Infrastructural Attachments

Austerity, Sovereignty, and Expertise in Kenya

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Contents

Preface

The sources for this project, and the modes of reading them, were heterodox. In reading between and across these sources, I have worked to generate a thick description of the politics of infrastructures in colonial and postcolonial Kenya. National archives were consulted in the United Kingdom, Kenya, and Uganda. Corporate archives—namely those of the Imperial British East Africa Company, the British Broadcasting Corporation, the Marconi Archives, and the Cable and Wireless archives—were consulted in the United Kingdom. I also had the opportunity to work with the small remaining collection of audio recordings of early radio broadcasts housed at the Kenya Broadcasting Corporation. Mission archives also offered invaluable insights. In Kenya, I worked with the archives of the Anglican Church, as well as the papers of Leonard Beecher and Louis Leakey, which are in Nairobi.

Archival materials were read alongside oral historical research undertaken in Kenya. For me, conducting oral histories with radio men was critical to understanding both the cultural politics of infrastructures and their complex poetics. This is important in its own right, but more specifically because it enabled an understanding of the consistency with which African expertise had been sidelined in the archives from which we construct our histories. The importance of telling these stories of sidelined expertise, insofar as I was able, was heightened by the ethnographic component of my research, which mainly involved working and chatting with a friend, Peninah, at her small M-Pesa kiosk, and working with others in the so-called "informal" sector (M-Pesa agents, "hawkers," and *matatu*-industry workers) some of whose stories are surfaced here, others I hope to tell elsewhere. For the final portion of the book, I also conducted interviews with digital technologists and industry experts. Their perspectives and insights were coupled with the anonymous voices that make

themselves heard on Kenya's lively blogosphere, as well as communications captured and preserved by WikiLeaks. These insights, in tandem with everyday talk, formed the foundations of much of the third section of the book.

This method has, I think, been a boon rather than a liability. Moving between these source bases alerted me to the importance of being as concerned with locating continuities and repetitions as I was with understanding ruptures and change over time. While this is certainly a story about transformation, claims to change do a good deal of work in the world, especially as regards infrastructures and technologies.[1] Keeping an eye on these claims to rupture guided my reading of the archive, forcing me to ask whether and when narratives of rupture obscure more than they reveal. In this instance, the ways in which infrastructures' long history as "public goods" in the region has always been crosscut by the aspirations of capital firms; or the ways that infrastructural work has repeatedly been rendered merely banal and unremarkable labor; or the fought-over processes by which infrastructures have been enrolled to enact competing social and political goals.

While I work across sites in the pages that follow, readers will note that Central Kenya and the Rift Valley, as well as the cultural and technical work of Kikuyu-speakers feature heavily. The reasons for this are historical. Those from the center of the country often accessed infrastructures before, and sometimes to the exclusion of, other regions and communities. In the present, this is popularly associated with the dispensations that are held to be the result of historical connections of Kikuyu-speakers to the center of administrative power. In the colonial period, by contrast, infrastructural densities in these regions reflected not only the presence of white settlers in the area but also the intensity of commodity production and these areas' proximity to Nairobi. What is today framed as an unfair advantage, in other words, was in the colonial period experienced by many as the state's overzealous incursions into the lifeworld of the region's African communities. By bringing these stories and all their attendant unevenness together, I hope to have done justice to the characters and processes that animate these pages, generating a series of tales of infrastructures, and their attachments, that are three-dimensional in scope.

Map of Kenya and the East Africa region

Acknowledgments

It is as hard to mark beginnings as it is to mark ends. As a book, this manuscript came together following my move to NYC, when I started at The New School in 2017. As an idea, this project was born at the University of Michigan (UM). As a cluster of ideas and nebulous political commitments this project germinated following my first trip to Kenya and my disillusion with the limitations in what was considered the domain of the political. I began working through this problematic at Concordia University where I completed an MA. As a maximalist who tends to think in terms of continuities, and who considers knowledge work to be a fundamentally collaborative and collectivist endeavor, I choose the longest timeline. Life is but a series of (ideally) socially reproductive debts, and mine are many.

I am deeply indebted to the many friends and interlocutors in Kenya who made this work possible, particularly the family of Judith Maina. Judy was my first friend in Kenya and on our second meeting was working with an NGO collecting the life histories of the oldest living residents of Mathare. While initially skeptical of me, something she expressed with a keen wit, she became a fast friend, soon welcoming me into her family and teaching me about Kenya along the way. These dynamics became more intimate and complicated as Judy suffered a series of health crises. By the time I arrived to do the longest stint of fieldwork in 2014, she had lost her vision. I then lived with Judy's sister-in-law, Peninah Mugure Njenga, her brother, Vincent Maina Kariuki, and their son, Kamaish. We stayed on the same compound where Judy and her mother lived, with Judy's father, Humphry Maina Githiro, joining some weekends. Judy's partner, her champion and stalwart caregiver, Claudio Torres, joined her family in trying to make her life normal. In spite of the unfolding tragedy through which they were all living, they welcomed me as family. I traveled with them

to their shamba up-country, and spent many evenings chatting with Judy and her mother. Other afternoons, I worked with Peninah at her M-Pesa kiosk. Judy died in 2020. This book is, in large part, for her and the network that sustained her.

Outside of the succor and warmth provided by this family, I extend my gratitude to Gitau Kariuki who chattered with me as my Kiswahili improved, patiently answered my myriad questions about the most minute of dynamics, and worked with me as a research assistant. I am also very grateful to the tireless work of the late Richard Ambani, who made all sorts of knowledge production possible for all sorts of people in his capacity as a freelance archivist at the Kenya National Archives (KNA). There was not a person with deeper institutional knowledge of the KNA and I grieve his passing. Huge thanks are also owed to Vivian Wanjiku who, aside from being a steadfast friend, also acted as a sometimes research assistant, and to Peninah for explaining to me the intricacies of her work. Thanks to Stanley Macharia, Fuadi Mbigi, and their comrades who taught me about the politics of life, space, and economy in Nairobi from their vantage as "hawkers" at the Figtree Market and workers in the *matatu* industry, respectively.

The earliest seeds of this project grew under the generous and generative advising of Andrew Ivaska, who I now happily count as a friend. But this project really grew and took shape at the University of Michigan. I cannot imagine having more incisive, kind, and supportive advisors than Gabrielle Hecht and Derek Peterson. The creativity and political clarity with which Gabrielle approaches knowledge work is unparalleled—Gabrielle impressed on me that anger in the face of durable historical inequalities can be an engine of creative output. My thinking has been indelibly shaped by her influence. She is at once an intellectual and professional role model to whom I am forever grateful. Derek's deep commitment to eastern Africa, his ethics as a researcher and teacher, and the rigor and focus of his thinking and research remain a well of inspiration to me. I could not have asked for more generous intellectual parents, who variously nurtured my person and pushed me as a thinker. Nancy Rose Hunt is among the most capacious historians I know, and she impressed on me the need to be attentive to the peculiar, the out of the ordinary, and the idiosyncratic. In the spaces between, there are connections to be drawn and meanings to be surfaced. This project also benefited from the astute insights of Jatin Dua, whose work and thinking exemplifies historical anthropology at its very best. Big thanks are also owed to Will Glover, whose insights regarding power and the built environment shaped this project.

My time at the University of Michigan was contoured by the insights of its faculty, including Omolade Adunbi, Adam Ashforth, Kelly Askew, Howard

owed to another brother, Aidan Cowling, whose care, brilliance, wit, and playlists have sustained me.

I was lucky to work with the dedicated team at Duke University Press to bring this book to print. Elizabeth Ault expressed enthusiasm regarding this project from the outset, and patiently guided me through the process. Thank you also to Benjamin Kossak who was immensely helpful in walking me through the logistics of getting the book out. Big thanks to Lisa Lawley, Erin Davis, and Jamie Thompson for their considered help (and patience!) through the editorial process. Tim Stallmann worked with me tirelessly as he made maps for this book. He taught me the joy of translating argument into visualization. I could not have asked for more generative and thorough feedback than that provided by the two anonymous reviewers who helped me make this a sharper and more focused book.

Aside from my chosen family, my family by birth has been an unwavering source of support to me over the course of this journey. My sisters, Jessica Hay and Sari Park, are fierce in their loyalty and acceptance. Jess, your generosity and perseverance inspire me. Sari, your dogged commitment to justice is exceptional. I am grateful for the admittedly too infrequent trips to northern Ontario and time spent in Toronto and Mexico. Kris Bronstad began as a sister, and I now count her as a dear friend. To Millie and Birdie, thank you for bringing the joy of possibility. My stepfather, Gary Kraemer, has been a consistent intellectual interlocutor and friend. But this book owes its greatest debts to my parents, Norman Park and Alison Fleming. Dad, your radical acceptance of me at every turn and your intellectual curiosity have at once stabilized and inspired me. Mum, I have no words. The many, many late-night conversations made life possible both in joy and in grief. My love for mentoring was no doubt shaped by many years of watching you grow alongside your own students. Your commitment to community, generosity of spirit, brilliance, and evenness are qualities to which I aspire. This book is for you.

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Introduction

One afternoon in August of 2014, I traveled from Pangani to Zimmerman, a lower-middle-class neighborhood some thirty minutes from Nairobi's Central Business District, to visit Peninah. As on most days, the neighborhood was alive with activity—"hawkers" were selling clothing from makeshift structures, *mama mboga* (mama vegetable, the Kenyan shorthand for the largely female workforce of vegetable sellers) were serving customers, as *matatu* (minibus) conductors were soliciting waiting commuters to board their brightly painted vehicles, blasting music from the radio as they stopped along the one paved road that cuts through the neighborhood. When I arrived, Peninah was standing outside of her M-Pesa kiosk chatting with neighbors as her son, Kamaish, played at her feet. At the time, Peninah worked as an M-Pesa agent for Safaricom.

Once an unremarkable mobile phone company, Safaricom is now the largest corporation in East Africa.[1] M-Pesa, a mobile-to-mobile service that allows users to store, transfer, and withdraw money, was a harbinger for this growth and enabled Safaricom's rapid rise to dominance. As an M-Pesa agent, Peninah's work officially involves signing up new users, collecting their ID and mobile numbers, and recording user transactions as she moves money in and out of the system. For this work, Peninah receives a small commission based on the total number of transactions conducted over the course of a month. But Peninah's work, as I came to learn while spending many afternoons with her in her shop over the course of 2014 and 2015, entails much more than this: It requires building and maintaining social relationships that comprise an unacknowledged but crucial component of the infrastructure upon which Safaricom's profitability depends.

Greeting Peninah and Kamaish, the three of us entered her small "Safaricom green" kiosk. Sitting next to Peninah behind the small wooden counter

and iron grating that separates her from Safaricom's users that sunny afternoon, an elderly man walked into the shop. Peninah greeted him warmly. He handed Peninah KSH 1,000, asking to deposit KSH 800. She completed the transaction as they chatted, handing him the change. "He's my customer," she told me as he left.[2] "He comes here every evening and makes a deposit." His status as "her customer" was not simply a matter of routine, she explained. "He can't see very well, so he asks me to read transaction texts to him." For Peninah, these acts of care are crucial to retaining "her customers." But according to Safaricom, M-Pesa agents simply act as undifferentiated interfaces between the corporation, its customers, and their shillings. Indeed, the importance of these interpersonal attachments notwithstanding, developmentalist market makers are explicit in devaluing this work, referring to the over one hundred thousand people who take charge of Safaricom's M-Pesa kiosks, using a peculiar but telling nomenclature: "Human ATMs." On this reading, M-Pesa agents merely act infrastructurally. Half-human, half-machine, it is the job of these people to take the place of a largely absent banking infrastructure, thereby enabling the digital money-transfer system to work. This framing of human action, while troubling, is revealing of a more fundamental reality that Safaricom's labor regime works to conceal.

Safaricom's infrastructure, as Peninah well knows, is by no means a purely technological network. It relies on people like Peninah to act as what I refer to as "infrastructural prosthetics," a concept that highlights the forms of largely unremunerated but transformative work required to make Kenya's infrastructural landscape hang together, and in many instances to expand. Peninah acts as an infrastructural prosthetic in two interrelated ways. First, she gathers data and generates knowledge about people who visit her shop, data which Safaricom mobilizes as it generates new services that enable it to seize value from those at the "bottom of the pyramid."[3] Second, it is Peninah's work that enables M-Pesa and Safaricom to themselves function as infrastructural prosthetics, filling the gap in a context where brick-and-mortar banks are the exception rather than the rule. She is both a systems builder and maintainer. And the work of Peninah, and the over 160,000 women and men who work as M-Pesa agents, has been essential to Safaricom's profound financial and technological success. Over the past fifteen years, Safaricom has emerged as the largest corporation in the region, having established a near monopoly over both mobile telephony and digital financial services. In 2022, Safaricom's annual profits totaled more than $417 million.[4]

Not only is Safaricom not merely a technological network, but it is also not merely a market actor. The firm began as a state-held corporation, incremen-

tally privatizing under pressure from the International Monetary Fund (IMF) and the World Bank. Today, the corporation is jointly held by the United Kingdom based firm Vodafone (through its South African subsidiary, Vodacom), the government of Kenya, and largely Kenyan shareholders. This distributed ownership, notes Keith Breckenridge, gives the "state a double-dipping interest in the company's enormous profits: first as shareholder and second as tax collector."[5] Safaricom itself then operates as an infrastructural prosthetic that shores up the reproduction of the Kenyan state. Neither wholly public, nor wholly private, Safaricom is emblematic of what I call the "corporate-state."

I begin with Peninah (the putative Human ATM) and Safaricom (the corporate-state), because together they offer a contemporary window into a set of historical dynamics that sit at the heart of this book. While the informalization of labor and the outsourcing of infrastructural provisioning to a corporation might seem unique to the "neoliberal" present, these are dynamics that have deep and specifically colonial roots that are disclosed by a study of Kenya's infrastructural past.

Infrastructural Attachments works to reconstruct a history that takes seriously a longer-term view of the Kenyan state as, from its founding inception, premised on austere forms of statecraft that have depended on the intimate interweaving of the political and the economic, the state and the market, the public and the private. This historical account of the region's infrastructures—roads in the late nineteenth and early twentieth centuries, radio broadcasting from the 1920s through the 1950s, and digital financial services in the present—demonstrates that an ambiguous blending of corporate and state power founded the institutions of governance in the region, and this has had implications for the status of infrastructural work. The story of Safaricom and its labor regime are *not*, then, aberrations unique to the neoliberal present. They are historically constituted forms of statecraft that are better understood as inheritances of colonial capitalism.

Scholars of the postcolonial state have long recognized the enduring role of colonial institutions in shaping the modalities of governance in contemporary Africa. The focus has largely been on decentralized governance (first undertaken in the colonial period under the mantle of "indirect rule"), the domination of cultural categories (namely "tribe") in structuring political affinity, the outsourcing of social provisioning to the family, and the primacy of "informal" labor.[6] These accounts of the African state concerned with the colonial origins of the postcolonial detected a set of logics that, today, are commonly associated with neoliberalism and austerity—devolution, speculative planning, identitarian politics, and the delegation of risk and responsibility from the state to the family and the worker.[7] Scholars concerned with neoliberalization in

Euro-America have argued that these processes required redrawing the lines between the market and the state, between the economic and the political.[8] However, as the literature on the colonial origins of the postcolonial state demonstrates, the boundaries between the private and the public, between the economic and the political, have never been neatly drawn in Africa. The problem with accounts of neoliberalism when read through this literature, then, is both the temporal claim ("neo"), and the political and economic claim ("liberalism").[9] Put differently, what we often think of as a story of neoliberalization has a different and longer genealogy in this part of the world.

One of the reasons that the genealogy laid out in *Infrastructural Attachments* has not always been visible is that studies of the state have focused on colonial modalities of governance and discursive formations, occluding the principle importance of infrastructures in mediating the relations between economy and polity.[10] Infrastructures bring these abstractions into being in concrete ways; they are the site where the demarcation between the state and the market have unfolded.[11]

As I show, since the earliest days of the British presence in the region, striking a balance among capital accumulation, state formation, and the "public good" has been difficult for a state whose origins were corporate in character.[12] In 1888, facing limitations in the British fiscus and public skepticism of overseas adventures, the Crown granted a Royal Charter to the Imperial British East Africa Company (IBEA) authorizing the firm's operations as the *de jure* sovereign in the region. The Crown's charter was matched by a concession from the territorial sovereign, the Sultan of Zanzibar, who was similarly facing fiscal constraints. In entering into these agreements with the IBEA, the twin sovereigns outsourced the cost and risk of administering the region, enrolling private capital to enact the dual goals of "commerce and civilisation."

There was nothing particularly unusual about this distribution of sovereign authority in the nineteenth century. As British jurist Henry Sumner Maine summarily wrote in 1892: "Sovereignty is a term which, in international law, indicates a well-ascertained assemblage of separate powers or privileges . . . there is not, nor has there ever been, anything in international law to prevent some of those rights being lodged with one possessor and some with another. Sovereignty has always been regarded as divisible."[13] In the case of the early colonial state, this divisible vision of sovereignty saw an assemblage of sovereign prerogatives, privileges, and rights transferred from the Crown and the Sultan of Zanzibar to the IBEA. The IBEA was, then, a complex entity; neither self-evidently "private" nor "public," it was a hybrid legal form.[14]

While corporate sovereignty may have formally passed with the collapse of the IBEA, the outsourcing of large-scale infrastructures to private firms did not. Indeed, though short-lived, the patterns of divisible sovereignty inaugurated with the IBEA were remarkably durable, subjecting Kenya and Kenyans to varying forms of company rule.[15] The expansion of radio broadcasting from the 1920s through the 1950s was shaped by early agreements that bound the colonial state to the networks of the British monopoly Cable and Wireless Ltd. (C&W), contracting the firm to provide services for remunerative white listeners. By the 1940s, it was clear that C&W's monopoly status was a liability, frustrating the colonial state's aspirations to expand broadcasting to the African majority. As for Safaricom in the present century, the firm's partial privatization has not entailed the retreat of the state, but its reconfiguration—today, Safaricom is jointly held by British multinational Vodafone, the Government of Kenya, and a shareholding "public." Across the long twentieth century, the government's ambitions to use infrastructures as a tactic of statecraft have been shaped by agreements that attached its fate to corporate firms whose interests were driven by profit motives. We err, in other words, in seeing state planning as opposed to market formation.[16]

If the separation of the "political" from the "economic" is one of capitalism's founding abstractions, in the colonies these boundaries were evidently never so neatly drawn. In Kenya, a former settler colony, the devolution of state sovereignty to corporate firms has been the norm. This book aims to put the world back together by disclosing how the infrastructural state in Kenya has consistently tied its fate to private firms. It is not simply that states produce markets, but that corporations shape the fate of states.[17]

If enacting the infrastructural state has relied on state-corporate collusions, it has also crucially depended on the exploitation and expropriation of Africans' infrastructural work. While this work has critically enabled infrastructural expansion, maintenance, and repair, the centrality of these contributions has been systematically effaced by metropolitan observers and recognized experts.[18] Building on a growing literature that explores Africans' technological action, I center the crucial and transformative work of African knowledge-workers and technological experts.[19] In foregrounding these workers and their work over the long twentieth century, I interrogate the various ways that the corporate-state has subsumed Kenyans' knowledge and expertise to under-write the development of (in some instances global) infrastructural expertise, the circuits of finance on which (post)colonial infrastructural expansion has been premised, and the forms of profit-making it has enabled.

Over the long twentieth century, these infrastructural dynamics, I show, have been contoured by the highly stratified racial, ethnic, and economic orders that guided (post)colonial administration and shaped everyday life in Kenya. In the colonial period, both access to infrastructures and the conditions of infrastructural work were critically shaped by the racial hierarchies and ethnic topographies that structured the settler colony. Creating lines of connection under these conditions produced a landscape characterized by what Manu Goswami has described as "internal differentiation and fragmentation," leading to the development of Kenya's uneven infrastructural topography.[20] Since independence, "ethno-regional patterns of stratification" have continued to ensure that people's experiences of infrastructures as "public goods" reflect a striated vision of the public; however, ethnicity and class have largely (though not completely) supplanted race as the primary frameworks through which many Kenyans interpret infrastructural exclusion.[21] Infrastructures bring these dynamics into stark relief; they are the material substrate intermediating attachments between the state, markets, and "the public."[22] As a result, as people have made and continue to make claims on the infrastructural state, they have engaged in forensic work, comparing how their infrastructural access measures up against that of various others. Put differently, Kenya's infrastructural politics have been shaped by administrative practices and corporate profit-driven strategies that produced a divisible public, at times impeding the formation of a nation.

These compounding legacies notwithstanding, the corporate-state has routinely attempted to distance the work of governance from the work of profit generation by positioning infrastructures as "public goods" crucial to the region's "development." Indeed, this long-angle view reveals that developmentalist thinking—whether "civilizational," "social welfarist," or "neoliberal"—has been as much concerned with shifting strategies of marketization as it has been with poverty alleviation. Prospective profit generation has been at the center of these projects of social "uplift." But state administrators and designers did not hold a monopoly over the developmentalist aspirations embedded in new infrastructures. Across the chronology laid out here, Kenyan communities have read globally circulating theories of social change through alternative epistemologies of individual and collective transformation.[23] Infrastructures, then, are not merely materializations of abstract state or corporate power. They are also intimate objects—the everyday networks of circulation and blockage that structure people's quotidian lives, sometimes becoming the terrain where social and political subjectivities are formed.[24] Unraveling these histories helps us understand why, today, access to infrastructures is a key metric by which people evaluate and debate the meaning of social and political belonging.

Austerity, Infrastructures, and the State: A View from Kenya

Scholars working in Europe and North America have argued that infrastructures are one means by which states materialize their power over space and people, forming the material substrate of "modernity."[25] The nineteenth century, which saw a frenzy of large-scale infrastructure building, was by many accounts a harbinger for these transformations.[26] In the United Kingdom, between 1841 and 1850, Parliament authorized the construction of over 10,000 miles of new track.[27] Stocks and bonds floated in the centers of finance were gobbled up by investors eager to sink idle capital into infrastructures, banking on future returns that the new forms of circulation promised.[28] Despite the private provenance of the capital used to fund infrastructural expansion, these lines of communication are largely credited with producing "state space"; the networks themselves emerging as key sites where relations between states and citizens materialized.[29]

Kenya's infrastructural history has been shaped by similar dynamics, but with distinctive colonial characteristics and imperial material and genealogical inheritances.

A key claim pursued in these pages is that the infrastructural state in Kenya has, from its founding moment, been marked by conditions of austerity, which have critically shaped the contours of Kenya's infrastructural landscape over the course of the long twentieth century. My use of the term "austerity" is intentionally anachronistic, for reasons both historical and political. For scholars working in Europe and America, austerity, while sometimes associated with the deprivations of the Second World War, more typically names a bundle of policies enacted following the fiscal crisis of the 1970s. As many states and international financial institutions (IFIs) advocated for the supposed need to balance budgets and reign in state spending, government services and public infrastructures were gutted, with private firms left to profitably take up the task of governance.[30] By contrast, scholars of Africa have accorded little attention to austerity as a concept or an analytic.[31] In part, this is because it arrived in its official and postcolonial form under the mantle of "structural adjustment." Irrespective of geographical orientation, conditions of imposed fiscal constraint—whether at the hands of IFIs or fiscally conservative governments—are firmly tethered to the period beginning in the late 1970s. In those years, state indebtedness was reframed not as an investment, but as a problem. The solution: A reduction in public spending and the informalization of labor, with the market left to fill in the gaps opened up by the state's withdrawal.

If implicitly, this literature takes what Thomas Piketty referred to as "the Great Compression"—from 1945 to the early 1970s—as the norm against which

to contrast the deprivations of the austere, neoliberal present.[32] In these accounts, those twenty-five years—which saw the expansion of social welfare and state provisioning of infrastructures and services, and a reduction of inequality—are framed as the normative ideal against which later austerity is critiqued.[33] For these authors, austerity is irruptive, applying to "situations where societies and individuals that formerly enjoyed a higher standard of consumption must now make do with less."[34] As a "theory of history," writes Nathan Connolly, these state-centric accounts posit a "supposedly clean chronology moving from laissez-faire capitalism to New Deal and Keynesian liberalism . . . [with] 'neoliberalism' [appearing] to close out capitalism's biography." Beginning with the supposed "arrival" of financialization in the 1970s and 1980s, policies of austerity inaugurated the "start of an epoch when [national] governments that once protected citizens took to defending corporations, at times even mimicking their structure."[35]

But the historical geographies from which we narrate our stories matter to the types of stories we are able to tell. Not only is this a partial story it is also largely "a white story," as Connolly argues; its narrative arc is structured by the blinders of a white, worker, and male subject position that never applied to most of the world.[36] As Piketty himself argued, the Great Compression was an aberration in what was otherwise a longer, and decidedly more austere, trajectory. On this framing, what is irruptive is not austerity, but its inverse—robust state provisioning for infrastructures and services and the leveling out of inequalities. The long history of the infrastructural state in Kenya offers a useful corrective, allowing us to tell new stories that challenge the typical chronology and geographies that frame histories of austerity.

As *Infrastructural Attachments* argues, the delegatory technopolitics of austerity are not unique to the neoliberal period, but were baked into the logic of statecraft from the earliest days of colonial occupation, calling into question the novelty of austerity as a mode of governance and lived experience. Structural adjustment was an important shift to be sure, but in seeing it as an epochal break, we lose sight of important lineaments that connect the colonial to the postcolonial. This reorientation affords important insights. For too long, poverty has been a characteristic feature of representations of Africa. This view risks naturalizing what is better understood as manufactured deprivation, as scholars of underdevelopment- and world systems-theory have long recognized.[37] Austerity, then, is not synonymous with scarcity, which signals an absolute or objective lack.[38] Instead, my use of the term austerity refers to a discretionary mode of fiscal (and infrastructural) governance that has enabled the enrichment and provisioning of some people and some places

at some times at the expense of others. And these others are often, though not always, racialized. As this suggests, imperial austerity depended on producing disjunctures across geographies.[39] In the colonial period, these dynamics structured relations between the colony and metropolitan firms, generating the uneven geography of historical capitalism that underwrote "imperial state space."[40] Within Kenya, infrastructural provisioning was shaped by explicit policies of discretionary (under)investment in the lives of the African majority, ensuring the development of lumpy infrastructural networks that mapped onto and reproduced the racialized topography of accumulation that structured the settler colony more generally.[41] Today, policies of austerity imposed on Kenya by IFIs have enabled the thickening of asymmetric linkages between the independent state, Kenya's elite, and private British infrastructure firms, generating profits that are largely borne on the backs of the poor.

Infrastructural Attachments: Expertise, Prosthetics, and Work

In charting the long history of the austere infrastructural state in Kenya, a key concept I develop is "infrastructural attachments." I conceive of infrastructural attachments as the material and conceptual tethers that bind institutions and people to new networks, ideologies, markets, and forms of circulation and blockage that they engender. As I show, the historical actors who animate these pages were engaged in projects geared toward generating infrastructural attachments. While they did not invoke this concept, of course, the analogs that they used are suggestive. Corporate officials and colonial administrators forecasted that new road networks would integrate the region and its people into global markets, enabling the inroads of "commerce" and simultaneously "civilising" people and their lands. Radio enthusiasts in the 1950s hoped to use the broadcasting network to shake people out of their supposed "parochialism" by enacting "national units." Safaricom engaged in attachment building of a particular kind, as it leveraged "local" knowledge in a bid to embed its networks and services in Kenya, while distancing the work of the corporation from the work of the state. At its broadest, then, I use this analytic to explore the legal mechanisms, ideological frameworks, and economic logics that enabled the emergence of various iterations of the corporate-state.

As a methodological stance, though, the utility of infrastructural attachments lies in its capacity to operate as an "interscalar vehicle," directing attention away from ambitious plans to attend to the prosaic technical, material, and ideological mechanisms mobilized to make infrastructural attachments stick.[42] These attachments have often taken residence in "less visible locations,"

"unfamiliar technical forms," and seemingly mundane sites—contracts, treaties, legal precedents, shareholder agreements, currencies, taxation regimes, technological features, kilowatts, wavelengths, algorithms, and, crucially, forms of infrastructural work are all material at this scale.[43] As this suggests, attachments are not just generated out of relations of affection or fondness. While infrastructural attachments are sometimes sought out as a means to make claims or to forge more desirable futures, these attachments are often coercive—severing relationships with some people, some places, some things, some ways of being in the world in order to secure, extend, and preserve others. This makes infrastructures and their attachments—real or prospective—something worth fighting over.

If the concept of infrastructural attachments allows us to move from grand ambitions to prosaic material forms, it also enables us to track the distinct, historically contingent mechanisms and forms of work that have enabled attachment building in the three periods addressed in this book. These differences reflect the particularities of the infrastructures and their respective affordances, the shifts in ideologies of statecraft and development that underwrote their expansion, the budgetary decisions out of which they emerged, the possibilities for profit-making they portended, the publics that assembled around them, and the labor regimes on which they relied.

Just as administrators were forced to confront perennial limits in state financing, drawing on private capital to enact infrastructural rule "on the cheap," technologists hoping to forge attachments had to contend with eastern Africa as a unique material zone.[44] As elsewhere in the colonial world, administrators posited their knowledge as universal—claiming to have generated "principles true in every country."[45] "Expertise," put simply, was part of the armature of empire. Colonial subjects within this discursive and material field were expected to live under colonial rule for a "necessary period of pupilage," to shake them out of "backwardness" and to "steward" them into "modernity."[46] Expertise, like all master categories, then, is a relational claim, foregrounding some forms of knowledge, some forms of work, and some forms of being in the world, while rendering others inconsequential or quaint at best, and invisible and subject to expropriation at worst.[47]

But these infrastructural architects came armed with visions of how these networks should work based on experiences, models, and designs developed abroad. These conditions simply could not be counted on in eastern Africa. In both material and ideological terms, infrastructural plans and infrastructures themselves had to be modified—"tropicalised," to use the language *en vogue* in

the 1940s—if they were going to become embedded in this particularly Kenyan milieu.[48] Technological diffusionist pretentions notwithstanding, under these material conditions expertise and technologies imported from abroad, while claiming global purchase, reached definite limits in practice. In the seams of this lumpy infrastructural state, alternative types of experts and forms of expertise asserted their autonomy.

Indeed, as *Infrastructural Attachments* makes clear, in negotiating conditions of austerity, designers and engineers have relied on the contributions of African infrastructural workers—topographical experts in the case of roads, technologists and knowledge-workers in the case of radio, and lay ethnographers and data gatherers in the case of digital financial services—to enact and shore up this ideologically dense but materially thin infrastructural state. This is typical of capitalism operating under conditions of austerity, which "proceeds through the devaluation of labor; decentralized speculative planning; and improvised low-tech investments."[49] Over the course of the histories narrated in the chapters to follow, these "low-tech investments" have required the dynamic infrastructural work of African knowledge-workers and experts. These men and women have routinely been called to act as infrastructural prosthetics. That is, they have been forced to fill the gap between the developmentalist aspirations of the corporate-state and realities that have been characterized by the interruption of unforeseen materialities, partial knowledge, arterial networks, and limitations in financing. This work, while constituting forms of expertise, has routinely been devalued—both materially and conceptually—as merely rote labor. This devaluation has enabled the development of shifting regimes of exploitation and expropriation, which have been critical to the operations of the austere infrastructural state.

A word on prosthetics. As noted, today, developmentalist market makers are explicit in naming Kenyans' work with digital infrastructures prosthetic labor, referring to people who take charge of Safaricom's M-Pesa kiosks as Human ATMs. Conventionally, a prosthetic is defined as an addition, application, or attachment. On this framing, a prosthetic executes the task of a missing limb, its labors leaving the whole more or less unchanged. Drawing on science studies, in the chapters that follow, I argue that we need to think of prosthetics not simply as replacements that execute the functions and daily tasks of missing parts but as a "fundamental category for understanding."[50] Infrastructural prosthetics and prosthetic work are extensions that fundamentally transform the systems to which they are attached, sometimes irrevocably changing them, at other times putting them to uses unforeseen by designers. As it pertains to infrastructures in now postcolonial Kenya, a focus on infrastructural prosthetics and prosthetic work enables us to reframe our understanding of large-scale

technological networks by placing front and center the work of making them hang together, and its transformative effects.[51] The work of these men and women, I show, was (and is) critical to generating infrastructural attachments. These histories, in turn, allow us to chart how infrastructures—ostensibly generic and universally applicable networks—became "tropicalised" and "peculiarly" Kenyan.[52]

Accessing this expertise is difficult. While I can approach contemporary knowledge-workers such as M-Pesa agents ethnographically, the presence of African infrastructural experts in the archives are as subjects—invoked out of frustration, curiosity, or flourish by Euro-Americans and recognized experts—not as authors of their own documentary trails. The partial visibility of these experts is a result of pernicious representational practices that frame Africa as a place without technologies, as a place without technological experts.[53] Over more than a century, technologists and market makers have presented this expertise as banal, making it appear to be *merely* prosthetic.[54] It goes without saying that the occlusion of African infrastructural expertise in these archives shaped the histories I have been able to narrate in these pages. Given these limitations, readers will note that the ethnographic density of the stories of these African men and women increases as we move across the chronology narrated here. This expository lumpiness is to be lamented. But to not tell the stories of these people simply because they were deemed unexceptional (or were actively devalued) by chroniclers would be to leave untroubled the racist underpinnings that guided the composition of the archives with which I worked. Focusing on the difficulty of making infrastructures hang together, and looking to the breach that divided aspiration from reality, offered one opening, allowing me to surface new histories of work and new histories of expertise. In this regard, while partial, the stories offered in these pages treat (post)colonial "middle figures": infrastructural knowledge-workers and experts.[55] Their work, far from being generic or banal, was (and is) transformative work that constituted (and constitutes) an unrecognized and under-remunerated—when paid at all—form of expertise.

This, in turn, is essential to understanding the repetitions that guide the workings of capitalism in the present—enthusiasts' claims to rupture notwithstanding—and the types of inequalities that it shores up. Proponents of contemporary developmentalist thinking claim that capitalism in an "altruistic" register can "transform" the lives of the poor by locating value at the "bottom of the pyramid."[56] I show that appropriating this expertise, and the social infrastructures on which this value has been based, has a long history in the region. In understanding these processes, I move away from a vision of "people as infrastructure" to explore how it has come to pass that people

are compelled to act infrastructurally.[57] This distinction is important. The first risks naturalizing the material conditions under which people as infrastructures emerge as a phenomenon. The second, and the one pursued here, works to parse out those conditions as a mode of critique of the particular articulations of capitalism—both past and present—in Kenya and beyond.[58]

Arc of the Book

The term "austerity" was not used by the historical or contemporary actors that people these pages. In each of the three sections that structure the book, I use the actor categories that I understand to be austerity's analogs—"sound finance" and colonial "self-sufficiency" from the nineteenth century through the interwar years (chapters 1 and 2), "community development" following the Second World War through the late colonial period (chapters 3 and 4), *harambee* (Kiswahili for "all pull together") in the independence period, and "the digital" in the 2010s (chapters 5 and 6). Across the chapters, I signal these important historical ideological and material transformations, while training attention on the shaping capacity of the deep "cross-historical processes" that have characterized the operations of the austere state.[59] Such a long-angle view reveals that the "intransigence of infrastructure[s]" lies not simply in their presence, but crucially in their durable absence.[60] As Joshua Grace has shown, material constraints shape infrastructures in "underappreciated ways." As underinvestment was naturalized as scarcity, the absence of "permanent infrastructure[s]" also gained momentum.[61] In Kenya, this has had implications for the shape of infrastructures of the future.[62]

Chapter 1 charts the expansion and decline of the Imperial British East Africa company (IBEA) in the late nineteenth century. The IBEA's rise as a corporate-state emerged at a peculiar conjuncture, which saw the Crown outsource the costs and risks of undertaking colonial occupation to the firm, this in keeping with the logic of "sound finance." The Crown's charter was matched by a concession from the Sultan of Zanzibar. With the delegation of sovereignty into corporate hands, the IBEA promised to bring "commerce and civilisation" to the region. The construction of a word network was at the heart of this project. A company road network would enable the firm to establish a revenue regime in pursuit of corporate profits through inaugurating novel regimes of taxation. The firm quickly realized, however, that asserting sovereignty on the ground required daily material and conceptual work. These labors turned on efforts to assert a monopoly over the meaning of the emergent distributions of sovereign authority, of debt and deference, critical to consolidating power in the hands of the corporate-state.

As chapter 2 explores, while gaining the right to seize taxes was at the heart of the IBEA's mission, getting east African communities to recognize the IBEA as the dominant administrative and fiscal authority would require a revolution not simply in regimes of sovereignty, but in regimes of work as well. As I show, the IBEA was dependent on Africans' knowledge of historical networks of mobility as it constructed a new road network, but this knowledge it hoped to subsume all the while transforming expert work into rote labor. African topographical experts resisted complying with this new labor regime. At this conjecture, company administrators tried to mobilize two new fiscal technologies—a company currency and new regimes of taxation. Working in tandem, they forecasted that these fiscal and administrative forms would operate as infrastructural attachments, binding people as labor to the road and the wage as they struggled to "find their tax." These contradictions persisted when the Foreign Office took over the administration of the region, becoming the foundational logic of the colonial state as it pursued sound finance's imperial corollary, colonial "self-sufficiency."

The middle section of the book (chapters 3 and 4) turns to the history of radio broadcasting, focusing mainly on the 1940s and 1950s, which seemed to mark the decline of colonial austerity as social welfarist models of governance made inroads in the form of the Colonial Development and Welfare Acts of 1940 and 1945. However, the durable material consequences of policies of colonial "self-sufficiency" could not easily be undone, and grand plans for centralized social welfare quickly devolved into "community development." This pivot was largely driven by parsimony, "community development" having as its core appeal being "inexpensive" because it often "relied on unpaid voluntary labour."[63] It was against this backdrop that administrators came to see in broadcasting a plausible solution to the long history of underinvestment in the lives of the African majority. Indeed, it was precisely in the absence of—let alone the funding for—"harder" infrastructures of development that many in the 1940s came to see radio as an infrastructural prosthetic; the government's messages for social and material transformation suffusing people's consciousnesses over the airwaves. The medium, they claimed, could broadcast development.

This aspiration was stymied from the outset. Absent funding from the Treasury, in the 1920s the government had entered into agreements with Cable and Wireless Ltd. (C&W), to service white settler and South Asian listeners. These early decisions—driven by the prudent logic of colonial "self-sufficiency" and a racial politics that gave primacy of place to the needs of white settlers—attached the state to infrastructural networks funded and established by a corporation. Given these material constraints, the government deployed in-

formation vans boasting receiving sets across the colony. These infrastructural prosthetics, it hoped, could mitigate the problems thrown up by the lumpy reach of the state. Such material conditions ensured that European information officers were utterly dependent on the practiced labor of African knowledge-workers and experts, something which became abundantly clear during the Mau Mau uprising of the 1950s. At one level, then, efforts to enact radio both indexed the change in direction of colonial policies that characterized the 1940s and 1950s and exemplified colonialism on the cheap. This was colonial austerity in the age of social welfare.

Chapter 4 turns to the postwar period which saw the Treasury, for the first time, make monies available to assemble a state-run infrastructure of broadcast. This was a response to labor mobilizations across the British empire in the 1930s and 1940s, which convinced the administration of the urgency of developing its own broadcasting network. In this uncertain moment, the colonial government hoped to use broadcasting to mold the social and political worlds available to Kenyans, by generating subjects of an "intermediate" scale— beyond "tribe" but before "all-embracing citizenship." This centered on efforts to produce a robust parochialism through Kiswahili-language broadcasting. These goals were complicated in practice. Not only was Kenya a unique atmospheric and topographic zone, but problems of financing remained. Material issues could not be easily divorced from the question of politics, which intensified over the course of the 1950s. As people started tuning in to broadcasts from Egypt's Radio Cairo on their shortwave receivers, they were invited to generate novel forms of affinity. Listeners seized on this opportunity, demanding that the state provision them with vernacular-language broadcasts. While this led to the consolidation of a technopolitical network geared toward forwarding "parochial" attachments, this process was driven from below.

The final section of the book (chapters 5 and 6) addresses the period following political independence and charts the consequences of the incremental privatization of Safaricom, which began its life as Kenya Post and Telecommunications Corporation (KPTC). Independence marked a rupture as "Africanization" saw white managers and state officials replaced by Kenya's black elite. While in rhetorical terms, the history of austere infrastructural governance was one that the state under Jomo Kenyatta was eager to shake off, in practice the developmentalist ideology of the early postcolonial state was largely an extension of that of the late colonial state. "Community development" was rebranded *harambee*, or "all pull together." Occupying a central place in Kenya's coat of arms, the message was clear: Austerity would be the normal state of affairs in the near and mid-term future.

Nevertheless, the promises of independence were buoyed by the boom in commodity prices in the 1950s and 60s—leading some to dub the period from 1964–1980 the "Kenyan Miracle." But this "miracle" was uneven in its reach. The discretionary logic of indirect rule remained largely intact, with the government mobilizing parastatals, such as KPTC, to reward loyal constituencies. By the end of the 1970s, price inflation and high interest rates on international loans resulted in massive deficits in government budgets.

By the 1990s, under pressure from IFIs—which cited the state's inability to fund infrastructural expansion, maintenance, and repair—KPTC was dissolved and reconstituted as Telkom Kenya. In the early 2000s, the state shuttled 40 percent of its shares to the UK-based firm Vodafone, and so Safaricom was born. In 2008, the corporation launched M-Pesa. This mobile-to-mobile money transfer system emerged as a solution to long histories of underinvestment that had seen the consolidation of a banking network that was both incomplete and that had long excluded the African majority. Safaricom's financial services, like radio, then, were devised to "leapfrog" over the absences generated by longer histories of austerity. In 2008, Safaricom went "public," giving birth to "digital Kenya."[64] These transformations inaugurated a new era of corporate statehood, while ushering in a novel political form: shareholder citizenship.

Chapter 6 explores Safaricom's austere labor regime through a textured ethnographic engagement with the daily life and work of M-Pesa agents, those women and men who industry insiders refer to as Human-ATMs. Far from this work being simply infrastructural, the daily care and practiced expertise of M-Pesa agents has been essential to Safaricom's success, enabling the firm to emerge as the largest corporation in the region. It is not simply Safaricom workers who are implicated in this regime, but Kenyans writ large whose everyday tactics and social relations have been appropriated and translated into commercially useful data on which Safaricom assembles new markets.

Put simply, if our definitions of austerity are rooted in perceptions of a normalized Keynesian developmentalist model, the era of the well-financed state that could be said to resemble a welfare state was short-lived in the region. Austerity in Kenya has largely not been characterized by a reversal of fortunes; it has been the norm. This has opened up possibilities for private accumulation, with private investments and capital being enrolled to make up for limited state budgets. In Kenya, "the market" has *always* been the critical third term mediating relations between subjects and the state through infrastructures.

Taken together, a central claim of *Infrastructural Attachments* is that histories of infrastructure, capitalism, and state formation that take Kenya as their point

of departure force us to confront a different genealogy of the history of both the state and infrastructures. This genealogy is one that must highlight the role played by austerity, track the peculiar institutional forms to which it has given rise, and place infrastructural prosthetics at the center of the story. In the process, occluded forms of statecraft, expertise, and regimes of expropriation become visible.

As this suggests, the histories narrated in these pages are not primarily stories about the material networks of infrastructures themselves. Instead, I use an exploration of infrastructures always "in the making," and the discussions, disputations, and practices that they elicited and enabled—to tell new stories about the changing relations among capital, state formation, and notions of belonging; to locate new histories of expertise and skill; and to explore the long-term continuities in developmentalist thinking, and how people have reframed development through vernacular notions of individual and collective well-being.

By firmly rooting people's engagements with infrastructures and infrastructural work in the social lives, political languages, and cultural practices of the historical subjects and contemporary interlocutors who people these pages, this book works to trace out the contradictions of (post)colonial rule "on the ground." Conjoining an ethnographically informed analysis of state-building and market-making with a close reading of the cultural politics of Kenyan communities, I track transformations in political economy and developmentalist thinking as manifest in infrastructures through the micropolitics that they engendered. Holding these histories together is essential to understanding why infrastructures in Kenya, far from being the invisible and unremarked background of social life, have emerged as fraught cultural and material objects.[65] They are not neutral, nor are they banal. Both discursively and as material networks, infrastructures in Kenya have been politically charged and "multiply authored" cultural and material objects.[66]

Notes

PREFACE

1   Hecht, "Rupture-Talk."

INTRODUCTION

1   This as measured by market capitalization. "The East Africa, Mauritius & Seychelles Top 30 Companies," African Financials, September 2022, accessed 18 June 2023, https://images.africanfinancials.com/83616f9a-2022-09-east-africa -mauritius-top-30.pdf.
2   Fieldnotes, 7 August 2014.
3   Prahalad, *Fortune at the Bottom of the Pyramid*.
4   "Safaricom PLC Annual Report and Financial Statements," Safaricom, 2022, https://www.safaricom.co.ke/investor-relations-landing/reports/annual-reports.
5   Breckenridge, "Failure of the 'Single Source,'" 105.
6   This literature is vast. For some of the sources I'm thinking with, see Mamdani, *Citizen and Subject*. For Kenya on ethnicity, see Peterson, *Creative Writing*; MacArthur, *Cartography and the Political Imagination*; Berman and Lonsdale, *Unhappy Valley, Book One*; Berman, *Control & Crisis in Colonial Kenya*. On labor and class formation, see Cooper, *On the African Waterfront*. For broader accounts on ethnicity and indirect rule, see Ranger, "Invention of Tradition Revisited." For a response to Terence Ranger, see Spear, "Neo-Traditionalism and the Limits."
7   Bear, *Navigating Austerity*; Appel, *Licit Life of Capitalism*.
8   Fraser and Jaeggi, *Capitalism*; Fraser, "Behind Marx's Hidden Abode"; Wood, "Separation of the Economic and the Political"; Phillips-Fein, *Fear City*; Blyth, *Austerity*.
9   Ferguson, "Uses of Neoliberalism"; Capotescu, Sanchez-Sibony, and Teixeira, "Austerity without Neoliberals."
10 For exceptions, see Von Schnitzler, *Democracy's Infrastructure*; Brownell, *Gone to Ground*; Appel, *Licit Life of Capitalism*. For an excellent example outside of Africa, see Goswami, *Producing India*, especially chapter 1.

11   Special thanks to Matt Shutzer for helping me develop and sharpen this framework.

12   Bruce Berman was among the first to point to this contradiction, arguing that the colonial state in Kenya struggled to mediate between settlers, metropolitan capital, and the needs of the black African majority, as thin as officials argued these needs were. This book shares these concerns, but uses an exploration of the corporate-state as one site where the contradictions of colonial statecraft were manifest. Berman, *Control & Crisis in Colonial Kenya*.

13   Maine, *Sir Henry Maine*, 322.

14   Ciepley, "Beyond Public and Private."

15   Guyer, *Legacies, Logics, Logistics*, 157; cf. Mann, "Autonomous Power of the State."

16   Offner, *Sorting Out the Mixed Economy*.

17   For various takes on this, see Fraser and Jaeggi, *Capitalism*; Blyth, *Austerity*, 99; Wood, "Separation of the Economic and the Political"; Fraser, "Behind Marx's Hidden Abode."

18   In this, I join a growing body of literature on African technological and infrastructural expertise. See D'Avignon, *Ritual Geology*; Grace, *African Motors*; Hart, *Ghana on the Go*.

19   Grace, *African Motors*; Hart, *Ghana on the Go*; D'Avignon, *Ritual Geology*; Osseo-Asare, *Bitter Roots*; Twagira, "Introduction"; Mavhunga, *Mobile Workshop*; Mavhunga, *Science, Technology, and Innovation*; Tilley, *Africa as a Living Laboratory Empire*; Osseo-Asare, *Bitter Roots*; Jacobs, *Birders of Africa*; Mutongi, *Matatu*; Mika, *Africanizing Oncology*.

20   Goswami, *Producing India*, 33.

21   Apter, *Pan-African Nation*, 37.

22   Larkin, *Signal and Noise*; Barry, *Material Politics*.

23   For accounts that attend to the vernacularization of development, see Ferguson, "Declarations of Dependence"; Karp, "Development and Personhood"; Shipton, *Credit between Cultures*; Smith, *Bewitching Development*.

24   Larkin, "Politics and Poetics of Infrastructure"; Larkin, *Signal and Noise*; Von Schnitzler, *Democracy's Infrastructure*.

25   Mukerji, *Impossible Engineering*; Edwards, "Infrastructure and Modernity."

26   Schivelbusch, *Railway Journey*; Cronon, *Nature's Metropolis*; c.f. Collier, *Post-Soviet Social*.

27   Bagwell, *Transport Revolution*, 80–83.

28   Luxemburg, *Accumulation of Capital*; Cronon, *Nature's Metropolis*; Bagwell, *Transport Revolution*, 80–87; David Harvey, *The Limits to Capital*; Utsa Patnaik and Prabhat Patnaik, *Capital and Imperialism*.

29   The language of "state space" is drawn from Manu Goswami. However, it is worth noting that Goswami is centrally concerned with highlighting how creating "state space" in India critically turned on producing and reproducing the uneven and combined development that characterized the British Empire. Goswami, *Producing India*, 53; Hughes, *Networks of Power*; Mann, "Autonomous Power of the State."

30   Harvey, *Limits to Capital*; Klein, *Shock Doctrine*; Phillips-Fein, *Fear City*; Blyth, *Austerity*; Brown, *Undoing the Demos*; Ong, *Neoliberalism as Exception*; Bear, *Navigating Austerity*. Mattei offers an alternative to the standard chronology, arguing that aus-

terity is a tactic of statecraft that first emerged in Europe—specifically Italy and the United Kingdom—to resolve capitalism's endemic crisis tendency in the interwar period. For Mattei, austerity functions to discipline the working class and insulate capitalism from the popular demands of working people. See Mattei, *Capital Order*.

31 For exceptions, see Park et al., "Introduction"; Machava, "Reeducation Camps"; Quarshie, "Psychiatry on a Shoestring."

32 Piketty, *Capital*.

33 Piketty, *Capital*.

34 Knight and Stewart, "Ethnographies of Austerity," 2.

35 Connolly, "White Story."

36 Connolly, "White Story"; see also Harvey, *Brief History of Neoliberalism*, 11.

37 Rodney, *How Europe Underdeveloped Africa*; Amin, *Unequal Development*; Wallerstein, *Capitalist World-System*; Wallerstein, *World-Systems Analysis*; Arrighi, *Long Twentieth Century*.

38 While I share many concerns of this work, I understand austerity to be analytically and politically distinct from what Seikaly refers to as "scarcity." See especially the introduction of Seikaly, *Men of Capital*.

39 In coming to this conclusion, reading in South Asian and Middle Eastern history has been formative. See Goswami, *Producing India*; Jakes, *Egypt's Occupation*; Chaudhuri, "Lives of Value."

40 Goswami, *Producing India*.

41 Goswami, *Producing India*. The word *lumpy* better describes processes of globalization, emphasizing the necessary unevenness missed by the language of "flows," and "scapes," which suggests globalization has entailed homogenization and equal integration. See Hecht, *Being Nuclear*; cf. Appadurai, *Modernity at Large*.

42 Hecht, "Interscalar Vehicles."

43 Von Schnitzler, *Democracy's Infrastructure*, 5.

44 Berry, "Hegemony on a Shoestring." This argument shares an affinity with Berry's, but takes the argument in different directions. Whereas Berry emphasizes how policies of fiscal constraint required the use of "native authorities," I emphasize how policies of colonial austerity made the state dependent on private enterprise to enact infrastructures on the one hand, and relied on the often unpaid contributions of African knowledge-workers and experts on the other.

45 Mitchell, *Rule of Experts*.

46 "The Policy of Creating Reigning Companies," *The Economist*, September 15, 1888.

47 As d'Avignon shows based on her research in French West Africa, the colonial and postcolonial state has routinely contrasted "artisanal" mining with industrialized forms of extraction, often criminalizing the former despite the fact that industrial mining firms were reliant on Africans' knowledge of the subsoils. See d'Avignon, *Ritual Geology*.

48 The language of "milieu" is borrowed from Hunt, *Nervous State*.

49 Bear, *Navigating Austerity*, 31.

50 Haraway, *Simians, Cyborgs, and Women*, 249n7; Mackenzie, *Material Markets*. In the wake of Donna Haraway's provocative essay "The Cyborg Manifesto: Science, Technology, and Socialist Feminism in the 1980's," scholars working in a range of

disciplines have taken up the concept of "the prosthetic." Within disability studies, the proliferation of the term has come under scrutiny. At the center of these critiques is the sense that the prosthetically enhanced body has been reduced to mere metaphor, ignoring the concrete materiality of lives lived alongside and through prosthetics. For my purposes most interesting in the critiques of the figure of the cyborg–the figure of the prosthetically mediated body–is that it has rarely been used to engage in materialist critique, Haraway's initial intent notwithstanding. The approach taken here insists on the importance of the materiality of prosthetics and prosthetic work, in pursuit of a critique of capitalism's uneven, extractive, and expropriative tendencies. See Mitchell and Snyder, eds., *The Body and Physical Difference: Discourses of Disability*; Smith and Morra, eds., *The Prosthetic Impulse: From a Posthuman Present to a Biocultural Future*; Alison Kafer, *Feminist, Queer, Crip,* especially chapter 6.

51   The language of "hang together" is taken from Mol, *The Body Multiple*.

52   British National Archives [BNA] Colonial Office, "Broadcasting Cheap Medium-Wave Receivers"; Bindra, *Peculiar Kenyan*; Moorman, *Powerful Frequencies*.

53   For critiques, see Serlin, "Confronting African Histories of Technology"; Kriger, *Pride of Men*; Mavhunga, *Mobile Workshop*; Mavhunga, *Science, Technology, and Innovation*.

54   Maurer, Nelms, and Rea, "Bridges to Cash."

55   Hunt, *Colonial Lexicon*.

56   Prahalad, *Fortune at the Bottom of the Pyramid*.

57   Simone, "People as Infrastructure." I would like to thank Gabrielle Hecht for impressing on me the importance of this distinction.

58   My approach shares the concerns articulated in Fredericks, *Garbage Citizenship*.

59   Cooper, "Concept of Globalization," 190.

60   Von Schnitzler, *Democracy's Infrastructure*, 15; Collier, *Post-Soviet Social*; Elyachar, "Phatic Labor."

61   Grace, *African Motors*, 23–4. For a discussion of the shaping role of infrastructural incompleteness in Kenya, see Prince K Guma, "Incompleteness of Urban Infrastructures in Transition."

62   On the shaping capacity of what Kimari and Ernston refer to as "imperial remains," see Kimari and Ernston, "Imperial Remains and Imperial Invitations."

63   Berman, *Control & Crisis in Colonial Kenya*, 281.

64   Poggiali, "Digital Futures and Analogue Pasts?"

65   Edwards, "Infrastructure and Modernity."

66   Welker, *Enacting the Corporation*, 4.

CHAPTER 1. A DIVISIBLE SOVEREIGNTY

1   McDermott, *British East Africa*, 399.

2   Livingstone often referred to "paths," rather than "roads," when he discussed the relationship between infrastructures and "commerce and civilisation." Livingstone, *Cambridge Lectures*, 21.

3   Hunt, *A Colonial Lexicon*.