

MAE-MAT EARLY CAREER PAPER AWARD 2021

# The Grammar of Leprosy

## Temporal Politics and the Impossible Subject

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### Abstract

This research article critically interrogates the implications and unintended consequences of the World Health Organization's purported elimination of leprosy as a public health problem. I explore how leprosy has been portrayed (for nearly a century) as something from the past, recalcitrantly lingering on into the present, but surely about to be gone—a temporal framing I call the 'grammar of leprosy'. I recount the experiences of Daniel, my interlocutor in Tanzania, whose existence became a problem for his doctors. This problem they ultimately resolved by fabricating negative test results in order to record what they already knew: leprosy had been eliminated. I also analyse how researchers working for Novartis (the supplier of leprosy's cure) continue to push for an always imminent 'elimination', while field researchers repeatedly caution about the potential problems of this approach. Finally, I reveal how the grammar of leprosy operates through a complex set of temporal politics, pulling into its orbit and being enabled by multiple interwoven temporalities. I conclude that—due to this grammar, the impossible subjects it produces, and the temporal politics through which it operates—leprosy elimination campaigns may have dire consequences for the lives of people with leprosy today, impeding rather than enabling treatment.

### Keywords

Leprosy, Tanzania, Disease elimination, Temporal politics, Grammar.

‘...the battle against the scourge of leprosy is “all but won”’

— British Leprosy Relief Association (BELRA), 1952.

## Introduction

This research article critically interrogates the implications and unintended consequences of the World Health Organization’s purported elimination of leprosy as a public health problem. I analyse the temporal framing of leprosy elimination in Tanzanian archival documents and transnational scientific debates, revealing how—across such diverse times, institutions, and discourses—leprosy has consistently been portrayed as something from the past, recalcitrantly lingering on into the present, but surely about to be gone. I call this temporal framing the ‘grammar of leprosy’, and I demonstrate its stakes ethnographically by showing how disease elimination efforts can counterintuitively hinder treatment and produce impossible subjects. Such was the case for Daniel, one of my interlocutors in the Southern Highlands of Tanzania, where I conducted approximately three years of ethnographic fieldwork as part of a larger project on pharmaceuticals.<sup>1</sup> I conclude with Wittgenstein’s (1969) provocation about our inability to doubt the ‘grounds’ of any grammar, the foundational assumptions upon which all subsequent enquiry is premised. Is it even possible to question whether the goal of disease elimination should be pursued? How might the pursuit itself be rendering this question inaudible?

Between 2013 and 2018, Daniel and I spent hundreds of hours trying, always unsuccessfully, to access medical care for him—from attempting to acquire the so-called cure for leprosy (which was sitting on the shelves of the local government hospital collecting dust) to seeking to have his necrotic wounds cleaned, dressed, and treated. However, we found that the ‘elimination’ of leprosy made Daniel into an impossible subject—impossible for the Tanzanian healthcare system, the World Health Organization (WHO), the local government welfare office, and even his own kin. By ‘impossible’ I do not mean simply that Daniel was stigmatised or mistreated for having leprosy. Rather, his very existence presented a problem for those we encountered and thus his reality was denied, as I recount below, in numerous ways. We were told many times over, often while Daniel was standing right there, that leprosy has been ‘eliminated’. Doctors told us this, government officials told us this, and, in fact, the WHO declares leprosy to be ‘eliminated’ in the region. Although elimination is defined as a prevalence of less than one case per 10,000 people (WHO 2019), there seemed to be dissonance between this technical

<sup>1</sup> Daniel is a pseudonym.

definition and everyday discourses in which ‘eliminated’ meant ‘no longer a problem worth attending to’.

As I also began delving into archival research, policy reports, and critiques of leprosy elimination by infectious disease specialists, I became aware of the temporal politics subtending Daniel’s encounters with the state, non-governmental organisations, and healthcare workers. For nearly a century, leprosy has been apprehended almost exclusively in terms of elimination. This temporal horizon structures the forms of care provided (or not), decisions over epidemiological methods of enumeration, and the financing of global/public health priorities. In referring to this framing as a type of ‘temporal politics’, I draw attention to how leprosy elimination both ‘takes for granted *and* produces’ particular temporal horizons, lived and imagined, embodied and anticipatory (McKay 2018, 12). As anthropologists have compellingly demonstrated, the manipulation of time can operate as both a mode of subjugation (Fabian [1983] 2014; Verdery 1996) and a strategy for resistance (Argenti 2007; Ahmann 2018). Much attention has focused on the near future, showing how it is hollowed out (Guyer 2007) or even ‘dispossessed’ when people face ‘the inability to plan, predict, or build futures in an incremental way’ (Smith 2011, 17). Here, I show how elimination campaigns construct the disappearance of leprosy as the (perpetual) near future, always just about to happen, no matter how much time passes.

I argue that elimination is the grammar through which leprosy has been spoken for almost a century: the disease is always (just about to be) gone and so is apprehended as though it does not fully exist in the present. By referring to this as a ‘grammar’, I draw upon Wittgenstein’s conceptualisation of the language-game, which emphasises how ‘language is part of an activity, or of a form of life’ (1958, 23). As developed further by Cristiana Giordano, the concept of grammar involves the repetition of rules and norms, subject and object positions, which delimit how experience is translated into knowledge and what becomes intelligible (or not) (2020). In the case of leprosy, its position within humanitarian biomedicine—from colonial medicine to global health—has been sustained by the perpetuation of a temporal structure that anticipates its imminent disappearance and therefore justifies a whole set of practices built around this expectation. I call this a grammar to highlight how it subtends knowledge and engagement with leprosy across several domains and many decades. Within this grammar, leprosy is durably positioned as existing as the (soon to be) past, recalcitrantly lingering on in the present, but *certainly* almost gone. The grammar of leprosy as past present is pervasive: from contemporary WHO goals and *New York Times* reporting to 1950s

colonial medicine and *Tanganyika Standard* news columns.<sup>2</sup> Other understandings of the disease appear unintelligible from within this grammar.

My concern with the grammar of leprosy is not simply discursive. I maintain that this grammar and the temporal politics through which it operates have dire consequences for the lives of persons with leprosy today, actually hindering treatment. I demonstrate this primarily through my ethnographic fieldwork in Iringa, Tanzania, recounting in depth the challenges faced by Daniel, whose story reveals in complex and varied ways how the grammar of leprosy manifests in the post-colonial healthcare landscape of contemporary Tanzania. I also draw from six months of archival research at the Tanzania National Archives, which allows me to probe the *longue durée* of leprosy's anticipated elimination. Although the political entities being served by this temporal framing have morphed—from the British Tanganyika colony, to the once socialist nation of Tanzania, to the neoliberal public–private partnerships of global health today—it is striking that the grammar of leprosy has remained remarkably similar. Finally, I analyse a series of correspondences published by scientists in *The Lancet: Infectious Diseases* journal over the past several years, in which researchers working for Novartis (the supplier of leprosy's cure) continue to push for an always imminent 'elimination' while field researchers in Brazil repeatedly caution about the potential problems of this grammar. While all the talk of imminent elimination (combined with the existence of a cure) may make it seem as though scientists have a thorough understanding of the disease, leprosy actually remains something of an enigma for those who study it. There are many questions left unanswered, and leprologists too lament that the framing of leprosy as almost eliminated makes it very difficult to find answers or provide care. Although these infectious disease specialists do question the pursuit of elimination, the grammar of leprosy renders their doubts inaudible within global health agendas.

## Leprosy elimination as a barrier to leprosy treatment

Like many people with disabilities in Tanzania, Daniel survives by begging in urban areas. He estimates that he is in his mid-forties but does not know his precise age. Daniel is ethnically Hehe, having grown up in a rural village a few hours' drive beyond the town of Iringa. Daniel's physical disability from leprosy is quite advanced—with several fingers amputated now, he often burns himself as he tries to cook with firewood amongst rock formations on the outskirts of town. Even on the hottest days he wears an oversized coat and a hat, with a somewhat eerie-looking smiley face sewn onto it. We got to know each other through chatting at

<sup>2</sup> A 2014 *New York Times* article on leprosy was entitled: 'Leprosy, Still Claiming Victims' (Angier 2014). The word 'still' in this title gives the impression that this disease should already have disappeared, and much of the piece is dedicated to expelling the 'myth' that leprosy is a 'medieval' disease.

the town park where I often went to have Swahili lessons and where Daniel would be working. (For my interlocutors, begging is a recognised form of work; each beggar in Iringa has ‘their spot’ in town where they come to work each day.)

In 2015 I asked another close interlocutor of mine, Dr O, who worked at a regional government hospital, if it would be alright if I brought a friend with leprosy to meet him and receive treatment. Dr O reacted incredulously—he started chuckling and teasing me that leprosy does not exist anymore and that he did not believe that I knew someone with leprosy. I insisted and so he eventually agreed. When Daniel and I arrived at the hospital, Dr O immediately recognised Daniel’s symptoms as signs of leprosy. He asked Daniel whether he could feel fire when he touched it with his hand, to which Daniel replied ‘no’. This seemed sufficient for Dr O to confirm a diagnosis of leprosy.

During our meeting, I noticed the calendar on the wall in Dr O’s office. It had been provided by the German Leprosy and Tuberculosis Relief Association (abbreviated DAHW in German), the primary non-governmental organisation (NGO) that had dealt with leprosy in Iringa before the disease was ‘eliminated’ and they had moved on to more urgent priorities. Although the calendar’s title was partially covered by a sticker about tuberculosis, it was just possible to make out the heading across the top in blue upper-case letters, which read: ‘*Changamoto za Kutokomeza Ukoma 2014* [Challenges of Leprosy Elimination 2014]’. As I would soon learn, there are many challenges to leprosy elimination, not the least of which is the shifting priorities of public health mandates, aptly symbolised by the tuberculosis sticker now hiding the calendar’s title. In fact, this NGO’s 2013 Annual Report stated that ‘In Uganda, Tanzania and Nigeria, leprosy checks by national programmes are relatively well run which means that DAHW focuses more on tuberculosis there’ (DAHW 2013, 9).

Leprosy is a chronic infection of the skin and nerves caused by the bacteria *Mycobacterium leprae*. Temporality is important here too: the organism multiplies very slowly, incubating for at least two years (five on average), and it can take over twenty years (even up to thirty) after infection before symptoms first appear (DAHW 2013, 18; WHO 2019). There is no way to test for leprosy during the years when it is incubating. The bacteria will not grow outside of humans (although it has appeared, very rarely, in a handful of other animals, most notably armadillos, who contracted it from us). This means that it cannot be studied in other hosts and is nearly impossible to culture in the lab (Ploemacher et al. 2020). Scientists are not entirely sure (and not all are in agreement) about how the disease is transmitted (Smith et al. 2014). It is thought to spread through respiratory droplets, but researchers disagree over whether it can be spread by skin contact as well. Additionally, 95 percent of humans appear to be immune to leprosy, for reasons

not well understood. These are some of the many scientific questions left unanswered now that research funding has been reallocated to other diseases with more compelling numbers (Scollard 2005). Organisations such as the Bill and Melinda Gates Foundation no longer fund leprosy research because of the assumption that the disease is always *just about* to be gone (Lockwood and Suneetha 2005).

The standard treatment for leprosy is multidrug therapy, consisting of either two or three antibiotics (rifampicin, clofazimine, and dapsone). Although the disease is curable, these drugs need to be taken every day for six months to a year, and even then relapse may occur. While leprosy is rarely fatal, it leads to severe disability over time. The skin on the face and extremities forms scaly lesions (*lepra* is Greek for scaly), and the Schwann cells that sheathe the nerves are destroyed so patients lose sensation in their extremities. The respiratory tract and eyes are damaged as well. There is a high prevalence of secondary bacterial infection in the resulting chronic lesions, and they often go untreated until they must be amputated—as was the case with several of Daniel’s fingers and toes.

After confirming that Daniel did in fact have leprosy, Dr O revealed to me that, although his work title located him within the ‘National Tuberculosis and Leprosy Programme’ at the hospital, he had never received any training in the treatment of leprosy. There was a course he was supposed to attend, he said, but government funds were not available so he was ‘still waiting’. To say that one is ‘still waiting’ (*bado ninasubiri*) in Swahili is often a subtle way of conveying that something that definitely ought to have happened, probably never will. Dr O’s lack of training must be understood within broader global health developments. According to the WHO regional office for Africa, ‘[b]y the end of 2005, all countries in the Region had eliminated leprosy as a public health problem’ (WHO 2011, 11). Again, elimination is defined as a reduction in prevalence to less than one case per 10,000 people. The global prevalence of leprosy is thought to have plateaued at about 214,000 cases per year, with 94% of new cases being reported in just thirteen countries (among these, five are in Africa: the Democratic Republic of Congo, Ethiopia, Madagascar, Nigeria, and Tanzania) (WHO 2016). However, as is the case in Tanzania, few countries now have any surveillance-response system to provide current epidemiological data.

Some of the consequences of the WHO elimination campaign have been the ceasing of planning, training, and service provision for leprosy, in addition to the aforementioned absence of research due to the assumption that the disease is always just about to be gone (Lockwood and Suneetha 2005; Scollard 2005). In particular, there is very little research into the most perplexing questions about leprosy, such as why some individuals have high relapse rates even after

completing two years of treatment. There is also no knowledge about how to detect such cases. Even more frightening is the lack of research on multidrug-resistant strains of leprosy; resistance has been documented for all three of the antibiotics used to treat the disease and rates of multidrug resistance are rising (Cambau et al. 2018). Leprologists lament that it is extremely difficult to find postdoctoral students and clinical fellows to work in the field, because ‘who can build a career on a disease that is perceived as being eliminated?’ (Lockwood and Suneetha 2005, 232). At the same time, some infectious disease physicians argue that leprosy does not biologically lend itself to elimination and that it should be classified as a chronic stable disease rather than as an acute infectious disease responsive to elimination strategies (Lockwood, Shetty, and Penna 2014; Yadav et al. 2014). Lockwood and Suneetha assert that the ‘WHO missed an opportunity to be intellectually open when it failed to acknowledge that leprosy is not going to be eliminated by multidrug therapy alone’ (2005, 232).

When the WHO declared leprosy to be successfully ‘eliminated’ as a public health problem, many governments ended (expensive) specialised programmes and adopted more cost-efficient integrated approaches whereby primary healthcare workers were tasked with diagnosing and treating leprosy—often without any additional training (Lockwood and Suneetha 2005, 232; Sardesai 2015). Since Dr O did not know how to treat Daniel, he told us that we should come back another day to meet his supervisor, Dr N, the Regional Director for Tuberculosis and Leprosy.

## Bewitchment and fabricated test results

It took months and many failed attempts before this meeting actually took place. When it did, Dr N declared that he recognised Daniel from a leprosy treatment centre in Morogoro where Daniel had been treated—and cured—five years earlier. The room grew increasingly tense as Daniel began to refute this version of events. With tears running down his face, he explained that he had sought treatment at that government clinic, yes, but that it was for malaria. The doctors there had bewitched him, he said, using the syringe for administering the malaria medicine to give him leprosy.<sup>3</sup> Like many people with leprosy, Daniel has extreme hoarseness, making his words difficult to hear or understand, and his tears made it even harder to follow everything he said. But I understood perfectly clearly when

3 Syringes were often viewed by my interlocutors in Tanzania as the archetypal symbol of the dangers of biomedicine; they have a long history of being associated with witchcraft and other nefarious practices throughout East Africa. When I spoke to elders in Iringa, they would tell stories of how they were forced by the British colonial government to get smallpox vaccinations. They also spoke of histories of Western bloodsuckers who used syringes to steal Africans' blood (see White 2000), the spread of HIV/AIDS through syringes (see Tilley 2016), and their fears that vaccinations are causing the mass sterilisation of Africans today (see Feldman-Savelsberg et al. 2000). It is important to recognise that although Dr N doubted the veracity of Daniel's claims, he was not incredulous about the use of syringes to bewitch people.

Dr N began lecturing Daniel, in a harsh tone of voice, saying that ‘there is no medicine that can make your fingers or nose grow back’.

The conflict peaked as Dr N kept asking Daniel over and over ‘*unaelewa?*’ (‘do you understand?’), to which Daniel kept replying, softly but defiantly, ‘*nasikiliza*’ (‘I am listening’); much to the doctor’s chagrin, Daniel refused ever to say that he ‘understood’. This small act of resistance obviously infuriated Dr N. He finally demanded that Daniel remove his shirt. (I turned away at this point because Daniel appeared humiliated by being forced to do this.) The doctor informed Daniel that the white patches on his body were proof that he no longer had an active case of leprosy. Then he ordered Daniel to remove his hat—the one with the eerie smiley face sewn onto it—but Daniel refused to do this. He began explaining again that he had gone to that clinic in Morogoro, but that he went there for malaria treatment only. Seeing that the tension was escalating, I suggested that we perform a test to confirm whether Daniel had indeed been cured.<sup>4</sup> Dr N very begrudgingly agreed to this.

Daniel’s skin smear came back positive. So the doctor, still not believing that Daniel had an active case, ordered blood tests and samples were drawn from Daniel’s fingers, arm, and ear. When we went back for these results a few days later, no one had them. Each of the two labs at the hospital insisted that the other lab had done the test. Dr O (my friend) walked around the hospital with Daniel and me, asking nurses and technicians about the results, but the answer we received again and again was that the other doctor (Dr N) had declared that ‘this man’s already been treated!’, implying that the results were not needed. Eventually Dr O called the young woman who had (presumably) done the test into his office, chastised her, and then together they filled out a lab report saying that the results had been negative. They did this with Daniel and me standing in Dr O’s office with them.

I asked the young woman, ‘Are you sure it was negative?’, to which she replied ‘*sikuona kitu chochote*’ (‘I didn’t see anything’). This is a multivalent phrase in Swahili; biomedical tests that ‘show nothing’ often suggest the invisible presence of witchcraft. Indeed, witchcraft was a constant and pervasive presence in the hospital. I never met anyone—staff or patient—who did not take it to be a very real and serious danger; even the director of the hospital complained to me frequently that her own two-year-old daughter was ‘failing to thrive’ because she had been bewitched by their housekeeper. Most people I know in Tanzania, including

<sup>4</sup> Some individuals with leprosy have high relapse rates even after completing two years of treatment, but biomedical practitioners do not know why or how to detect those cases. Additionally, resistance has been documented for all three antibiotics used to treat leprosy, as has multidrug resistance (Cambau 2018). This means that even if Daniel had received treatment elsewhere five years earlier, it was entirely possible that he could have an active case of leprosy, still or again.

doctors, seek medical treatment from a wide range of providers, such as pastors who might perform exorcisms, vernacular healers who can provide both herbal remedies and rituals to resolve witchcraft attacks, and biomedical providers like clinics and pharmacies (Feinstein and D'Errico 2010; Green 1996; Langwick 2008; Parkin 2014). One way witchcraft attacks are understood to manifest is by producing 'fake' diseases that mimic the symptoms of real conditions; for instance, 'fake' malaria is common (see Gerrets 2012, 35; Muela, Ribera, and Tanner 1998). When one conducts a series of biomedical tests to diagnose an ailment, only to find that all the tests show nothing, this frequently suggests that the invisible presence of witchcraft may be the real culprit. Thus, by saying that she did not 'see anything', the lab technician left it ambiguous as to whether this was a result of Daniel having already been cured or a result of bewitchment, as he claimed.

Although I was furious about the fabricated test results, I knew that I could not push the issue any further, for if I did Daniel's health would be put in jeopardy—he would need to go to this hospital to have his secondary infections treated long after I left Tanzania. This story recounts only a small portion of the trials Daniel faced when attempting to receive medical treatment and government assistance. Together, we also attempted to acquire the specially designed sandals and glasses that are supposed to be provided free to leprosy patients—they help those living with disabilities caused by nerve damage and its resulting amputations, and poor eyesight. Again, we had to go to the hospital several times before Dr O finally walked us out to the edge of the hospital compound and opened a large metal shipping container to search for them. It took three hours of searching before we found the shoes in the back of the container. The last I knew, Daniel was 'still waiting' for the glasses.

## Temporal politics

Daniel and I also went to the hospital together several other times in an attempt to get treatment for his secondary bacterial infections. However, on many of these occasions the hospital was completely out of stock of the necessary medical supplies. For instance, in March of 2015 Daniel was prescribed metronidazole, ciprofloxacin, hydrogen peroxide, dressing, and silverex cream, but the hospital dispensary had none of these items. I bought them for Daniel from a private pharmacy, but it cost much more than he could afford on his own. Thus, the fact that he is legally entitled to free healthcare does not actually guarantee treatment.

The healthcare system was not always like this in Tanzania. When the country gained independence from the British in 1961, it originally adopted a non-aligned socialist policy and began establishing a robust national healthcare system including its own pharmaceutical industry (Langwick 2010). Tanzania made

enormous advances in access to biomedical care during the 1960s and 1970s, only to face a near collapse of the government health infrastructure in the early 1980s (Dilger 2012). This came about in large part because of the structural adjustment policies required for loans from the International Monetary Fund and World Bank, which demanded enormous reductions in the national budget for health care, the privatisation of or cost-sharing for medical services, and unfettered markets, which became flooded with cheap—and often counterfeit—pharmaceuticals (Janes and Corbett 2009). The earlier notion that the state should be charged with protecting the health of its citizenry was replaced with the rhetoric of consumer-driven choice and the value of the free market to meet healthcare needs throughout the African continent (Pfeiffer and Chapman 2010). Government facilities became underfunded and overcrowded, with exhausted stocks of drugs the norm rather than the exception. As the Tanzanian healthcare system became systematically under-resourced, this only compounded the epidemiological devastation wrought by colonialism and its concomitant efforts to dismantle local healing practices (Langwick 2011; Tilley 2016). Ultimately, these developments precipitated a shift away from international medicine, which emphasised primary healthcare and sought to build up national health infrastructures through development, to global health—a fragmented conglomeration of non-profits and private-public partnerships that instead prioritise efforts to reduce the ‘burden’ of specific diseases, an approach that David Fidler has aptly characterised as open-source anarchy (2003; see also Biehl 2016).

Sometimes during my fieldwork I did not see Daniel for months, as I had no way to get in touch with him other than to search around the town square where he works. One day in September 2016, I got a call from a friend saying that he had seen Daniel searching through the dumpster of fruit and vegetables behind the town market. When I found him, I thought that Daniel seemed much worse off than before. He told me that his relatives would not allow him to stay in their village and that he was living in the rock formations in the mountains outside of town. He had a wound on his hand that appeared severely infected and explained that he had burned himself trying to cook. We decided then to investigate whether there were any other services available to help people in the community with (active or cured) leprosy, so we set up a meeting with the head of the town’s welfare office, Ms T.

I was not surprised, though still demoralised, when Ms T began the meeting by informing us that leprosy had been eliminated. The NGO that had provided services for leprosy in the past—the German Leprosy and Relief Association (DAHW)—had cut their funding after the disease had been declared eliminated. Their focus was now exclusively on tuberculosis in East Africa. (Recall the calendar from this NGO in Dr O’s office, which was partially covered by a tuberculosis health campaign sticker.) Noticing that I was not satisfied with this

response, Ms T called a representative from the DAHW and handed me the phone. The representative very patiently explained to me that it was government policy to close all residential centres for leprosy, since such communities isolate and stigmatise patients. These days, individuals with leprosy should remain with their families, in their communities, the representative told me. Ms T nodded and said 'Yes, Daniel belongs to them', indicating her agreement that Daniel should be relegated to his family's rural community.

I later read on the DAHW's website that they, together with the pharmaceutical company Novartis—the supplier of antibiotics for leprosy—had determined that leprosy should no longer be a national health priority in the region. Instead, they declare that leprosy is a 'community responsibility' and that emphasis should be placed on patients' need to 'self-care' (DAHW 2015). It is difficult to imagine what 'self-care' could even mean in Daniel's case, when he has nowhere to live, nearly no income, and severe disability. This site also stated that, 'More than any other disease leprosy has always been a local problem, affecting individuals and their communities. For centuries sufferers have been isolated from mainstream society ... Thanks largely to science, this medieval way of dealing with leprosy victims is a thing of the past' (DAHW 2015). However, DAHW's statement about 'medieval isolation' is actually more similar to European medieval responses to leprosy than to African ones (Douglas 1991).

The missionaries tasked with running leprosy settlements throughout much of Africa during the twentieth century relied heavily on Biblical interpretations to support their assumption that their patients would otherwise face severe stigma from their communities. Thus, by being closed away in secluded communities, lepers were also 'saved' from such stigma. However, Africanist historians like John Manton have demonstrated that, prior to colonialism, many African communities did not ostracise individuals with leprosy. Instead, these communities viewed the disease as similar to (and often indistinguishable from) other prevalent skin conditions (Manton 2011, 130). Leprosy settlements were quite porous and patients frequently married members of the surrounding community (Manton 2011, 132; Tanzania National Archives 1921, 1957). Yet, as I elaborate further below, scientists today continue to presume that leprosy stigma is universal and acultural. A recent piece in *The Lancet: Infectious Diseases* claimed that 'the persistence of deep-rooted stigma and discrimination against people with leprosy' prevents diagnosis and treatment, without citing any evidence to support this claim (Smith et al. 2016, 398-99). Stigma remains 'one of the primary ordering concepts in western biomedical thought about leprosy', a direct legacy of the social projects made possible by the intertwining of Christianity and biomedicine (Manton 2011, 134; see also Comaroff and Comaroff 1992; Tilley 2011).

While statements like these—by NGOs and scientists—present biomedical interventions as secular, they actually reproduce a latent Protestant ethos of salvation from within so-called secular medicine itself (Whitmarsh and Roberts 2016). Medical anthropologists Whitmarsh and Roberts have analysed how these ‘political medical religious logics’ operate by simultaneously excluding the ‘religious other’ and enacting a form of secular Protestantism (2016, 207). Here, religious and occult understandings of leprosy are denounced as backward, ignorant, and inherently stigmatising (thus further silencing Daniel’s claims about bewitchment). Meanwhile, in the DAHW’s statement, ‘science’ is portrayed as a saviour of ‘medieval’ (read: backward) communities in the developing world. This bespeaks the ‘coloniality of global public health’ (Richardson 2020) as it both erases the actual historical conditions of leprosy in the region and presents public health interventions as a kind of (apolitical) humanitarian salvation.

There is yet another layer of temporal politics inflecting Ms T’s insistence that Daniel should return to his family’s village because he ‘belongs to them’. Contextualised within the *longue durée* of colonialism and racial capitalism in Africa, this statement bespeaks a structural binary created by colonial governance (Chachage 1988; Mamdani 1996). This structural binary was both spatial and temporal, such that ‘urban and rural were contrasted as European and African, nonnative and native, citizen and subject, modern and customary/traditional’ (Piot 2010, 6). Further, the urban/rural binary within African colonies reflected broader colonial logics that translated physical distances into temporal ones, such that sites far from the metropole were understood to belong to a past time (Fabian [1983] 2014). When Daniel is told he ‘belongs’ in his village and should ‘return’ there, space and time take on a political significance as markers of status.

The rural village where Daniel grew up is predominantly Hehe. The Hehe are among the poorest of over 130 ethnic groups in Tanzania today, a condition that is a direct legacy of the devastating scorched earth tactics used by the Germans for over a decade in the late 19th century during the German–Hehe War (Redmayne 1968). Even after the war ended, the Hehe continued to resist the colonial state, for instance refusing to enter the formal labour force or to accept grain stipends during times of shortages (Pizzo 2010; Redmayne 1964). Underdevelopment continued to characterise the rural villages in the region after the colony of Tanganyika was passed to the British under a League of Nations mandate at the end of World War I.<sup>5</sup> Meanwhile, in recent decades many

5 Traces of this past resonate in the landscape and in place names (Ferme 2001; Ferme and Schmitz 2014). For instance, Kitanzini Street stretches down a hill in the centre of town, lined on both sides with second-hand clothes sellers. *Kitanzini* literally means ‘the hanging area’ (from *kitanzi*, ‘noose’), so called because it was where the Germans hanged prisoners, especially the Hehe who revolted against them. Meanwhile, the name of the town, Iringa, comes from the Hehe word *lilinga* (fort), a reminder that the site was originally Hehe Chief Mkwawa’s fortress before German forces destroyed it in 1894 (Pizzo 2010).

Tanzanians of other ethnicities and regions have moved to the town of Iringa in search of work and business opportunities. These individuals, such as the doctors and government officials I knew, are typically of other ethnicities, like Chagga, and are from regions that had higher rates of missionisation, development, and access to education. Thus, the inequalities wrought by colonialism still rebound through Tanzanian society today, echoing in phrases like ‘Daniel belongs to them’. While the medical elite aspire to the status of global modernity, chronically ill patients from the surrounding rural Hehe villages are relegated to a spatiotemporal past and told to ‘return’ there for care. Yet, Daniel’s family refused to care for him. Whenever he took a bus to his village, he told me, his kin would get him drunk and then steal from him whatever money he had earned by begging in town. We explained this to Ms T, but she insisted there was simply nothing to be done.

## The politics of leprosy enumeration

Another knot of temporal politics around leprosy has to do with practices of enumeration. When the German Leprosy and Relief Association (DAHW) cut its funding, this also ended all monitoring and screening for leprosy in the region. With no screening of patients and no reporting of case numbers, the absence of data has come to perform the disappearance of leprosy. As Adams has written in her work on metrics, the imperative for data-driven global health has led some to posit that so-called ‘data deprivation’ is what really needs to be eliminated since uncounted people are invisible ones (2016, 44). This is also part of the story behind Daniel’s position as an impossible subject.

Leprosy enumeration practices simultaneously enact a temporal structure—anticipating leprosy’s imminent disappearance—and enable and stabilise a whole set of medical, institutional, and political practices built around this expectation. But as medical anthropologists have shown time and again, the question of how to count is far from self-evident and is often politically and socially fraught (Biruk 2012; Erikson 2012; Wendland 2007). Counting not only documents populations and experiences but also brings subject positions into being (Hacking 1999; Kohrman 2003; Sangaramoorthy and Benton 2012). Further, in some cases enumeration can operate as a form of violence. As Mariane Ferme wrote in reference to the civil war in Sierra Leone, ‘structural forms of violence are often linked to processes of enumeration and classification—the politics of numbers’ (1998, 561). In this section, I consider the politics of numbers in relation to leprosy elimination and how this, too, can become a form of violence.

The politics of leprosy enumeration was brought to the fore in a recent series of correspondences in the *The Lancet: Infectious Diseases*, in which researchers working for and paid by Novartis (the supplier of leprosy’s cure) continually

enumerate an always-imminent ‘elimination’ while field researchers repeatedly contest this arithmetic. I have looked at correspondences from 2010 until the present day and selected four key pieces to focus on here in depth. This analysis is critical to my argument because it suggests a direct link between the impossibility of Daniel’s treatment in Iringa, Tanzania, and the politics of enumeration within global health apparatuses operating transnationally. The pieces I outline below were part of a correspondence between Dr Cairns S. Smith (and colleagues) from the Institute of Applied Health Sciences, University of Aberdeen in the UK, and Dr Claudio Salgado (and colleagues) at the Laboratório de Dermato-Imunologia, Universidade Federal do Pará in Brazil. I show how Smith—who is paid by Novartis—continues to advocate for ‘elimination’, while Salgado repeatedly cautions that the push towards elimination may be having unintended and counterproductive effects.

Smith et al. aver that leprosy ‘is no longer the scourge that had plagued humanity for countless centuries’, an accomplishment they credit to the Swiss pharmaceutical company that manufactures the multidrug treatment for leprosy (2014, 96). Not insignificantly, the authors formally declare that the Novartis Foundation paid them to write this paper, funded their travel and accommodation in Geneva, and hired a medical writer to compose the piece. To explain the fact that leprosy cases have plateaued in recent years rather than continuing to drop, Smith et al. partially blame the sense of ‘complacency among health officials of many countries’ (2014, 97). In the absence of surveillance-response systems needed to locate areas of elevated risk, they also suggest that ‘patients with leprosy are likely to be found where patients with other poverty-associated diseases cluster’ (*ibid.*, 97). Consequently, they recommend searching for cases in those areas, despite other scientific evidence challenging the stereotype of leprosy as a disease of poverty (see Yadav et al. 2014).

Other scientists wrote correspondences in response to this *Lancet* piece, critiquing it and cautioning that a more realistic view of leprosy was in order. One group of researchers from Brazil, led by Claudio Salgado, reported that when they conduct home visits they find new diagnostic rates as high as 13.4% in some places, ‘indicating an extremely high number of hidden leprosy cases’ (2016, 778). Yet, when they send these individuals to leprosy control coordinators with recommendations that they begin the multidrug regimen, those coordinators ‘have repeatedly refused to enroll all the cases [they] diagnose into the national leprosy database (SINAN)’ (*ibid.*, 778). Moreover, only approximately 11.8% of the new cases receive any treatment at all. Thus, leprosy cases are severely under-reported in Brazil (and probably globally as well).

Casting further doubt on the veracity of leprosy enumeration practices, Salgado et al. write:

Nonetheless, the real question is why the percentage of children with leprosy varies from 1.2% to 39.8% (or why grade 2 disability ranges from 0.0% to 28.0%) in different, but all equally poor, countries? The answers will only be possible when we understand that absence of diagnosis of leprosy is not the same as the absence of leprosy. *The elimination target has become the mantra everywhere, but it is now meaningless.* Although the zero-transmission strategy is highly desirable, comprehension and acknowledgment of the real worldwide leprosy situation is imperative first (Salgado et al. 2016, 778; emphasis added).

Salgado and his team argue, much like medical anthropologists, that practices of enumeration are political and that many cases of illness are rendered invisible in this process. Further, they point to what I am calling the grammar of leprosy—the ‘mantra’ of its imminent elimination—as ‘meaningless’ and, worse, partially to blame for the subsequent inaction of health officials.

In response to the criticisms raised, Smith and his colleagues wrote a reply recognising that the push to eliminate leprosy has ‘given rise to unforeseen consequences’, including ‘the tendency of policy makers, international funders, and governments to mistakenly equate elimination (as a public health problem) with eradication and to consider that efforts to rid the world of leprosy had achieved their objective’ (Smith et al. 2016, 398). They acknowledge that this has reduced support, making governments and practitioners less interested in finding or treating new cases. In India, for instance, rates of new diagnoses fell substantially immediately after the country achieved ‘so-called elimination’. However, they claim that part of the problem is ‘the persistence of deep-rooted stigma and discrimination against people with leprosy, a factor often linked to late diagnosis’ (*ibid.*, 398–99). As I noted above, unlike the other claims in the piece this statement is not supported by citations. The assumption that ‘stigma’ is what prevents ‘elimination’ enables the grammar of leprosy to be reproduced, in the absence of (and even against) evidence. The piece concludes by explaining that the authors’ meeting (again, paid for by Novartis) ‘ended with an endorsement of this “zero transmission” strategy and strong hopes that it would hasten the realization of a leprosy-free world’ (*ibid.*, 399).

Replying again in *The Lancet* two years later, Salgado et al. reiterated their criticisms of this grammar and its deleterious consequences. This time they write in their ‘declaration of no competing interests’ that their ‘funders had no role in the writing of the manuscript’, which I hear as a sigh of exasperation at the practice of pharmaceutical-industry publications (2018). In this piece, they also bring up a new

point of contention: the method by which leprosy numbers are being reported has shifted in a way that results in an under-reporting of prevalence rates. Political, medical, and institutional conflicts are once again contained within *the question of numbers*: which numbers to use and how to count.

Before the multidrug regimen began in the 1980s, Salgado et al. explain, patients with leprosy would be under medical care for at least five years, sometimes continuing with a single antibiotic for life. With the advent of multidrug therapy, treatment time was lowered to two years, and today it may be as low as six months or one year depending on the type of leprosy. The problem arises from there being two different ways of counting prevalence: one, the ‘case detection rate’, which records the number of new cases in a given year; and the other, ‘point prevalence’, which lists only the number of patients currently under treatment on the last day of the year. Under the latter method, many people who begin treatment between January and June are not recorded, as their treatment would be completed before the end of the year. Salgado et al. suggest that this way of counting has become more appealing in light of the WHO’s ‘Final Push Plan’ to eliminate leprosy globally, which encourages countries where leprosy is still endemic to report lower numbers (2018). They conclude that ‘the estimated number of hidden cases of leprosy is likely to be up to eight times higher than the [reported] prevalence in the area at any given time’ (Salgado et al. 2018, 136–37).

Indeed, this kind of number politics could well account for aspects of the reaction that Daniel received upon seeking medical treatment for leprosy in Tanzania. After all, how one chooses to measure leprosy—or anything else—is shaped by the story one wants to tell about it. As feminist policy analyst Stone puts it: ‘The fundamental issues of any policy conflict are always contained in the question of how to count the problem’ (1988, 127). The desire to look good when one is being observed and measured is something that policy analysts call a ‘reactive effect’, a phenomenon that is ‘an inextricable feature of social measurement’ (*Ibid.*, 140). It encourages people and institutions to report high numbers of a problem when it is first being targeted, in order to make the issue appear large and therefore important; but it also encourages them to report low numbers after an intervention has been implemented for some time, in order to make their institutions (and nations) seem effective and successful. For instance, in her work on polio eradication in Pakistan, Closser found that certain evidence was ‘devalued or quieted’ when numbers were presented to donors, in an effort to ensure the continuation of funding (2012). Such reactive effects frequently, even predictably, manifest as changes in how a problem is counted and measured.

On both sides of the debate in *The Lancet*, numbers are deployed much like ethnography: to tell stories. As Stone writes: ‘quantitative analysis gets its

meaning—*all of its meaning*—from narrative’ (2016, 168; original emphasis). These ‘number narratives’ are ‘literary and social technologies’ (Brooks 2017, 34) that present competing stories about leprosy elimination campaigns: as triumphant or insidious, laudatory or meaningless. More than this, though, these numbers not only describe but also intervene in the world. As Rhodes and Lancaster elaborate, enumeration is an ‘evidence-making intervention’, with evidence and health interventions being co-constructed and performed relationally (2019). In this case, the numbers supporting the success of elimination are generated by not enrolling all symptomatic individuals into treatment (or databases), employing point prevalence techniques rather than case detection rates at the same time as new antibiotic regimens shorten treatment, and producing journal articles paid for by companies like Novartis with a financial stake in the data’s analysis. Numbers here, as elsewhere in global health infrastructures, operate as a form of fact-making that at times ‘entail a kind of violence to the empirical truths they aim to produce’ (Adams 2016, 8).

## The grammar of leprosy

Although the success of multidrug therapy provided the basis on which the contemporary concept of elimination developed, I also want to point to the *longue durée* of this temporal framing. The elimination of leprosy was something of an obsession for missionaries and colonial medical officers with their Protestant ethos of salvation, as well as for the post-colonial, socialist Tanzanian nation, whose officials saw the disease as incommensurable with modernity and development. In my research at the Tanzania National Archives, I found that claims about the imminent disappearance of leprosy date back at least 80 years. For instance, the epitaph with which I opened this essay is from a 1952 article in a Tanzanian national newspaper, the *Tanganyika Standard*. The article, written by the General Secretary for the British Leprosy Relief Association, proclaimed triumphantly that ‘the battle against the scourge of leprosy is “all but won”’ (BELRA 1952; Tanzanian National Archives 1955–57).

A decade later, in 1963, this same organisation sought permission to conduct a pilot project in Tanzania with the ‘aim of eradicating leprosy, within a period of up to ten years, in a selected population centre’ (Tanzanian National Archives 1960–79). The Secretary of the Ministry of Health replied suggesting the Southern Highlands Region, where, he said, ‘leprosy is rife’. (This is the region where I conducted my research, over half a century later.) Despite this ‘culture of optimism’ (Closser 2012), the hope that this project would eliminate leprosy in the region by the mid-1970s went unfulfilled. In 1971, a decade after Tanzania gained independence, the WHO provided a new set of strategies, called the ‘Principles of Leprosy Control,’ which stated just as triumphantly as the 1952 BELRA

spokesperson had, that '[t]he fulfillment of this objective will slowly, steadily, but certainly lead to the REDUCTION and ultimate DISAPPEARANCE of leprosy' (Tanzanian National Archives 1960–79; original capitalisation).

National independence thus seems not to have had any impact on the expectation that leprosy should and would be gone soon. Nor does the end of socialism and the current neoliberal climate in the country appear to have shaken this assumption. In 2015, the *Daily News* (a national, government-run Tanzanian newspaper) ran an article entitled 'Tanzania on Track to Wipe Out Leprosy Infection, Says Expert' (Mjasiri 2015). The article quotes a regional coordinator for tuberculosis and leprosy—someone in Dr N's position but employed in a different region. This doctor told the reporter that it is 'an encouraging fact that treatment and management of leprosy is simple because once the patient tests positive to the disease and starts receiving treatment, he or she recovers fast' (Mjasiri 2015).

How can we reconcile this century of exuberant anticipation around elimination with the reality of Daniel's existence today? The grammar of leprosy entails, but cannot be reduced to, a 'culture of optimism' in global health (Closser 2012). It cannot be fully grasped as just another example of the 'anti-politics machine', though it surely deploys these logics (Ferguson 1994; Harper and Parker 2014). As I have argued, elimination is the grammar with which leprosy has been spoken for almost a century. This grammar follows certain rules, patterns, and norms that produce and reproduce a form of life: leprosy as an always vanishing condition and the leper as an impossible subject who will (soon) disappear.

## Conclusion

While Daniel's experience demonstrates some of the broader problems with the grammar of leprosy, it also reveals other layers of fissions and tensions, other temporal politics shaping how this grammar manifests in Iringa. As Mbembe wrote: 'the postcolony encloses multiple *durées* made up of discontinuities, reversals, inertias, and swings that overlay one another, interpenetrate one another, and envelope one another: an *entanglement*' (2001, 14; original emphasis). These 'entangled times' (Schoenbrun 2006, 1410) are all subsumed within the grammar of leprosy, as it pulls into its orbit numerous interwoven temporalities: the temporal politics of salvation within (non)secular (Protestant) biomedicine; the embodied historical wounds of the *longue durée*; development discourses and modernist aspirations; the hauntings of a biomedicine that has never been modern; spatiotemporal hierarchies between urban and rural; and the temporal stories told through the number narratives that animate global health campaigns.

Writing about the politics of time, Greenhouse explicated how 'linear time does the state's (or any institution's) work by providing an idiom with which individual agency

can be represented as flowing into the nation's' (1996, 180). Additionally, Greenhouse argued that linear time helps to bolster the state's authority in part because its representation of agency allows it to 'absorb' other temporal representations (1996, 212). I see the grammar of leprosy as performing a similar operation: subsuming and redeploying the many knots of time in post-colonial Tanzania. The position of leprosy within humanitarian biomedicine—from colonial medicine to global health—has been sustained by the repetition of a temporal structure that anticipates leprosy's imminent disappearance. Although the political entities employing this temporal framing have changed significantly, it is striking that the grammar of leprosy has remained largely the same. Leprosy appears as already the past, recalcitrantly lingering on in the present, but *certainly* almost gone.

As I have argued, this temporal framing may have dire consequences for the lives of individuals with leprosy today, hindering their access to treatment. I want to stress that this is not a story about hospital corruption or resource scarcity: in my years of fieldwork at this government hospital, I did encounter 'corruption' and perennial stock shortages, but nonetheless many patients were treated for many conditions, every day. The question I ask here is this: How did it come to pass that the cure for leprosy could be sitting on the shelves at this hospital and yet Daniel could never access it? I conclude that the impossibility of Daniel's treatment is due, in part, to the fact that he occupies a subject position which the grammar of leprosy has made impossible. He cannot exist, and so the fact that he does became a problem for his doctors, one that they ultimately resolved by fabricating negative test results in order to record what they already knew: leprosy has been eliminated.

All grammars, and their forms of life, are founded upon certain grounds that cannot be doubted (Wittgenstein 1969). As Wittgenstein wrote—'It may be for example that *all enquiry on our part* is set so as to exempt certain propositions from doubt, if they are ever formulated. They lie apart from the route travelled by enquiry' (1969, 13e; original emphasis). Is it even possible to question whether the goal of disease elimination should be pursued? Could the temporal framing of elimination be preventing treatment and rendering unthinkable other possible responses, other forms of treatment and care? These are challenging questions to ask in the midst of a global pandemic, when the elimination of COVID-19 seems to many—though certainly not to all—as an obviously worthy pursuit.<sup>6</sup> It is important to remember, though, that pandemics too have their grounds: being framed as a 'crisis', the pandemic (as a category) also produces its own 'blind spots' (Roitman 2013). Drawing on Roitman, infectious disease historian Peckham writes of COVID-19 that 'the crisis performs ideological work, creating a strategic blind spot

<sup>6</sup> For an analysis of contestations over COVID-19 public health measures in Africa, see Lee, Meek, and Mwine-Kyarimpa (2021).

where non-crisis issues are congealed and the operations of crisis-management institutions are legitimated' (2020, 669). These blind spots are another kind of ground, the structural (pre)conditions to ongoing necropolitical processes that leave certain (racialised) populations vulnerable to disease and death. Challenging such structures necessitates unsettling these grounds, opening up black boxes like 'crisis', 'pandemic', and 'disease elimination', to interrogate the ideological work they do, the interventions they enable, and those they render impossible.

## Acknowledgements

I am deeply indebted to Daniel (pseudonym) and my other friends and interlocutors in Tanzania who share their lives with me—*nawashukuru sana mno*. This piece benefited enormously from feedback on earlier drafts provided by Joe Dumit and Cristiana Giordano. I am also grateful to Mary Anglin, Marisol de la Cadena, Claudia Fonseca, Justin Haruyama, Neelima Jeychandran, Glaucia Maricato, Bettina Ng'weno, Robert Peckham, Jane Saffitz, Ria Sinha, James Smith, and Smriti Srinivas for their generous feedback and provocative conversations on this material. Any errors or oversights are mine alone. This research and the writing were made possible by the generous financial support of the Indian Ocean Worlds Mellon Research Initiative (Dissertation Writing Grant), the Research Grants Council of Hong Kong (Early Career Scheme Award), the University of California, Davis, the University of Hong Kong, the US National Science Foundation (Doctoral Dissertation Research Improvement Grant), and the Wenner-Gren Foundation (Dissertation Fieldwork Grant).

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'Contested Truths over COVID-19 in Africa' with Jia Hui Lee and Jacob Katumusiime Mwine-Kyarimpa (2021).

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