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## COVID-19 across Africa:

### *Colonial Hangovers, Racial Hierarchies, and Medical Histories*

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*“L’Afrique n’est pas un laboratoire. . . . Africa is not a testing lab.”*

Didier Drogba, Twitter, April 2, 2020

*“The surge against clinical trials is paradoxical, phantasmagorical and instructive. . . . Africa is not, directly or indirectly, the preferred target of clinical trials to date.”*

Fred Eboko, *Le Monde*, April 8, 2020

**ABSTRACT** In the early months of the COVID-19 pandemic, few journalists or scholars in Europe and North America paid much attention to how people or governments were responding to SARS-coV-2 anywhere in Africa. As the pandemic progressed, in fact, key agencies—from the World Economic Forum to the Economic Commission for Africa to the Global Health Security Index—all predicted or implied that there would be catastrophic fatality rates in African countries. Two French scientists shared these assumptions, going on live television on April 1 to discuss whether the BCG tuberculosis vaccine might protect people from the worst effects of COVID-19 and proposing new BCG vaccine trials in “Africa” because, they alleged, protections would be minimal and

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infection rates high, offering ideal conditions to test their theories. This article takes the controversy that stemmed from the French scientists' comments as a point of departure, connecting it to African medical and imperial histories, on the one hand, and more recent histories of randomized controlled trials and global (health) governance on the other. Between January and November 2020, African nations, peoples, and pan-African organizations did better with COVID-19 than any other region of the world. Yet, there are understandable—if insidious—reasons why the continent's success stories have not reached wider audiences: they run so contrary to (outside) expectations and belie the implicit predictions of different country rankings in global health. This kind of strategic erasure gets reproduced time and again within global institutions, creating semipermanent obstacles to African nations' (therapeutic) sovereignty and (medical) self-determination.

**RÉSUMÉ** Dans les premiers mois de la pandémie de COVID-19, peu de journalistes ou d'universitaires en Europe et en Amérique du Nord ont prêté attention à la manière dont les gens ou les gouvernements réagissaient au SRAS-coV-2 partout en Afrique. En réalité, alors que la pandémie continuait de progresser, les principales agences—du Forum économique mondial à la Commission économique pour l'Afrique en passant par l'indice mondial de sécurité sanitaire—ont toutes prédit ou laissé entendre qu'il y aurait des taux de mortalité catastrophiques dans les pays africains. Le 1er avril, deux scientifiques français ont partagé ces hypothèses en direct lors d'une discussion sur la question de savoir si le vaccin antituberculeux BCG pourrait protéger les gens des pires effets du COVID-19. En effet, ils proposaient de nouveaux essais de vaccin BCG en « Afrique » car, selon eux, les taux d'infection minimes et élevés offraient des conditions idéales pour tester leurs théories. Cet article prend comme point de départ la controverse issue des commentaires des scientifiques français, la reliant aux histoires médicales et impériales africaines d'une part, et aux histoires plus récentes d'essais contrôlés randomisés et de gouvernance mondiale (sanitaire) d'autre part. Entre janvier et novembre 2020, les nations et peuples africains ainsi que les organisations panafricaines africains ont mieux géré la pandémie du COVID-19 que le reste du monde. Pourtant, il existe des raisons compréhensibles—quoique insidieuses—pour lesquelles les réussites du continent n'ont pas atteint un public plus large. En effet, elles sont complètement contraires aux attentes (extérieures) et démentent les prédictions implicites des différents classements de pays en santé mondiale. Ce type d'effacement stratégique se reproduit à maintes reprises au sein des institutions mondiales, créant des obstacles semi-permanents à la souveraineté (thérapeutique) et à l'autodétermination (médicale) des nations africaines.

On April Fool's Day 2020—better known as April 1—a prank of sorts took place on live television that quickly went viral across the Atlantic world. It took the form of an interview with two French scientists who were discussing whether the BCG tuberculosis vaccine played any role in protecting people from the worst effects of the coronavirus, SARS-coV-2. Medical reports had been circulating for weeks that speculated that the vaccine reduced respiratory infections and invited scholars to put such theories to the test with COVID-19.<sup>1</sup> Researchers in Australia, Germany, the Netherlands, France, and the UK had already heeded the call, choosing to focus on health-care workers who were at highest risk and easiest to enlist.<sup>2</sup> These trials were exploring a simple question: would adults vaccinated with BCG—or revaccinated as the case may be—have better outcomes with COVID-19 than adults who received a placebo injection?

During the televised interview, the anchor passed the baton to one of the scholars, Jean-Paul Mira, head of the intensive care unit at Cochin Hospital in Paris, who began asking questions directly of Camille Locht, a leading expert on the BCG vaccine and director of research at INSERM in Lille. They discussed the challenges of comparing BCG drug trials across national lines because countries used different vaccine ingredients and protocols, and they noted that it was not easy to find sufficient test subjects. Trials had to be large enough, Mira stressed, to get statistically robust results, and rates of infection in the placebo groups had to be high enough for scientists to draw meaningful conclusions. This could be a challenge in settings where health-care professionals used enough protective gear to avoid COVID-19 infections altogether. Mira then asked Locht to engage in a “provocative” thought experiment: “shouldn't we do this study [of the BCG vaccine] in Africa where there are no masks, no treatments, no intensive care?” This would be “much as was done elsewhere in certain AIDS studies where they used prostitutes to test some things because they know they are highly exposed and they don't protect themselves. What do you think?” Locht did not hesitate. “You are right,” he replied. “We are in the process of thinking about a parallel study in Africa to make the same kind of approach with the BCG placebos. . . . That does not prevent us, in parallel, from thinking about a study in Europe and Australia.”<sup>3</sup>

Reactions to the program were swift and furious, so swift in fact that the details of the conversation got lost in the shuffle and many people asserted or assumed—including dozens of journalists and even the director general of the World Health Organization (WHO)—that Locht and Mira had proposed that a vaccine for COVID-19 be tested *first* in Africa and *only* on “poor Africans.”<sup>4</sup> Even as a brief excerpt of the interview circulated across social media, rumors and reality mixed. Some of the earliest and most vocal critics were football players who were either from or had roots in Francophone West Africa: Demba Ba (born in France and with family in Senegal), Didier Drogba (from Ivory Coast),

and Samuel Eto'o (from Cameroon), whose millions of followers witnessed in real-time their visceral reactions, which Ba and Drogba posted simultaneously in English and French. Ba (April 2): "Welcome to the West, where white people believe themselves to be so superior that racism and stupidity become commonplace. TIME TO RISE." Eto'o (April 2): "You are nothing but shit. Africa isn't your playground." Drogba (April 2): "It is inconceivable that we continue to accept this. Africa is not a laboratory. I strongly denounce these grave, racist, and contemptuous remarks."<sup>5</sup> By the end of April 2, the hashtags #AfricaIsNotALaboratory and #AfricansNotLabRats (and several variants) were trending on twitter in different countries, as were graphic illustrations with similar slogans in French and English, including one from a young Congolese artist, Arnold Makumba, depicting an African man crucified across the continent and hanging by the French and European Union flags that said, "We Are Not Guinea Pigs."<sup>6</sup>

For anyone well-versed in imperial and medical histories in (West) Africa, this particular April Fool's prank was hauntingly familiar and hardly a laughing matter. The French scientists and their critics were shining the spotlight on questions of (therapeutic) sovereignty and (medical) self-determination. Although Mira and Locht might have been misunderstood on exact details, their callous logic, willful ignorance, and willingness to trade in stereotypes spoke volumes to those who listened (whether they knew it or not). In just a few minutes they had resurrected several formidable colonial tropes: that the African continent had few leaders or institutions able to address disease threats effectively; that impoverished conditions were pervasive and would mean constant exposure to infectious disease; that people would choose to put themselves in harm's way, even if told the risks (because they ignored the facts); that foreign interventions on matters of health were by definition benevolent and necessary; and that people in the continent were most useful to European scientists as experimental subjects and sources of biological data. These assumptions made Tedros Adhanom Ghebreyesus—the former minister of health from Ethiopia and first director general of the WHO from an African nation—visibly bristle. As he insisted during his press briefing on April 6: "The hangover from a colonial mentality has to stop."<sup>7</sup>

In what follows, I explore some of the ironies and paradoxes of this April Fool's controversy, placing it in the wider context of the COVID-19 pandemic across Africa and connecting it to imperial and medical histories. Many people responded so critically to the French scientists because they were justifiably concerned about the lingering legacies of empire. It was not that long ago that British, French, Afrikaner, and German colonizers spoke approvingly about Africa being a laboratory for scientific study and experimentation.<sup>8</sup> This kind of thinking went hand in glove with colonial state-building, structural (and actual) violence, and investigations of all kinds, work that fundamentally transformed

theories and disciplines not just in the medical sciences, but also in the natural and human sciences. More often than not, however, it was outsiders rather than insiders who set intellectual priorities, defined people's needs, judged their aspirations, and turned them from agents to objects of knowledge.

To this day, deep-seated inequalities prevent "Africa's medical dreams" of health and wealth from becoming a full-fledged reality.<sup>9</sup> Dreams deferred and delayed, though, do not always mean dreams denied. If this pandemic has lessons to teach, they should include two mundane insights: wealthy countries can oversee nightmare scenarios of their own, no matter how expensive their infrastructures, while marginal states and people in poorer regions of the world can achieve remarkable things.<sup>10</sup> That this still has to be said is a telling indictment of (outside) analysts' and commentators' enduring blind spots, ignorance, and double standards. It also creates a set-up for those who care about African histories and futures: having to prove people's agency and ingenuity time and again can also distort analyses and distract from other patterns equally deserving of attention. In the midst of a pandemic with sweeping ripple effects, the wise move is to be humble in the face of uncertainty: no region has yet come to terms with the epidemiological, environmental, political, and economic crises on the horizon, no matter how this pandemic may end.<sup>11</sup>

## Ironies: Projected Passivity, Ignored Successes, and the Effects of Empire

One of the many ironies of the Mira/Locht controversy was that they assumed European countries were better prepared to respond to the pandemic than their African counterparts. Evidence—at least for the first wave of the pandemic—was not on their side. Hundreds of thousands of respondents from across Africa on Twitter, Facebook, and Instagram weighed in to "fact check" the scientists, pointing out that African nations still had the lowest infection rates in the world.<sup>12</sup> If high infection rates for COVID-19 were necessary to test vaccines, they insisted, then trials ought to be conducted first in the current "epicenter" of the pandemic, i.e., Europe, where more people were becoming ill and dying. Indeed, at the time the French scientists took part in the broadcast, forty-one African countries had already acted virtually en masse to close their borders and most leaders—and their ministries of health—had taken additional steps to spread the word about and begin to plan for the pandemic.<sup>13</sup> Many people jumped into action before their countries had registered even one official case.

The clock to respond started on January 30, the day the World Health Organization issued its highest alarm, declaring the coronavirus a public health

emergency. Tanzanian illustrator and satirist, Godfrey Mwampembwa aka “Gado” marked the occasion the next day with an image of the planet with each continent masked and looking suspiciously at its neighbors, titled “Continents vs. Coronavirus!”<sup>14</sup> For the next two months, Africa’s five Centers for Disease Control (under the authority of the African Union), the African Regional Office of the WHO, the African Academy of Sciences, plus dozens of nongovernmental organizations (NGOs) and outside funding agencies (in China, the European Union, the United States, India, Cuba, and elsewhere), worked to enhance countries’ abilities to trace and test contacts and isolate and treat the ill. Their stated goals were to “limit transmission and minimize harm.”<sup>15</sup> In early February, only two nations had the capacity to do in-country lab tests for the coronavirus; by mid-March that number had increased to 43.<sup>16</sup> Meanwhile, civic and mutual aid groups had sprung up to sew masks, set up hand-washing stations, support those in need, and improvise communication systems to inform people how to do their part to “flatten the curve.” Adults who had come of age during the HIV-AIDS pandemic often understood only too well the risks of ignoring public health warnings. In the face of “failed services and absent states,” observed Kenyan analyst Nanjala Nyabola, people across the continent were “not waiting to be saved,” but were mobilizing in myriad ways to stem the tide of suffering.<sup>17</sup>

These acts were accompanied in March and early April, by a number of music videos from pro-democracy performers in Ghana, Nigeria, and Gabon (DJ Titanium, Abdullahi Jega, and “Jores”), Senegal (Y`en a Marre), Sierra Leone (ABR-Africa Best Rappers), and Uganda (Bobi Wine and Nubian Li), as well as one written and performed by the president of Liberia himself, George Weah, all touting the importance of washing hands, wearing masks, and keeping an appropriate social distance.<sup>18</sup> DJ Titanium’s lyrics, sung in English, Twi, French, and Hausa, illustrated the general message: “They call it Corona, transmission worse than Ebola. Caution is a weapon. Be courageous and carry on. Never say, had I known. Let’s stand together. Health is wealth.” In other words, coordinated, unofficial, centralized, and decentralized responses were all well underway by April 1 and many who reacted within African countries to the French scientists’ controversy knew it. As Simon Allison, the Africa editor of South Africa’s *Mail and Guardian* pointed out in early May, “With notable exceptions . . . the response of most African countries to this unprecedented public-health threat has been better organized, better informed, and better implemented than many of their Western counterparts.”<sup>19</sup> This included having fewer leaders embrace and amplify disinformation and misinformation campaigns, dynamics that plagued pandemic control in countries like the United States and Brazil. Predictably, African success stories never managed to circulate that widely.

One of the more powerful epistemological hangovers from the colonial era is the popular motif that all of Africa and most “Africans” have had little to offer the rest of the world beyond wealth in labor and natural resources; that the continent has always been behind its more “modern” relations and relatively helpless in the face of “global” threats.<sup>20</sup> Such perspectives die hard in part because they have deep historical roots and also because they rest upon profound geopolitical inequalities. Already in the late nineteenth century, European elites peddled the argument that colonial rule would introduce scientific experts and sophisticated skillsets to “backward” regions of the world in ways that would improve the lives of colonial subjects.<sup>21</sup> Those who participated in the conquest of African polities and the seizure of African lands saw themselves (or were described by others) as being on a “mission to civilize,” often in the guise of an ethnonational mandate. For over a century, such paternalistic and racial rationales—even when actively debated, contested, and opposed—played a significant role in imperial development projects and postcolonial foreign aid programs.<sup>22</sup> They also underpinned numerous colonial state and League of Nations’s campaigns to control diseases such as plague, smallpox, syphilis, sleeping sickness, tuberculosis, malaria, and cholera as well as projects focused on nutritional, reproductive, and rural health.<sup>23</sup>

Yet, as so many historians have shown, it was the Scramble for Africa itself, combined with efforts to generate new revenue streams for colonial states, that ensured that the four horsemen of the apocalypse—war, famine, pestilence, and death—had intensified effects. Exact demographic statistics are impossible to come by, but some scholars estimate that as many as tens of millions of people died prematurely during the first three decades of colonial rule.<sup>24</sup> Though these estimates continue to be debated, scholars do agree that people’s well-being from the time of conquest until at least the First World War declined precipitously in many places as a direct consequence of new weapons of war, unprecedented epizootics and pandemics, exploitative labor regimes, and myriad shocks to systems of social reproduction, including foodways.<sup>25</sup> Extractive economies around mining, forestry, and agriculture combined with new profit-driven economies and cash crops, had especially brutal effects as they ruptured gendered relations of production, altered (and poisoned) landscapes faster than they could regenerate, and undermined women’s authority on several fronts: moral, therapeutic, intellectual, and political.<sup>26</sup> Although the staffing of colonial states tended to be sparse, the effects of colonial policies were widely felt, leaving even officials to worry about infertility (of land and people) and depopulation (resulting as much from low birth rates and mass migration as from higher death rates) well into the 1950s.<sup>27</sup>

Imperial administrators also managed to entrench new racial geographies and hierarchies within colonial states, labeling landscapes (and procuring property) based on their dangers or benefits to Europeans’ well-being. These impulses too



had roots in earlier eras when European merchants and slave-traders came up with the moniker for West Africa of the “White Man’s Grave” because fatality rates—for European men—were so high there. By the early twentieth century, as the third plague pandemic swept the world (ca. 1894–1923) and studies of malaria and sleeping sickness became more fine-tuned, germ theories helped to bolster race-based segregation strategies within many Western, Eastern, and Southern African cities on the grounds that they would keep “white” officials healthier and separate them from infected African “carriers.” When British governors from Lagos, Northern Nigeria, and the Gold Coast (Ghana) objected to these policies, because they felt segregation betrayed the needs and health of people under colonial rule, they found themselves in the minority and eventually overruled or replaced by people who supported segregation.<sup>28</sup> And when elected leaders such as Blaise Diagne in Senegal tried to mitigate the punitive effects of plague control—during a campaign in Saint Louis (the capitol of French West Africa) in 1917–18—he had to contend with newly reified theories about Wolof and Bambara “races” among administrators. Though Bambara and Wolof speaking peoples were predominantly Muslim, French officials defined Wolof as being more resistant and oppositional to colonial rule, having a “nature” more likely to obstruct effective measures and good governance.<sup>29</sup> Across British, Belgian, German, and French territories, idioms of race, theories of essential group differences, and techniques of disease control all mixed as officials worked to surveil local residents, enforce sanitary laws, and introduce more invasive techniques, including quarantines, medical passports, and household inspections. Yet, even as so many (West) African cities bear the traces of early twentieth-century racial thinking, this period also witnessed the first sustained critiques of racial medicine and race prejudice, spearheaded in part by a group of Nigerian, Ghanaian, and Sierra Leonean doctors and tacitly reinforced by a cross-section of British and French administrators who refused to fund studies that would examine (and by extension potentially “prove”) racial difference.<sup>30</sup>

These dialectic dynamics point to another irony of the history of European empire-building in Africa: just as colonialism introduced myriad kinds of violence, dispossession, erasure, denial, suppression, denigration, and recalibration (of power), it also generated recursive patterns of discovery, epiphany, bricolage, appropriation, reconstruction, and even on occasion, celebration (of endogenous achievements and insights).<sup>31</sup> One of the more subtle reasons it has been so hard to divest the world of colonial and imperial hangovers is because their effects and legacies were contradictory and multifaceted. Like computer codes, colonial states were rooted in binaries that on the surface of things oversimplified reality. Once operationalized, however, these same codes managed to create complex worlds of meaning and practice, competing jurisdictions and epistemologies, and

syncretic influences and scaffolding. Histories of empire use ideas of entanglement and braiding for a reason: people and things circulated across places, fusing, mixing, mingling, and intersecting.<sup>32</sup> Although notions of purity and separation were always important for maintaining colonial orders, especially in terms of racial, ethnic, and national categories, in practice little was pure or hermetically insulated.<sup>33</sup>

### Paradoxes: Therapeutic Sovereignty, Medical Self-Determination, and the Enduring Specter of Inequality

If the French scientists Mira and Locht traded in colonial tropes about African passivity and helplessness, their critics were more concerned with a different kind of colonial hangover, the specter that scientists had the power to experiment on people in Africa (without their consent) and impose potentially dangerous therapies (before they had been sufficiently tested). Mira's thought experiment had been about *future* scenarios and presumed that at some point during the pandemic African nations *would be* facing widespread COVID-19 infections, as were already underway in Europe. This was in fact the attitude of another inadvertent player in the April Fool's prank, Jean-Jacques Muyembe-Tamfum, the head of the Democratic Republic of Congo's (DRC) coronavirus response effort. Muyembe was and is known internationally for his decades of work in the DRC on Ebola, including the latest efforts to use new vaccines in what were called "ring protocols" of the sort that had been effective in smallpox eradication. These trials had successfully stemmed an Ebola outbreak in the DRC in 2018, but cases of the disease emerged again in 2019 prompting a second trial of two different vaccines tested simultaneously.<sup>34</sup> Between 2018 and early 2020, over 2,000 people in the DRC died of Ebola and more than 3,300 had been infected, predominantly in the North Kivu and Ituri provinces bordering Uganda, Rwanda, and South Sudan. With the vaccines approved under "an emergency situation"—not without ethical and political perils of their own—the vast majority of the people who received one of the vaccines (255,441 recipients out of 274,871) did so following protocols that had accelerated testing in human subjects, even if the researchers deemed the vaccine to have "a good safety profile."<sup>35</sup> The DRC's policies on vaccine use and testing therefore had nontrivial implications, not just for its own people, but also for those in surrounding countries. During a press conference on April 3, 2020, Muyembe was asked about the possibility of coronavirus vaccines: he replied that he was concerned that "at some point COVID-19 will be uncontrollable. The only way to control it will be a vaccine, just like Ebola." He knew companies and

universities were already at work on vaccine research on COVID-19 in the United States, Canada, and China and reported in an offhanded way to his audience that “we’re candidates for doing the testing here [in the DRC].”<sup>36</sup> As head of his country’s control efforts, he probably saw himself as both advocating for and anticipating people’s future needs.

What Muyembe had not fully understood was that between April 1 and 3, “No vaccine tests in Africa” had become a kind of rallying cry on social media with many people assuming or alleging that unjust and dangerous clinical trials had been widespread in the past. Netizens in the DRC and its diaspora saw Muyembe’s remarks as little different from those of Locht and Mira, adding fuel to the firestorm. Even the DRC’s minister of human rights weighed in saying that his country “should not serve as a testing ground for vaccines against Coronavirus. . . . I am a Cabinet Minister and am not aware of any such request to be part of a trial. Absolutely not.”<sup>37</sup> This too was no laughing matter, except that it rested on misunderstandings and distorted truths. As political scientist and sociologist, Fred Eboko (from Cameroon), made clear in an article for *Le Monde*, drug companies’ own statistics showed that Africa and the Middle East accounted for a small percentage of global drug trials. In 2017, for instance, the total came to only 7 percent for both regions. “Sub-Saharan Africa,” he drove home for his readers, “is the part of the world least sought out for clinical trials.”<sup>38</sup> He was right and most people in biomedical research institutes would have known it.<sup>39</sup> This helps to explain why Locht’s organization, INSERM, made a related point in its official response to the public outcry: if BCG vaccines were to be tested for their protective properties in Europe and Australia then “Africa must not be forgotten or excluded from research because the pandemic is global.”<sup>40</sup>

Leaders within the African Academy of Sciences had been making similar points, noting the “gross imbalance” of trials worldwide and the need for just representation of people and sites across the continent.<sup>41</sup> Jenniffer Mabuka, the AAS’s genomics program coordinator, supported this view with an appeal to Africans’ “genetic diversity”: “If this diversity is not well represented in clinical trials, the findings cannot be generalized to large populations.”<sup>42</sup> Whether they understood it or not, advocates of this position were walking a tightrope, balancing their desire to bolster scientific infrastructures and ensure African nations were included, with the high risk that their focus on genetic difference might yet again reify views that people across the continent were somehow essentially different as a group (or set of groups), that Africa was still a kind of “racial laboratory” where genotypes could be used to resurrect taxonomies of ethno-racial biology.<sup>43</sup> In his own effort to assuage people’s concerns, Muyembe recorded a special video on April 4 clarifying his position: no prospective COVID-19 vaccine was yet being tested in the DRC, he explained, though such tests were already underway in

North America, Western Europe, and East Asia. He had faith in vaccines, he said, reminding viewers of successes with polio and Ebola, and reassuring them that nothing would be tested in DRC before it had been tested first and shown to be safe in Belgium, France, and the United States.<sup>44</sup>

What no one involved in the Locht-Mira controversy seemed to know—or remember—was that the BCG vaccine itself had its own checkered history in Africa, having been tested first on about 40,000 people in French Algeria between 1930 and 1956 in one of the longest and largest randomized controlled trials of the first half of the twentieth century.<sup>45</sup> As Clifford Rosenberg has explained, it was a multinational team of League of Nations’ statisticians who created many of the protocols for such a trial, but it was France’s Albert Calmette who ultimately decided to run the test in Algeria, given its legal status as a “département” of France. Even in the late 1920s, well before techniques of “informed consent” became routine in medical research, scientists recognized that to conduct random controls and produce statistically sound results, they had to use key criteria to identify research sites; that is, they had to determine whether there were sufficient numbers of staff, adequately funded institutions, transport and other infrastructure in place, and, above all, enough susceptible people and good record keeping in order to monitor “test subjects.” When Albert Calmette was surveying possible venues for his study, he actually ruled out colonial territories in French West Africa and Indochina because they lacked the infrastructure he knew he needed. North Africa, with its longer imperial connections to France and its more established civil bureaucracy—especially in terms of keeping consistent records of birth, death, and morbidity—made it both a suitable extension of the metropole and an easier place to work, because it lacked powerful physicians’ unions and had higher rates of poverty and tuberculosis. Indeed, Muslims in Algiers were four or five times as likely to die of tuberculosis in the 1910s and 1920s as their European counterparts.<sup>46</sup>

A central paradox of Calmette’s long-standing vaccine trial was that it failed to prove BCG’s efficacy in preventing tuberculosis. What it did do was reinforce and legitimate new statistical standards that made it *less*, not more, likely that African countries would become future testing grounds for other kinds of vaccines and pharmaceuticals. To this day, far more randomized control trials and *formal* human subjects research in medicine have taken place in Europe and North America—whether in hospitals, clinics, schools, asylums, prisons, poor houses, orphanages, universities, or community groups—than in Africa. This historical fact punctures a commonplace journalistic (and literary/cinematic) trope, popularized in John le Carré’s novel *The Constant Gardener*, that assumes that pharmaceutical companies have used Africans *disproportionately* as guinea pigs.<sup>47</sup> By and large they have not, though as medical historians and anthropologists have shown

there are copious examples of other kinds of wrongdoing in medical research and practice, just as there have been ethical transgressions in the smaller number of pharmaceutical trials themselves.<sup>48</sup> One could even argue that bypassing Africa—for most *drug* trials—is also a hangover or byproduct of the colonial era given its insufficient investments in medical and public health infrastructures. By contrast, experiments in economics and planning have remained a norm, involving insidious effects, receiving less public scrutiny, and transforming over the last two decades into a new wave of randomized control trials (RCTs) in development economics. In these efforts, sub-Saharan African sites are considered *quintessential* because its peoples are defined as having the greatest needs. Those spearheading these RCTs often embrace pernicious assumptions about objectivity and flawed methodologies about social reality, all while paving the way for potential abuses of power and human rights in the name of “evidence-based” policies to alleviate poverty.<sup>49</sup>

Perhaps the ultimate paradox of empire-building (and its aftermath) is the way it has left so many people with historically justified fears and anger that more powerful countries and their institutions will continue to make it impossible for African nations to determine for themselves what medical and therapeutic sovereignty should look like.<sup>50</sup> Imperial histories force a set of counterfactual questions that haunt Mira’s thought experiment: what kinds of therapeutics would people in the continent have pursued had they never been colonized? What shape would medical and public health infrastructures have taken had so much wealth, including people, never been (forcibly) removed or extracted? Without European incursions and the radical inequalities it created, what norms for “medical” education, categories for healing diagnostics, standards for treatment, and protocols for research would now exist? To pose these questions helps to remind us of the extent to which so much in “global health governance” over the last sixty years—the very period when African countries achieved political independence—has ignored trends *within* Africa by design, making it clear to the continent’s people how easily they are written off as active agents in their own, not to mention the world’s, histories.

“No vaccine testing in Africa” becomes a rallying cry not just because rumors and details continue to circulate about medical injustices or experiments gone awry, but also because people are viscerally aware that their lives and their futures matter less in any global balance sheet. This is evident, as Adia Benton and Denielle Elliott have noted, from the double standards across Africa that accord white expatriates more protections, expertise, and monetary value in humanitarian initiatives and research collaborations than either African expats or their own citizens.<sup>51</sup> And it is reinforced when the Gates Foundation publishes reports, as it did in 2018, sounding the alarm about African “overpopulation” and pushing

new paternalistic programs for family planning.<sup>52</sup> France's president, Emmanuel Macron, proved an ally on this campaign, saying at a G-20 meeting in 2017 that Africa faced a set of "civilizational" problems including the fact that women had too many children (comments he echoed in the fall of 2018 at a Gates Foundation event), earning him the same kind of critical pushback that the French scientists received.<sup>53</sup> "No clinical trials" in such contexts becomes a useful slogan for anyone who wants to highlight extreme geopolitical inequalities and questions of therapeutic sovereignty and medical self-determination.<sup>54</sup>

## Conclusion: Forecasting Deaths and Ranking Preparedness

In thinking about future scenarios within Africa for COVID-19, there are understandable reasons to be cautious in trumpeting the continent's success stories. Above all, it is hard to celebrate successes when so many people still live with economic precarity; when governments still have comparatively weak infrastructures; when political transparency and economic accountability are not norms for all nations; when state powers and violence are still idiosyncratically applied; when other kinds of misinformation may well be rife; and when infection rates are still uncertain. Indeed, the resurgence in Nigeria of widespread, youth-led mobilizations against SARS (the state-run Special Anti-Robbery Squad) in early October 2020 served as a vivid reminder of the entangled threats people face from a pandemic, police violence, and financial insecurity. As Ghana's finance minister, Ken Ofori-Atta, pointed out in late March 2020, the pandemic's effects on industrial economies and the related collapse in oil prices were already hitting African countries—and thus their people—hard.<sup>55</sup> He and so many other economic forecasters assumed that the worst was still to come. They are likely right in terms of economic fallout, though it is worth pointing out that financial forecasts continue to rely on measures of economic growth that are poor indicators of people's (and environmental) overall well-being.

Still, there are other, more insidious reasons that African successes (and complexities) do not get more attention or reach wider audiences: they run so contrary to (outside) expectations and belie the implicit predictions of different global rankings and systems of global governance. In fact, it was the World Economic Forum (WEF) that popularized the idea in early April that COVID-19 represented a "time bomb just waiting to explode" in the continent, failing to notice, much less investigate the many steps different groups and nations had already taken to ward off disaster. The WEF bullet point summary said it all: "Africa has little hope of support when countries like the United States cannot supply its healthcare workers with personal protective equipment."<sup>56</sup> This statement actually required the

WEF reporter to gloss over evidence in the US of the federal government's negligent, deceptive, and obstructive efforts around the pandemic.<sup>57</sup> This exact erasure was what helped to shore up a logical prophecy/fallacy: if wealthy nations could not meet the testing and equipment needs of their citizens, so the inference went, then there was no way poorer nations could control the pandemic.

In the fall of 2019, just months before the new coronavirus emerged, these kinds of flawed—yet taken for granted—assumptions were hard-wired into a new system of “global health security” metrics. Spearheaded by an Anglo-American alliance at Johns Hopkins University and the Economist Intelligence Unit, the architects of these new measures were interested in classifying 195 different countries in terms of their “proven capabilities for stopping [disease] outbreaks at the source.”<sup>58</sup> Using six different variables, broken down into a 140 questions, their new index labeled the bulk of African countries as “least prepared” to handle a pandemic, including sixteen in West and Central Africa alone.<sup>59</sup> The United States, by contrast, ranked first. Most Latin American countries did better and yet comparing them (and their rankings) to African countries of similar size in terms of population, reveals strikingly different trends that defied expectations.<sup>60</sup>

These kinds of rankings give cover to journalists and scientists when they have insisted on describing Africa's low fatality rates as an enduring “mystery” or an “enigmatic case.”<sup>61</sup> It could not possibly be human agency or ingenuity or continental-level coordination, so it must be chance or other contingencies based on timing, climate, or biology. To be sure, the lower levels of travel into African countries in January and February introduced fewer infections over all. And the exact role of human physiology in COVID-19, whether relating to nutrition, immunology, or even prior vaccinations is still unclear. Yet when experts focus so exclusively on biological and environmental explanations—such as people's vitamin D levels, or their exposure to other infectious diseases, or their relative youthfulness, or the higher temperatures in the tropics—they explicitly play down or ignore the many things people across Africa, including nations' economic policymakers, have done to stem the effects of the first wave. Dozens of countries, for instance, worked to expand their social welfare safety nets including direct food and cash supports, wage subsidies, tax breaks, waived fees for utilities, and stimulus spending for small businesses.<sup>62</sup> However frail and inadequate states may be, these steps made a difference and their impact needs to be factored into analyses rather than ignored or rendered invisible.

As Paul Richards and others have pointed out for the 2014–16 Ebola pandemic in Sierra Leone, Liberia, and Guinea, it was just this tendency to overlook human agency that led epidemiological modelers to predict casualties from Ebola in the hundreds of thousands or even millions, when in practice the final numbers were around 11,310 fatalities.<sup>63</sup> Death rates, of course, reflect just the tip of the iceberg



of human impact in any epidemic and should never be the sole or even primary measure of a pandemic's long-term effects given the toll such diseases can take in terms of both direct and indirect suffering and debility. A large number of people who survive COVID-19, for instance, report lingering neurological, respiratory, and systemic problems. In addition, the pandemic has diverted attention away from other endemic and chronic diseases, as well as childhood vaccination programs, which will likely have wider ripple effects. Its disproportionate impact on women, in the form of higher levels of domestic violence, lost wages and employment opportunities, increased effort to care for children (no longer in school) and kin (who may be ailing), were forecast from the earliest days of the pandemic.<sup>64</sup> Yet even taking all these factors into account, there is no denying that what has happened so far has avoided worst-case scenarios by a wide margin.

To put it plainly, geopolitical rankings are themselves built upon strategic (read: deliberate) blind-spots and ignorance.<sup>65</sup> As late as May 1, a public health specialist predicted “catastrophic levels” of COVID-19 in Africa by the end of June, whereas UN agencies were forecasting anywhere from 300,000 to 3.3 million deaths.<sup>66</sup> As of September 1, Africa, which accounted for 16 percent of the world's population, numbered only 3 percent of all fatalities, whereas the United States, which accounted for 4 percent globally, represented 22 percent of all deaths.<sup>67</sup> It is not enough to point out that rankings bear little resemblance to reality, though that is true, it's also necessary to revisit widespread assumptions about what health and wealth mean in different parts of the world.<sup>68</sup> This kind of analysis not only puts people's agency front and center—raising questions about what they did and how and why it (might have) worked—but also forces far more critical assessments of the prevailing measures and costs of different models of “health care.” Wealthy countries and their medical schools and global health programs have somehow managed to persuade so many people that their models are the best out there and yet so many studies have shown that profit-driven, high-tech systems create pathologies of their own, that socioeconomic inequalities continue to be reproduced over time, and that the most marginal in society are too often treated as disposable. It is worth asking what the trade-offs are when “first-world” models of infectious disease control and “personalized” medicine are implanted in different parts of the world, even when we know they are nested—in Russian doll fashion—in wider geopolitical systems that play down community modes of care, obstruct reproductive (and economic) sovereignty, and insist on valuing property more than people.



## NOTES

I wrote this article in dialogue with Holly Ashford at Cambridge University and Sarah Runcie at Muhlenberg College, who helped me refine the introduction and identify the Congolese artist and also alerted me to Fred Eboko's essay. I consider this a collaborative effort and am grateful for their willingness to share their ideas. I also benefitted during the pandemic from the Twitter feeds of Iruka Okeke, April Zhu, Nanjala Nyabola, and Samira Sawlani. Finally my thanks to Chernoh Bah for offering comments on a penultimate draft and to Adia Benton and Monica Green who have been thoughtful interlocutors throughout. I alone am responsible for any errors.

1. For one widely circulated study, see Aaron Miller, MacJosh Reandelar, Kimberly Fasciglione, Violeta Roumenova, Yan Li, and Gonzalo Otazu, "Correlation between Universal BCG Vaccination Policy and Reduced Morbidity and Mortality for COVID-19: An Epidemiological Study," *medRxiv: The Preprint Server for Health Sciences*, March 28, 2020.
2. Christine Mateus, "COVID-19: le Vaccin BCG Contre la Tuberculose a-t-il un Effet Contre Le Virus?" *Le Parisien*, March 30, 2020.
3. The clip of the interview that circulated was less than one minute; the full interview was nearly six minutes; see <https://www.youtube.com/watch?v=vNZoC57C3vg>, accessed June 16, 2020.
4. A *Business Insider* headline was typical of this misleading take: Julian Kosoff, "2 Top French Said on Live TV that Coronavirus Vaccine Should be Tested on Poor Africans, Leaving Viewers Horrified," *Business Insider*, 3 April 2020. U.S. academics critical of structural racism have since used this factually inaccurate headline to describe the interview.
5. See their Twitter and Instagram accounts for April 2, 2020: @dembabafoot (1.4 million followers); @didierdrogba (1.9 million followers); @setoo9 (4.9 million followers), accessed June 16, 2020.
6. Image posted on Makumba's Instagram page, April 5, 2020, <https://www.instagram.com/p/B-l68o-Hx4M/>.
7. Tedros Adhanom Ghebreyesus, press briefing, April 6, 2020, for the full video of the event, see <https://www.youtube.com/watch?v=tQHm8bPE8ds>.
8. My own work has focused on this issue in depth. See Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870–1950* (Chicago: University of Chicago Press, 2011). Over the last two decades, the literature exploring the history of colonial experiments and scientific research across Africa has flourished. For scholars who have explored laboratory analogies see the work of Gwendolyn Wright (architecture), Saul Dubow (racial science), Jean Comaroff (disease and medicine), Omnia El Shakry (human sciences), Benoît de l'Estoile (anthropology), and Wolfgang Eckart (infectious diseases).
9. This is the subject of a terrific special issue, P. Wenzel Geissler and Noémi Tousignant, eds., "Beyond Realism: Africa's Medical Dreams," special issue 1, *Africa* 90

- (2020): 1–228. On scientific infrastructure for the study of infectious diseases, see especially Iruka Okeke, “Dreams and Dream Spaces of West African Molecular Microbiology,” *Africa* 90 (2020): 167–87.
10. See another wonderful special issue, Erica Charters and Koen Vermeir, eds., “Spotlight Issue: Histories of Epidemics in the Time of COVID-19,” special issue, *Centaurus* 62 no. 2 (2020): 219–380; the two introductions and articles by Monica Green, Anne-Emanuelle Birn, and David Jones speak to these points.
  11. On the challenges of endings see Jeremy Greene and Dora Vargha, “How Epidemics End,” *Boston Review*, June 30, 2020.
  12. These numbers are drawn from the sheer volume of “likes” and retweets of posts that offered this kind of critique.
  13. Details from COVID-19 Afro-Tracking Team, “Imported Cases of COVID-19 in Africa,” April 4, 2020. This is a graphic map developed by a team of students, scholars, young professionals (in international organizations), and a few entrepreneurs working across four continents; they compiled official reports on first imported cases (by country), origins of flights (for earliest 467 imported cases), state border closures (by country), and total number of cases between Feb 14 and Mar 28. My thanks to Wei Ye, PhD student in anthropology at the University of Minnesota for discussing the group’s work with me. Also see, Moustapha Mbow et al, “COVID-19 in Africa: Dampening the Storm?” *Science* 369 n. 6504 (2020): 624–626; and Frank Kuwonu, “Radio Lessons: In Africa Schools Are Closed, but Learning Goes On,” *Africa Renewal* May 15, 2020. In addition to radio, many countries also turned to online and television instruction.
  14. This image was first published on *The Elephant* website on January 31, 2020, <https://www.theelephant.info/cartoons/2020/02/06/continents-vs-corona-virus/>, and again in Abdi Dahir, “Tanzanian Cartoonist Has a Stick For Every Powerful Eye,” *New York Times*, May 1, 2020, <https://www.nytimes.com/2020/05/01/world/africa/tanzanian-cartoonist-gado.html>. Artist’s website: <http://gadocartoons.com/>.
  15. Different countries’ ability to test was and is uneven; statistics are kept by Our World In Data, among other sites: <https://ourworldindata.org>. See African Union and Africa CDC, *Africa Joint Continental Strategy: COVID-19 Outbreak* (Addis Ababa, Ethiopia: AU and Africa-CDC, 2020); approved by AU heads of state on March 26, 2020. Outside support in the form of funding, supplies, equipment, and even technical advice also came in from China, the European Union, the United States, India, France, the United Arab Emirates, Qatar, and Cuba, helping to shore up infrastructures across sub-Saharan Africa. See Judd Devermont, “A Seat at the Table: African Leadership in a Post-COVID-19 World,” Center for Strategic and International Studies, June 12, 2020, esp. map, “International Responses to COVID-19 in Sub-Saharan Africa,” <https://www.csis.org/analysis/seat-table-african-leadership-post-covid-19-world>.
  16. Some disagreement exists whether it was 46 or 43; I’ve used the lower number. Patricia Geli, “Africa Centres for Disease Control and Prevention’s COVID-19 Response: A United Continental Strategy,” *World Bank Blogs*, August 25, 2020, <https://blogs>

- .worldbank.org/health/africa-centres-disease-control-and-preventions-covid-19-response-united-continental-strategy.
17. Nanjala Nyabola, "Africa Is Not Waiting To Be Saved From the Coronavirus," *The Nation*, May 11, 2020. <https://www.thenation.com/article/world/coronavirus-colonialism-africa/>.
  18. Links to these songs were published in various news reports: Y'en a Marre, "Fagaru ci Coronavirus," March 19, 2020, <https://www.youtube.com/watch?v=o6YbYiMLp4A>; DJ Titanium et al., "War Against COVID-19," March 19, 2020, <https://www.youtube.com/watch?v=Y6NvTFohTJY>; George Weah, "Corona (COVID-19) Awareness Song," song, March 25, 2020, video released April 9, 2020, <https://www.youtube.com/watch?v=Q6hARy-TtKc>; Bobi Wine and Nubian Li, "Corona Virus Alert," March 25, 2020, <https://www.youtube.com/watch?v=PUHrck2g7Ic>. UNESCO has gathered many of the African songs together under the hashtag #Don'tGoViral. My thanks to Sean Hanretta for helping me confirm the languages on the DJ Titanium video.
  19. Judd Devermont and Simon Allison, "COVID-19 in Africa: The Good News and the Bad," *Mail and Guardian*, May 2, 2020, <https://mg.co.za/article/2020-05-02-covid-19-in-africa-the-good-news-and-the-bad/>. The exception he mentioned was Tanzania; the following month on June 6 the president of Burundi, Pierre Nkurunziza, who played down the significance of COVID-19, may have died from it, though his official cause of death was a "heart attack." Also see David Pilling, "How Africa Fought the Pandemic—and What the Coronavirus Taught the World," *Financial Times*, October 22, 2020, <https://www.ft.com/content/cobadd91-a395-4644-a734-316e71d60bf7>.
  20. So many historians undermine these assumptions: see the contributions to Thomas Spear, ed., *The Oxford Encyclopedia of African Historiography: Methods and Sources* (Oxford: Oxford University Press, 2019); also see Ewout Frankema and Marlous van Weijenburg, "Structural Impediments to African Growth? New Evidence from Real Wages in British Africa, 1880–1965," *Journal of Economic History* 72 (2012): 895–926; Amanda Logan, *The Scarcity Slot: Excavating Histories of Food Security in Ghana* (Berkeley: University of California Press, 2020).
  21. For various citations see V. Y. Mudimbe, Jean O'Barr, and Robert Bates, eds., *Africa and the Disciplines: The Contributions of Research in Africa to the Social Sciences and Humanities* (Chicago: University of Chicago Press, 1993); Tilley, *Africa as a Living Laboratory*.
  22. Alice Conklin, *A Mission to Civilize: the Republican Idea in France and West Africa, 1895–1930* (Stanford, CA: Stanford University Press, 1997); Frederick Cooper and Randall Packard, eds., *International Development and the Social Sciences: Essays in the History and Politics of Knowledge* (Berkeley: University of California Press, 1997); Frederick Cooper, *Decolonization and African Society: the Labor Question in French and British Africa* (Cambridge: Cambridge University Press, 1996).
  23. The League of Nations Health Organization sponsored work on both sleeping sickness and tuberculosis in the 1920s, which eventually led to its two pan-African health conferences in 1932 and 1935. For primary source references, see

- Séverin Abbatucci, *Public Health Services in the French Colonies* (Liège, Belgium: League of Nations, 1926), and *A Note on Some of the Scientific Studies Undertaken by Members of the Colonial Medical Service, 1930–1947, with a Bibliography* (London: Her Majesty's Stationery Office, 1949). Scholarship on infectious diseases in African history is vast and still growing: for select examples consult the work of Jean-Paul Bado, Simukai Chigudu, Myron Echenberg, John Ford, Nancy Gallagher, Monica Green, Kirk Hoppe, John Iliffe, Guillaume Lachenal, Maryinez Lyons, Clapperton Mavhunga, James McCann, Deborah Neill, Randall Packard, Kim Pelis, Elisha Renne, Megan Vaughan, James Webb, Mari Webel, and Luise White. My apologies that space prevents me from listing the full titles of their important works.
24. The estimate comes from a demographic map of Africa published by UNESCO and cited in Paul Farmer, "Ebola, Spanish Flu, and the Memory of Disease," *Critical Inquiry* 46 (2017): 70.
  25. For a review of the literature, and a cautious approach to figures, see Shane Doyle, "Demography and Disease," in *Oxford Handbook of Modern African History*, ed. John Parker and Richard Reid (Oxford: Oxford University Press, 2013), 38–55. Also see Emmanuel Akyeampong, "Disease in West African History," in *Themes in West Africa's History*, ed. Emmanuel Akyeampong (Athens: Ohio University Press, 2006), 186–207.
  26. Demographic shocks and money economies both predated the Scramble for Africa, of course, but their effects intensified with European conquest. See Jane Guyer and Karin Pallaver, "Money and Currency in African History," *Oxford Research Encyclopedia in African History*, ed. Thomas Spear (Oxford: Oxford University Press, 2018).
  27. In surveying the scholarship, Doyle points to a "band of sub-fertility that stretched across equatorial Africa, encompassing much of the present day of Uganda, north-west Tanzania, south Sudan, Central African Republic, both Congos, Cameroon, and Gabon, where birth rates remained depressed until well after the Second World War." On infertility scares in the two Congos, see Nancy Hunt, "Colonial Medical Anthropology and the Making of a Central African Infertility Belt," in *Ordering Africa: Anthropology, European Imperialism, and the Politics of Knowledge*, ed. Helen Tilley and Robert Gordon (Manchester, UK: University of Manchester Press, 2007). On labor migration and debilities from mining, Julie Livingston, *Debility and the Moral Imagination in Botswana* (Bloomington: Indiana University Press, 2005); on agricultural changes, Henrietta Moore and Megan Vaughan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890–1990* (Portsmouth, NH: Heinemann, 1994).
  28. For a synthesis that places Western African developments in a global context, see Carl Nightingale, "Segregation Mania," in *Segregation: a Global History of Divided Cities*, ed. Carl Nightingale (Chicago: University of Chicago Press, 2012), 159–90. Some of this paragraph is also based on research in files dealing with "native

- racess” and the “Advisory Sanitary Medical Committee for Tropical Africa,” in the British National Archives, London.
29. Kalala Ngalamulume, “Plague and Violence in Saint-Louis-du-Sénégal, 1917–1920,” *Cahiers d’Étude Africaines* XLVI no. 183 (2006): 539–65.
  30. For background on ethnographic versus physiological understandings of racial groups and of distinctions between racial states and racial science, see chapters 5 and 6 of Tilley, *Africa as a Living Laboratory*; also see several of the contributions in Tilley with Gordon, *Ordering Africa*. On some of the tensions between racial idioms and empires, see Helen Tilley, “Racial Science, Geopolitics, and Empires: Paradoxes of Power,” *Isis* 105 (2014): 773–81.
  31. The latter patterns are just as important as the former and must be included in any effort that tries to “decolonize” knowledge or establish “decolonial” practices. Too often only one side of the equation gets attention leading to “solutions” that reentrench colonial ways of thinking or deny the work of past generations interested in epistemic accuracy and social justice. I explore some of the dynamics in Helen Tilley, “Global Histories, African Genealogies, and Vernacular Science, or, Is the History of Science Ready for the World?” *Isis* 101 (2010): 110–19.
  32. Ideas of entanglement are now widely used, though I first came across them in the work of Nicholas Thomas, *Entangled Objects: Exchange, Material Culture, and Colonialism in the Pacific* (Cambridge, MA: Harvard University Press, 1991); the idea of “braiding” stems from Projit Mukharji, *Doctoring Traditions: Ayurveda, Small Technologies, and Braided Sciences* (Chicago: University of Chicago Press, 2016).
  33. For a cross-section of studies on racial science and racial thinking, see Patricia Lorcin, *Imperial Identities: Stereotyping, Prejudice and Race in Colonial Algeria* (London: Taurus, 1995); Karen Jochelson, *The Colour of Disease: Syphilis and Racism in South Africa, 1880–1950* (Oxford: St. Antony’s, 2001); Owen White, *Children of the French Empire: Miscegenation and Colonial Society in French West Africa, 1895–1960* (Oxford: Clarendon Press, 1999); Christopher Lee, *Unreasonable Histories: Nativism, Multiracial Lives, and the Genealogical Imagination in British Africa* (Durham, NC: Duke University Press, 2014); Saul Dubow, *Scientific Racism in Modern South Africa* (Cambridge: Cambridge University Press, 1995); Hilary Jones, *The Métis of Senegal: Urban Life and Politics in French West Africa* (Bloomington: Indiana University Press, 2013); Jonathan Glassman, “Ethnicity and Race in African Thought,” in *A Companion to African History*, eds. William Worger, Charles Ambler, and Nwando Achebe (New York: Wiley-Blackwell, 2018), 199–224.
  34. Muyembe-Tamfum often uses only “Muyembe” in official reports. My thanks to journalist, Elien Spillebeen, for first bringing Muyembe’s briefings to my attention. For the 2018 outbreak, see GAVI Vaccine Alliance, “Ebola Vaccine Praised as Congo Outbreak Declared Over,” July 25, 2018, <https://www.gavi.org/news/media-room/ebola-vaccine-praised-congo-outbreak-declared-over>. For the 2019 efforts, see London School of Hygiene and Tropical Medicine, “Global

- Consortium Working with DRC Government to Introduce Second Ebola Vaccine,” October 31, 2019, <https://www.lshtm.ac.uk/newsevents/news/2019/global-consortium-working-drc-government-introduce-second-ebola-vaccine>.
35. Keesha M. Matz, Andrea Marzi, and Heinz Feldmann, “Ebola Vaccine Trials: Progress in Vaccine Safety and Immunogenicity,” *Expert Review of Vaccines* 18 (2019): 1230.
  36. For Muyembe’s April 3 press briefing see “DR Congo ‘Prepared’ to Take Part In Vaccine Testing,” Agence France Presse, April 3, 2020, <https://www.barrons.com/news/dr-congo-prepared-to-take-part-in-vaccine-testing-official-01585950904>. For background see Adia Benton, “Why We Should be Cautious About the ‘Game-Changer’ Ebola Vaccine,” *Al-Jazeera*, May 30, 2018; Ann Kelly, “Ebola Vaccines, Evidentiary Charisma, and the Rise of Global Health Emergency Research,” *Economy and Society* 47 (2018): 135–61.
  37. Andre Lite quoted in AFJN Interview, “No African Guinea Pigs for Coronavirus Vaccine: DRC Minister of Human Rights, Andre Lite,” *Africa Faith and Justice Network*, April 4, 2020, <https://afjn.org/africans-not-guinea-pigs-for-coronavirus-vaccine/>.
  38. Fred Eboko, “Non, L’Afrique n’est pas, ni de près ni de loin, la cible privilégiée des essais clinique,” *Le Monde*, April 8, 2020.
  39. Duduzile Ndwandwe, Kopano Dube, Lindi Mathebula, Charles Wiysonge, “Description of Vaccine Clinical Trials in Africa: A Narrative Review,” *Human Vaccines and Immunotherapeutics* 16 (2020). Of the 377 trials they reviewed, four diseases accounted for nearly half of the trials: malaria (20%), HIV/AIDS (15%), tuberculosis (7%), and Ebola (6%).
  40. INSERM statement quoted in “Coronavirus: France Racism Row Over Doctors’ Africa Testing Comments,” *BBC News*, April 3, 2020, <https://www.bbc.com/news/world-europe-52151722>.
  41. The quotation is from David Ishola (from Sierra Leone) now at the London School of Hygiene and Tropical Medicine, in an African Academy of Sciences video on Clinical Trials Community, June 8, 2020, <https://www.facebook.com/aasciences/videos/the-clinical-trials-community-being-developed-by-the-african-academy-of-sciences/722903511796106/>; also see Tom Kariuki (from Kenya), Director of Programs, AAS video on COVID-19 and clinical trials: <https://www.youtube.com/watch?v=ZD2bsK1oxqI>. For two different clinical trials registries for all of Africa, see <https://www.ctc.africa/> and <https://pactr.samrc.ac.za>.
  42. Jennifer Mabuka, “Few Clinical Trials Are Done In Africa: COVID-19 Shows Why This Urgently Needs to Change,” *The Conversation*, April 6, 2020, <https://theconversation.com/few-clinical-trials-are-done-in-africa-covid-19-shows-why-this-urgently-needs-to-change-135117>. Professor Mabuka is from Kenya.
  43. Duana Fullwiley and Sahra Gibbon, “Genomics in Emerging and Developing Economies,” in *Handbook of Genomics, Health and Society*, eds., Sahra Gibbon, Barbara Prainsack, Stephen Hilgartner, and Janelle Lamoreaux (New York: Routledge, 2018), 228–237; Catherine Bliss, “Conceptualizing Race in the Genomic



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44. “COVID-19 et Vaccin en RDC: les Précisions Dr. Muyembe,” <https://www.youtube.com/watch?v=aGCuywaX4cA>.
  45. This history is carefully unpacked in a terrific article by Clifford Rosenberg, “The International Politics of Vaccine Testing in Interwar Algiers,” *American Historical Review* 117 (2012): 671–97. BCG vaccines were actively administered in French Indochina between the world wars, but their efficacy was neither studied nor tested using random controls. For this see, Laurence Monnais, “Preventive Medicine and ‘Mission Civilisatrice’: Uses of the BCG Vaccine in French Colonial Vietnam between the Two World Wars,” *International Journal of Asia-Pacific Studies* 2 (2006): 1–27. For my own discussion of the history of medical experiments, see Helen Tilley, “Experimentation in Colonial East Africa and Beyond,” *International Journal of African Historical Studies* 47 (2014): 495–505; and Helen Tilley “Medicine, Empires, and Ethics in Colonial Africa,” *American Medical Association Journal of Ethics* 18, no. 7 (2016): 743–53.
  46. Rosenberg, “International Politics of Vaccine Testing in Interwar Algiers,” 687.
  47. So many of the journalistic articles focused on the French scientists’ controversy invoked harms done in medical experimentation; John le Carré, *The Constant Gardener* (New York: Scribner, 2001). Le Carré based his novel on a real-life example of a trial of a 1996 Pfizer antibiotic trial in Kano, Nigeria, which ultimately went to court in Nigeria; see Ben Goldacre, *Bad Pharma: How Drug Companies Mislead Doctors and Harm Patients* (New York: Faber and Faber, 2012), 116–18.
  48. For an example that gets at the kind of racism and stupidity (bêtise) that Demba Ba invoked (above), see Guillaume Lachenal, *The Lomidine Files: The Untold Story of a Medical Disaster in Colonial Africa* (Baltimore, MD: Johns Hopkins University Press, 2017).
  49. Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, and Modernity* (Berkeley: University of California Press, 2002); Mary Morgan, “‘On a Mission’ With Mutable Mobiles,” *London School of Economics Working Papers on the Nature of Evidence* (London: LSE, 2008); Kevin Baker, “Virtually Nigeria: USAID, Simulated Futures, and the Politics of Postcolonial Expertise, 1964–1980,” in *Struggle for the Long-Term in Transnational Science and Politics: Forging the Future*, eds., Jenny Andersson and Eglė Rindzevičiūtė (New York: Routledge, 2015), 195–217; Alden Young, *Transforming Sudan: Decolonization, Economic Development, and State Formation* (Cambridge: Cambridge University Press, 2018); Margarita Rayzberg, “Fairness in the Field: The Ethics of Resource Allocation in Randomized Controlled Field Experiments,” *Science, Technology and Human Values* 44, no. 3 (2019), 371–398; Luciana de Souza Leão and Gil Eyal, “The Rise of Randomized Controlled Trials in International Development in Historical Perspective,” *Theory and Society* 48 (2019), 383–418; Godwin Murunga and Ibrahim Ogachi, eds., “Randomised Control Trials and Development Research in Africa,” *CODES-RIA Bulletin* no. 1 (2020): 1–29.

50. For evocative studies of the recent past and imagined modernities, see Paul Wenzel Geissler, ed., *Para-States and Medical Science: Making African Global Health* (Durham, NC: Duke University Press, 2015); Paul Wenzel Geissler, Guillaume Lachenal, John Manton, and Noémi Tousignant, *Traces of the Future: An Archaeology of Medical Science in Africa* (Chicago: University of Chicago Press, 2016).
51. Adia Benton, "African Expatriates and Race in the Anthropology of Humanitarianism," *Critical African Studies* 8 (2016): 266–77; Denielle Elliott, "Transnational Scientific Projects and Racial Politics: The KEMRI-Six Case Against the KEMRI-Wellcome Trust Research Programme in Contemporary Kenya," *Medizinethnologie*, August 7, 2017, <https://www.medizinethnologie.net/the-kemri-six-case>.
52. Bill and Melinda Gates Foundation, *Goalkeepers: The Stories Behind the Data 2018* (Seattle, WA: Gates Foundation, 2018); Ross Douthat, "Fear of a Black Continent," *New York Times*, October 20, 2018.
53. Siddhartha Mitter, "Yes, Macron's 'Civilizational' Africa Statement is Problematic, But It's Also Very French," *Quartz Africa*, July 11, 2017.
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56. Tolbert Nyenswah, "Africa has a COVID-19 Time Bomb to Defuse," *World Economic Forum*, April 6, 2020, <https://www.weforum.org/agenda/2020/04/africa-covid-19-time-bomb-defuse/>.
57. A Cornell University research group concluded both domestically and internationally that "the President of the United States was likely the largest driver of the COVID-19 misinformation 'infodemic.'" Sarah Evanega, Mark Lynas, Jordan Adams, Karinne Smolenyak, "Coronavirus Misinformation: Quantifying Sources and Themes in the COVID-19 'Infodemic,'" [July 23, 2020], [https://allianceforscience.cornell.edu/wp-content/uploads/2020/09/Evanega-et-al-Coronavirus-misinformation-submitted\\_07\\_23\\_20.pdf](https://allianceforscience.cornell.edu/wp-content/uploads/2020/09/Evanega-et-al-Coronavirus-misinformation-submitted_07_23_20.pdf).
58. Global Health Security Index, <https://www.ghsindex.org>.
59. These are, with ranking out of 195 in parentheses: Benin (#150), Togo (#128), Niger (#132), Burkina Faso (#145), Mali (#147), Guinea (#125), Guinea Bissau (#186), Mauritania (#157), Chad (#150), Angola (#170), Zambia (#152), Democratic Republic of Congo (#161), Republic of Congo (#173), Central African Republic



- (#159), Gabon (#186), and Equatorial Guinea (#195); 2019 Global Health Security Index.
60. Nigeria with a population of 206 million was ranked ninety-sixth in the GHS index and had a death rate on August 23, 2020 of 0.51 per 100k. Brazil, by contrast, with a population of 212 million, was ranked twenty-second on the index, yet had a rate of 54.54 per 100k. To state the obvious, whatever its other limitations, Nigeria's government under President Buhari did not deny or downplay the threat of COVID-19, whereas Brazil's President Jair Bolsonaro did. Likewise Ghana (population 31 million) was ranked 105th, but had a death rate of 0.88 per 100k, whereas Peru (population 33 million) was ranked 49th and had a rate of 85.17. Senegal (population 17 million) showed a similar discrepancy, ranked ninety-fifth in the Global Health Security Index with a rate of 1.68, whereas Ecuador (population 17 million) was ranked forty-fifth and had a rate of 36.74. (The United States's death rate per 100k was 53.90 on the same date.)
  61. Quoted in, "Editorial: 'COVID-19 in Africa: No Room for Complacency,'" *The Lancet* 395 (2020): 1669.
  62. For an interview on Senegal's response, including economic measures, see Folashadé Soulé and Camilla Toulmin, "Felwine Sarr: The COVID-19 Crisis Demonstrates the Need to Change Track and Re-Think the World of Tomorrow," *Institute for New Economic Thinking*, June 16, 2020, <https://www.ineteconomics.org/perspectives/blog/felwine-sarr-the-covid-19-crisis-demonstrates-the-need-to-change-track-and-re-think-the-world-of-tomorrow>. For the list of social welfare programs, see Judd Devermont, "COVID-19 in Africa: The Good News and the Bad," *Mail & Guardian*, May 4, 2020.
  63. Paul Richards, *Ebola: How a People's Science Helped End an Epidemic* (London: Zed Books, 2016).
  64. Helen Lewis, "The Coronavirus Is a Disaster for Feminism: Pandemics Affect Men and Women Differently," *New Republic*, March 19, 2020, <https://www.theatlantic.com/international/archive/2020/03/feminism-womens-rights-coronavirus-covid19/608302/>.
  65. Linsey McGoey, *The Unknowers: How Strategic Ignorance Rules the World* (London: Zed Books, 2019).
  66. The scholar, Dr. Uzma Alam, is from Kenya and noted that African countries had more experience with horizontal approaches to health care and had learned important lessons from Ebola, though this did not seem to change her predication. Colin Poitras, "Study Predicts COVID-19's Impact Across Africa," *Yale School of Medicine*, May 1, 2020, <https://medicine.yale.edu/news-article/24397/>; Economic Commission for Africa, *COVID-19 in Africa: Protecting Lives and Economies* (Addis Ababa, Ethiopia: ECA, 2020).
  67. These numbers are from August 30, 2020. Global fatalities were recorded as approximately 868,000; U.S. fatalities were 186,760; and all African fatalities were 29,800. African statistics from *The Elephant*, <https://www.theelephant.info/mapping-the-coronavirus-pandemic-in-africa/>.

68. See Helen Tilley, “Medical Cultures, Therapeutic Properties, and Laws in Global History,” *Osiris* (forthcoming).

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