Article

Brexit as heredity redux: Imperialism, biomedicine and the NHS in Britain

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Abstract
What is the relationship between Brexit and biomedicine? Here we investigate the Vote Leave official campaign slogan 'We send the EU £350 million a week. Let's fund our NHS instead' in order to shed new light on the nationalist stakes of Brexit. We argue that the Brexit referendum campaign must be situated within biomedical policy and practice in Britain. We propose a re-thinking of Brexit through a cultural politics of heredity to capture how biomedicine is structured around genetic understandings of ancestry and health, along with the forms of racial inheritance that structure the state and its welfare system. We explore this in three domains: the NHS and health tourism, data sharing policies between the NHS and the Home Office, and the NHS as an imperially resourced public service. Looking beyond the Brexit referendum campaign, we argue for renewed sociological attention to the relationships between racism, biology, health and inheritance in British society.

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Introduction

On 11 May 2016, 'Vote Leave', the official campaign for Britain to leave the EU, revealed its referendum 'battle bus' – a newly-painted vehicle that was to '[tour] the country drumming up support for leaving the European Union' (ITV News, 2016). The event featured leave campaigner, Conservative Member of Parliament, and subsequent Prime Minister, Boris Johnson, 'on a rampage around Cornwall – sharing an ice cream with a passer-by, downing beer, eating Cornish pasties and brandishing asparagus that he bought at a market in Truro' (Dathan, 2016a). Of course, the 'battle bus' is now a familiar part of the performance of democracy in Britain. But few such buses can have become so iconic of a campaign as the 2016 'Vote Leave' vehicle. The bus's iconicity was not due to its striking red colour, however. It was due instead to the slogan on the bus's side: 'We send the EU £350 million a week. Let's fund our NHS instead' (Dathan, 2016b).

Two messages are at stake here. The first – 'we send the EU £350 million a week' – was underwritten by the central Leave campaign theme of resentment at funding (what was seen as) European bureaucracy and unaccountable European initiatives. However the accuracy of the £350 million claim was immediately countered by the UK Statistics Authority, who stated that the £350 million figure was 'misleading and [that it] undermines trust in official statistics' (Dilnot, 2016); the chair of the Advertising Standards Authority even used it as an example of why political claims should be regulated (Srivastav, 2017).

The second message, however – 'Let's fund our NHS instead' – quickly became one of the most prominent and contested proposals of the entire campaign. The central claim of this article is that the central object of that message – the NHS – is not incidental. The article asks: why is it that, of all institutions, of all possible repositories of weepy national sentiment, it was that great, chronically crisis-stricken bureaucracy, *the NHS*, that became the rhetorical centrepiece of the triumphant Leave campaign? Why did a campaign otherwise centred on anti-migrant sentiment and bloated European bureaucracy choose *this* institution as its most prominent vehicle? The central gambit of the article is that addressing these questions will shed new light on the nationalistic and imperialistic stakes of Brexit. And it will do so by situating the Leave campaign's slogan within the larger entanglements of biology, heredity and race that manifest in biomedical policy and practice in Britain.

In what follows, we propose re-thinking Brexit through the concept of *heredity*. Heredity, we will show below, is an expansive concept, with significant juridical, biomedical and sociological force. A focus on the *cultural politics* of heredity, which makes the weight of these multiple associations of the concept explicit, thus allows us to trace the entanglements of empire and ancestry that are congealed within the vote and its aftermath. In particular, it allows us to show how the figurative centrality of the NHS in the Leave campaign marks a vital meeting-point between, on the one hand, the gradual restructuring of health and biomedicine in Britain around genetic logics of ancestry and heredity, and, on the other, an image of the state and its welfare system that relies on imperial tropes of national and racial inheritance. We argue that Brexit offers a moment

to observe and account for a renewed and revitalised cultural politics of heredity, which foregrounds the intertwinement of (among other things) biology and law within a new era of ethno-nationalist state projects. We describe this as a *heredity redux*. In using these terms (the cultural politics of heredity; heredity redux) we situate Brexit as a simultaneously neo-imperial and biological project; a project that settles questions of belonging as questions of ancestry; a project that ties race, biology, inheritance and nation together through biomedicine and health.[1]

In the background of the article, there is another claim about what sociologists are paying attention to when they attend to phenomena like Brexit. This article stages a meeting-point between two sets of literatures that have been central to the development of sociology in Britain: the sociologies of race, ethnicity and post-colonialism, on the one hand, and the sociologies of science, biomedicine and genetics, on the other. While there has been a good deal of attention paid to the entanglements of race, health and medicine in British sociology (see e.g. Ahmad & Bradby, 2008; Nazroo, 2001), our article offers a theoretical intensification of this relationship, at a cultural moment in which the preservation of health has become the ground on which a range of nationalist projects now seek to establish themselves.

The article is in four parts: first, we make a case for the intersection of Brexit and biomedicine (particularly within the NHS) as a renewal of imperially-charged ideas about the organisation of people's bodies and entitlements. We then analyse three moments in which the biomedical landscape of the UK in general, and of the NHS in particular, are produced within racial, ancestral and neo-imperial logics of citizenship and belonging. First, we look at discourse and policy around 'health tourism' in the UK, including political anxieties about who is entitled to treatment, as well as the policy changes introduced to manage this anxiety. Second, we look at the wider relationship between the NHS and the Home Office, with particular attention to data sharing arrangements that provide the Home Office with information to aid immigration enforcement. Third, we consider the history of the NHS as an imperially-resourced service, attending especially to the tension in which the NHS has emerged as both a site of anti-migrant agitation *and* an institution heavily reliant on migrant labour. Across all of these sites we show that there is nothing accidental in the now-famous battle bus claim. We argue that, for a political project bent on reimagining Britain as a kind of misplaced inheritance predicated on racialised anti-migrant feeling, the NHS is indeed the most obvious and appropriate object on which to centre this claim.

Heredity redux: Brexit at the crossroads of biology, culture and politics

Beneath the surface of our common understanding of heredity (i.e. the passage of traits genetically from one generation to another) is a far more expansive concept. Heredity is closer to the heart of sociology than is often acknowledged. It is true, of course, that most (not all) sociologists today consider themselves to be working either independently of, or explicitly counter to, hard-hereditarian and genetic logics; it is also the case that much sociological work has been invested in writing against, and exposing the assumptions of, such literatures (see e.g. Bliss, 2018). Nonetheless, detailed historical studies have shown

how the heredity concept was central to the formation of public health systems, illuminating a diverse range of biological differences between groups and obsessing eugenicists on both sides of the Atlantic in the 19th century (Duster, 2004; Meloni, 2016). In the UK, these histories also reveal a close intimacy between the development of the heredity concept and the growth of sociology (Osborne & Rose, 2008; Renwick, 2012). For example, it was not the UK's leading biologists that invited Francis Galton to present his programme for national eugenics in 1903, but rather the founders of the Sociological Society at the London School of Economics. The event was recorded in *Sociological Papers*, later *The Sociological Review* (Renwick, 2011, p. 365).

The origins of heredity are in jurisprudence, specifically in inheritance law: systems of rules regulating the passing on of titles and goods. Müller-Wille and Rheinberger (2012, p. 5) have shown that the now-dominant biological sense of heredity resulted from a metaphorical transfer of a juridical concept to a description of the generation and propagation of living beings when, around 1800, the legal notion of heredity diffused into biology. Once heredity moved inside the body, the effect, says Evelyn Fox Keller (2010, p. 21), was that 'it was not the law, nor civil or church code, nor custom, or theological prescription, but the body that became the vehicle of inheritance'.

This understanding of the body as the vehicle for biological heredity emerged alongside the formation and development of nation-states and empires in the 19th and 20th centuries, with their centralised bureaucracies, capitalist economies and imperialist aspirations (Müller-Wille & Rheinberger, 2012, p. 8; Sabean et al., 2007). Fundamental to the moving of heredity into the body was the global movement of people, plants, animals and ideas: 'the knowledge regime of heredity . . . started to unfold as people, goods, and the relationships they mediated began to move and change on a global scale' (Müller-Wille & Rheinberger, 2012, p. 3). Here we explicitly engage this double meaning of heredity, the passing on of biological traits via human reproduction, *and* a form of inheritance establishing legitimate entitlement. We argue that this conjoinment marks how the British state has historically organised and governed human bodies, along with their corresponding entitlements. In the 20th-century welfare state, the human body, and the management of these bodies within the British Empire, became the location and grounds to operationalise heredity as a biological process.

Our proposal for a cultural politics of heredity builds on sociological work showing how racism generated by the referendum is linked to wider histories of empire, decolonisation and British welfare capitalism (Bhambra, 2017a; Virdee & McGeever, 2018). Virdee and McGeever (2018) argue that Brexit has largely been driven by two conflicting but interlocking narratives. On the one hand, sections of the Leave campaign framed the post-Brexit environment as a form of benign 'Empire 2.0', recreating the free-trading 19th/early-20th century 'global Britain' but without overt violence, thanks to the 21st century (Anglo)-Commonwealth and a rejuvenated form of neoliberal Atlanticism. On the other hand, a form of Powellism (named for the anti-migrant demagogue, and one-time Conservative and then Ulster Unionist politician, Enoch Powell), which articulated a far more isolationist form of British nationalism, also drove Brexit. This xeno-racist approach demanded that immigration from Europe, and indeed other parts of the world, must be stopped to prevent alien groups and cultures eradicating the very nature of the British populace, and eroding the services to which they are not entitled.

The use of Powellist discourse during the referendum to defend welfare state institutions, such as the NHS, highlights particular histories of race, class and heredity in Britain. Shilliam (2018) has traced the history of terms that dominated the rationale for Brexit ('left behind', 'white working class') back to the formation of the British welfare state: elite planners of the social democratic compact in Britain, he argues, mobilised eugenics-inspired divisions between capable, improvable Anglo-Saxons, and incapable colonial (non-white) citizens of Britain's empire. Universal welfare in Britain was thus underpinned by this exclusionary identity of 'whiteness' wherein non-white British citizens were excluded from welfare, housing and unionisation.

Sara Ahmed (2006, p. 121) has also shown how whiteness functions as a form of 'bodily inheritance' within British welfare institutions. She shows how an affective economy operates through which emotions like fear construct, out of objects and others, a common threat (Ahmed, 2004). This affective economy was on display at the 2012 London Olympic opening ceremonies via Danny Boyle's use of NHS symbolism. These sentimental attachments ran across (post)colonial fault lines during the referendum and also formed links between English nationalism and Euroscepticism (see e.g. Henderson et al., 2016). Proponents of Brexit could thus evoke the racialised nationalism of a 'white England' once again threatened by subjects such as Eastern and Central Europeans and Black and Brown migrants who may or may not be Muslims (Shilliam, 2018; see also Bhambra & Narayan, 2016).

The racial fault lines of Britain's welfare services have regularly been used in the postwar era by elites to colour Britain's class distinctions, reframing debates around the deserving and undeserving poor as debates about immigration (Narayan, 2019). It is not surprising that narratives of race, nation and entitlement were galvanised by members of the Leave campaign (e.g. Boris Johnson, Nigel Farage) who favour 'the most intense marketization of hitherto sacrosanct public goods' (Shilliam, 2018, p. 176; Kundnani, 2018). Indeed, a likely outcome for the NHS post-Brexit is increased pursuit of profit through privatisation, marketisation and deregulation in the name of national universal welfare.

By focusing on a cultural politics of heredity we show how entitlement is framed as much by biology as it is by law, deeply soaked in 20th-century welfare debates, as the migratory implications of empire began to rub up against the ostensibly universal compact of the British welfare state. Brexit marks a 21st-century revival of this cultural politics – a *heredity redux*. This term does not gesture towards a rupture or break from past cultural articulations of heredity in the UK, but rather its explicit revival in both the referendum campaign and current policies surrounding provision of NHS healthcare.

To demonstrate how this heredity redux unfolds across a variety of scenes, we draw on what follows on a number of empirical data sources. These include UK media-based reports that constitute part of Brexit's mediascape (Appadurai, 1990) in which historical moments have been 'frozen' (Gilroy, 2019). We consider the online activity of healthcare professional activist organisations such as Docs not Cops, alongside analysis of staffing data from the Organisation for Economic Co-operation and Development (OECD), and the World Health Organization (WHO). The following arguments also marshal our individual work which engages diverse strands of the relationship between knowledge-making, race and social order (Fitzgerald, 2017; Hinterberger, 2018; Narayan, 2017; Williams, 2018) along with previous collaborative projects (Williams & Hinterberger, 2016).

An illegitimate inheritance: the health tourist

In 2018, 19 NHS trusts were asked to begin checking patients' identification documents to assess whether people accessing the service were entitled to free treatment over a defined period: 8900 were checked and 50 – about 0.56% – were found to be ineligible (Lydall, 2018). Despite the failure of this Department of Health and Social Care (DoH) pilot to uncover a significant problem of people ineligibly receiving free treatment, the 'health tourist' remains a deeply salient figure for making sense of the racial logic of healthcare entitlement in Britain. Indeed, the very public attempt at this 'crackdown', even amid its own obvious redundancy, and in the absence of a strong *prima facie* case even before it began, bespeaks the unusual force and power of this figure (Pushkar, 2017).

In the UK, health tourism connotes the travel of people from Eastern Europe and beyond Europe (where healthcare provision is thought, often erroneously, to be of a lesser quality) to the UK to make use of the NHS. There is ambiguity in the concept: it can describe migrants already living in Britain. It might also describe those travelling to Britain specifically to visit a doctor or hospital. This ambiguity has made health tourism perennially fertile ground for anti-migrant rhetoric since the NHS's founding in 1948. As Roberta Bivins (2015, p. 86) points out, the body and its biological management have always been sites of negotiating citizenship and belonging: 'Only a decade after the NHS opened', she writes, 'the fearful and possessive discourse of its exploitation by "medical tourists" was also already emerging, hand in hand with redefinitions of British "identity" and "belonging".' Bivins (2015) outlines how physical traits and bodily practices came to define postwar migrants in the eyes of the British state – the rhetoric of politicians and medical professionals was that the Irish, European voluntary workers (predominantly from Eastern Europe) and 'new commonwealth migrants' imported diseases with them, threatening British modernity. That one can be possessive over the NHS, and view it as a resource to be exploited by outsiders, speaks to the invocation of an entitlement to the NHS inherited through Britishness.

In the period leading up to the Brexit vote, the Leave-supporting right-wing press regularly carried stories about the 'cost of immigration' to the UK, much of it couched in the language of diseased foreigners with excess fertility. One *Daily Mail* article noted that '73 per cent of TB cases reported in the UK, almost 60 percent of newly diagnosed cases of HIV, and 80 percent of hepatitis B-infected UK blood donors were from those who were born outside of the UK' (Slack, 2013). Worse: 'foreign-born women are having more children, an average of 2.28 each compared to 1.89 for UK-born women'. Here the migrant is an object of anxiety both for her sickliness and her vigour, demonstrating what Ahmed has elsewhere called the 'rippling effect' (2004, p. 45) of emotive attachments.

The casting of Brexit in this fashion, as relief to a beloved NHS strained by non-paying migrants, is visible elsewhere – like this letter written to the government by the chair of a group of general practitioners:

> I am sure you too feel that those of us who pay our taxes do not expect to see precious NHS resources abused by people coming in from abroad with the sole purpose of accessing free healthcare when they have never paid anything towards the NHS. (Adams, 2013)

The implication of such narratives is that the NHS must go without recompense for providing healthcare to Europeans, although so-called cross-border care arrangements allow EU citizens to receive healthcare in another member state while costs are reimbursed by their own country (European Council, 2011). The arrangement, however, is poorly understood. For example, the *Daily Telegraph* in 2013 decried that 'for every £18 paid out to EU countries, the UK receives £1 back for caring for their patients' (Donnelly, 2013). This seems, in one sense, an empty statement: it does not account for British migrants in Europe, and (as the article notes) the NHS does not 'keep proper records of overseas visitors who come here from the EU'. Yet it indicates how the sense of illegitimate access to healthcare – the claiming of an ancestrally-endowed good by those who do not share the endowing ancestry – has come to structure public anxieties about the place of the migrant in 21st-century Britain.

Hostile hospitals and the NHS/Home Office 'Memorandum of Understanding'

The emergence of the health tourist as a figure haunting the health service must be understood in terms of the transformation of this service within a period of self-defined austerity – and especially in terms of the NHS's relationship to other state austerity programmes. It is clear that practices at the heart of austerity politics have had racialised outcomes in the UK. As Bhattacharyya argues, the current moment of austerity 'marks the space of public life as racialised terrain where bodies are ordered and attributed value according to arbitrary but highly consequential categorisation' (2015, p. 112). The context of Hostile Environment policies – espoused by former Prime Minister Theresa May (Jones et al., 2017; Tyler, 2018) as a means of making life difficult for illegal migrants – can be read as one articulation of this politics. Within this context, we can also situate the relationship between the NHS and the Home Office (HO) – the ministerial office of immigration.

In legislative terms, the NHS is free to those 'ordinarily resident' in the UK, a descriptor including those with British citizenship or any other immigration status that deems them lawfully, voluntarily residing in the UK (HO, 2017). Following the 2014 Immigration Act, an NHS surcharge was introduced for some migrants (HO, 2013). In 2018, the DoH reported that its '[p]lans to double the immigration health surcharge may provide an extra £220m a year to the NHS' (DoH, 2018a). NHS hospitals became mandated with checking patients' immigration status to determine whether they should offer treatment. This moment marked a material manifestation of the cultural politics of heredity in which the legitimacy of one's rightful claim to healthcare could be tested.

Among those falling foul of this change were members of the 'Windrush generation', named after a ship bringing Caribbean citizens of empire to Britain in 1948. Windrush-generation migrants arriving before 1973 were caught up in British efforts to restrict freedom of movement for Britain's 'darker citizens of empire' (Bhambra, 2017b, p. 95), and were granted leave to remain in Britain via the 1971 Immigration Act. This conferred on them the status of ordinarily resident, though many were never given paper documentation, and still more were unable to prove their leave to remain. Thus, when the 2014 Immigration Act mandated that the NHS check immigration status, many could not

demonstrate their entitlement. A slew of news stories followed in which ailing Caribbean pensioners were denied NHS treatment – an example of how the nation has come to define itself against what Virdee and McGeever call 'internal others' (2018, p. 1803).

Many medical professionals have responded robustly to this development. The 'Docs not Cops' campaign group, for example, describes it as a 'public health disaster' in which the most vulnerable (e.g. refugees and asylum seekers) are being turned away from necessary healthcare (Docs not Cops, 2018). But the relationship between the NHS and HO also extends to the issue of data collection. Since at least 2005, HO has sought information from the NHS – by directly contacting general practitioners, who often refused to respond – on migrants with whom HO has lost contact, to locate their last known address (Gulland, 2017). At the start of 2017, an agreement came into effect between HO, DoH and NHS Digital, the body that collects data from across the English health and social care system. This Memorandum of Understanding (MoU) bypassed individual clinicians and gave legitimacy to HO 'requests to NHS Digital to establish if they hold certain non-clinical information . . . in relation to immigration offenders' (HO & DoH, 2017). In the six months after the arrangement came into effect, HO made 2355 such requests (NHS Digital, 2017).

The MoU was controversial within the parliamentary Health and Social Care Committee, within activist groups, and among the clinical community. It provoked concerns about data privacy (House of Commons Health and Social Care Committee, 2018a), the risk of eroding trust in medical institutions and their data stewardship (General Medical Council, 2018), and the arrangement's potential public health implications (House of Commons Health and Social Care Committee, 2018b). Three months after declining the chair of the parliamentary committee's request to end the MoU (HO & DoH, 2018a), HO and DoH indefinitely suspended the arrangement (HO & DoH, 2018b). This came after the parliamentary committee's report concluded that the MoU had not sufficiently consulted professional bodies, and reiterated its initial concern 'that the public interest in the disclosure of information held by the NHS is heavily outweighed by the public interest in the maintenance of a confidential medical service' (House of Commons Health and Social Care Committee, 2018a, p. 9).

HO's attempt to access migrant information in this way makes sense when considered in conversation with Evelyn Ruppert's exploration of the UK's data-based production of populations. Ruppert notes that governmental proposals for 'new sources of population statistics are . . . motivated by the increasing difficulty of tracking mobile individuals who engage in international living and employment patterns or who migrate from EU and non-EU states' (2011, p. 222). It is in this vein that we might understand the MoU as an effort to draw on distinctly non-immigration-related data sources to construct a governable migrant population.

But it is also another instance – co-productive of, and co-terminous with, the media figure of the 'health tourist' – in which questions of belonging, heredity and entitlement centre on the NHS. Certainly, the NHS is not the only institution in which these issues become visible. But it is, we claim, one of the most potent and under-analysed sites in which the cultural politics of heredity are being produced in Britain today. We will return to this argument in a moment, but first we draw on one more node in this developing landscape of health, empire and race – the recruitment of NHS staff from the former British Empire.

The NHS as an imperially-resourced service

At least since the 1707 Act of Union, the United Kingdom, its economy and division of labour, have not been nationally constituted. Britain has rather always been part of an empire, relying on empire's hinterlands of land, labour and material resources or having had access to a substitute for such hinterland resources (Shilliam, 2018, pp. 178–179). As Sivanandan (2008, p. 77) outlines, the emergence of the Commonwealth after decolonisation and Britain's entry into Europe in 1973 made Britain a 'neo-colonial power with two peripheries'. The NHS has always been an imperially resourced health service. In 1948, local selection committees in 16 colonies recruited NHS nurses; women from the Caribbean, already qualified as nurses, arrived in the 'mother country' and into the nursing profession's lowest sectors (Shilliam, 2018, p. 91). NHS reliance on immigrant labour continues today, dependent on Britain's links with its former colonies after decolonisation *and* the UK's membership of the EU.

The NHS in England, in 2017, employed around 1.2 million people, with one in eight of those staff – 12.5% – from overseas. This does not vary much from the number of non-UK workers in the labour force as a whole (11%). What *is* distinctive is that the NHS has a lower proportion of staff from new EU countries (1.8%) than the wider economy (4.2%) and a higher proportion of staff from South Asia, Sub-Saharan Africa and South East Asia. Looking at data from clinical roles only also makes this relationship clearer: over a quarter of doctors (26%) and 16% of nurses and health visitors come from overseas, while 37% of doctors working in NHS England received their primary qualification outside of the UK (Baker, 2018). And this is unlikely to change: according to Health Education England, the NHS will need 190,000 new clinical staff by 2027 unless action is taken to reduce demand through prevention, service transformation and productivity growth (Global Future, 2018).

The contradiction between the NHS's enduring reliance on immigration and Brexit's anti-immigrant sentiment are clear: the NHS is dependent on immigrant labour and yet, since the referendum, EU/EEA registrations of doctors and nurses have declined, mirroring falling UK registrations from doctors from the rest of the world – as Britain is seen as an inhospitable place for migrants (Global Future, 2018). One can easily locate the contradiction of the NHS and Brexit Britain in the very name of the UK government's 2018 'Earn, Learn and Return' scheme (DoH, 2018b), which seeks to recruit over 5000 nurses to the NHS. Trialled in India then extended to Jamaica, the scheme offers fixed-term posts to nurses from these countries to gain specialist knowledge with the proviso that after three years they return home. People enrolling on these schemes are entitled to work (temporarily) in the UK, but this entitlement is severed from long-term claims to the fruits of the nation: though they may work to sustain a health service for those with a legally legitimate claim to use it, such migrants themselves must then leave, unable to share in the inherited welfare provision that their labour has precisely reproduced.

There is a global shortage of healthcare workers. The shortfall is currently around 7.2 million and, by 2035, rising to 12.9 million (WHO, 2013). However, this shortage is felt unequally around the world. Europe, for example, where demand for healthcare is driven by technological progress and ageing populations, navigates the shortage through immigration of healthcare workers from lower and middle income countries in the Global

South (European Commission, 2012). Migration of healthcare workers from the Global South to Global North is driven by 'pull' factors such as better remuneration and living conditions, and 'push factors' such as the lack of infrastructure and spending in the source countries of migrant health workers (Jensen, 2013, p. 8).

Unsurprisingly, the migration of healthcare workers from the Global South often follows cultural and linguistic ties established by European colonialism (OECD, 2015). For example, 8 of the top 12 suppliers of foreign doctors for the NHS are former British colonies or protectorates such as India, Pakistan, Egypt, Nigeria, Iraq, South Africa, Ireland and Sri Lanka. This is also apparent across nursing where India, Ireland, Zimbabwe, Nigeria and Ghana make up 5 of the top 12 suppliers of foreign nurses (Baker, 2018, pp. 13–14).[2] Such 'brain drain' from the Global South leads to a significant inability of poorer countries to provide their own domestic healthcare and reinforces exploitative economic relations between richer and poorer countries. In effect, this creates an imperialist set of relations where poorer countries in the Global South subsidise richer countries in the Global North, and health systems like the NHS, by paying for the education and training of their immigrant healthcare professionals.

The turn to Jamaican nurses through the 'Earn, Learn and Return' scheme, for example, has partly been based on the emigration of Jamaican specialist nurses (e.g. intensive care nurses and A&E nurses) to developed countries such as Britain. James Moss-Solomon, chair of the University Hospital of the West Indies, shows that countries such as the United Kingdom are 'poaching' Jamaica's most critical nurses: 'we train them at a fraction of the cost of what it costs you in . . . the UK. So it's an economic issue. There's a great saving in just poaching instead of training' (Beaubien, 2017). The extent of this poaching can be seen in the numbers: in December 2018 there were 446 Jamaican nurses and health workers in NHS England, which amounts to around 10% of the total nursing population in Jamaica (4500) in 2017 (Upneja, 2017). This imperial relationship can also be found across migrant doctors in the NHS. Nigeria, for example, currently has around 35,000 practising doctors and is short of the World Health Organization's recommended doctor to population ratio of 1:1000 (NOIPOLLS, 2017). The number of Nigerian doctors working in the NHS in England is 1903 – about 5.5% of the current number of Nigerian doctors practising in Nigeria (Baker, 2018). These numbers become starker when one examines the General Medical Council's registration of 4997 licensed doctors who received their medical training in Nigeria: amounting to 17.4% of the current number of Nigerian doctors practising in Nigeria (General Medical Council, 2019).[3]

Here is where the question of inheritance and the UK welfare state are sharpened: the examples of Jamaican nurses and Nigerian doctors reveal massive subsidies from middle and low-income countries that help to reproduce public institutions in high-income nations such as the NHS. Consider Sierra Leone, one of the world's poorest countries: at the height of the Ebola crisis in Sierra Leone (2013–2015), which was hastened by the country's lack of trained staff, the NHS employed 27 doctors and 103 nurses trained in Sierra Leone. This amounted to around 20% and 10% of the number of the doctors and nurses to be found in Sierra Leone itself. This was compounded by the fact that Sierra Leonean doctors and nurses employed by the NHS amounted to Sierra Leone providing a financial subsidy to the UK in the region of £14.5–22.4 million.[4]

Conclusion: Heredity redux

We have shown that knowledge regimes of biology and heredity shape ideas about who does (not) belong and who is (not) entitled to benefit from state institutions, *particularly* welfare institutions, *especially* biomedical institutions. The invocation of the NHS as part of the Leave campaign strategy was therefore not simply about access to public services. It was a moment of heredity redux – an explicit revival of imperial attention to both biological and genealogical propriety, marked by racial and national hierarchy as an ordering mechanism. Such a frame allows us to make sense of the historical meanings and practices, along with the potential futures of national health, as encoded in the NHS logo burnished on the Vote Leave bus. But it also suggests three directions for analysis beyond the referendum campaign, including an account of the larger connections between Brexit, biomedicine and the NHS.

First, our analysis suggests the need for further traffic – especially in theoretical and historical analyses – between the sociologies of race, ethnicity and post-colonialism, on the one hand, and the sociologies of science, biomedicine and genetics, on the other.[5] Biomedical research and expertise have increasingly assumed a central role in receiving public funding in the UK (Jones & Wilsdon, 2018). The historical strengths of the UK's medical and life sciences sectors have also led to increased growth and new forms of bioscientific knowledge that are employed to address social problems, including health inequalities which are often stratified by race and class. The NHS, simultaneously an institution of care, a diagnostic and treatment complex, and a site for the generation and application of biomedical knowledge, is core to these processes. As its own brand identity guidelines state, the NHS is one of the most 'cherished, trusted and powerful brands in England' (NHS England, 2019). This is not only sentimental, but legally enforceable. The NHS logo is a government-owned trademark. Government lawyers explained this to 'Vote Leave' campaigners in a series of letters threatening legal action if campaign materials continued to use the trademark (Boffey, 2016). While the NHS logo signifies patient care, it also increasingly symbolises a high-tech, risk-stratified and increasingly privatised, personalised and digitalised set of biomedical interventions that exceed immediate clinical need and care (see, for example, the 100,000 Genomes Project which aims to sequence 70,000 NHS cancer and rare disease patient genomes). We can see this in the push to bring genome science into cancer treatment where NHS patients do not just receive treatment but also participate as research subjects giving blood, tissue and genetic data for further study by public and private industry (Kerr & Cunningham-Burley, 2015).

Second, focusing on the cultural politics of heredity gives us pause to consider the wider relationship between national health and racialised inequalities in Britain. There has been a general political retreat in the UK from the ideals and policies of state-sponsored multiculturalism (Gilroy, 2012), yet something different can be observed in the institutional practices of biomedicine. Multicultural policies and approaches, often explicitly linking certain groups to illnesses and diseases, have been revitalised in an era of biomedicine dominated by genome science, where genetic differences are central to genomic medicine (Hinterberger, 2018; Williams, 2018). The UK does not legally mandate enrolling ethnic minority groups in biomedical and clinical research like the USA does (see Epstein, 2008), but multicultural forms of inclusion and recognition are

nonetheless increasingly fundamental to the UK's biomedicine industry. Here again the 100,000 genomes project is instructive: as part of its recruitment target, Genomics England and the NHS have highlighted the importance of engaging with the UK's black and minority ethnic population who are 'underrepresented in clinical studies and in clinical research' including those 'disease areas where black and minority ethnic people have a disproportionate risk' (Skyers, 2018).

While the pursuit of equality in health requires recognising difference, this recognition can have unintended consequences, not least encouraging the belief that population categories (e.g. ethnicity) are themselves biological (Epstein, 2008, p. 11). This terrain is further complicated by the selling of biological diversity as a resource for the UK's biomedical research industry. In 2015, civic leaders in Birmingham announced that the city's 'multicultural population is ideal for clinical trials' hoping to attract biomedical investment through Birmingham's 'large and ethnically diverse pool of patients' (Ward, 2015) and profit from scientific mobilisations of ethnicity (see Merz & Williams, 2018). Biomedical knowledge thus plays a significant role in shaping understandings of ancestry and heredity which, in turn, tacitly shape assumptions about medical provision, investment and technology development.

Third, making sense of Brexit means making sense of the revitalisation of bio-imperial logics of heredity and ancestry that we have called heredity redux. This term fixes attention on how debates about sovereignty become debates about belonging – about biological communities bound by a shared concern for their own vitality and inherited entitlements. As highlighted above, the NHS has always relied on imperially resourced labour. This is unlikely to change after Brexit – even within its most left-wing imaginaries. Take, for example, the attempted revitalisation of 'socialism' in Britain as staged under Jeremy Corbyn's ultimately unsuccessful leadership of the Labour Party, not least as it manifested in the 2019 general election. As Narayan (2019) has argued, and as the tensions wrought within the left by the 2019 election plainly showed: in the wake of austerity in Britain, even where there remains an appetite for social democracy's return, along with its ideal of universal rights to welfare, housing and employment, the idea of social justice, public goods and income redistribution tacitly – and not always only tacitly – repeats the racialised and methodological nationalist idea of justice that underpinned previous forms of British social democracy through a neutral focus on British class injustice (Shilliam, 2018).

Simply returning to the nationally-bound universal health service ideal – tax-funded and free at the point of delivery for British citizens – will not answer questions about global health worker shortages, global health inequalities or the neo-imperial extraction of healthcare workers. It will not pay the reparative debts of human and economic capital owed by the British state to foreign nations who have indirectly paid for the NHS for over 70 years. Nor will it give space for the appraisal of issues like 'health tourism' or NHS surcharges. These questions, which centre on the problem of inheritance establishing legitimate entitlement, cannot be answered in full here but are likely to form the horizon of future contestation requiring an appreciation and understanding of the cultural politics of heredity in the UK.

Here we have focused on the 'battle bus' as a site from which to unfurl relations between health and biomedicine *and* the formation of the British welfare state as an

object rooted in forms of racial inheritance that sustain and perpetuate racism and white supremacy. We end by noting that 2018 – the precise midpoint between the 2016 Brexit vote and the fateful election at the end of 2019 – marked two 70th anniversaries: that of the NHS, and of *HMS Windrush*'s arrival at Tilbury Docks. One outcome of the Windrush scandal was the UK government's announcement of a new Windrush celebration day with the striking tag line 'Celebrating Great Britain's DNA' and a logo drawing together Caribbean country flag colours and the shape of DNA structures (Ministry of Housing, Communities and Local Government, 2018). DNA here is not just a metaphor for life's building blocks – it reflects the many circuitous routes that heredity and race continue to take as they are mobilised in the politics of Brexit and beyond.

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Notes

1. The NHS, as an institution, is not unique here – indeed, the cultural logic of heredity redux in Brexit Britain may well be traced through a wide range of social and political objects. This article is not about countering attacks on the NHS from the right, or bolstering the NHS as a welfarist totem on the left, but rather examining its use in the Leave campaign strategy.
2. Other than Ireland, no former white colony or dominion such as Australia, New Zealand or Canada figure in the top 12 suppliers of foreign healthcare workers in the NHS.
3. The caveat here is that these numbers reflect at least 50 years of immigration from the Commonwealth into Britain. Some of these Nigerian doctors will have been in the UK for many decades. Doctors who qualified in India and Pakistan, for example, represent around 18% of the total of doctors working in the NHS. However, the number of Indian doctors working in the NHS has actually decreased over the last 10 years as Indian doctors have retired, India has become more affluent, and Britain's immigration policies have become less hospitable or enticing to certain migrants. Yet, it also shows that Britain's turn to non-EU countries for NHS staff in the midst of Brexit is not a simple about-face turn to the Commonwealth but rather an increase in possible forms of exploitative relationships established over half a century of decolonisation.
4. Sharples (2015) makes this the lower estimate based on training costs for junior doctors and nurses. The higher estimate is based on assuming the doctors are consultants. Sierra Leone is also a good example of how neo-imperial relations between the Global North and South combine across economic policy and flows of migration. Over the last decade, the IMF, through loan conditionality, has effectively forced governments in Guinea, Liberia and Sierra Leone

to cut healthcare spending in order to prioritise debt repayments and set public-wage caps which contribute to the push factors of health worker migration. As a result of the enforcement of neoliberal polices, these countries' healthcare systems were not prepared for the crisis, and a major reason why the Ebola outbreak spread so rapidly was the weakness of health systems in the region (Kentikelenis et al., 2015).

5.   While there are lively conversations happening at the intersection of these disciplines, much of it focuses on North America, and the USA, which has a different healthcare system and distinctive histories of health activism (e.g. Nelson, 2011).

References

Adams, S. (2013, January 30). Health tourists 'abusing precious NHS resources' say GPs. *The Telegraph*. www.telegraph.co.uk/news/health/news/9836997/Health-tourists-abusing-precious-NHS-resources-say-GPs.html (accessed 9 April 2019).

Ahmad, W., & Bradby, H. (2008). Ethnicity and health: Key themes in a developing field. *Current Sociology*, *56*(1), 47–56.

Ahmed, S. (2004). *The cultural politics of emotion*. Edinburgh University Press.

Ahmed, S. (2006). *Queer phenomenology: Orientations, objects, others*. Duke University Press.

Appadurai, A. (1990). Disjuncture and difference in the global cultural economy. *Theory, Culture & Society*, *7*(2–3), 295–310.

Baker, C. (2018). *NHS staff from overseas: Statistics*. House of Commons Library Briefing Research Paper, No. 7783. https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7783 (accessed 9 April 2019).

Beaubien, J. (2017). Jamaica says U.S and others are 'poaching' its nurses. *National Public Radio*. www.npr.org/sections/goatsandsoda/2017/01/10/508991805/jamaica-says-u-s-and-others-are-poaching-its-nurses?t=1555412971498 (accessed 15 April 2019).

Bhambra, G. K. (2017a). Brexit, Trump, and 'methodological whiteness': On the misrecognition of race and class. *The British Journal of Sociology*, *68*, S214–S232.

Bhambra, G. K. (2017b). Locating Brexit in the pragmatics of race, citizenship and empire. In W. Outhwaite (Ed.), *Brexit: Sociological responses* (pp. 91–100). Anthem.

Bhambra, G. K., & Narayan, J. (2016). Introduction: Colonial histories and the post-colonial present of European cosmopolitanism. In G. K. Bhambra & J. Narayan (Eds.), *European cosmopolitanism: Colonial histories and postcolonial societies* (pp. 13–26). Routledge.

Bhattacharyya, G. (2015). *Crisis, austerity, and everyday life: Living in a time of diminishing expectations*. Springer.

Bivins, R. E. (2015). *Contagious communities: Medicine, migration, and the NHS in post-war Britain*. Oxford University Press.

Bliss, C. (2018). *Social by nature: The promise and perils of sociogenomics*. Stanford University Press.

Boffey, D. (2016, March 5). Brexit group warned: Stop using NHS logo or we'll sue. *The Observer*. www.theguardian.com/politics/2016/mar/05/vote-leave-threatened-over-use-of-nhs-logo (accessed 9 April 2019).

Dathan, M. (2016a, May 11). Boris on the rampage! Former mayor fuels up on ice cream and beer and brands David Cameron 'demented' as Brexit battle hits the streets, *Daily Mail*. www.dailymail.co.uk/news/article-3584563/Boris-Johnson-claims-David-Cameron-demented-s-one-waving-asparagus-Cornish-Pasty.html (accessed 9 April 2019).

Dathan, M. (2016b, May 11). 'The Boris blunder bus': Boris Johnson accused of hypocrisy as he kicks off his nationwide Brexit tour in a GERMAN bus – and he's mocked by Tory colleagues. *Daily Mail*. www.dailymail.co.uk/news/article-3584627/The-Boris-blunder-

bus-Boris-Johnson-accused-hypocrisy-kicks-nationwide-Brexit-tour-GERMAN-bus.html (accessed 9 April 2019).

Department of Health. (2018a). Health charge for temporary migrants will increase to £400 a year. www.gov.uk/government/news/health-charge-for-temporary-migrants-will-increase-to-400-a-year (accessed 9 April 2019).

Department of Health. (2018b). *UK to establish global nursing partnership with Jamaica*. www.gov.uk/government/news/uk-to-establish-global-nursing-partnership-with-jamaica (accessed 9 April 2019).

Dilnot, A. (2016). UK Statistics Authority statement on the use of official statistics on contributions to the European Union. *UK Statistics Authority*. www.statisticsauthority.gov.uk/news/uk-statistics-authority-statement-on-the-use-of-official-statistics-on-contributions-to-the-european-union/ (accessed 9 April 2019).

Docs not Cops. (2018). About. www.docsnotcops.co.uk/about/ (accessed 9 April 2019).

Donnelly, L. (2013, April 28). NHS counts £900 million cost of treating EU visitors. *The Telegraph*. www.telegraph.co.uk/news/health/news/10022601/NHS-counts-900-million-cost-of-treating-EU-visitors.html (accessed 9 April 2019).

Duster, T. (2004). *Backdoor to eugenics*. Routledge.

Epstein, S. (2008). *Inclusion: The politics of difference in medical research*. University of Chicago Press.

European Commission. (2012). *European Commission staff working document on an action plan for the EU health workforce*. http://ec.europa.eu/dgs/health_consumer/docs/swd_ap_eu_healthcare_workforce_en.pdf (accessed 20 November 2018).

European Council. (2011). Directive 2011/24/EU of the European Parliament and of the Council of 9 March 2011 on the application of patients' rights in cross-border healthcare. *Official Journal of the European Union* L 88/45

Fitzgerald, D. (2017). The biopolitics of post-truth. *Discover Society*, *49*. https://discoversociety.org/2017/10/04/focus-the-biopolitics-of-post-truth/ (accessed 19 February 2020).

General Medical Council. (2018). *Written evidence to House of Commons Health and Social Committee report on the memorandum of understanding on data-sharing between NHS Digital and the Home Office*. http://data.parliament.uk/WrittenEvidence/CommitteeEvidence.svc/EvidenceDocument/Health%20and%20Social%20Care/Memorandum%20of%20understanding%20on%20datasharing%20between%20NHS%20Digital%20and%20the%20Home%20Office/written/76776.html (accessed 9 April 2019).

General Medical Council. (2019). Doctor location map. https://data.gmc-uk.org/gmcdata/home/#/reports/The%20Register/UK%20maps/report (accessed 15 April 2019).

Gilroy, P. (2012). 'My Britain is fuck all': Zombie multiculturalism and the race politics of citizenship. *Identities*, *19*(4), 380–397.

Gilroy, P. (2019, January 26). Still no black in the Union Jack? *Tribune*. https://tribunemag.co.uk/2019/01/still-no-black-in-the-union-jack (accessed 9 April 2019).

Global Future. (2018). Our international health service. https://ourglobalfuture.com/wp-content/uploads/2018/06/GlobalFuture-Our_International_Health_Service.pdf (accessed 9 April 2019).

Gulland, A. (2017). Handing NHS data to the Home Office. *British Medical Journal*, *356*, j911.

Henderson, A., Jeffery, C., Liñeira, R., Scully, R., Wincott, D., & Wyn Jones, R. (2016). England, Englishness and Brexit. *The Political Quarterly*, *87*(2), 187–199.

Hinterberger, A. (2018). Molecular multicultures. In M. Meloni, J. Cromby, D. Fitzgerald, & S. Lloyd (Eds.), *The handbook of biology and society* (pp. 251–268). Palgrave Macmillan.

Home Office. (2013). *Immigration Bill factsheet: National Health Service*. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/249315/Factsheet_08_-_Health.pdf (accessed 9 April 2019).

Home Office. (2017). *Assessing ordinary residence: Nationality policy guidance.* www.gov.uk/government/publications/assessing-ordinary-residence-nationality-policy-guidance (accessed 9 April 2019).

Home Office & Department of Health. (2017). *Information requests from the Home Office to NHS Digital.* www.gov.uk/government/publications/information-requests-from-the-home-office-to-nhs-digital (accessed 9 April 2019).

Home Office & Department of Health. (2018a, February 23). *Letter to House of Commons Heath Select Committee Memorandum of Understanding between NHS Digital, Department of Health and Social Care and the Home Office.* www.parliament.uk/documents/commons-committees/Health/Correspondence/2017-19/Letter-to-Chair-of-Committee-from-Caroline-Nokes-MP-and-Lord-O%27Shaughnessy-MoU-on-data-sharing-23-02-18.pdf (accessed 9 April 2019).

Home Office & Department of Health. (2018b, June 28). *Letter to House of Commons Heath Select Committee Memorandum of Understanding between NHS Digital, Department of Health and Social Care and the Home Office.* www.parliament.uk/documents/commons-committees/Health/Correspondence/2017-19/Correspondence-Home-Office-Ministers-NHS-Digital-regarding-MoU.pdf (accessed 9 April 2019).

House of Commons Health and Social Care Committee. (2018a). *Memorandum of understanding on data-sharing between NHS Digital and the Home Office, HC677 2017–19.* https://publications.parliament.uk/pa/cm201719/cmselect/cmhealth/677/677.pdf (accessed 9 April 2019).

House of Commons Health and Social Care Committee. (2018b, January 29). *Letter from the Chair of the Committee to the Chief Executive of NHS Digital.* https://publications.parliament.uk/pa/cm201719/cmselect/cmhealth/677/67709.htm (accessed 9 April 2019).

ITV News. (2016, May 11). *EU referendum: Vote Leave campaign gets underway in Cornwall.* www.itv.com/news/westcountry/update/2016-05-11/vote-leave-battle-bus-unveiled/ (accessed 9 April 2019).

Jensen, N. (2013). *The health worker crisis: An analysis of the issues and main international responses.* www.healthpovertyaction.org/wp-content/uploads/downloads/2013/11/Health-worker-crisis-web.pdf (accessed 18 December 2018).

Jones, H., Gunaratnam, Y., Bhattacharyya, G., Davies, W., Dhaliwal, S., Forkert, K., Jackson, E., & Saltus, R. (2017). *Go home? The politics of immigration controversies*. Manchester University Press.

Jones, R., & Wilsdon, J. R. (2018). *The biomedical bubble: Why UK research and innovation needs a greater diversity of priorities, politics, places and people*. Nesta. www.nesta.org.uk/report/biomedical-bubble/ (accessed 9 April 2019).

Keller, E. F. (2010). *The mirage of a space between nature and nurture*. Duke University Press.

Kentikelenis, A., King, L., McKee, M., & Stuckler, D. (2015). The International Monetary Fund and the Ebola outbreak. *The Lancet Global Health*, *3*(2), 69–70.

Kerr, A., & Cunningham-Burley, S. (2015). Embodied innovation and regulation of medical technoscience: Transformations in cancer patienthood. *Law, Innovation and Technology*, *7*(2), 187–205.

Kundnani, A. (2018). Disembowel Enoch Powell. *Dissent Magazine*. www.dissentmagazine.org/online_articles/enoch-powell-racism-neoliberalism-right-wing-populism-rivers-of-blood (accessed 25 July 2018).

Lydall, R. (2018, May 29). 8,900 checks on NHS 'health tourists' find just 50 liable to pay. *Evening Standard*. www.standard.co.uk/news/health/8900-checks-on-nhs-health-tourists-find-just-50-liable-to-pay-a3850121.html (accessed 9 April 2019).

Meloni, M. (2016). *Political biology: Science and social values in human heredity from eugenics to epigenetics*. Palgrave Macmillan.

Merz, S., & Williams, R. (2018). 'We all have a responsibility to each other': Valuing racialised bodies in the neoliberal bioeconomy. *New Political Economy*, 23(5), 560–573.

Ministry of Housing, Communities and Local Government. (2018). Annual day of celebrations for the Windrush Generation. www.gov.uk/government/news/annual-day-of-celebrations-for-the-windrush-generation (accessed 9 April 2019).

Müller-Wille, S., & Rheinberger, H. J. (2012). *A cultural history of heredity*. University of Chicago Press.

Narayan, J. (2017). The wages of whiteness in the absence of wages: Racial capitalism, reactionary intercommunalism and the rise of Trumpism. *Third World Quarterly*, 38(11), 2482–2500.

Narayan, J. (2019). British black power: The anti-imperialism of political blackness and the problem of nativist socialism. *The Sociological Review*, 67(5), 945–967.

Nazroo, J. Y. (2001). *Ethnicity, class and health*. Policy Institute Studies.

Nelson, A. (2011). *Body and soul: The Black Panther Party and the fight against medical discrimination*. University of Minnesota Press.

NHS Digital. (2017). Freedom of information request NIC-114423-C2G4D. https://digital.nhs.uk/about-nhs-digital/contact-us/freedom-of-information/freedom-of-information-disclosure-log/freedom-of-information-disclosure-log-june-2017/freedom-of-information-request-nic-114423-c2g4d (accessed 9 April 2019).

NHS England. (2019). NHS brand identity guidelines. www.england.nhs.uk/nhsidentity/why-its-important/ (accessed 9 April 2019).

NOIPOLLS. (2017). Emigration of Nigerian doctors: Survey report. Nigeria Healthwatch. www.noi-polls.com/documents/Emigration_of_Medical_Doctors_Survey_Report.pdf (accessed 15 April 2019).

Organisation for Economic and Co-operative Development. (2015). *International Migration Outlook 2015*. OECD Publishing.

Osborne, T., & Rose, N. (2008). Populating sociology: Carr-Saunders and the problem of population. *The Sociological Review*, 56(4), 552–578.

Pushkar, P. (2017, August 2). The human cost of the 'health tourism' crackdown, *British Medical Association Connecting Doctors Blog*. www.bma.org.uk/connecting-doctors/b/work/posts/the-human-cost-of-the-39-health-tourism-39-crackdown (accessed 9 April 2019).

Renwick, C. (2011). From political economy to sociology: Francis Galton and the social-scientific origins of eugenics. *The British Journal for the History of Science*, 44(3), 343–369.

Renwick, C. (2012). *British sociology's lost biological roots: A history of futures past*. Springer.

Ruppert, E. (2011). Population objects: Interpassive subjects. *Sociology*, 45(2), 218–233.

Sabean, D. W., de Renzi, S., Vedder, U., Lopez-Beltran, C., Wilson, P. K., Cartron, L. L., Ratcliff, M. J., Wood, R. J., Terrall, M., McLaughlin, P., & Duchesneau, F. (2007). *Heredity produced: At the crossroads of biology, politics, and culture, 1500–1870*. MIT Press.

Sharples, N. (2015). *Healthy revenues: How the extractives industry can support universal health coverage in Sierra Leone*. Health Poverty Action. www.healthpovertyaction.org/wp-content/uploads/2018/12/Healthy-Revenues-extractives-industry-Sierra-Leone-report-June-2015.pdf (accessed 9 April 2019).

Shilliam, R. (2018). *Race and the undeserving poor: From abolition to Brexit*. Agenda Publishing.

Sivanandan, A. (2008). *Catching history on the wing: Race, culture and globalization*. Pluto Press.

Skyers, S. (2018). *100,000 genomes project: Black African and Black Caribbean communities. A qualitative exploration of views on participation*. Genomics England. www.genomicsengland.co.uk/wp-content/uploads/2018/07/black-african-black-caribbean-communities-participation-100kgp.pdf (accessed 9 April 2019).

Slack, J. (2013, July 4). True toll of mass migration on UK life: Half of Britons suffer under strain placed on schools, police, NHS and housing. *Daily Mail*. www.dailymail.co.uk/news/article-2355208/Toll-mass-migration-UK-life-Half-Britons-suffer-strain-places-schools-police-NHS-housing.html (accessed 9 April 2019).

Srivastav, T. (2017, September 9). ASA chairman, Lord Christopher Smith believes that political ads should be held accountable. *The Drum*. www.thedrum.com/news/2017/09/09/asa-chairman-lord-christopher-smith-believes-political-ads-should-be-held (accessed 9 April 2019).

Tyler, I. (2018). Deportation nation: Theresa May's hostile environment. *Journal for the Study of British Cultures*, *25*(1).

Upneja, A. (2017). Jamaica's nursing problem. *The Yale Global Health Review*. https://yaleglobalhealthreview.com/2017/02/07/jamaicas-nursing-problem/ (accessed 15 April 2019).

Virdee, S., & McGeever, B. (2018). Racism, crisis, Brexit. *Ethnic and Racial Studies*, *41*(10), 1802–1819.

Ward, A. (2015, September 25). Birmingham's multicultural population ideal for clinical trials. *Financial Times*. www.ft.com/content/0f8fa162-5d3c-11e5-a28b-50226830d644 (accessed 9 April 2019).

Williams, R. (2018). Enactments of race in the UK's blood stem cell inventory. *Science as Culture*, *27*(1), 27–43.

Williams, R., & Hinterberger, A. (2016). Arguing with Justice: Brexit and biomedicine. *Somatosphere*. http://somatosphere.net/2016/arguing-with-justice-brexit-and-biomedicine.html/ (accessed 19 February 2020).

World Health Organization. (2013). Global health workforce shortage to reach 12.9 million in coming decades. www.who.int/mediacentre/news/releases/2013/health-workforce-shortage/en/ (accessed 21 January 2019).