely problematic.

stories about modern medicine, science, and innovation. However, that Europeans were not the only people to find ways to treat smallpox and were, in fact, comparably quite late to the game, is something visitors would be unlikely to glean from the two displays of leaflet 1981-1697/smallpox baby discussed here.

Second, smallpox was a powerful tool of colonial administrations, used to control populations, either through debilitating, potentially deadly illness, or the promise of a cure delivered by public health systems structured like penal systems (Bashford 2004). Smallpox has played well-researched and terrible roles in European colonialism, perhaps most notoriously in the context of White settler colonialism in North America and the Caribbean where smallpox devastated First Nations Peoples (Kochhar 2011; Patterson and Runge 2002). Although smallpox was present in Africa before European colonization, it was also repeatedly introduced through European colonialism, again with devastating effects, and spread further through the forced displacement of enslaved peoples (Mitchell 2023; Schneider 2009).

Though it happened after many African countries gained independence, the broader context of the WHO programme to eradicate smallpox, symbolized by leaflet 1981-1697/smallpox baby in the exhibitions discussed here, has its roots in colonial administrations (Tilley, 2011; Lowes and Montero, 2021). As Schneider (2009) has shown, historically Western medicine was touted as a palpable benefit of European colonization for African populations; or as we might call it, White medical saviourism. This story of saviourism has persisted, despite the imagined benefits of European scientific advancements being widely refuted by those experiencing colonial and neo-colonial public health campaigns (Lowes and Montero 2021). Leaflet 1981-1697/smallpox baby is enmeshed within colonialism and neo-colonialism: the DRC achieved independence from Belgian colonial rule in 1960, only a decade before the leaflet was in use. But this story, like the one about Europeans lagging behind in smallpox interventions, was missing from both displays of leaflet 1981-1697/smallpox baby, a museum practice Fatima El-Tayeb (2020: 72) calls 'colonial amnesia' and a practice, research suggests, that is far from unusual (Edwards and Mead 2015; Dixon 2016).

I suggest these stories are absent because they are incompatible with the authorized *science* heritage discourse and its celebratory, nationalistic framework. Charles Mills described the modes of relation set up here as the 'racial contract' (1997: 3), in which the knowledges, practices, and histories of Black people are mistrusted, undermined and/or ignored while those of White people are lauded. Tracing this contract through the authorized *science* heritage discourse, we can see how decentring European success in modern Western medicine is outside the scope of the authorized *science* heritage discourse. This is not its function, but if we understand how the authorized *science* heritage discourse constructs public science stories, then we are better able to deconstruct those stories by using counter-stories to change museum narratives, whether by acknowledging the colonial legacy of smallpox vaccinations or by highlighting the precedents set by West African smallpox treatments.

Thinking with STS scholars it is not surprising that science and society are interwoven in museum narratives (Latour 1987; Latour 2012; McNeil 2007; Erickson 2016). Science is a social, cultural, and political process in both the doing *and* in the telling. Public stories about science in national museums are inevitably interwoven with the contemporary politics of the state, dominant groups, and the modes of relation that social hierarchies generate (Smith 2006; Smith 2017; Macdonald 2002; Haraway 1992). And it is these dominant narratives that structure the authorized *science* heritage discourse. At the same time as telling a story about smallpox, an extremely partial story is also being told about the historic and contemporary moral and technical successes of Britain through the display of leaflet 1981-1697/smallpox baby. These European, scientific successes are juxtaposed with a story of disease in Africa, which sets up racialized modes of relation that draw on contexts of colonialism, White saviourism and racism (Wall 2024). Here we see Wallace's (1997) notion of the museum as ruins rather than accurate records.

The authorized *science* heritage discourse shaping the display of leaflet 1981-1976/smallpox baby might therefore be summarized as follows: modern Western science (preferably British) is an international force for good – it saves babies! – it sets up Britain as a powerful, moral, technical, and epistemic authority, simultaneously reinforcing racist and colonial modes of relation.

Conclusion

In examining two displays of leaflet 1981-1697/smallpox baby, I have shown how an authorized *science* heritage discourse works in museum practices to set up particular forms of science and society relationships. Rather than attempting to establish an evaluative judgement about whether one exhibition or the other does a better or worse job displaying leaflet 1981-1697/smallpox baby, I suggest instead both displays are embedded within and reinscribe an authorized *science* heritage discourse, a discourse that shapes museum practices well beyond these specific exhibitions. That this discourse reverberates through both exhibitions suggests, drawing on Smith's (2006: 27) work, that a self-referential cycle operates, making and remaking narratives that 'inevitably universalizes Western values and systems of thought'. As a result, we can see the kinds of forces structuring how science and society relationships are co-produced through cultural and heritage organisations like museums (Latour and Woolgar 2013; Macdonald 2002).

My point is not that the authorized *science* heritage discourse is specific to leaflet 1981-1697/smallpox baby, nor that reinscribing colonial modes of relation was in any way an intention of the museum staff involved with either of the exhibitions discussed here: from their writing it was evidently not (Bond et al. 2020). Rather, in analysing the display of this specific and not particularly extraordinary museum object, I have tried to show how the authorized *science* heritage discourse shapes public stories about science along particular, well-trodden paths that are hard to escape. The authorized *science* heritage discourse shapes, I suggest, the parameters of what is thinkable and actionable in science museums (and elsewhere).

Thus, redisplayed 40 years later, within a framework of participatory museum practices, leaflet 1981-1697/smallpox baby remains embedded within and in turn shapes an authorized *science* heritage discourse. A discourse that in this case shapes a Eurocentric, nationalistic story about the technical and moral superiority of the West and sets up colonial modes of relation (Smith 2006; Latour 1987; Latour 2012; Sharpe 2016). The concept of the authorized *science* heritage discourse contributes therefore to decolonial research and practices in museums as well as in science and technology studies.

Tracing the authorized *science* heritage discourse through the two displays of leaflet 1981-1697/smallpox baby, and through possible counter-stories, helps us think about power and change in museums. Museum exhibitions reinscribe economies of value about who matters, what matters, and why these matter, but these can change. Thus, a museum object as unremarkable as leaflet 1981-1697/smallpox baby sits within a complex web of relations of power, which may be reproduced, shifted, reimagined, or radically altered through its display.

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Notes

- ¹ Google Arts & Culture, 'Science Museum, Level 5', Google Arts & Culture 2023. <https://artsandculture.google.com/streetview/science-museum-level-5/YAHBdt7uLu-Qxg>, accessed 24 March 2023.
- ² Emily Scott-Dearing, 'A new era for medicine at the Science Museum', Science Museum 2015. <https://blog.sciencemuseum.org.uk/a-new-era-for-medicine-at-the-science-museum>, accessed 29 May 2023.
- ³ Emily Scott-Dearing, 'A new era for medicine at the Science Museum', Science Museum 2015. <https://blog.sciencemuseum.org.uk/a-new-era-for-medicine-at-the-science-museum>

museum, accessed 29 May 2023.

- ⁴ Science Museum, 'Medicine: The Wellcome Galleries', Science Museum 2023. <https://www.sciencemuseum.org.uk/see-and-do/medicine-wellcome-galleries>, accessed 3 March 2023.
- ⁵ See also Elise A. Mitchell, 'West Africans and the History of Smallpox Inoculation: Q&A with Elise A. Mitchell', The Royal Society 2020. <https://royalsociety.org/blog/2020/10/west-africans-and-the-history-of-smallpox-inoculation>, accessed 29 June 2023.

References

- Apaydin V. (2022) *Heritage, Education and Social Justice*, Cambridge: Cambridge University Press.
- Archer L., Dawson E., Seakins A. and Wong, B. (2016) "'I'm Being a Man Here": Urban Boys' Performances of Masculinity and Engagement With Science During a Science Museum Visit', *Journal of the Learning Sciences*, 25 (3) 438-85.
- Armstrong E. (2022) 'Towards Queer Tours in Science and Technology Museums', *Museum and Society*, 20 (2) 205-20.
- Bashford A. (2004) *Imperial Hygiene: A Critical History of Colonialism, Nationalism and Public Health*, New York: Palgrave MacMillan.
- Benjamin R. (2017) 'Cultura Obscura: Race, Power, and "Culture Talk" in the Health Sciences', *American Journal of Law & Medicine* 43 (2-3) 225-38.
- Bevan B. and Ramos B. (2022) *Theorizing Equity in the Museum: Integrating Perspectives from Research and Practice*, London: Routledge.
- Bond S., Dabin K., Emmens S., Hurley S. and McEnroe N. (2020) 'Curating Medicine: The Wellcome Galleries', *Science Museum Group Journal*, 14 1-72.
- Boon T. (2010) 'Parallax error? A Participant's Account of the Science Museum, c. 1980–c.2000', in Peter J.T. Morris (ed) *Science for the Nation: Perspectives on the History of the Science Museum*, 111-35, London: Palgrave Macmillan.
- Brockway L.H. (2002) *Science and Colonial Expansion*, New Haven: Yale University Press.
- Bud R. (2010) 'Collecting for the Science Museum: Constructing the Collections, the Culture and the Institution', in Peter J.T. Morris (ed) *Science for the Nation: Perspectives on the History of the Science Museum*, 250-72, London: Palgrave Macmillan.
- Bunning K. (2020) *Negotiating Race and Rights in the Museum*, London: Routledge.
- Candlin F., Butler T. and Watts J. (2022) *Stories from Small Museums*, Manchester: Manchester University Press.
- Cassidy A., Lock S.J. and Voss G. (2016) 'Sexual Nature? (Re)presenting Sexuality and Science in the Museum', *Science as Culture*, 25 (2) 214-38.
- Coleborne C. and MacKinnon D. (2017) *Exhibiting Madness in Museums: Remembering Psychiatry through Collection and Display*, London: Routledge.

- Das S. and Lowe M. (2018) 'Nature Read in Black and White: Decolonial Approaches to Interpreting Natural History Collections', *Journal of Natural Science Collections*, 6 4-14.
- Dawson E. (2019) *Equity, Exclusion and Everyday Science Learning: The Experiences of Minoritised Groups*, London: Routledge.
- Dawson E., Archer L., Seakins A., Godec S., DeWitt, J. and King H. (2019) 'Selfies at a Science Museum: Exploring Girls' Identity Performances in a Science Learning Setting', *Gender and Education*, 32 (5) 664-81.
- Dawson E., Bista R., Colborne A., McCubbin B., Godec S., Patel U. and Archer L. (2024) 'Inclusion for STEM, the Institution, or Minoritized Youth? Exploring how Educators Navigate the Discourses that Shape Social Justice in Informal Science Learning Practices', *Science Education*, 108 (3) 792-819.
- Dawson E. (forthcoming) 'Tracing the Authorised Science Heritage Discourse: Smallpox Stories and the So-construction of Science and Society Relationships in Museum Exhibitions' in Veyssel Apaydin, Kalliopi Fouseki, David Francis, Jonathan Gardner, Heather King and Sara Perry (eds) *Critical Heritage and Social Justice: Redistribution, Recognition and Representation in Context*, London: UCL Open Press.
- Dixon C.A. (2012) 'Decolonising the Museum: Cité Nationale de l'Histoire de l'Immigration', *Race & Class*, 53 (4) 78-86.
- Dixon C.A. (2016) 'The "Othering" of Africa and its Diasporas in Western Museum Practices', PhD thesis submitted to the University of Sheffield.
- Edwards E. and Mead M. (2015) 'Absent Histories and Absent Images: Photographs, Museums and the Colonial Past', *Museum and Society*, 11 (1) 19-38.
- El-Tayeb F. (2020) 'The Universal Museum: How the New Germany Built its Future on Colonial Amnesia', *Nka: Journal of Contemporary African Art*, 46 72-82.
- Epstein S. (1995) 'The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials', *Science, Technology, & Human Values*, 20 (4) 408-37.
- Erickson M. (2016) *Science, Culture and Society*, Cambridge: Polity Press.
- Gieryn T.F. (1998) 'Balancing Acts: Science, Enola Gay and History Wars at the Smithsonian.', in Sharon Macdonald (ed) *The Politics of Display: Museums, Science, Culture*, 197-228, London: Routledge.
- Gill J., McKenzie C. and Lightfoot E. (2019) "'Handle with Care": Literature, Archaeology, Slavery', *Interdisciplinary Science Reviews*, 44 (1) 21-37.
- Hall S. (1993) 'What Is This "Black" in Black Popular Culture?', *Social Justice*, 20 (1-2) 104-14.
- Hall S. (2013) 'The Spectacle of the "Other"', in Stuart Hall, Jessica Evans and Sean Nixon (eds) *Representation: Cultural Representations and Signifying Practices*, 215-87, London: SAGE.
- Haraway D. (1992) *Primate Visions: Gender, Race, and Nature in the World of Modern Science*, London and New York: Verso.

- Hartman S. (2007) *Lose Your Mother: A Journey Along the Atlantic Slave Route*, New York: Farrar, Straus and Giroux.
- Hooper-Greenhill E. (1992) *Museums and the Shaping of Knowledge*, London: Routledge.
- Jackson Z.I. (2020) *Becoming Human: Matter and Meaning in an Antiracist World*, New York: New York University Press.
- Kochhar R. (2011) 'Smallpox in the Modern Scientific and Colonial Contexts 1721–1840', *Journal of Biosciences*, 36 (5) 761-68.
- Latour B. (1987) *Science in Action: How to Follow Scientists and Engineers through Society*, Milton Keynes: Open University Press.
- Latour B. (2012) *We Have Never Been Modern*, Cambridge, MA: Harvard University Press.
- Latour B. and Woolgar S. (2013) *Laboratory Life: The Construction of Scientific Facts*, Princeton: Princeton University Press.
- Levin A.K. (2010) *Gender, Sexuality and Museums: A Routledge Reader*, London: Routledge.
- Long M., Steinke J., Applegate B., Lapinski M., Johnson M.J. and Ghosh S. (2010) 'Portrayals of Male and Female Scientists in Television Programs Popular Among Middle School-Age Children', *Science Communication*, 32 (3) 356-82.
- Lowes S. and Montero E. (2021) 'The Legacy of Colonial Medicine in Central Africa', *American Economic Review*, 111 (4) 1284-314.
- Macdonald S. (2002) *Behind the Scenes at the Science Museum*, Oxford and New York: Berg.
- Mance H. (2022) 'Is Britain Tiring of the Culture Wars?', *Financial Times*, 15 July.
- McGuigan J. (1996) *Culture and the Public Sphere*, London: Routledge.
- McKittrick K. (2014) 'Mathematics Black Life', *The Black Scholar*, 44 (2) 16-28.
- McKittrick K. (2020) *Dear Science and Other Stories*, Durham: Duke University Press.
- McNeil M. (2007) *Feminist Cultural Studies of Science and Technology*, New York: Routledge.
- Mills C. W. (1997) *The Racial Contract*, London: Cornell University Press.
- Mitchell E.A. (2023) 'On Slavery, Medicine, Speculation, and the Archive', *Historical Studies in the Natural Sciences*, 53 (1) 82-5.
- Nelson A. (2016) *The Social Life of DNA: Race, Reparations, and Reconciliation after the Genome*, Boston, MA: Beacon Press.
- Oncil B. (2015) *Museums, Heritage and Indigenous Voice*, London: Routledge.
- Parry M. (2021) 'Risky Histories', *Science Museum Group Journal*, 14. <https://doi.org/10.15180/201406>
- Patterson K.B. and Runge T. (2002) 'Smallpox and the Native American', *The American Journal of the Medical Sciences*, 323 (4) 216-22.

- Rasekoala E. (2023) 'Introduction: Race and Sociocultural Inclusion in Science Communication - Global Contemporary Issues', in Elizabeth Rasekoala (ed) *Race and Sociocultural Inclusion in Science Communication*, 1-18, Bristol: Bristol University Press.
- Roberson T. and Orthia L.A. (2021) 'Queer World-Making: A Need for Integrated Intersectionality in Science Communication', *Journal of Science Communication* 20 (1), (C05). <https://doi.org/10.22323/2.20010305>.
- Rooney D. (2010) "'A Worthy and Suitable House": The Science Museum Buildings and the Temporality of Space', in Peter J.T. Morris (ed) *Science for the Nation: Perspectives on the History of the Science Museum*, 157-75, London: Palgrave Macmillan.
- Ruffins F.D. (1997) 'Culture Wars Won and Lost: Ethnic Museums on the Mall, Part 1: The National Holocaust Museum and the National Museum of the American Indian', *Radical History Review*, 68 79-100.
- Sandell R. (2007) *Museums, Prejudice and the Reframing of Difference*, London: Routledge.
- Sandell R., Dodd J. and Garland-Thomson R. (2010) *Re-Presenting Disability: Activism and Agency in the Museum*, London: Routledge.
- Sandell R. and Nightingale E. (2012) *Museums, Equality and Social Justice*, London: Routledge.
- Schneider W.H. (2009) 'Smallpox in Africa during Colonial Rule', *Medical History*, 53 (2) 193-227.
- Sepúlveda dos Santos M. (2005) 'Representations of Black People in Brazilian Museums', *Museum and Society*, 3 (1) 51-65.
- Sharpe C. (2016) *In the Wake: On Blackness and Being*, London: Duke University Press.
- Smith L. (2006) *Uses of Heritage*, London: Routledge.
- Smith L. (2010) "'Man's Inhumanity to Man" and other Platitudes of Avoidance and Misrecognition: An Analysis of Visitor Responses to Exhibitions Marking the 1807 Bicentenary', *Museum and Society*, 8 (3) 193-214.
- Smith L. (2017) "'We are...We are Everything": The politics of Recognition and Misrecognition at Immigration Museums', *Museum and Society*, 15 (1) 69-86.
- TallBear K. (2013) 'Genomic Articulations of Indigeneity', *Social Studies of Science*, 43 (4) 509-33.
- Tilley H. (2011) *Africa as a Living Laboratory*, Chicago: University of Chicago Press.
- Tousignant N. (2018) *Edges of Exposure: Toxicology and the Problem of Capacity in Postcolonial Senegal*, London: Duke University Press.
- Wahome M.N. (2023) *Fabricating Silicon Savannah: The Making of a Digital Entrepreneurship Arena of Development*, Palgrave Macmillan: London.
- Wall N. (2024) *Black Expression and White Generosity*, Leeds: Emerald Publishing.
- Wallace M. (1997) 'The Prison House of Culture: Why African Art? Why the Guggenheim? Why Now?', *Black Renaissance*, 1 (2) 162.

Waller L. (2017) 'Curating Actor-Network Theory: Testing Object-Oriented Sociology in the Science Museum', *Museum and Society*, 14 (1) 193-206.

Wong A. (2019) 'The Rise and Fall of the Plastic Straw: Sucking in Crip Defiance', *Catalyst: Feminism, Theory, Technoscience*, 5 (1). <https://doi.org/10.28968/cftt.v5i1.30435>

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