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BOOK FORUMS

Haunting Biology: Book Forum

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Abstract

Emma Kowal's *Haunting Biology: Science and Indigeneity* (2023) investigates the history of biological and medical research about Indigenous peoples in Australia. This book forum invited contributors to provide nuanced insights that engage the book's central contributions to debates in medical anthropology about decoloniality and racial science. Bringing together medical historians, anthropologists, and scholars of science and technology Trevor Engel, Beth Greenhough, Frederic Keck, and Ros Williams, the forum's contributors highlight the profound utility of Kowal's insights and the necessity of attending to the spectral presence of the colonial-era ghosts that haunt the ground on which contemporary biological science, including genetics and epigenetics, is practised. The forum contributors draw out the multivalent affects that ghosts provoke, brought to presence through Kowal's ethnographic observations and rich archival research. They engage ghostly characters like British scientist Baldwin Spencer, who sits out of sight but not out of mind in a museum storeroom, and surgeon and Australian anatomist Sir William Colin Mackenzie, who haunts the dreams of Goenpul Indigenous filmmaker Romaine Moreton. Each contributor shows the productive tension gained by following Kowal's directive to listen to these and other ghosts around us, and gesture towards the possibilities of decolonial scientific practices.

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Hauntology, Indigenous peoples, Colonialism, Biology, Epigenetics

Introduction

Benjamin Hegarty and Meredith Evans

This book forum is a discussion of Emma Kowal's *Haunting Biology: Science and Indigeneity* (2023). In this exciting new book, Kowal unravels complex histories of biological and medical research about Indigenous peoples in Australia and their lingering theoretical and political implications for contemporary genomics and Indigenous biology. At its core, *Haunting Biology* argues that the biological sciences are haunted by the presence of colonial-era ghosts, both the many Indigenous peoples whose body parts were used for scientific research (often without their consent) and of the white researchers whose disquieting presence cannot be fully put to rest by contemporary institutions. Using methods from science and technology studies and theories of hauntology, Kowal acknowledges, listens, and responds to ghosts by tracing their material endurance in dead scientists and their haunted statues, in samples of hair, bone, and blood, and in the spectral remnants of colonial violence. For Kowal, living with the ghosts of racial science rather than trying to banish them is a method for contending with the implications of this history for scientific practices today, and grappling with the ethical challenges of contemporary genetic research with Indigenous peoples. This book forum brings together medical historians, anthropologists, and scholars of science and technology studies Trevor Engel, Beth Greenhough, Frederic Keck, and Ros Williams to discuss *Haunting Biology* with the author.

Kowal is a cultural and medical anthropologist—as contributor Keck notes, her first book *Trapped in the Gap: Doing Good in Indigenous Australia* (2015) addressed the ways that non-Indigenous people seek to 'do good' to improve the health of Indigenous people in Australia. These insights were informed by ethnographic research paired with her own experiences as a physician working in remote Australia. By contrast *Haunting Biology* uses largely historical methods, notably archival research, to address its central question: How are we to understand the science of Indigenous biological difference in the 21st century? In exploring this question, this book pays astute attention to the presence of ghosts of 19th- and early 20th-century racial science.

A series of subtle ethnographic observations of uncanny and unusual events, the absent presence of racial science, punctuates the rich archival research presented in the book. In one section, Kowal observes a curious scene in which a statue of British scientist Baldwin Spencer was displayed as a 'collected' object along the

items that he himself had collected in the late 19th and early 20th centuries. His statue's display was rendered problematic in light of shifting postcolonial politics, resulting in a decision to store the statue in a restricted room in the museum, away from public view. Here, he became a 'collected' object stored alongside sacred Indigenous items that he himself had collected. Of course, an important distinction between the presence of Spencer's statue and Indigenous peoples' ancestral human remains is that the former is only there as a simulacrum, his own body buried (intriguingly far from home in Magallanes, Chile, where he died while on an expedition). His double's likeness nevertheless conjures a palpable spectre, and points to the multiplicity of colonial presences that are entangled with sacred Indigenous objects and haunt decolonial efforts to grapple with colonial histories.

By contending with the apparitions of Spencer and other ghostly characters that appear in Kowal's book, contributors to this book forum advance a critical view of emerging politics and economies of knowledge, particularly the evaluation of 'Indigenous knowledge' as a field of research. In their contributions, Williams draws parallels to other colonial hauntings and contested afterlives of racist violence and questions the political implications of ghostly entanglements. Tracing the intimacies of ghosts at home to their broader structural presences, Engel points to the hauntings of transinstitutionalisation, the trafficking of Indigenous people between different state institutions such as prisons and schools. Greenhough extends this provocation by speculating about ways of acknowledging Indigenous scientific pasts alongside Indigenous-led scientific futures. Keck reflects on the 'cryopolitics' of modern institutions like museums, laboratories and biobanks where Indigenous communities are consulted on the fate of ancestral human remains. Following Kowal, contributors to this book forum interrogate ghostly presences at the intersections of colonial legacies, institutional structures, and scientific practices, and reflect on the ongoing political and ethical dimensions of researching Indigenous peoples and engaging Indigenous knowledge.

Haunting Biology could be read alongside books that unpack ongoing entanglements between scientific practice, race, and racism, like Duana Fullwiley's *Tabula Raza: Mapping Race and Human Diversity in American Genome Science* (2024), and books that illuminate the liberatory possibilities of anticolonial knowledge practices for Indigenous peoples, like Max Liboiron's *Pollution is Colonialism* (2021). Putting such texts in conversation could help attune ourselves to anthropology, science and technology studies, and history as haunted fields of knowledge. Paying historical attention to scientific practices can offer new insights into who benefits from scientific research about the salience of human difference to how that scientific research is mobilised for improving health and wellbeing. These concerns remain rich fields of inquiry in medical anthropology. By focusing on how biology treats race in human genome research and its political and ethical

implications, Kowal and the contributors to this forum articulate the ways that attending to unsettling and uncanny apparitions can open new vistas for engaging with the coloniality of contemporary scientific practices.

A brief note on images: we acknowledge that the ethics of reproducing images of Indigenous people and white scientists in this forum are complex. While our aim is to engage with the disquieting ghostly presences of Indigenous peoples whose bodies were used in scientific research and of the white researchers who enacted colonial violence through their scientific practices, we recognize that images are not neutral. Images of Indigenous people and white scientists do not speak for themselves—they emerge within complex power relations that resonate between the time that the photograph was taken in the past and the engagement of audiences in the present, drawing audiences into ethical encounters (Azoulay 2008). By including such complex and difficult images in this forum, we aspire to Kowal's hauntological methodology and encourage readers to consider how evidence, including photographs, can inspire encounters with ghosts that prompt concern with the enduring coloniality of scientific research and institutions.

Ghosts, presences, and memory

Ros Williams

Haunting Biology: Science and Indigeneity by Emma Kowal (2023) is a book built out of ghosts—vignettes that draw together an awesome number of individuals across space, moving backwards and forwards through time. Many books do this, of course, but at its extremes, *Haunting Biology* moves between the last glacial maximum (about 25,000 years ago) to some imagined future colonisation of Mars. These endpoints are coordinates in Kowal's narration of the long-researched and coveted experience of human torpor, or hibernation. Here, Indigeneity is a precious resource, to be engaged in research because of Indigenous people's *especially* human biology, demonstrating archaic abilities lost to everybody else long ago, that could be used for future humans to endure extreme temperatures, both on and beyond Earth.

And between these temporal bookends are an incredible number of different people and matter featured over the book's chapters; we meet gold prospectors, scientists and researchers from a bewildering array of disciplines, a breadth of blood, bones and very well-preserved strands of hair (and with them some stark reminders of the violence wrought on Indigenous bodies and peoples). As we meet this cast of people and objects across time, *Haunting Biology* shepherds us across an intricate lattice of theories, proposed generally by men with a breadth of interests, very few of them actually the interests of the people they are attempting to group, describe, collect, display, and measure.

Perhaps what makes it a great book, though, is its ability to take you out of itself, beyond its pages. *Haunting Biology* did this for me. Specifically, it took me to an empty concrete plinth in Bristol, England, once home to a statue of Edward Colston. Featured far and wide across UK news during the COVID-19 pandemic, Colston's statue was torn down from the plinth and rolled into the nearby harbour in 2020, for it wasn't a simple hunk of metal. It was a monument to a man active in the Royal African Company, and to a set of values and practices with which he is associated, including the enslavement of tens of thousands of African people. His looming presence was, it seemed, no longer tolerable.

Whilst attempts in the aftermath were made to prosecute the topplers, debates, too, were had about what to do with the statue. In the meantime, it was being held in a museum across the harbour that bears a tiny plaque 'in memory of the countless African men, women and children whose enslavement and exploitation brought so much prosperity to Bristol.' So many British cities now have these little reminders.

But the statue was not on display. It was in storage—or rather: he, Colston, was in storage. This is something that Kowal teaches us to acknowledge: the subject lives on through the many objects they come to haunt. He was there whilst officials sought community guidance on what should be done with him. The decision, ultimately, was to put him in a glass box, the vivid graffiti that protestors had sprayed on his chest untouched, gazing up at the ceiling of the old-transit-shed-turned-city-museum. The decision was made quietly, and the display didn't seem to be something to be celebrated. Indeed, Colston is in a corner, neither hidden away, nor particularly prominent.

Figure 1. Statue of Edward Colston at the M Shed by Adrian Boliston, 2021. Creative Commons Attribution 2.0 Generic License, https://www.flickr.com/photos/boliston/51235720672/).

As I was reading *Haunting Biology*, the fate of Colston's statue first came to mind when Kowal tells us about Truganini, an Indigenous woman who felt it would be less violent for her body to be thrown into a river after her death than to be displayed in a museum. In a bleak, but not unsurprising sequence of events, we read that her body found its way to a museum nonetheless. Through another generation of agitators, we also learn, her display is brought to an end, and she is eventually reburied.

But perhaps a more instructive story for my own thinking around Colston would come towards *Haunting Biology*'s end. Kowal brings us to the early 2000s: a wax model of anthropologist, biologist and ethnologist Baldwin Spencer perches on a chair behind glass, alongside displays of the many objects he collected. In this way, the exhibition suggests, the *collector has been collected*. It perhaps produced, writes Kowal, a 'satisfactory sense of irony' (2023, 160) on the spectator's part.

I've not gone to see Edward Colston, but I imagine some ambivalence about seeing the vandalised metal carcass of a man who traded in people who might have been my ancestors.

Figure 2. Model of Baldwin Spencer in storage at Melbourne Museum by Emma Kowal, 2017. Used with permission.

By the late 2000s, we find the wax Spencer in a back room. No longer on display, he sits in the lab area of the museum, more a trip hazard than anything else. People, perhaps, have taken umbrage that a white man is taking up space intended to elevate Aboriginal life. Still, something has to be done with him. He is getting in the way of the museum workers. So, he is moved. Now, to a *restricted room,* resolutely not for viewing, but equally not for discarding. As Kowal reflects, Spencer's figure demonstrates how 'the difficult histories of objects cannot be disembedded' (Idem, 161).

Efforts at silencing, whether pushed into water, into a back room, into a glass box, generate presence. There would, of course, have been different moral loads to leaving Colston submerged, rusting in the water where he was pushed, versus

transplanted to a museum backroom. Much the same with Spencer: to have left him in restricted access versus, say, interred to the earth by the communities he spent so long collecting, cataloguing, describing, would have been substantively different silences with their own ghostly afterlives. The variegated possibilities of these afterlives are important: we might wager, based on Spencer's story, that Colston's 'permanent exhibit' is far from permanent, but we might find it more challenging to predict the next step of his journey, and its timeframe. As such, 'ghost' is more than a metaphor. Haunting too. These words evoke the memetic: what *can be* remembered, what *is* remembered, what *should be* remembered, *how*, *when* and *why* we remember. *Haunting Biology* teaches many lessons, but the biggest is that to elide or ignore that which comes before, is to deny and disavow that which carries along beside us. Being haunted is a condition of living in a world that is being shaped by what's happening—right now, just then, just out of memory, on the edge of our timescales. To say these ghosts don't exist is to deny what's come before and how it's shaping the present. More troubling still: to push ghosts away, is to preclude particular futures from ever coming to be.

Haunting presences

Beth Greenhough

This is a book which poses a question that is, by its own admission, unanswerable: How are we to understand Indigenous biological difference in the 21st century? In response, Emma Kowal carefully sets out to 'identify the ghosts that line the path to an Indigenous controlled genomics' (2023, 16) but—and this is important—she does not do so in order to lay such ghosts to rest. Rather, Kowal argues for the importance of staying with the trouble (Haraway 2016), or, as Kowal puts it, 'productive discomfort' (2023, 29), of their haunting presences whilst also allowing for possible alterative futures to emerge.

Engagingly written, *Haunting Biology* introduces us to the ghosts which hover around frozen blood and bone and hair samples, scientific research exploring 'archaic Caucasian' ideas of race and the human capacity for temporary hibernation and the unsettling statue of anthropologist and biologist Baldwin Spencer which lurks in a locked storeroom at Museums Victoria. In each case these ghostly presences serve as important reminders of 'a past that can never be completely left behind' (171).

As an academic who has worked on the ethics and socio-cultural relations of biological collecting, biobanking and medical research, this sense of haunting—and the questions it raises around who might be seen to have an interest in and be affected by the extraction and exploitation of bioinformation and bodily commodities—is one which resonated with me. In particular, the notion of haunting

speaks to the troubling spaces and traces left when materials are returned or destroyed, but the knowledge and data generated from them—and all its unequal impacts and effects—remains. So, returning to the question posed by the book, I want to offer a few thoughts around the absent presences which haunt biological collecting.

Firstly, the book raised questions for me about who is being haunted, by whom, and whether this matters. Ghosts figure differently in different stories and amongst different communities. Within the book we hear, amongst a collection of Indigenous ghost stories in a film by Aboriginal director Warwick Thornton, the story of Romaine Moreton (the only story where the ghost is white) haunted by orthopaedic surgeon and comparative anatomist Sir William Colin Mackenzie. We also hear how museum staff and community members react to the unsettling presence of Spencer's statue in the museum's stores and restricted room. What more can we learn by reflecting on not only different modes of haunting, but diverse experiences of being haunted? I wonder about the ghost stories which didn't make it into the book, and what may shape decisions about which ghost stories should be told (by whom and to whom) and which should be laid to rest.

Secondly, what kinds of knowledge and expertise make for more careful understandings and just futures? In thinking about Indigenous-led scientific futures I wondered if there may also be scope for acknowledging Indigenous scientific pasts. I'm reminded of Cesar Herrera's (2018) work arguing we could see Columbian shamans as microbiologists as opposed to mystics. Herrera suggests what counts as science (and biology), and who is understood to hold scientific authority and expertise, looks very different if we challenge Columbian missionaries' accounts which dismissed Indigenous knowledge as mythology and religious practice. What would it mean to acknowledge the Indigenous collaborators who hover at the edges of Kowal's stories as co-authors of the scientific knowledge produced? How might we understand the role of the two Aboriginal assistants, Erlikiliakirra and Purula, in Baldwin Spencer's 1901–2 expedition party (pictured in Kowal 2023, 144)? How did they shape the knowledge which emerged and the claims which may be laid to it? Such tracings are important when we consider that, as earlier work on bioprospecting has shown, while biological samples are seen to hold value for science, what really makes them valuable is the knowledge of their provenance and properties which travels with them (Hayden 2003; Parry 2004). Alternatively, is such knowledge something which is not and should not be available to those outside of a community? As Liboiron (2021) might remind us, some knowledges are not for sharing.

Finally, how are ghosts in conversation with other objects and traces which also serve to bridge between past, present and future? For example, what is the

relationship between ghosts and memorials (such as the plaque for William Colin Mackenzie pictured in Chapter 2)? I suggest that some forms of memorialisation seek to fix ghosts—not unlike the ones which haunt biological science and Indigeneity in Australia—into specific political and activist agendas. At times memorials can raise ghosts and help us 'stay with the trouble' (Haraway 2016), but all too often they can serve as a sap to conscience which presumes to lay troubling pasts to rest; a form of second burial perhaps. I'm thinking here of some of the conversations with my former student Sarah Morton around the perception amongst some in the United Kingdom museum community that repatriation marks the end of a process of reconciliation, as opposed to only being the beginning (Morton 2017). If so, as Kowal has also argued elsewhere, are some things best left unburied? After all, burial can be a difficult and traumatic process as well as a healing one. One more reason, perhaps, why haunting presences—and the stories Kowal and others so beautifully weave around them—are more ethically and politically effective than overt statuesque statements.

The cryopolitics of hauntings

Frederic Keck

Emma Kowal's first book (2015) was an ethnography of white Australian humanitarian actors 'doing good' in their work with Indigenous Australians. In *Haunting Biology* (2023), she writes as a historian of science about Western biologists using human remains from Indigenous Australians. Beyond criticising the work of these biologists as racist or excusing them for the injustices that they caused to Indigenous communities, she poses the following question: what is a 'good science' (Thompson 2013) when it resonates with the colonial violence settler scientists inflicted to Indigenous peoples? She argues, following historian Jenny Reardon, that the colonial category of race, rather than being merely an ideological cause or an unintended side effect of Western biological science, 'returns' as a ghost that haunts these biologists as well as their subjects of research.

Consider some of the Western researchers whose spectral presence in biological research is presented in this fascinating book. William Colin Mackenzie was the director of the Australian Institute of Anatomy launched in the 1920s by the Australian government. He collected human remains from Indigenous Australians, alongside those of other mammals, to understand their place in evolution. In the 1950s, Robert Kirk added to this collection blood samples from Indigenous communities (see Chapter 2). In 1934, the British anthropologist Alfred Haddon exchanged a hair sample from a young Aboriginal man for money or food during a journey across Australia by train. In 2011, DNA sequence from this hair sample

was used as evidence of migration of Australian Aboriginals from Southeast Asia forty thousand years ago, published in *Nature* by Danish biological anthropologist Eske Willerslev (Chapter 3). In 1889, Alexander 'Sandy' MacPhee travelled across Australia to find an Aboriginal white man. MacPhee's hypothesis, that Indigenous Australians shared a recent ancestry with white Caucasians, was used by Andrew Arthur Abbie in his popular 1969 book, *The Original Australians* (Chapter 4). At the end of the 1920s, C. Stanton Hicks measured the basal metabolic rate of Aboriginal Australians in the Central Desert with a portable respiration apparatus. His hypothesis that Aboriginal Australians entered torpor during sleep was borrowed by Per Scholander, who came to Australia to compare measures on Indigenous people in the Central Desert of Australia to those he had taken in the Norwegian mountains (Chapter 5). Baldwin Spencer was the first professor of biology at the University of Melbourne and acquired thousands of Aboriginal objects as honorary director of the National Museum of Victoria (Chapter 6).

Figure 3. Norman Tindale measuring an Indigenous person's head during a Board of Anthropological Research Expedition. University of Adelaide, fair use.

The primary objective of these white men was to do 'good science'. Spencer sought to protect Indigenous Australians from colonial violence by developing reserves for them. C. Stanton Hicks wanted to save humanity from climate change.

Willerslev developed ethical guidelines for research with Native Americans through the study and repatriation of Kennewick Man or the Ancient One. Haddon contributed to the 1935 book *We Europeans*, lauded as a groundbreaking critique of racial biology. And while evolutionary works showing that Indigenous people in Australia would naturally merge with white settlers have been debunked, and are now read as highly suspicious, they were considered at the time to be based on 'good science'. Emma Kowal, quoting Charis Thompson, reminds us that 'good science' doesn't mean only following procedures to produce proper data, but also requires taking into account the sensitive body parts and social history that was involved in all of the steps that led to the research.

This is where Kowal's concept of 'haunting biology' becomes an especially powerful way to interpret these histories without concealing their dubious aspects. Avoiding sensationalism, Emma Kowal displays photographs that trouble the reader, such as 'Portrait of Jungun' (2023, 98), an Aboriginal with albinism who was exhibited by McPhee to promote his racial hypothesis of Aboriginal whiteness, or 'Lora and her mother' (Idem, 101), an albino Aboriginal child embraced by her Black mother as displayed to further this same theory in Abbie's book ([1969] 1976). Kowal's analysis reveals what historian Warwick Anderson (2002) has described as the strange desire for race among white scientists during the 20th century. When we look at these images, these white scientists and settlers haunt us as much as they are haunted by the racialised persons they wanted to study.

Emma Kowal wants us to look at these images rather than avert our gaze from them. She argues that while postcolonial approaches worked to display these images in an ironic and polyphonic mode, decolonial approaches have focused on displacing them with the voices of Indigenous communities. This erasure sometimes means that the haunting traces of racial biological research are situated in an intermediary stage between life and death, as dead bodies waiting for a second burial. An example offered by Kowal is the statue of Spencer, which was displayed in an exhibition curated by Indigenous communities at the Melbourne Museum in 2000, but then placed by the museum staff in storage in a locked room without an inventory number. Following philosopher Jacques Derrida (1994) and sociologist Avery Gordon (2008), Emma Kowal claims that bodies involved in past anthropological research are still present through their absence, because they hold traces of a colonial violence that still awaits justice before they can return to a good death. As such, attending to these myriad hauntings can open possible futures that cut through standard institutional histories.

Writing together with historian Joanna Radin, Emma Kowal reflects on the 'cryopolitics' of these body parts, including hair, bones or blood samples frozen in the expectation that biological technologies will bring them to life (Kowal and

Radin, 2015). Cryopolitics is a good term to describe liminal spaces in museums, laboratories and biobanks, where Indigenous communities are now involved in the conversation on the fate of these human remains—such as the National Centre for Indigenous Genomics in Australia, where Kowal has worked as a director. They also reveal the imaginary of the post-Cold War era in which we live under the challenges of climate change, since scientists are asked to maintain 'frozen life in a melting world' (the subtitle of Kowal and Radin's book, *Cryopolitics*).

Emma Kowal narrates how she discussed with an anonymous bioprospector on the potential uses for spatial conquest of Hicks' research which hypothesised that Indigenous people in the Central Desert in Australia enter 'torpor' during sleep. She imagines with terror 'a wild physiological goose chase' (Kowal 2023, 137) to find the DNA for torpor among Indigenous communities of the Central Desert. She imagines that the missing sequence in a publication by a team of researchers from Cambridge on the genes for thyroxine (a protein that allows children with fevers to survive with limited food and water) may come to serve a military purpose. But this theoretical plot is for her just one indication of the ways that Hick's hypotheses live on in a ghostly manner, revealing Western fantasies of how Indigenous people could contribute to 'freezing life in a melting world' (Radin and Kowal 2017a).

In my book *Avian Reservoirs* (Keck 2020), I borrow Emma Kowal and Joanna Radin's ideas on 'cryopolitics' to describe 'virus hunters,' who collect samples to store in freezers and build phylogenetic trees, allowing them to anticipate the next pandemic. I showed that these practices were accompanied by the violence imposed by global health procedures through the mass culling of animals suspected of carrying potentially pandemics pathogens. I also used Grégoire Chamayou (2012) and Achille Mbembe's (2017) concept of 'cynegetic power' to describe how 'virus hunters' are not above animals, as epidemiologists in the 'pastoral power' described by Michel Foucault (2007), but at the same level as animals: they act like hunters who can become prey if animals send them viruses to revolt against human interventions in their ecosystems. In a similar way, Spencer's statue appears at the end of Emma Kowal's book as 'the collector [. . .] collected' (John Morton quoted in Kowal 2023, 152). But we cannot content ourselves with criticising the violence of 'cynegetic power', even if we need to give voice to these Indigenous peoples whose knowledge it mimics. We need to continue to look at Spencer's statues, photographs, and other evidence of 'haunting biology', to understand the ongoing role of 'cryopolitics' in modern institutions.

Addressing the ghost in my living room

Trevor Engel

My living room is full of dead things. I've always held a particular fondness for taxidermy, skulls, bones, and wet specimens. None of the animals that I have were killed for the purpose of being collected, and I think the only ones not to have died from natural causes are the extremely old taxidermy mounts that I've inherited from family members who killed them for food, sport, and as a rite of passage. In my early college days, I discovered the Mütter Museum, a 19th-century medical museum at the College of Physicians of Philadelphia, and the world of anatomical collections. I was obsessed.

The Mütter and similar collections seemed, without a better way to put it, really cool to me as an undergraduate student. I mean, where else can you get such an intense, unique, and authentic view at the inner workings of the human body? At the time, however, I never imagined that I would wind up pursuing a PhD in history researching a project that critically considers the role these museums played in the 19th-century trade and collection of bodies and body parts. In fact, when I finished undergraduate studies I was gifted a small slice of human brain from a private medical collection. I considered this a very fitting graduation present.

How does this small slice of human brain in my living room fit into the stories of the hundreds of thousands of such items collected, as well as the trafficked bodies and body parts contained in medical, natural history, and anthropological collections worldwide? I'm not entirely certain, but I am certain that it, along with the hundreds of thousands of other body parts from or in these collections, does haunt. Emma Kowal's *Haunting Biology: Science and Indigeneity in Australia* (2023) provides plenty of tools to help me listen to what this undoubtedly haunted piece of brain might have to offer.

Aside from providing a wonderful history and overview of the history of genomics and biological anthropology in Australia in the 20th century, the book is a fantastic case for the generative power of ghosts, for listening to and figuring out what they have to say. There are *many* ghosts in this book, but Kowal states that two of the main ghosts are 'specific to Indigenous genomics', those being 'the ghosts of past racial science and the haunting possibility of Indigenous biological difference' (2023, 25). The haunting power of past racial science includes the damages these scientific practices and materials have caused to Indigenous communities and the bodies collected in their wake. These legacies trouble how we think about scientific histories and do science today. Racial science haunts the possibilities of what Indigenous biological difference could actually mean in the past and what it means today, whether it exists at all, and who should determine if it exists. Kowal also demonstrates how each generation of science sought to leave the past behind, detailing the new and varied methods in each generation. Despite these efforts, the ghosts stubbornly stuck around.

The ghosts of past racial science do haunt Indigenous genomics (and the history of Indigenous peoples more broadly), but Kowal's argument can be extended further, to other scientific disciplines, practices, and institutions. These same ghosts haunt so many other locales in the history of science, disability history, African American history, as well as the overall disciplines of history and anthropology. The ghosts are ubiquitous in the lives of not only the scientists and researchers, historians, and anthropologists in these and related fields, but they also continue to haunt Indigenous people around the world. Racial science infected so many fields and facets of daily life across the globe: from healthcare equity and access, industrialisation and progressive reforms in the 19th and early 20th centuries, to even the rather mundane aspects of everyday life such as children's access to playgrounds and families' access to fresh food and vegetables. Most historians of the 19th and 20th centuries would be hard pressed *not* to find these ghosts in their work.

Also present in this story are the *thousands* of ghosts of people whose bodies (or portions of them, including everything from entire limbs, organs, skin, hair, or blood samples) were collected for the pursuit of these sciences. Kowal provides a superb ontological overview of the different ways that specific parts of the body were treated as persons or objects in Western versus Indigenous frameworks (Chapter 2). She argues that we cannot simply depart from these ghosts as we create knowledge in new ways, despite the attempts of scientists to move away from older methodologies. Instead, Kowal shows the 'haunting possibilities' that lie in all of the sciences and knowledge produced about Indigenous people (2023, 16). It is these ghosts and the ghosts of racial science that speak most to me. I would push all historians, anthropologists, and other scholars to find a way to heed Kowal's call to 'live with' the ghosts they find in their own work, instead of trying to banish or exorcise them (Idem, 27). Perhaps it is more of an acknowledgement of ghosts for some historians, but for others, recognising ghosts would give them space to better explore the roots of the subjects that they are studying.

We *are* still living with these ghosts of racial science. So many of the bodies and body parts collected in the 19th and 20th centuries are still present in collections around the globe, especially in larger cities in the United States and Europe. Indeed, in one of the key stories in Chapter 2 of *Haunting Biology*, the ghostly figure of William Colin Mackenzie, surgeon and anatomist whose collection resided in the Australian Institute of Anatomy, appears to Indigenous filmmaker and writer Romaine Moreton in a dream while she was on a fellowship at the National Film and Sound Archive. He slices her open with a scalpel. After that experience, his ghost 'compelled her to pay attention to the absent presence of spirits contained within displaced Indigenous body parts' that were still in the National Museum of Australia's storage facility (Idem, 36–7).

An aspect of haunting that Kowal does not focus on is its inherent connection with transinstitutionalisation, a concept that describes how disabled people, Native peoples, and others have been forced to live in and move between various types of punitive and medical institutions (including boarding schools, reservations, poorhouses, tuberculosis sanitaria, insane asylums and psychiatric hospitals). In my research on the trade and collection of bodies and body parts in anatomical, anthropological, and other collections, I argue that many of the very same bodies that are still housed in museums and other institutions are the very same bodies that were, in life, forced to travel between punitive institutions. This applies not only to Indigenous peoples who were killed or forced to live on reservations or be incarcerated in 'schools' to remove their Indigeneity, but also to disabled people who were collected for the proposed 'uniqueness' of their bodies or body parts and who, in life, were far more likely to be institutionalised in insane asylums, poor houses, 'crippled' children's schools, and other institutions.

Their ghosts continue to haunt these spaces. The very same people who were incarcerated and institutionalised at higher rates in life were also collected and *kept* in institutions after death to help advance the same sciences that argued for their institutionalisation in the first place. Ghosts, haunting, and transinstitutionalisation *are* deeply intertwined. And these ghosts will continue to haunt these spaces, because they were stolen in the first place, because repatriations are insufficient, and because the work that built these institutions is inseparable from the ghosts that have been wrought from the pursuit of those sciences.

Does repatriation make these ghosts disappear? I think Kowal would argue *not necessarily*: that decolonial efforts by museums are still rife with ghosts and threaten to generate more by attempting to banish past voices that refuse to be silenced. So even if, through repatriation, the ghosts of people whose bodies are in museums are given rest alongside their physical bodies, it might still be the job of historians, anthropologists, and current scientists to record the voices of those ghosts so that they are not lost. Or, will the ghosts themselves find a way to pass on that story to future generations? Without question, repatriation should be a priority of these collections, which it has been for Australia's Museums Victoria, as described in Chapter 6. Yet, as Kowal demonstrates, other efforts at decolonisation may facilitate new hauntings through the attempted erasure of past practices. Kowal, for example, highlights how Museums Victoria management removed a model of Baldwin Spencer, a British anthropologist of Aboriginal Australia responsible for collecting much of the Aboriginal collections. Created for an exhibit, Spencer's display was intended to redirect the museum-goer's gaze in a postcolonial critique of colonial collection practices, yet created a sense of distance from that colonial past. In an effort at decolonisation, the museum's non-Indigenous staff moved the Spencer model to a locked storeroom designated for

secret or sacred Indigenous objects, without consulting Indigenous communities. As Kowal suggests, the nostalgic retention of this 'unauthorized occupant' (Idem, 155) runs the risk of producing yet more ghosts and further alienating communities.

I share Kowal's hope that we will not lose what these ghosts have to say in the pursuit of 'justice' for these bodies and Indigenous peoples. Indeed, Kowal is aware of the danger of repeating the past as she notes in the conclusion: that it is necessary to continue listening to the ghosts that haunt Indigenous biological research.

Returning to my living room, I am not sure that I will ever be able to repatriate that slice of human brain, which is sadly the reality for so many of the bodies in the collections that I study. It will serve as a reminder to me, however, as I write my dissertation and continue my academic career: to pay attention to the ghosts in my work. They are there. We only have to attune ourselves to listen to them, as Kowal has done in *Haunting Biology*.

Author's response: Haunting presences and unanswerable questions

Emma Kowal

There is no greater pleasure as an author than to engage with any readers, let alone readers of the calibre of the contributors to this *MAT* book forum. These are readers who connect with the arguments of the book, with the 'unanswerable' questions it poses, from their own diverse fieldsites and disciplines; that is, from their own unanswerable questions. All the contributors to this forum recognise the driving question of *Haunting Biology* (2023)—'How are we to understand Indigenous biological difference in the twenty-first century?'—and offer a glimpse into how they might go about answering it.

Ros Williams provides a clue as to why the question I ask is unanswerable. She is struck by the sheer scale of my inquiry. Taking Chapter 4 ('Indigenous physiology') as an example, she points out the temporal horizon of the story I tell, from evolutionary deep time to the futurescape of a colonised Mars. These are precisely the scales at play for some scientists who are interested in Indigenous biological difference. I remember the time when I first realised, near the start of my ethnographic interest in genetics, that the multiple millennia that Indigenous people have lived on the Australian continent meant very different things to them and to me. For me as a young doctor and social scientist, Indigenous people and culture were things to hold in reverence and to support in any small way I could. In learning to see like an evolutionary biologist or population geneticist, a thriving ancient culture becomes a Petri dish of microevolutionary change. The image below—a

Figure from a scientific article about genetic mutation—illustrates this very different view of time. All those millennia of Indigenous history become a ‘t’ (time) on the X-axis of a graph over which strands of DNA gradually change, either randomly or because the change leads to a selective advantage (like being able to not feel cold when sleeping on the freezing desert floor).

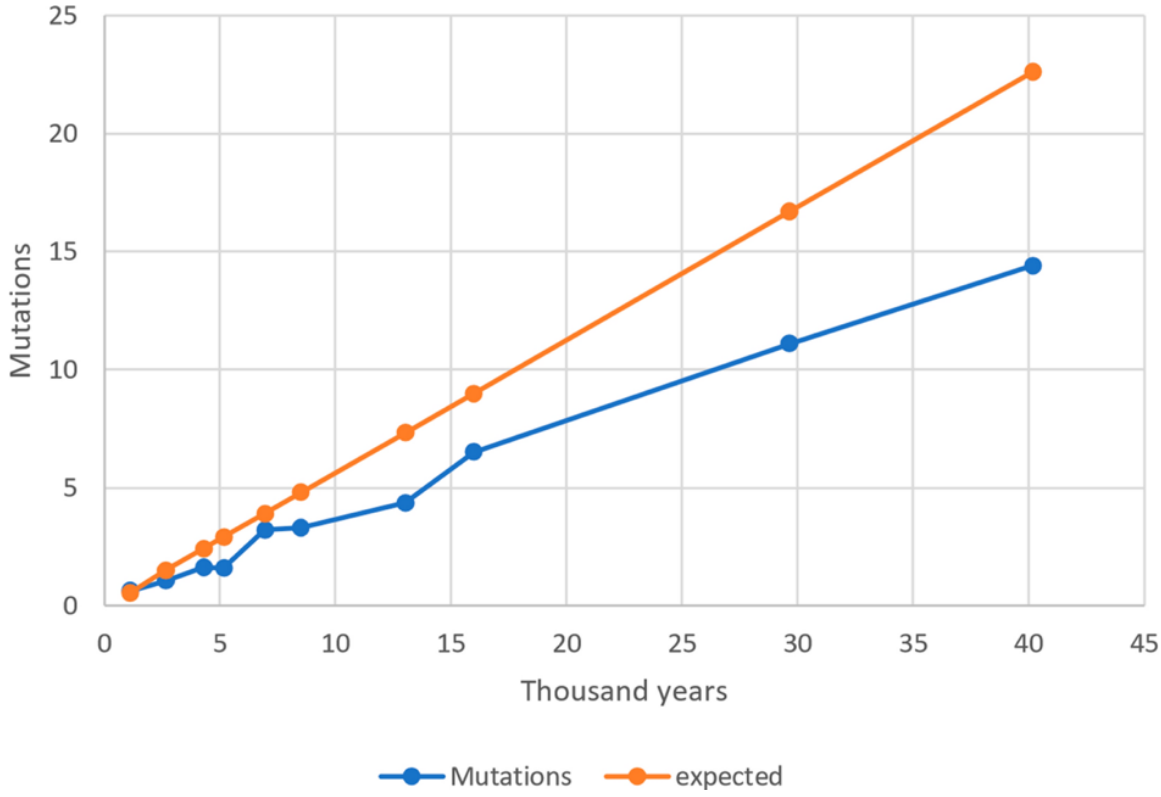

Figure 4. Observed and expected mean number of mutations accumulated along periods viewed through ancient and modern mitochondrial DNA genomes (Cabrera 2021).

Alongside the big ideas of the book are concrete objects that act to ground the discussion whenever there is a risk of getting lost in the scale of evolutionary thinking. Williams, among other readers, is struck by the statue (or is it prop? A model? An effigy?) of Sir Walter Baldwin Spencer, the celebrated anthropologist, museum administrator, and avid collector. She masterfully adds to the conversation the problematic statue of Edward Colston, or more accurately, the statue’s remains. Colston’s vandalised metal carcass is perhaps less visually appealing than Spencer, fully intact in a relaxed pose on his bentwood chair, but as Williams realises, they both ‘generate presence’ that serves to remind us that the difficult pasts they represent cannot be easily laid to rest.

It is Beth Greenhough’s commentary that immediately puts its finger on the two essential critical mechanisms of the book: the quality of unanswerability, and the productive discomfort of knowing something is unanswerable but trying to answer

it anyway. I realised some time ago that the only questions that appealed to me intellectually were those without answers. As a citizen, an activist, or a community member, answerable questions are key. But as an academic, questions with clear answers do not seem a good use of my critical faculties. Greenhough raises excellent questions of her own about Indigenous science. Indigenous scientists are the drivers of Indigenous genomics in the present, a story I tell in the book, but the role of Indigenous people in the scientific expeditions of the past is harder to excavate. Luckily, I have excellent colleagues looking at this very issue (Shellam et al. 2016) as well as the broader question of 'invisible labour' in science (Bangham, Chacko and Kaplan 2022).

Frédéric Keck perceptively points to the throughline of my two monographs. A clear connection between my first, *Trapped in the Gap: Doing Good in Indigenous Australia* (2015), and *Haunting Biology* is the notion of the good. He points particularly to my use of Charis Thompson's (2013) 'good science' in Chapter 3, but more broadly at my consideration of the parade of scientists across the long 20th century, what they thought they were doing, and the intellectual and material legacies they have left us. Equally perceptively, Keck sees connections between the book and my work with Joanna Radin on cryopolitics (Kowal and Radin 2015, Radin and Kowal 2017b). Cryopolitics hinges on the liminal state that freezing induces, neither alive nor dead. Drawing on the pithy expression of Foucault's biopolitics as *make live and let die*, Radin and I formulated cryopolitics as *make live and not let die* (note that German scholar Alexander Friedrich and Stefan Höhne (2014) independently thought of the same thing at the same time). Keck is right to see my use of Kevin Hetherington's (2004) idea of haunting as failed second burial as another way to think about cryopolitics. While I approach this connection in Chapter 2 when I ask, 'Do blood samples haunt?', Keck's intervention makes me want to pursue this further.

The wonderful intellectual tour of this book forum ends in Trevor Engel's living room as he ponders a slice of human brain bestowed upon him as a graduation present. While the haunting potential of blood samples is arguable, Engel is certain that the strange souvenir of his time at the Mütter Museum is indeed haunted. I am honoured that he sees in *Haunting Biology* the tools to listen to what haunted objects like the brain in his living room might tell us. I am fascinated by his concept of transinstitutionalisation that captures the circulation of bodies and their parts, in life and in death, through state institutions—from the poorhouse to the asylum to the museum—all the while haunted by the ghosts of race science and the violence it produced. This leads him to consider whether repatriation will quieten ghosts, a question also raised by Greenhough. I see in both of their comments a realisation that it is always productive to listen to ghosts. I agree with Greenhough that repatriation, memorial plaques and statues (including toppled and vandalised

ones) can ‘seek to fix ghosts . . . into specific political and activist agendas’. These agendas may be important and useful responses to the issues of the day, but we should remain ever attuned to the unexpected things ghosts can tell us and the unanswerable questions they pose.

Authorship statement

Trevor Engel, Beth Greenhough, Ros Williams, Frédéric Keck, and Emma Kowal are sole authors of their contributions. Benjamin Hegarty and Meredith Evans coauthored the introduction.

Ethics statement

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Beth Greenhough is Professor of Human Geography and Fellow of Keble College at the University of Oxford. Her research argues that we can gain insights into the relationships between humans and their environment by exploring how human and animal bodies are accessed, produced and commodified as resources for biomedical exploration. She is co-author of *Bioinformation* (Polity 2017) and *Researching Animal Research* (Manchester University Press 2024).

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