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ARTICLES

Ebola and COVID-19 in Sierra Leone: comparative lessons of epidemics for society†

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Abstract

This case study focuses on two epidemic diseases in Sierra Leone. Ebola in 2014–15 drew international response, but was contained within the Upper West African region. COVID-19 reached Sierra Leone in April 2020 as part of a global pandemic. Local social knowledge has been an important factor in shaping responses to both diseases. In the case of Ebola, infection was concentrated in families, and responders needed a good knowledge of family interactional dynamics. COVID-19 is a more public disease. Responders have to assess risk factors in workplaces, markets, and places of worship. Comparing and contrasting the two cases also draws attention to different aspects of the historical context. Ebola response indexes Sierra Leone's history as a humanitarian project associated with the abolition of the slave trade. The pandemic challenge of COVID-19 draws attention to Sierra Leone's nodal position within a global diaspora rooted in Atlantic slavery and emancipation. Responders are forced to consider the ways in which the two infections articulate different aspects of calls for global social justice.

Keywords: Black Lives Matter; COVID-19; Ebola Virus Disease; Sierra Leone; slave trade

Introduction

Epidemics are group learning experiences. Responding to infection risks requires societal action as well as specialist medical intervention. The process of social mobilization to address an epidemic reveals society to itself. What has to be done, and what cannot be done, in terms of human behaviour and interaction, in order to end infection generates reflection on cultural and historical processes through which human social cohesion has been created and sustained. Controlled comparison of epidemics can be an especially insightful exercise, by throwing a spotlight on what remains consistent about human cohesion from epidemic to epidemic, and on what changes, and has to change, in response to variations in the challenge of infection.

Here, an attempt is made to summarize some of the social lessons to be learned from experience of two historically adjacent epidemics in a single West African country – Sierra Leone. The two disease events are the epidemic of Ebola Virus Disease (EVD) in 2014–15 and the arrival in March 2020 of the novel respiratory disease (COVID-19) caused by the SARS-CoV-2 virus. EVD evoked a major international humanitarian response, resonant with the country's origins as a product of British abolitionist agency. COVID-19, however, places the country in a different historical light, emphasizing the aspect of Atlantic African diaspora connections.

The article is organized as follows. A short introduction describes the country as a product of the emergence of the globalized economy based on the slave trade and its aftermath. The main

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features of the two diseases are then compared and contrasted. It is argued that local social knowledge is a key (and often neglected) factor in response to epidemic disease. EVD in Sierra Leone contributed to the realization of calls for a culturally well-informed epidemiology. These calls seem to have been sidelined in the global response to COVID-19. The article briefly discusses some reasons for an apparent retreat from an approach that served to end EVD. There follows a concluding discussion of ways in which COVID-19 has linked itself to legacies of injustice and inequality associated with Atlantic commerce. This refreshed historical awareness draws attention to unresolved tensions within Sierra Leonean society underpinning its conflicted pandemic responses.

Sierra Leone: an Atlantic humanitarian project

Sierra Leone is a small country on the Upper West African coast, located on the ecological transition from tropical forest to savanna grassland. The large natural harbour formed by the estuary of the Rokel river, backed by the mountains of the Sierra Leonean peninsula, was an early gathering ground for Atlantic maritime trade. Portuguese merchants began acquiring tropical produce and slaves on the coast of Sierra Leone in the late fifteenth century. They were then joined in the slave trade by the English. The privateer John Hawkins first shipped slaves from Sierra Leone (gathered 'partly by the sword and partly by other meanes') to the Caribbean in 1562.[1]

In the second half of the seventeenth century, an English trading monopoly, the Royal African Company, headed by the future King James II, became a dominant force in the Atlantic slave trade from West Africa. It had small trading forts at Sierra Leone in the 1660s (at Tasso and Bunce islands in the Sierra Leone river, and at York, Sherbro Island), but subsequently shifted its focus towards the Gold Coast, leaving behind on the Sierra Leonean coast a number of freelance traders once associated with the company, intermarried with coastal ruling families. After a brief surge in the mid eighteenth century, the slave trade from Sierra Leone finally declined during the American revolutionary and Napoleonic wars. This was a period in which British abolitionists focused on establishing a model colony for freed slaves on the northern slopes of the peninsula mountains. English slavers with knowledge of this region, such as John Newton, provided some of the evidence from which the abolitionists built their case against the Atlantic slave trade.[2]

Sierra Leone, as a political project, dates from 1787, and was promoted by a London-based group of abolitionists led by Granville Sharp. Their scheme was to resettle in Africa a group of former slaves offered freedom under the British flag in the American Revolution, but reduced to poverty in London through lack of action by the British government.[3] Sharp's Province of Freedom, on the north shore of the Sierra Leone peninsula struggled for survival in the Napoleonic wars, was then reformed as a commercially self-supporting trading company under the direction of various British abolitionist merchant directors, and eventually became a British crown colony in 1807. From that date a Royal Navy anti-slavery squadron was based at Freetown to enforce the parliamentary act ending British involvement in the Atlantic slave trade. Thereafter, the new colony grew rapidly, largely as a result of the arrival of many 'recaptives' – captive West

[1]The statement comes from Richard Hakluyt, a younger contemporary of Hawkins, who documented the activities of the English oceanic voyagers in the Tudor era. Clements Markham, Hakluyt's nineteenth-century editor, realizing the momentous significance of Hawkins' first voyage to Sierra Leone, added that 'It is not, therefore, John Hawkins alone who can justly be blamed for the slave trade, but the whole English people during 250 years, who must all divide the blame with him.' Clements Markham, ed., *The Hawkins' Voyages during the Reigns of Henry VIII, Queen Elizabeth, and James I* (London: for the Hakluyt Society, 1878), v and 6.

[2]John Newton, 'Thoughts upon the African Slave Trade', 1788, available at https://en.wikisource.org/wiki/Thoughts_upon_the_African_Slave_Trade. For an eyewitness report of the slave trade in the vicinity of Sierra Leone in the 1780s, see John Matthews, *A Voyage to the River Sierra Leone, on the Coast of Africa* (London: B. White and Sons, 1788).

[3]The origins of the settlement have accrued a number of myths, carefully dispelled in Stephen J. Braidwood, *Black Poor and White Philanthropists: London's Blacks and the Foundation of the Sierra Leone Settlement 1786–1791* (Liverpool: Liverpool University Press, 1994).

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Africans released from slaving ships apprehended on the high seas and resettled in villages adjacent to Freetown.[4] As British naval power expanded through the nineteenth century, driven both by Atlantic trade and by competition for African territory, the strategic value of Freetown's vast natural harbour increased. Fearing French colonial expansion, the British colony annexed adjacent interior regions in 1896, ending local political and economic rivalries seen as a threat to supply lines to Freetown after the closing of the last coastal slaving ports south of Freetown in the 1840s.

From a 400-year perspective of British involvement, Sierra Leone can be seen as a long-term project to extend mercantilist trading preferences in West Africa begun by the Royal African Company in the seventeenth century, and extensively remoulded by abolitionist concerns at the beginning of the nineteenth century.[5] These at times uncomfortably intertwined mercantilist and humanitarian elements continued to shape the country through colonial occupation and into the post-colonial period. Economic failure in independent Sierra Leone in the 1980s led to a troublesome rebellion referencing some of the injustices associated with the era of the slave trade.[6] A doctrine of armed humanitarian intervention espoused in Britain by the Blair government brought UK armed forces to Sierra Leone in 2000 to end the rebel war. In the subsequent uneasy peace, little was done to resolve underlying long-term social grievances.

Medical units of the British army were back in Sierra Leone in 2014 to help address a new international threat: an outbreak of deadly EVD, surging out of control in Guinea, Liberia, and Sierra Leone. British-sponsored humanitarianism returned to the shores of the Rokel in full force, notwithstanding widespread local scepticism about the real motivations for the international response, expressed via stories of body-snatchers and vampirism rooted in kidnapping, once a major means of acquiring slaves.[7]

From April 2020 the country became affected by the global pandemic of SARS-CoV-2 – a virus causing a life-threatening lung disease, COVID-19. The flood of international help seen with EVD was not renewed. Every country was busy tackling its own outbreak, and Sierra Leone ceased to be a focus of British humanitarianism. A case of police violence in the US against an African American at the height of a new pandemic coincided with a growing realization that COVID-19 attacked 'minority' groups with more than average severity, and thus served to intensify international concern about historical injustices associated with the Atlantic slave trade. Unresolved intercommunal concerns over local legacies of slavery and the slave trade have made an uncomfortable reappearance in Sierra Leone, seemingly affecting the way that the pandemic is viewed locally. Episodes of infectious disease articulate local and global histories in complex ways.

Epidemics and pandemics: how Ebola and COVID-19 compare

How and why EVD reached Upper West Africa in 2013 is still unclear. Up until that point there had been about twenty outbreaks of the Zaire species of the virus in central Africa, mainly associated with the Congolian forests.[8] Ebola virus affects primates, but bats are frequently cited as the main vector. Fruit bats carry the virus without ill-effect, and form networks along the forest margins. The index case in south-eastern Guinea in December 2013 was a toddler from Meliandou, a village located close to the Liberian and Sierra Leonean borders. It is claimed that the child played in or near a bat-infested tree. The story is disputed.[9] Up until the moment that the Guinean

[4]John Peterson, *Province of Freedom: A History of Sierra Leone 1787–1870* (London: Faber and Faber, 1969).

[5]John D. Hargreaves, *Prelude to the Partition of West Africa* (London: Macmillan, 1963).

[6]Paul Richards, *Fighting for the Rain Forest: War, You and Resources in Sierra Leone* (Oxford: James Currey, 1996); Krijn Peters, *War and the Crisis of Youth in Sierra Leone* (Cambridge: Cambridge University Press, 2011).

[7]Paul Richards, *Ebola: How a People's Science Helped End an Epidemic* (London: Zed Books, 2016), p. 4.

[8]B. S. Hewlett and B. L. Hewlett, *Ebola, Culture, and Politics: The Anthropology of an Emerging Disease* (Belmont, CA: Thomson Wadsworth, 2008).

[9]James Fairhead and Dominique Millimouno, 'Ebola in Meliandou: Tropes of "Sustainability" at Ground Zero', in *The Anthropology of Sustainability*, ed. Marc Brightman and Jerome Lewis (New York: Palgrave Macmillan, 2017), 165–81.

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government reported Ebola to the World Health Organization, in December 2013, the presence of the virus in the forests of Upper West Africa had not been suspected. The outbreak quickly spread across international borders to both Liberia and Sierra Leone. These borders divide Kissi communities, and there are many crossing points where interrelated people pass back and forth on a daily basis without control. The first cases of Ebola in Sierra Leone were linked to the activities of a herbalist and a nurse treating patients from Guinea. Tracing cases as they spread through eastern and central Sierra Leone suggested that the disease moved along main road networks and branched off into the forested interior, not the other way round, implying that infection was human-to-human.[10] Molecular analysis of early cases in the country confirmed human transmission as the main or sole factor in spread.[11] Bats and hunting were out of the picture, though it took international responders a long time to adjust their health messages.

EVD causes vomiting, diarrhoea, fever (sweating), and sometimes bleeding. Infection is caused by contact with the body fluids of a sick person. Nursing the patient and (in case of death) cleaning the corpse for burial are major sources of infection.[12] International responders campaigned against home care and local burial practices, but failed to understand why family involvement in nursing and burial could not be so easily abandoned, despite the dangers. Better understanding required detailed social and cultural knowledge, and it took international responders some time to acquire that knowledge.[13] Local knowledge was provided by local groups of volunteers, who organized case finding, contact tracing, and quarantine as an extension of community civil defence obligations familiar from the civil war.[14] This more secure knowledge of where the virus was to be found, plus the introduction of bio-secure case handling by international responders, then began to reduce the reproduction number for the disease (R) from an estimated 2.3 to below 1.0, and the epidemic declined.

Community capacity for EVD control remains relevant for handling the new threat of COVID-19, but the two diseases are different, and new knowledge of infection control needs to be acquired. COVID-19 is a respiratory disease, with the virus concentrated in the upper respiratory tract where it is expelled by coughing, shouting, singing, or even heavy breathing. Infection results from contacting the virus in the air or through touching contaminated surfaces. Information that the disease was airborne and had deadly outcomes (often derived via TV news film of chaos and death in well-equipped hospitals in China, Europe, and North America) brought about a rapid realization in Sierra Leone that more was needed than a re-run of Ebola control.

In two villages (one severely affected by EVD and one where community civil defence had prevented infection), a game designed to assess how people rated the risks associated with EVD and COVID-19 produced the surprising finding that a majority in both communities rated COVID-19 as the more threatening scenario.[15] This was unexpected, since the death rate is about 1% for COVID-19 but 70% for EVD. The result is perhaps best explained by fear of the unknown. People had controlled EVD by reducing contact with patients and minimizing burial risks. Protection from an airborne disease seemed more difficult, since breathing is unavoidable.

[10]Paul Richards *et al.*, 'Social Pathways for Ebola Virus Disease in Rural Sierra Leone, and Some Implications for Containment', *PLoS Neglected Tropical Diseases* 9, no. 4 (2015) https://doi.org/10.1371/journal.pntd.0003567.

[11]S. K. Gire *et al.*, 'Genomic Surveillance Elucidates Ebola Virus Origin and Transmission during the 2014 Outbreak', *Science* 345, no. 6202 (2014): 1369–72; T. Stadler, D. Kühnert, D. A. Rasmussen, and L. du Plessis, 'Insights into the Early Epidemic Spread of Ebola in Sierra Leone Provided by Viral Sequence Data', *PLOS Currents Outbreaks*, 6 October 2014, https://doi.org/10.1371/currents.outbreaks.02bc6d927ecee7bbd33532ec8ba6a25f.

[12]Richards, *Ebola*, esp. chap. 3.

[13]Richards, *Ebola*, esp. chap. 6.

[14]For an account of the origins of 'hunter' civil defence in the civil war in Sierra Leone, see Patrick K. Muana, 'The Kamajoi Militia: Civil War, Internal Displacement and the Politics of Counter-Insurgency', *Africa Development* 22, nos. 3–4 (1997): 77–100.

[15]Foday Kamara, Esther Mokuwa, and Paul Richards, 'How Villagers in Central Sierra Leone Understand Infection Risks under Threat of Covid-19', *PLoS ONE* 15, no. 6 (2020), https://doi.org/10.1371/journal.pone.0235108.

There was also scepticism about the protective value of social distancing, given the crowded character of homes and public places in Sierra Leone.

The first cases of COVID-19 arrived from Europe in late March 2020, after which the country went into lockdown, closing its international borders, and greatly restricting movement between the fourteen districts into which it is divided. The restrictions on inter-district movement were more severe than those imposed during the EVD crisis. Once more, schools and country markets (though, oddly, not the more crowded and enclosed urban markets) were closed, and church and mosque services suspended. Inter-district lockdown had severe immediate consequences (for example, in terms of rapidly deteriorating household food security) and was abandoned by the end of June 2020. Restrictions on schools and religious services have also now been eased.

Undoubtedly, early lockdown helped to slow the spread. Some cases occurred in the capital, Freetown, but the disease did not advanced through the rest of the country as fast as some anticipated. COVID-19 transmits more effectively indoors than in the open air, and the extent to which life in Sierra Leone is lived out of doors may have had an effect in reducing spread. The disease arrived in the hottest part of the dry season, when most people would in any case seek shady, breezy outdoor places as much as possible, whether for work or for leisure. Recent evidence confirms that strong sunlight quickly kills the virus out of doors.[16] Factories and other enclosed working spaces with large numbers of crowded employees, and care homes for the elderly – major sources of infection in Europe and North America – are uncommon.

It remains to be seen how the epidemic will develop. Reversing out of lockdown will not be easy. Although the country has good experience of case finding, contact tracing, and quarantine from EVD, it lacks the localized testing capacity to monitor and crack down on local outbreaks of COVID-19. COVID-19 presents particular diagnostic challenges, since infection is spread by pre-symptomatic and asymptomatic cases. With EVD, there was a three-day interval before a severely ill patient developed the highly infectious 'wet' symptoms. Case numbers were never very high, though the prognosis for those unlucky enough to catch the disease was very poor. Localization of initial case handling and better community liaison reduced reporting and test turnaround times. None of this applies to COVID-19. There may eventually be many more cases of COVID-19 than there were of EVD, and available test capacity may be swamped. COVID-19 cases infect others before they know they are ill. The laboratory capacity for rapid turnaround of tests is not available. Little was done by aid donors after the epidemic of EVD to consolidate in-country laboratory testing capacities. Equipment was sometimes supplied,[17] but training and payment of technicians, especially in provincial locations, was apparently beyond the capacity of governments hovering on the brink of post-Ebola bankruptcy to sustain.

Post-war and EVD humanitarian supply lines are now greatly attenuated. In a pandemic, every country has the disease, and international help and mutuality are at a premium, as demonstrated by unseemly wrangling over shipments of scarce resources such as test reagents and supplies of personal protective equipment. African countries are now having to face up to the need to develop their own responses to the pandemic. Some challenges are country- and location-specific, and international advice and equipment are not always relevant. Local research and innovation are as important as imported solutions. For Sierra Leone, earlier lessons concerning social responses to EVD provide a useful starting point, but these responses now need to be reworked to fit the challenge of COVID-19.

[16]M. Schuit *et al.*, 'Airborne SARS-CoV-2 Is Rapidly Inactivated by Simulated Sunlight', *Journal of Infectious Diseases* 222, no. 4 (2020): 564–71, https://doi.org/10.1093/infdis/jiaa334.

[17]The Dutch government, for example, paid for a new laboratory with capacity to test for Ebola at Njala University, and supported the training of a group of technicians in Ghana, to replace a pair of mobile EVD laboratories introduced at the height of the epidemic. The Njala One Health laboratory still functions but has not so far been mobilized for COVID-19.

The role of local social knowledge in Ebola and COVID-19 control

COVID-19 is a new disease, and science is regarded worldwide as an important tool for coping with and adaptation to new diseases. African countries lag in science and technology-based health systems. As one of the world's poorest countries, Sierra Leone is thought to be at a disadvantage in addressing epidemic diseases because the technical capacities of its health system are deemed to be exceptionally weak. But this assumption was challenged by the experience of EVD, in which local social knowledge turned out to be as important as scientific and technological capacity.

Like COVID-19, EVD was a new disease to Sierra Leone in 2014, and one for which there were no effective treatments, but the weakness of local health systems was not the handicap at first supposed. With EVD, everything had to be focused on preventing spread. The key to this was to develop an effective system for identifying and isolating cases, and tracing and quarantining contacts. This required human resources and social knowledge, a task to which Sierra Leoneans were well attuned.

Social knowledge can be defined as knowledge of the behavioural and organizational characteristics of the social group to which you belong. An example would be knowledge of how the members of a household are interrelated, and the kinds of obligations they owe to each other. In African households, this knowledge is often of considerable complexity. It requires, for example, detailed understanding of local systems of kinship categorization, such as the distinction between lineal and affinal relations, which of the people around you count as members of your family, and which are related by marriage. A further example is knowing the power structures of the community in which you reside, and which persons are entitled to exercise public authority, and whether this is a formal or informal power (for example, whether the person is a government-recognized chief or a highly respected traditional elder). Much social knowledge is tacit; everybody knows it, so it is rarely openly explained.

Capacity to track and isolate EVD cases based on local social knowledge in Sierra Leone can be contrasted with British experience of COVID-19. In the British case, reliance on human capacity was downgraded. The power of new technology was confidently announced as the inevitable solution to the epidemic challenge. Attempts to develop a 'world-beating' system of contact tracing for COVID-19 centred on a smart phone application that would automatically record the close social contacts of persons reporting sick with the disease, so that these contacts could be advised to self-isolate. The system for smart phones to record potentially infectious contacts proved ineffective and was abandoned. Security concerns could not be overcome. Attention returned (far too late) to the starting point for EVD in Sierra Leone: the mobilization of local public health teams equipped with the necessary social knowledge.[18]

One commentator summed up the British debacle in the following terms, 'Public health teams don't need a superforecast or cutting-edge AI. They just need to know where people with infections live and work and where they have been.'[19] From a perspective of what was learned about contact tracing for EVD in Sierra Leone, even this statement, true though it is, needs to be taken further. Contact tracers also need to know who they are dealing with in social terms, since that is highly relevant to the issue of who they are likely to interact with, and how frequently, and thus where they are likely to be found. Being able to communicate in a relevant language is also of critical importance. It seems that contact tracers for COVID-19 in the UK may not have had the relevant language skills to communicate with large numbers of older people in immigrant households. The larger lesson, then, is that the functionality of a contact tracing system depends not on whether it deploys 'world-beating' technology but on how capable it is at recognizing and responding to the realities of the complex social webs within which infected persons live.

[18]David McCoy, 'Countries from Germany to Vietnam Got Test and Trace Right, So Why Didn't England?', *Guardian*, 16 June 2020, https://www.theguardian.com/commentisfree/2020/jun/16/germany-vietnam-test-trace-england-coronavirus.

[19]Richard Vize, 'Government's Dithering Risks Unleashing a Second Covid-19 Wave in England', *Guardian*, 26 June 2020, https://www.theguardian.com/society/2020/jun/26/government-dithering-second-covid-19-wave-england.

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Fitness for purpose was more readily achieved in Ebola-affected Sierra Leone by hiring local people already equipped with relevant languages and social knowledge to do tracing on foot. Some of the best results came from teams of village-based volunteers recruited by local chiefs. Crucially, they knew every last corner of their area, how and where to find people according to the seasons and tasks they were likely to be engaged upon, and, most importantly, how to talk to them when found. Added to that, the work was for these village volunteers more than a job. Contact tracers cared about the results because they were engaged in a fight to protect their communities, lives, and livelihoods.

Our research team illustrated the importance of local knowledge through an accidental experiment. The team was carrying out a baseline household survey of a rural case-study community and wanted to collect information on the lineages from which the females in each household belonged. The information was of epidemiological significance, since at death a woman's body belongs to her patrilineage and will be buried in her own village by her brothers and sisters and not in the village of her husband, unless a lifelong series of obligations by the husband's family has been completed. Burial was such an important factor in the spread of EVD that we needed to estimate the likelihood of inter-village post-mortem body movements – something that would have been a disaster in epidemiological terms, since it would spread the disease between villages as well as between households.

The field team comprised four experienced research assistants, two men and two women. As the survey forms came in, the likely accuracy of the information on family relationships was scrutinized. All instances in which women had been assigned to their husband's lineage were sent back for checking. Local rules on incest make it impossible for a man to marry a woman from his own lineage, since she counts as his sister. Mistakes (about 20% of the total set) had been made by only three of the four interviewers. All interviewers were well trained, but only one was a local resident. He had been a primary school teacher in the village for many years. When misreported family names were given, he had enough local social knowledge to query them on the spot.

A key aspect of Ebola response in Sierra Leone was that the family-clustered pattern of the disease first became apparent to local responders. International responders were focused on the need for large bio-secure isolation units for case handling.[20] Initially, there were no survivors, and the facilities were shunned by communities. Local responders, on the other hand, recognized that EVD was a family sickness, and used this awareness to argue for an enhanced role for family members.[21] Decentralized case handling was introduced and families with suspected cases approached these family-friendly localized case-handling centres more readily. Testing and case-finding times fell. 'Safe burial' (viewed initially as a scandalous dump-and-run exercise) was also rendered more acceptable through the introduction of socially distanced ritual elements in burial. Together, these key changes provided a context within which the main epidemic risk factors were eventually controlled through behavioural modification.

Is there scope here to adapt these lessons to management of COVID-19? EVD and COVID-19 transmit differently. Home nursing and burials, although potential risk factors, are no longer the main activities requiring modification to increase biosafety. Early in the pandemic it became apparent that COVID-19 was a disease of congregations. The riskiest settings involved people gathered tightly packed indoors, with an abundance of loud talking or singing, and with poor ventilation. Clubs, bars, choirs, sporting events, religious worship, offices, and factories all came under suspicion. The worst occasions in terms of infection risk were events that congregated large

[20]Paul Richards, Esther Mokuwa, Pleun Welmers, Harro Maat, and Ulirike Beisel, 'Trust, and Distrust, of Ebola Treatment Centers: A Case-Study from Sierra Leone', *PLoS ONE* 14 no. 12 (2019), https://doi.org/10.1371/journal.pone.0224511.

[21]The name for Ebola in Mende, the main language of eastern and southern Sierra Leone is *bonda wote* ('family turn back'). Esther Mokuwa and Harro Maat, 'Rural Populations Exposed to Ebola Virus Disease Respond Positively to Localised Case Handling: Evidence from Sierra Leone', *PLoS Neglected Tropical Diseases* 14, no. 1 (2020), https://doi.org/10.1371/journal.pntd.0007666.

numbers of people, allowing intense infection transmission, and then saw infected people disperse over large distances to travel home. New Year festivities, winter après-ski gatherings, and Carnival have all been implicated in the wide and rapid spread of COVID-19 in China and Europe in the period January–March 2020.[22] Thus, infection risks are highly contextual: there are no après-ski parties or Carnival street celebrations in Sierra Leone, but there are (for example) large work parties of rice planters, who will congregate closely in a small farm hut to shelter from rain or to share a midday meal. Such events may be every bit as infectious as a German Carnival street party. Preventing them risks starvation, however.

What, then, should the Sierra Leonean response to the new disease be? Rapid lockdown of everything from international travel to education slowed initial spread but proved unsustainable. Rural markets, essential to food security and supply of other everyday items, cannot be permanently closed, any more than school education can be halted indefinitely. More precision is therefore required about which of a variety of typical local activities contribute to the infection rate for COVID-19. A key issue concerns how this information is to be gathered, and here we encounter a general problem with an evidence-based approach to epidemics. Science is selectively weighted towards evidence of what is measurable, sometimes separated from consideration of what evidence is intrinsically important. Not everything that matters can be precisely measured, however: measuring the crowding of rice planters while sharing their midday meal on a rainy day might serve as an example. For African countries like Sierra Leone to address a bias towards measurement over relevance, they will have to pay more attention to social observation and historical data, and to find ways to make the best possible inferences from 'soft' observations, especially in cases (such as face covering) where there is little realistic hope of more precise measurements becoming available. This is where the observational social sciences, familiar with the problem of making balanced judgements on the basis of less than ideal datasets, will have an important part to play.

On the possibility of cultural epidemiology

Which activities should be examined and how? It is interesting, in this respect, to track an important shift towards closer observation as the EVD epidemic in Sierra Leone unfolded. Initially, a quantitative theory-driven perspective prevailed. There was much talk of getting the R number below 1.0, and considerable debate about why this mattered. Epidemic modelling was attempted, but then proved to be wildly off target because it failed to take full account of the family-based clustering involved in spread.[23] Quantitative discourse on epidemiology introduced by external responders was quickly superseded by a local discourse on the role of family factors in spreading the disease (as evidenced by the Mende name for Ebola – 'family turn back') from which social scientists, familiar with monitoring and interpreting such community debates, quickly learned.[24] Tracking the daily progress of the epidemic then became a national preoccupation. A simple dashboard provided by the National Ebola Response Commission of daily cases by district was sufficient to make the situation clear to all.

Transmission began in the east of the country in May 2014 but ended in the first affected areas by November. This was termed 'getting to zero'. Localities that maintained themselves at zero were then designated 'silent districts'. People strove to keep their districts or chiefdoms 'silent'. Hearts sank whenever a new case emerged after a period of silence. Post-mortems were held to discover

[22]One German study shows infection risks from Carnival street parties were higher than infection risks in the home. Shared drinks may have been a factor. H. Streeck *et al.*, 'Infection Fatality Rate of SARS-CoV-2 Infection in a German Community with a Super-Spreading Event' (pre-print, 2020), https://doi.org/10.1101/2020.05.04.20090076.

[23]Models corrected for family clustering produced much better predictions: see S. Scarpino *et al.*, 'Epidemiological and Viral Genomic Sequence Analysis of the 2014 Ebola Outbreak Reveals Clustered Transmission', *Clinical Infectious Diseases* 60, no. 7 (2014): 1079–82.

[24]For evidence, see the exchanges archived at http://www.ebola-anthropology.net, the online discussion forum of the Ebola Response Anthropology Platform.

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why this was the case, and passionate arguments broke out about whether cases imported from elsewhere should be counted against the local 'clean sheet'. This meant that the population was engaged around issues conducive to ending the epidemic. But it was an engagement in which the R number and other epidemiological concepts (talk of 'flattening curves', for example) played little or no part. Discussion of R almost ceased. Instead, communities began to protect themselves by policing their neighbourhoods. Locating hidden cases was the new driver of Ebola response. Chiefs were quite prepared to deny entry even to respected kinsfolk attempting to visit their home communities with the best of intentions: to check family welfare. Persons of 'unknown status' simply spelt trouble. Local voices also spoke out about the risks posed by large burials or attempted treatments by local herbalists, and what might be done to limit these risks.

At this point, epidemiologists paused the mathematical modelling to take on board a new range of arcane ethnographic facts concerning such events as washing the corpse prior to burial. Rituals of death came under intense examination. What infection risks did they convey, and did they vary from community to community?[25] A new locally inflected explanatory paradigm for spread of EVD modified international interventions accordingly. Anthropologists wondered whether reports of the death of cultural epidemiology had been premature.[26] Scientific business-as-usual quickly returned in the immediate aftermath of the epidemic, as modellers scrambled to access medical records of the epidemic and apply standard numerical analytical techniques to sorting out causal patterns. Scientific papers resulting from this activity report that little was achieved in explanatory terms beyond confirming that the EVD epidemic was characterized by 'heterogeneities' – a fine word, but not much of an explanation.[27] To find out what lay behind these heterogeneities a different approach was needed, giving due weight to ethnographic and historical methods.[28]

The lesson has not been entirely lost on COVID-19. Response to the pandemic in Germany, for example, has involved work by epidemiologists in reconstructing infection pathways at local level, combining testing with a range of social observational insights.[29] German advisory panels on COVID-19 are said to include philosophers, historians, and observational social scientists. In Britain (increasingly an object lesson in how not to handle a pandemic) the pattern has been different. The government's Scientific Advisory Group on Emergencies kept its membership secret, and when it was finally revealed it seemed that voices from the observational social sciences played a less decisive part than those from the behavioural sciences who deployed quasi-experimental methods of behaviour modification.[30] Of historians and philosophers there was no sight.

The British approach implies that social pathways for infection are already well understood, and that that the main issue is to mitigate these behaviours. Yet, manifestly, basic behavioural facts remain inadequately known. Published case studies of (for example) the impact of religious worship or drinking in a crowded bar in spreading COVID-19 remain few and far between. Key assumptions – such as the need for social distancing at two metres – remain no more than informed guesses. Policy-makers have then made key decisions on the basis of 'unknown' facts. Stephen Reicher, a psychologist with knowledge of research by anthropologists on proxemics – how people in different cultural settings typically arrange themselves relative to each other – has suggested that one metre is the normal distance at which the British arrange themselves in public

[25]For details, see Richards, *Ebola*, chaps. 3 ('Washing the Dead') and 5 ('Burial Technique').

[26]S. M. DiGiacomo, 'Can There Be a "Cultural Epidemiology"?', *Medical Anthropology Quarterly* 13, no. 4 (1999): 436–57, https://doi.org/10.1525/maq.1999.13.4.436.

[27]Paul Richards, Gelejimah Mokuwa, Ahmed Vandi, Ebola Gbalo research team, and Susannah G. Mayhew, 'Re-Analysing Ebola Spread in Sierra Leone: The Importance of Local Level Social Dynamics', *PLoS ONE* (pre-print, 2020).

[28]*Ibid*.

[29]Streeck *et al*., 'Infection Fatality Rate of SARS-CoV-2 Infection'.

[30]List of participants of the Scientific Advisory Group on Emergencies and related subgroups, 7 May 2020, https://www.gov.uk/government/publications/scientific-advisory-group-for-emergencies-sage-coronavirus-covid-19-response-membership/list-of-participants-of-sage-and-related-sub-groups.

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gatherings, so to take a decision to ease social distancing from two metres to one is no more than an invitation to forget about social distancing and revert to what is culturally normal.[31]

Surely, the driver of this bias against observational knowledge is the notion that measured results count as evidence, but that inferences based on observed descriptions do not. This would explain why a cultural epidemiology of infection control has failed to flourish in a pandemic in which all the world leans on science, despite the evident utility of such an observational and descriptive approach in helping to transform the response to the 2014–15 EVD outbreak in West Africa (overlap in personnel notwithstanding).[32] African countries such as Sierra Leone should think hard about the need to counteract this bias. This is because observational inference made a crucial difference to changing understanding of Ebola hazard among both responders and affected populations in 2014–15. It could yet make a crucial difference in adaptation to the hazards posed by COVID-19 in Africa.

Ngiyema (not its real name) was a Sierra Leonean village very badly affected in the first stages of the epidemic in May 2014. The virus spread through the funeral of a highly respected local nurse who had attempted to treat patients with an unknown disease that turned out to be Ebola. There were eighty-nine cases and sixty-nine deaths. But people became aware of a pattern in spread. It was observed that new cases occurred among people most closely involved in caring for the sick, thus providing convincing local proof that the disease was spread by touch.[33] People then tried to protect themselves either by avoiding touching the sick, or by improvising personal protection using plastic bags and the like. Further infection was then ended. In scientific terms, documentation of this case is treated as no more than anecdotal evidence. This points to a bias in the way that science works.

The bias, for COVID-19, shows up most strongly in the vexed matter of face covering. Whether or not to wear a face covering has been debated since the onset of the pandemic, and at times advice changes daily, as much on political whim as on the basis of solid evidence. It appears to be the case that face covering plays little part in protecting uninfected persons but could be very effective in preventing people already shedding virus from passing on the infection. You wear a face covering not to protect yourself, but to protect others. It is hard, however, to imagine how this could be tested using the protocols of a double-blinded randomized field trial, the gold standard of evidence for scientific publication. Wearing a face covering is a highly visible act, so everybody knows who belongs to the treatment group. It is (or ought to be) impossible to get ethical approval for an experiment involving a control group exposed to the incessant coughing of carriers of SARS-Cov-2 virus. Yet wearing face coverings is something that African countries such as Sierra Leone might need to mandate. It may be the only option for contexts in which crowding is unavoidable, but where the activity is impossible to do without, such as market attendance or use of public transport.

An excellent paper by Greenhalgh reviews the circumstantial and natural experimental evidence that face coverings protect – including the case of a passenger who flew from China to Canada wearing a face covering and tested positive for COVID-19 the next day, but without infecting a single passenger or member of the crew.[34] Greenhalgh also addresses and refutes several of the hypothetical arguments that have been advanced to suggest why wearing face coverings might have negative consequences. She is explicit about why double-blind experimental evidence is not the sum total of scientific judgement.

[31]Stephen Reicher, 'The Way Boris Johnson Has Eased Lockdown Sends All the Wrong Messages', *Guardian*, 24 June 2020, https://www.theguardian.com/commentisfree/2020/jun/24/boris-johnson-ease-lockdown-england.

[32]See, for example, Christopher Whitty, Jeremy Farrar, Neil Ferguson, W. John Edmunds, Peter Piot, Melissa Leach, and Sally Davies, 'Infectious Disease: Tough Choices to Reduce Ebola Transmission', *Nature* 515, no. 7526 (2014): 192–4.

[33]Richards, *Ebola*, p. 147.

[34]Trisha Greenhalgh, 'Face Coverings for the Public: Laying Straw Men to Rest', *Journal of Evaluation in Clinical Practice* (2020), https://doi.org/10.1111/jep.13415.

The lesson of the Ebola epidemic in Sierra Leone is that a culturally informed epidemiology based on observation of behaviour is a viable and necessary tool of epidemic response and can be undertaken without huge investment in scientific infrastructure.[35] It should be retained and reapplied to COVID-19.[36] If high-quality work of this sort is rejected by the methodological gatekeepers of 'standard' science it may be necessary to ask whether such rejection is altogether rational.[37]

What social science contributes to management of epidemics

The assumptions of a standard model of scientific best practice are strongly evident in the mathematical modelling that plays such a prominent part in epidemiological analysis and is a major influence over policy. Models are useful, and African countries will be wise to take note of, or commission, such analyses. But some scepticism is also in order. A model is only as good as its assumptions. As noted, initial model predictions of growth of EVD cases in the West African epidemic were very wide of the mark because they failed to take proper note of the family clustering effects.[38] Some social scientists take this as a message to fine tune these models via better informed assumptions concerning human behaviour, and this is indeed highly desirable. But this underestimates the fuller potential of a social science approach.

A feature of social science is that its knowledge-building activity is part of the social world it attempts to observe. The consequences of this reflexivity are sometimes treated as problematic, as if confounding or contaminating a desired objectivity.[39] Behavioural social sciences often prefer to take a 'nudge' perspective, seeking to influence behaviour without people becoming aware of the behavioural corrections they are making.[40] The realist philosophy of social science offers a different prospect.[41] Analysis can help focus and mobilize social response through incorporating the affected populations as democratically enrolled agents of the social research process. This can be summed up in the phrase 'know your epidemic'. Better knowledge of how an infectious disease spreads then supports local commitments to protect community members. Evidence from the EVD epidemic in Sierra Leone in 2014–15 suggests that typically it took communities only about six to eight weeks to figure out the nature of the infection challenges they faced, and to mobilize against them.[42]

Of course, this mobilization will never be perfect. There are always free-riders and people who evade quarantine rules. Nevertheless, the speed of local social learning surprised many external responders to the EVD epidemic in Sierra Leone. The same surprise has been expressed in many countries affected by COVID-19. People understood more quickly than expected how the epidemic threat was configured, and the need for measures such as social distancing. A great majority are then willing to take steps to protect themselves and their communities, and become understandably angered by manifest breaches. Social shaming serves to control free-riders. This is more than just a social response; it also depends on a degree of calculation of risk.

The game comparing risks of infection and death from EVD and COVID-19 mentioned above was configured so that the combined risks were the same in both variants (high infection

[35]Neil Ferguson, 'Capturing Human Behaviour', *Nature* 446 (2007): 733, https://doi.org/10.1038/446733a.

[36]See Richards *et al.*, 'Re-Analysing Ebola Spread in Sierra Leone'.

[37]Peter Piot, co-discoverer of the Ebola virus, expressed puzzlement that 'it is not official policy [for COVID-19] to have compulsory face masks not only on public transport but when you go into public [and] enclosed spaces'. Sarah Boseley, 'Make Masks Compulsory in Public in UK, Says Virus Expert', *Guardian*, 30 June 2020, https://www.theguardian.com/world/2020/jun/30/make-masks-compulsory-in-public-says-virus-expert-peter-piot.

[38]Scarpino *et al.*, 'Epidemiological and Viral Genomic Sequence Analysis'.

[39]Peter T. Manicas, *A Realist Philosophy of Social Science* (Cambridge: Cambridge University Press, 2007).

[40]Richard Thaler and Cas Sunstein, *Nudge: Improving Decisions About Health, Wealth and Happiness* (New Haven: Yale University Press, 2008).

[41]Manicas, *Realist Philosophy*.

[42]Richards, *Ebola*.

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risk × lower risk of death for the COVID-19 proxy and low infection risk × high risk of death for the Ebola proxy).[43] One-fifth of all players spotted this and commented that there was no difference in the overall level of hazard. This supports claims that humans are good intuitive probabilists.[44] Effective risk-assessment capacity among those lacking formal school education provides a basis for an effective people's science of practical epidemiology. Ebola taught that African policymakers can rely on the good sense of the people. Pandemic response can be based on a continued application of that understanding, supporting people to acquire the evidence they need and relying upon them to make sensible decisions. With encouragement, African populations will learn their epidemic and adapt to its shifting challenges. This suggests that policy on COVID-19 in Africa can be usefully decentralized and opened to democratic decision-making.

Comparative questions raised about social justice in the Atlantic world

Ebola was a singular disaster. The disease had never before been seen in West Africa, and wreaked havoc in three neighbouring countries – Guinea, Liberia, and Sierra Leone. The urgency associated with such a terrifying disease rekindled memories of old humanitarian obligations. The aid ministry of the British government and British charities focused their attention on Sierra Leone. The flow of aid funds and volunteer assistance was only fully achieved by the halfway point in the outbreak. Before that point, Sierra Leoneans struggled with the disaster in large measure on their own resources and learned important lessons about how to cope with a new and deadly disease. An avalanche of international aid then threatened to engulf the country, and the problem became how to manage humanitarian largesse without trampling local capacity under foot.[45]

The pandemic of COVID-19 has set different challenges. Every country is dealing with the disease, and Sierra Leone is no longer in the humanitarian limelight. Differences in standardized performance indicators, notably measures of 'excess deaths' (the numbers of deaths above the normal for that country and time of year), reveal variations in response. Variation in impact by nation, class, and ethnic background demands attention. The country is forced to answer comparative questions about who is doing well, and who is doing badly, and why.

This places Sierra Leone back within a wider historical framework of Atlantic connections, no longer the poster child for British humanitarianism. Via diaspora links, there is awareness of the higher risks posed by COVID-19 to persons of colour. Many overseas-based members of Sierra Leonean families work in medical professions or in medical-related services (as hospital porters and cleaners, for example) in Europe and North America, and have been badly impacted by the disease. This provokes questions about why death rates are so high among persons of African descent. In turn, racial bias in protection offered by host countries to workers of immigrant origins come under scrutiny.[46]

The killing by police of the African American George Floyd in Minneapolis occasioned mass demonstrations by supporters of the Black Lives Matter movement across the world. These demonstrations have been undertaken in defiance of lockdown and create a counter-discourse to epidemic control. People have taken to the streets knowing the increased risks, on the basis that racist violence has pandemic features. They have felt impelled to make a stand, virus or no. Moral outrage over COVID-19 and racial injustice have become fused. The COVID-19 pandemic cannot be thought of independently of larger and longer-term discourses concerning slavery and

[43]Kamara *et al*., 'How Villagers in Central Sierra Leone Understand Infection Risks'.

[44]Leda Cosmides and John Tooby, 'Are Humans Good Intuitive Statisticians After All? Rethinking Some Conclusions from the Literature on Judgment under Uncertainty', *Cognition* 53, no. 1 (1996): 1–73.

[45]For an insightful eyewitness account, see Sinead Walsh and Oliver Johnson, *Getting to Zero: A Doctor and A Diplomat on the Ebola Frontline* (London: Zed Books, 2018).

[46]See, for example, Steven Morris, 'Systemic Racism among Risk Factors in Covid-19 BAME Deaths in Wales', *Guardian*, 22 June 2020, https://www.theguardian.com/uk-news/2020/jun/22/systemic-racism-among-risk-factors-in-covid-19-bame-deaths-in-wales.

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emancipation. These protests are closely monitored in Sierra Leone and have begun to impact on thinking about the epidemic. Sierra Leone's nodal position in an Atlantic world created by slavery and abolition is thereby brought back into focus.

In one highly salient demonstration in the English city of Bristol, protestors tipped the statue of the slave trader Edward Colston into the water of the docks where once his slave ships tied up from their voyages to the West African coast and the West Indies. Colston was chief executive of the Royal African Company in the 1680s, during which time the company, a monopoly of the English royal family, was involved in shipping around 100,000 enslaved West Africans to the Caribbean, of whom an estimated 20,000 died during the Atlantic voyage. The statue has long been a disputed artefact. It was erected in 1895, at the height of British colonial expansion in West Africa, in acknowledgement of Colston's charitable work, but made no mention of the source of his wealth. This was but a year before the British imposed colonial rule over the interior of Sierra Leone. It was the Royal African Company's slave-trading activities under Colston in the 1680s that had first brought Sierra Leone firmly into the British sphere of Atlantic commercial influence.

Sierra Leone today thus stands at a point of intersection of two counterpointed global debates: how to control a worldwide nexus of pandemic infection and how to realize the human rights of a diaspora of persons of sub-Saharan African descent who are living testimony to the consequences of global forced migration engineered over four centuries by agents such as Colston. In Sierra Leone, the latter debate is by no means straightforward, since the country comprises the descendants of those who benefited from the slave trade as well as those descended from communities suffering its ravages. In terms of public culture, there is a silence of a long duration over the internal legacy of the Atlantic trade.

In the place of public acknowledgement, however, there is subterranean debate, based on a long-term and largely murmured local critique of capitalism as a 'vampire' mode of wealth extraction.[47] This critique colours local understanding of infectious diseases. It envisages that the slave trade was replaced by an ever more rampant international system for extracting unearned wealth from the bodies of seized Africans. International humanitarian agencies are in West Africa not to help end epidemic disease but to lay the foundations of a wealth extraction system based on seizing blood and human body parts for medical use in richer countries.[48] Ebola and COVID-19 are contemporary tools for the renewal of a centuries-old extractive malpractice. The continued nag of this popular discourse in the shadows undermines confidence in epidemic response efforts and treatment. More generally, it nullifies the arguments of development agencies that enterprise is a means to bring about beneficial societal transformation. These fears, it is suggested, will not be assuaged until a darker secret connected to Sierra Leone's colonial history is addressed.

When Britain declared a protectorate over provincial Sierra Leone in 1896, a main purpose was to protect the hinterland of Freetown from French colonial expansion. An uprising of interior chiefs against British rule in 1898 challenged the new British order. The chiefs were threatened with loss of sovereignty, an issue brought into focus for them by demands to pay new taxes.[49] Because rebellion threatened a key hub for both the British navy and merchant shipping in the Atlantic at a time of major British colonial expansion in Africa, the revolt was swiftly and ruthlessly put down. If the British had any ambition to end slavery in the interior, it was quietly dropped. A blind eye was turned in order to consolidate good relations with new chiefs appointed by the colonial government to take the place of the rebels executed for their part in the revolt.

[47]Veronica Gomez-Temesio, 'Outliving Death: Ebola, Zombies, and the Politics of Saving Lives', *American Anthropologist* 120, no. 4 (2018):, 738–51.

[48]See Richards *et al.*, 'Re-Analysing Ebola Spread in Sierra Leone'.

[49]David Chalmers, *Report by Her Majesty's Commissioner and Correspondence on the Subject of the Insurrection in the Sierra Leone Protectorate 1898. Part 1: Report and Correspondence* (London: HMSO, 1899).

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The institution of slavery was tolerated because it was important to the food security of Freetown. Slave labour was deemed necessary for the back-breaking work of opening large areas of mangrove swamp for rice cultivation along the tidal zones of the rivers north of the port city. There were also significant areas of slave-based rice production further in the interior. It was in one of these, the Mabole valley in BombaIi District in northern Sierra Leone, that a slave revolt in 1926 finally brought evidence to the notice of the League of Nations anti-slavery committee that slavery remained extant in a country founded as a home for freed slaves, despite three decades of colonial rule.[50] This was a major scandal, and the colonial government in Freetown was forced to act. A declaration of emancipation was hastily drafted, and slaves were finally freed on 1 January 1928, though not directly informed. At that point it was estimated that as many as one-quarter of all villagers in some parts of northern Sierra Leone had been living as slaves. Many would remain trapped in subsequent poverty.

Compensation was offered not to the slaves but to the slave-owners. This compensation was controversial with the population of Freetown, much of which shared 'recaptive' origins and had never been offered compensation for its ordeal. The sweetener to the slave-owners therefore came in the form of a major agricultural development initiative: a work-oxen ploughing scheme to compensate landlords for the loss of their slave labour force. The scheme was revived by the British overseas aid programme as recently as the 1980s, presumably without recognition of its historical connotations. With perhaps a greater sense of local history than that possessed by British aid officials, the cadres of the rebel Revolutionary United Front finished off the scheme, and roasted the animals, during the latter days of the civil war of the 1990s. One of the movement's war slogans was 'no more master, no more slave'.[51]

Emancipation in 1928 had been a sham. It is not even clear that the slaves were even informed officially of their change of legal status. Like slaves of African descent across the Atlantic basin, they continued to farm for their own subsistence on land they did not own.[52] Or they headed to the towns and the mining districts to join the ranks of the daily paid labouring classes.[53] Economic insecurity and a sense of lives being wasted for want of opportunity for improvement persisted into the decades of independence from Britain in the second half of the twentieth century. And then something snapped. The civil war of the 1990s can be seen as a major eruption of socioeconomic tensions in a society that up to that point had not fully resolved vexed issues separating those benefiting from Atlantic slavery and those who bore the brunt of the social dislocation it caused.[54]

The conjunction of the COVID-19 pandemic and activity by the Black Lives Matter movement has resulted in re-energized debate on the complex legacies of Atlantic slavery. It is genuinely

[50]Alfred S. Arkley, 'Slavery in Sierra Leone' (MA thesis, Columbia University, New York, 1965). The gap between the declaration of a British protectorate in interior Sierra Leone (1896) and the ending of slavery (1928) was longer even than that between the ending of the British Atlantic slave trade (1807) and the general emancipation of slaves in the British colonies (1833). A slave uprising in Jamaica in 1831 precipitated that larger emancipation.

[51]For discussion of agrarian tensions as factors in the civil war in Sierra Leone in the 1990s, see Peters, *War and the Crisis of Youth in Sierra Leone*, esp. chaps. 6 and 8; and Paul Richards, 'To Fight or to Farm? Agrarian Dimensions of the Mano River Conflicts (Liberia and Sierra Leone)', *African Affairs* 104, no. 417 (2005): 571–90.

[52]When slaves in the British Caribbean were emancipated in 1833, the British government raised a loan of £20 million to pay compensation to the owners. The families of three subsequent British prime ministers (William Ewart Gladstone, Anthony Eden, and David Cameron) were among the beneficiaries. Information on compensation payments are to be found in the *Legacies of British Slave-Ownership* database, https://www.ucl.ac.uk/lbs/.

[53]On the organization of labour in the alluvial mining economy of Sierra Leone, see Alfred Babatunde Zack-Williams, *Tributors, Supporters and Merchant Capital: Mining and Under-Development in Sierra Leone* (Aldershot: Avebury Press, 1995).

[54]On the Sierra Leone civil war and tensions that fostered it, see Richards, Richards, *Fighting for the Rain Forest*. For a compelling account of the psychological scars of slavery on rural communities in Sierra Leone, persisting to the present, see Rosalind Shaw, *Memories of the Slave Trade: Ritual and the Historical Imagination in Sierra Leone* (Chicago: University of Chicago Press, 2002).

surprising to hear the number of voices of hope raised despite pandemic concerns. Evidently, global social mutuality is being urgently rethought. Some would argue, however, that Sierra Leone still needs to resolve internal tensions over its own legacy of collaboration with Atlantic commerce in order to become more fully aligned with these larger demands for social reform.

Conclusion

The comparative study of epidemics can reveal social and historical processes in a new light. Ebola in 2014–15 was mainly contained within three countries of the Upper West African coast. The crisis called forth considerable amounts of international aid, but channelled mainly along colonial and Cold War lines, with French, American, and British military missions playing a significant part in Guinea, Liberia, and Sierra Leone. Russian assistance to Guinea and Chinese assistance to Sierra Leone recapitulated forgotten Cold War alliances. Sierra Leone was once again a poster child for British humanitarianism, speaking to its abolitionist origins.

The 2020 pandemic of COVID-19 in Sierra Leone elicited no major boost in international aid but instead serves to throw into relief connections with Atlantic forced migration. The global calls for inter-racial justice have no doubt been intensified by realization that COVID-19 poses a higher risk to diasporic populations of African descent. In the event, Sierra Leone fights COVID-19 with its own resources, drawing on lessons learned from EVD, while at the same time being drawn into a wider re-examination of the legacies of Atlantic slavery. Its own deeply rooted history of social injustices, brutally exposed during the civil war of the 1990s, surfaces once more. It is a feature of epidemics and pandemics that they have an apparent capacity to resurrect aspects of global history some might prefer to forget.

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