

MODERNIZATION *BUBU*: CARS, ROADS, AND THE POLITICS OF DEVELOPMENT IN
TANZANIA, 1870s – 1980s

By

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ABSTRACT

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The dominant historical narrative about Africans and technology in the twentieth-century is one of backwardness and underdevelopment. Though African contributions to technology or scientific knowledge are acknowledged during the pre-colonial era, they are rarely mentioned after European industrialization or the onset of colonialism. My research challenges this metanarrative by examining the manner in which Africans transformed motor vehicles and roads from European tools of empire into African technologies that could be used for different social, political, and economic goals. It focuses on five main themes: (1) Racial and gendered hierarchies of technology; (2) African histories of innovation and development; (3) The global politics of expertise; (4) The importance of technology and mobility to African identities; (5) The relationship between technology and economic liberation.

Modernization is most often analyzed as a Western imposition upon passive African societies in need of technological assistance. My dissertation departs from this assumption by presenting modernization as a global process that was given shape and meaning by the knowledge and technological practices of local actors. In colonial repair garages, young men used access to automotive knowledge to create new forms of colonial personhood and challenge racial hierarchies of knowledge; after independence, they staked their careers and lives upon their creativity and ability to make a global machine commensurate with local economies of repair. On Tanzanian roads, African men and women upset ideologies of social and economic health by turning tools of social and economic engineering into vehicles for personal

development. Instead of passive targets of technologically based interventions, this project reveals Africans as flexible and innovative technologists whose labor and ideas are crucial to understanding larger processes of modernization and development.

My work makes at least three contributions to historical literature. (1) It replaces Eurocentric histories of development with the views and experiences of Africans who built personal and collective futures through car expertise or road travel. Instead of being targets of development schemes, my project analyses Africans as agents of development whose knowledge and labor are critical for understanding modernization in colonial and post-colonial periods. In particular, this research provides an alternative to state-based narratives of technology, governance, and development by using oral history, personal archives, and historical ethnographic methods. (2) My work shows the significance of technology to African identities in the twentieth-century. In contrast to colonial and post-colonial narratives that portray Africans as racially incompatible with modern technology, this research shows how cars, roads, and automobility became an integral part of African personhood. In particular, it reveals the importance of technology for contesting racial and gender social orders throughout the twentieth-century. (3) This research provides a new approach to modernity, technology, and expertise in World History by highlighting the contributions and achievements of African historical actors. In contrast to global historical narratives that describe Africa's twentieth-century through dominance and decline, this research reveals spaces of technological innovation and creativity that are critical for reevaluating World History from the perspective of historical actors in the Global South.

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INTRODUCTION—MODERNIZATION *BUBU*: TECHNOLOGY, MOBILITY, AND DEVELOPMENT IN AFRICA

Beginning in 1969, Sylvester Barongo drove each day to the residential offices of the Tanzanian Petroleum Development Agency (TPDC) on Unduli Street, an unpaved side road in a bustling quarter of Dar es Salaam. In this residential office, Barongo, a geologist trained in the United States, learned about the intricacies of global oil trading and spent sleepless nights worrying about his ability to procure oil as his country's reserves of foreign exchange dwindled. Barongo and his men had two jobs. The first was to procure oil by managing a technological project that brought banks from New York and London together with ministers from Iran, Iraq, and Oman, as well as shipping companies in India. While Barongo acknowledged that operations did not always run smoothly, they managed to procure crude oil in spite of Tanzania's declining purchasing power and a global energy crisis that further strained their limited resources. TPDC was also tasked with one of the most ambitious and outward-looking goals of post-colonial modernization: it was supposed to level the playing field of global oil trading for newly independent nations like Tanzania by creating an "indigenous" oil market. As Barongo explained in 1971, petroleum was critical to each of Tanzania's nation-building projects from rural villagization schemes to small-scale manufacturing and the daily movement of laborers from home to work.¹ And yet, its extraction, movement, and refining was controlled by a capitalists assemblage of multi-national corporations and technologies whose construction and parts linked post-colonial Tanzania to many of its older colonial relationships. Barongo's job was not only to

¹ Sylvester Barongo, "Petroleum Development in Tanzania," *Tanzania Notes and Records*, nos. 79 and 80 (1976), 115-116.

bring oil to Tanzania, but also to find a way to use a thoroughly capitalist energy source as a means of socialist modernization.

One hundred yards away from TPDC's residential office, a mechanic named Brian Tshaka set up shop under a tree between an apartment building and the road. Tshaka's garage was the type of informal space known as *bubu*, meaning "mute" in Swahili, that was technically illegal but widely used by government officials as spare parts shortages crippled state vehicle fleets in the early 1970s. The mechanics who worked and trained in *bubu* garages like Tshaka's were neither formally educated nor certified by technical institutes. Instead, they traded their labor for knowledge and staked their reputations upon the superiority of their "hand expertise" (*utaalum wa mikono*) and creativity (*ubunifu*) over what they termed the "book expertise" (*utaalum wa vitabu*) of international and state-trained mechanics. While these "mute" technological spaces are often considered anomalies when set alongside more recognizable forms of expertise such as Barongo and TPDC, the mechanical knowledge and pedagogy of *bubu* repair shops was an established system of repair with origins in the community repair shops of African mechanics during the colonial period. By the late 1960s, *bubu* garages were not only emerging as recognizable spaces of expertise; they were also becoming social institutions where uneducated boys with limited resources could seek social mobility and masculine respectability. As Barongo sat nearby in his office worrying about global oil markets, Tshaka, along with his friends and apprentices, huddled around cars on the side of Unduli Street as they talked about life, drank beer, and made African cars.

This dissertation explores the historical processes that allowed Barongo and Tshaka to be work neighbors for over forty years. As I finished field research and began writing, I found myself going back to this small stretch of Unduli Road because it condenses so many of the

tensions and contradictions that characterize longer histories of development in Tanzania. While Barongo's job was a critical element of official development policy in Tanzania that included the world's biggest banks and most powerful oil producers, Tshaka's garage would appear to the untrained eye as a pile of car scraps and loitering youth. And yet, the African men in illegal *bubu* garages like Tshaka's were no less important participants in global exchanges of knowledge and technology. This porousness between formal and informal, legal and illegal, certified expert and hand expert was not unique to Dar es Salaam or the post-colonial period. From the first technological interventions in East Africa in the 1870s, road engineers were forced to recognize their limitations to change Africans' social and material worlds. Though colonial officials used discourses of technological superiority to produce racial and social hierarchies in Tanganyika, these vertical relationships were also subject to technological breakdown and a continual reliance upon African knowledge and labor, what one official described as "manpower reinforcing horsepower." On paper, colonial development was supposed to create clear divisions between modern and traditional; industrial societies and craft-based societies; and African and European. In practice, development projects exposed the reliance of officials upon the very people, things, and sources of knowledge they disparaged. The same is true for the independent period. In spite of discourses emphasizing the power of universal bodies of knowledge, modernization in Tanzania was a continual practice in tinkering. While new ideas and technologies certainly changed lives, their uptake was always dependent upon long-standing social categories and cultures of technology.

"Modernization *Bubu*" is a social history of development that investigates how Africans transformed motor vehicles and roads from European tools of empire into African technologies that could be used to pursue different social, economic, and political goals and to work towards

forms of individual and collective development that ran counter to the plans of colonial or national authorities. By examining cultures of technology and mobility in Tanzania from the 1870s to the 1980s, this work makes three contributions to historiographic literature. First, this research paves the way for understanding the history of development through Africans ideas, actions, and experiences instead of privileging externally based sources, theories or trying to fit Africans into metanarratives of technology in which there is very little room for them to be competent technological or economic actors. As Frederick Cooper noted in 2005, modernization is most often analyzed as a Western imposition upon passive African societies in need of technological assistance. My dissertation departs from this assumption by presenting modernization as a global process that was given shape and meaning by the knowledge and technological practices of local actors. Instead of being targets of development schemes, what Timothy Mitchell calls, “the object of development”, my project analyses Africans as agents of development whose knowledge and labor are critical for understanding modernization in colonial and post-colonial periods.² Titled modernization *bubu* or “mute modernization”, this work draws attention to the overlooked sources of technological and economic innovation in African history and to the absence of African voices and actions from historical processes that have shaped lives in African and beyond. Put bluntly, I argue that we cannot understand global processes like development and modernization without taking Africans seriously.

Second, this research shows the significance of technology to African identities in the twentieth-century. In contrast to colonial and post-colonial narratives that portray Africans as racially incompatible with modern technology, this research shows how cars, roads, and

² Timothy Mitchell, *Rule of Experts: Egypt, techno-politics, modernity* (Berkeley: University of California Press, 2002), 210.

automobility became an integral part of African personhood. In particular, it reveals the importance of technology to contesting racial and gendered social orders throughout the twentieth-century, and thus, it provides an important counterweight to narratives of African technological backwardness rooted in racial stereotypes of the nineteenth-century. It does so by moving beyond the emphasis on discourse and ideology to a focus on materiality and practice. In colonial and post-colonial periods alike, African men and women used automobiles, roads, paths, buses, and truck stations to create social and economic livelihoods that were not defined by the goals of colonial and national discourse or the policy directives of official development schemes. Whereas colonial and national officials operated in the binary-laced worlds of policy—including, modern and traditional, primitive and industrial, developed and underdeveloped, African and European—drivers, passengers, mechanics and guides were flexible technological actors who excelled in the messy world of *bricolage* and tinkering.

This was never supposed to be the case. Technological interventions, whether colonial or national, were designed to remake African societies by providing the types of knowledge and machinery that could transform Africans into modern social subjects and Tanzania into legible and governable space. In the 1870s, British abolitionists claimed they could end the slave trade and save African souls by replacing “caravan paths” and “native paths” with European style roads. Throughout the twentieth-century, colonial and national governments attempted to make Tanzanian into a model industrial country by training and certifying formally educated Africans in motor vehicle repair. But what occurred instead was a history of unintended consequences as even the most carefully designed and best-funded projects rarely materialized as desired. As I show throughout this dissertation, the problem was not only that Africans used technology—whether imported or indigenous—to challenge social norms of colonial and national

governments. Even more telling was the reliance of colonial and national officials on the knowledge and labor of those disparaged as “primitive” and “lazy”. Thus, my dissertation shows that Africans have always been irreplaceable technological actors in development projects, the historical weight of which should make us rethink the chasm that so often separates Africa from modern cultures of technology.

And third, this research provides a new way to understand Africa’s place in world history and global politics. In contrast to global historical narratives that describe Africa’s twentieth-century through dominance, decline, and dysfunction, this research reveals spaces of technological innovation and creativity that are critical for reevaluating what anthropologist James Ferguson has called, Africa’s “place-in-the-world” in *Global Shadows*. Ferguson writes:

I want to focus attention on how a vast, complicated, heterogeneous region of the planet has come to occupy a place-in-the-world called ‘Africa’ that is nowadays nearly synonymous with failure and poverty. I want to ask both how that place-in-the-world functions in a wider categorical system and what this means for the way we understand an increasingly transnational political, economic, and social ‘global order.’³

Ferguson subsequently focuses on the “function” of categories and discourse in recent African history; he even shows how ridiculous stereotypes about Africa discourage business investment by international firms.⁴ But I am concerned with a different understanding of the term, function. This dissertation examines the manner in which both people and technologies have worked in eastern Africa from the mid-nineteenth century through the 1980s. Using the term “work” heuristically, I examine the technical details of car repair, oil procurement, and informal economies alongside racial and gendered experiences of labor during the colonial and

³ James Ferguson, *Global Shadows: Africa in the neoliberal world order* (Durham: Duke University Press, 2006), 5.

⁴ Ferguson, *Global Shadows*, 7.

independent periods. My goal is not simply to carve out a niche for Africa in which it is no longer the aberration to global standards of progress. It is also to challenge the standards that are used to construct stereotypes of Africans' technological backwardness and changeless state of underdevelopment. In short, this dissertation is a critical meditation about the widely accepted standards of development, expertise, and technology that are used to marginalize Africa in global public discourse.

The Swahili term, *bubu*, meaning “mute” is an actor category used to describe actions and spaces that are technically illegal but commonly known and widely accepted. While *bubu* is regularly used to describe unlicensed garages and “pirate” taxis, it can also reference something larger that is known and collectively believed, but incapable of becoming official and open. In Gabriel Ruhumbika's post-socialist novel, *Miradi Bubu ya Wazalendo*, the term describes the shadow state and the contribution of “silent projects” to the demise of nation building and the enrichment of a technocratic elite.⁵ Such “silent projects” would be nearly impossible to explore historically because keeping things *bubu* was also an economic and political strategy of deviance for a range of historical actors from bureaucrats to drivers.⁶ But *bubu*, inasmuch as it was unobtrusive, was also a means of establishing the most real form of reality.⁷ *Bubu* garages were unlicensed but the best place to get a car repaired for both private car owners and the state—sometimes, the latter would subsequently fine *bubu* mechanics for breaking the law, even as they

⁵ Gabriel Ruhumbika, *Miradi Bubu ya Wazalendo* (Dar es Salaam: Economic Research Bureau, 1992).

⁶ Aili Mari Trip, *Changing the Rules: the politics of liberalization and the urban informal economy in Tanzania* (Berkeley: University of California Press, 1997).

⁷ Alexei Yurchak describes a similar process as the “eternal” Soviet state fell in: *Everything was Forever, Until it was No More: The Last Soviet Generation* (Princeton: Princeton University Press, 2005).

continued to patronize their garages. Formal economies were the best measure of economic development, but Tanzanian citizens relied increasingly upon “contraband” (*magendo*) networks and exchanges that had to happen at night. *Bubu*, then, is a Swahili word that bridges the gap between things often considered to be binaries, allowing them to sit together in complementary tension. For this reason, *bubu* delinks modernization in Africa from the expectations of colonial and national officials. It calls us instead to use contradictions, complications, and breakdown as the starting point for understanding social and technological change across the twentieth-century.

TECHNOLOGY

There is no better index of social, political, and economic change in Tanzania than the automobile.⁸ From a fleet of 14 colonial vehicles in 1914, the number of automobiles reached 30,000 by Tanzanian independence in 1961, and grew to nearly 600,000 by the year 2000. During the same period, the total length of roads grew by a factor of ten, and the number of registered African drivers increased from six to an estimated 400,000.⁹ Important not only in number, automobiles and road networks expanded regional and national markets while providing colonial and national governments new conduits of mobilization and control. First driven as a tool of colonial rule in the early 1900s, motor vehicles were later used by African nationalists to mobilize support, by an independent government to build a nation, and by numerous individuals

⁸ See, for example, Igor Kopytoff’s discussion of cars in Africa in “The Cultural Biography of Things: Commoditization as a Process,” in *The Social Life of Things: Commodities in cultural perspective*, ed. by Arjun Appadurai (Cambridge: Cambridge University Press, 1986), 64-91.

⁹ Rolf Hoffmeier, *Transport and Economic Development in Tanzania: with particular reference to roads and road transport* (Munich: Weltforum Verlag, 1973); World Health Organization, *Global Status Report on Road Safety: Time for Action* (Geneva: World Health Organization, 2009).

for economic development, prestige, leisure, and social expression. By the 1970s, nearly two-thirds of Dar es Salaam's urban population relied on buses for mobility, and in rural areas, trucks and roads were used to design and implement state-led development.¹⁰ For officials, farmers, urban residents, and, young Africans seeking adulthood, automobiles and the infrastructure they relied upon became increasingly central to social, political, and economic life during the twentieth-century. And yet, the African cultures of automobility are as

The dominant historical narrative about Africans and technology in the 20th century is one of “backwardness” and “underdevelopment.” Though African contributions to technology or scientific know-how are acknowledged during the pre-colonial era, they are rarely mentioned after European industrialization or the onset of colonialism.¹¹ In scholarships and public discourse alike, these representations are rooted in an eighteenth and nineteenth-century vision of the world. As Gabrielle Hecht has recently written:

The image of Africans as irrational took root in the Enlightenment and took off during the imperialism that followed. Europeans built political philosophies premised on the radical Otherness of Africans. Armed with Maxim guns and industrial goods, they saw artisanally produced African technologies as proof of a primitive existence. ‘Africa’ became seen as a place without ‘technology.’ Colonialism, the conquerors were convinced, would transform the continent through European science, technology, and medicine. During the decades of decolonization and Cold War, modernization theorists followed suit, updating the language and tools of the colonial ‘civilizing mission’ but sticking to its core vision: humanity perched along a ladder of development, with well-meaning Westerners at the top and Africans at the bottom.¹²

¹⁰ Andrew Coulson, *Tanzania: A Political Economy* (New York: Oxford University Press, 1982).

¹¹ Judith Carney, *Black Rice: The African Origins of Rice Cultivation in the Americas* (Cambridge, Mass.: Harvard University Press, 2001); Peter Schmidt, *Iron Technology in East Africa: Symbolism, Science and Technology* (Bloomington: Indiana University Press, 1997).

¹² Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge: MIT Press-Kindle Edition, 2012), 16-17; Clapperton Chakanesta Mavhunga, “The Mobile Workshop:

Indeed, much of the literature about technology in African history is written by imperial historians more concerned with European technological developments and identities than the myriad ways Africans used and shaped technology in their daily lives.¹³ African historians have not yet countered this Eurocentric narrative, and development scholars, while underscoring the significance of technology to Africans' lives, have focused on the dominance of technical expertise from the global North over local forms of knowledge and practice.¹⁴ Absent from these bodies of literature are basic, yet important, technological practices that provide insight into how things work in new settings, who uses them, and how externally-produced standards are implemented, contested, altered, or simply ignored. More than good scholarship, these issues have political ramifications. From the mid-nineteenth century up to the present, technology has been used to present Africa as a place in need of external intervention, often with a promise to save Africans from themselves. This rhetoric unites nineteenth-century discourse from the civilizing mission to post-Cold War ideologies of multilateral humanitarianism and to the assumption underlying Kony 2012 campaigns for Uganda—that even the most basic ideas and technologies from the West can save Africa. This discourse is so pervasive that a century-and-a-

Mobility, Technology, and Human-Animal Interaction in Gonarezhou (National Park), 1850-Present” (PhD Diss., University of Michigan, 2008), 3.

¹³ Daniel Headrick, *The Tools of Empire: Technology and European Imperialism in the 19th Century* (New York: Oxford University Press, 1981); Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1989).

¹⁴ Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 1995), 3-4 and 23; Frederick Cooper, “Modernizing Bureaucrats, Backward Africans, and the Development Concept,” in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 64-65; Timothy Mitchell, *Rule of Experts: Egypt, Techno-Politics, Modernity* (Berkeley: University of California Press, 2002), 42 and 45.

half of failed technological interventions—literally, a dime a dozen for an empirically minded writer—in Africa becomes virtually invisible.

This dissertation aims to reframe whose knowledge and practice counts in historical studies of modernization and development. I argue that the uses, types, and power of knowledge that mattered citizens and officials alike defied the expectations and aesthetics of the colonial and national bodies seeking to direct change in Tanzania throughout the twentieth-century. This means challenging the role of industrialization in narratives about Africa and historical development. Industrialization is often considered a point of rupture in the making of the modern world, and for Africa in particular, a juncture at which it falls behind global standards of technological and economic development.¹⁵ In the post-war world, industrialization became a neutral standard for talking about the universal values of science and technology. Though Harry Truman and Tanzanian President Julius Nyerere shared widely divergent philosophies of economic growth, both championed industrialization as a means of remaking the world.

According to Truman in 1949:

More than half the people of the world are living in conditions approaching misery ... Their economic life is primitive and stagnant. For the first time in history humanity possesses the knowledge and skill to relieve the suffering of these people ... I believe that we should make available to peace-loving peoples the benefits of our store of technical knowledge in order to help them realize their aspirations for a better life.¹⁶

Speaking only fifteen years later, Nyerere, a skeptic of westernization, argued that Tanzanian

¹⁵ Wallerstein, *Unthinking Social Science*, 41-50 and 127-129. This is also a common trope in radical and liberal historical narratives alike: Walter Rodney, *How Europe Underdeveloped Africa* (Dar es Salaam: Tanzania Publishing House, 1972) and the Thornton debate in *African Economic History* cited above. See also Mavhunga,

¹⁶ Harry Truman, Inaugural Address, 20 January 1949, <http://www.let.rug.nl/usa/P/ht33/speeches/truman.htm>.

development depended upon the nation's ability to "take our traditional system, correct its shortcomings, and adapt to its service the things we can learn from the technologically developed countries of other continents."¹⁷ Even for a president wary of global development trends, Western science and technology offered the most promising way forward for countries whose leaders and people saw themselves as lagging behind.¹⁸

Historians of science and technology have shown that discourses of technological progress obscure more complex realities about the natures of social, political, and economic change. As a term, technology emerged in the late nineteenth and early-twentieth centuries to describe an increasingly narrow set of practices previously encompassed by the mechanical or useful arts.¹⁹ Technology became associated with the "hard" knowledge and social mobility of well-educated white men whereas the "soft" knowledge and labor of women, minorities, and working classes was termed craft. The former was active and celebrated the cognitive skills and creativity of the head whereas the latter was passive and linked to manual labor and handwork.²⁰ As Michael Adas has shown, this hierarchy emerged along with and fueled imperial designs for

¹⁷ Julius Nyerere, *Ujamaa: Essays in Socialism* (Dar es Salaam: Oxford University Press, 1974), 110.

¹⁸ Historical work on this phenomenon is sparse. See a forthcoming work by Stephan Miescher, *Akosombo Stories: The Volta River Project, Modernity, and Nationhood in Ghana* and Laura Fair's forthcoming work on the role of a drive-in in Dar es Salaam creating an imagined community that existed in few other places in Tanzania.

¹⁹ Leo Marx, "Technology": The Emergence of a Hazardous Concept," *Technology and Culture* 51 3 (2010): 561-577; Ruth Oldenziel, *Making Technology Masculine: Men, Women, and Modern Machines in America* (Amsterdam: Amsterdam University Press, 2004).

²⁰ Nina Lerman, "The Uses of Useful Knowledge: Science, technology, and social boundaries in an industrializing city," *Osiris* 12 (1997), 40-42; Paul Edwards, "Industrial genders: soft/hard", in *Gender and technology: a reader*, eds. Nina Lerman, Ruth Oldenziel, and Arwen Mohun, 177-203 (Baltimore: Johns Hopkins Press, 2003), 179-184.

remaking the colonial world.²¹ In colonial Tanganyika, for example, definitions about technology, industrial culture, and modernity informed hierarchies about whose knowledge and labor was valued. Africans were associated with “soft”, hand-based knowledge, whereas white colonial officials were linked with the “hard” knowledge of the head. For officials, this meant Africans were racially incapable of learning about motor vehicles and thus required intensive colonial stewardship in order to join the “civilized” world.

Scholars have challenged these distinctions in both Europe and the United States. In place of linear narratives of social and economic progress, historians have used claims to superior knowledge as evidence to explore emergent social and political hierarchies.²² Nina Lerman, for example, has called for historians to question the hegemonic definitions of technology and science produced by historical subjects: “By scholarly rather than popular definition, then, technology is not limited to a study of men, of machinery, or of Western cultures. On the contrary, if technology in the modern West has come to be defined as a masculine pursuit, then that association itself must become an object of study rather than an initial premise.”²³ Lerman’s own work reveals the association of technology with maleness, whiteness, and social mobility during the eighteenth and nineteenth-centuries in Philadelphia. By separating rhetoric from practice, Lerman provides an empirical counterweight to metanarratives of technological progress that reinforce, rather than challenge, the conventional wisdom about whose knowledge and practice matters when claims to power are being made. A critical feature of this scholarship is the role of anomalies, setbacks, and breakdown in histories of science and technology. By

²¹ Adas, *Machines as the Measure of Men*, 164.

²² Lerman, “The Uses of Useful Knowledge”, 45-49.

²³ *Ibid.*, 40-41.

shifting analytical focus from ideologies to the details of design, construction, and repair, scholars have used the material world to challenge linear and determinist narratives of social and technological change.²⁴

Doing the same in Africa provides an opportunity to push back against narratives of dominance and decline, replacing stereotypes of African backwardness and underdevelopment with stories of technical innovation and diversity.²⁵ I focus on three issues. The first is the type of knowledge and technology that matters. From the 1870s to the 1980s, the implementation of development has not relied upon portable and universal bodies of knowledge that move from the Global North to the Global South, but instead upon a patchwork or *bricolage* of knowledge and practice. Though colonial officials recognized this and wrote about it in their diaries, too much scholarship operates with the assumption that an official and formal type of technological knowledge is the most powerful actor in narratives of twentieth-century development. As I show in chapter one, breakdown and repair—not dominance—were central to colonial officers' experiences in Tanzania from the 1870s to the 1950s. In futile attempts to build roads and to administer the colony from behind the wheels of their cars, many British officials recognized the limitations of colonial power as well as the surprising usefulness of African technology, expertise, and labor—whether forced or free. As a project of social and material engineering,

²⁴ Merritt Roe Smith, "Technological Determinism in American Culture," in *Does Technology Drive History?: The Dilemma of Technological Determinism*, eds. Merritt Roe Smith and Leo Marx (Cambridge, Mass.: MIT Press, 1994), 7.; Kevin Borg, *Auto Mechanics: Technology and Expertise in Twentieth-Century America* (Baltimore: Johns Hopkins University Press, 2007); see "Maintenance" in David Edgerton, *Shock of the Old: Technology and Global History Since 1900* (New York: Oxford University Press, 2011).

²⁵ For good examples of such narratives see: Joseph Miller, "Beyond Blacks, Bondage and Blame: Why a Multicentric World History Needs Africa," in *Recent Themes in the History of Africa and the Atlantic World: Historians in Conversation*, ed. by Donald A. Yerxa (Columbia: University of South Carolina Press, 2008), 8-10;

colonialism was dependent upon the very people and things it demeaned.

A similar process occurred after Tanzanian independence in 1961. A “post-war moment” after 1945 was supposed to signal the universal power of Western science, technology, and rational planning.²⁶ And yet, the technological and economic networks that transformed lives were rooted less in the universal ideologies championed by authorities than in moral economies and cultures of technology deeply rooted in the region’s past or in forms of social and technological innovation that defy categorizations as essentially African or colonial. This was especially the case in Tanzania repair garages where precolonial rites of passage were mixed with colonial and post-colonial hierarchies of knowledge. Expertise was gained through experience and experimentation, not through manuals or the accumulation of technical certificates from the institutions that were supposed to direct social and technological change.²⁷ Though African mechanics discuss the role of their “intelligence” (*akili*) and “creativity” (*ubunifu*) in career histories, the basis of technical pedagogy in informal repair shops was hand knowledge, what the mechanics term “hand expertise” (*utaluum wa mikono*) in Swahili.²⁸

²⁶ Escobar, *Encountering Development*; Donna Mehos and Suzanne Moon, “The Uses of Portability: Circulating Experts in the Politics of Cold War and Decolonization,” in *Entangled Geographies: Empire and Technopolitics in the Global Cold War*, ed. by Gabrielle Hecht (Cambridge, Mass.: MIT University Press, 2011): 43-74.

²⁷ On various kinds of scientific and technological mixing, see: Warwick Anderson, *The Collectors of Lost Souls: Turning Kuru Scientists into Whitemen* (Baltimore: Johns Hopkins University Press, 2008); Nancy Rose Hunt, *A Colonial Lexicon: Of Birth Ritual, Medicalization, and Mobility in the Congo* (Duke University Press Books, 1999); Peter Galison, *Image and Logic: A Material Culture of Microphysics* (Chicago: University of Chicago Press, 1997), 816 and 830.

²⁸ To a certain extent, this distinction between hand knowledge and head knowledge mirrors the scholarship on skill in studies of science and technology. Drawing on Wiebe Bijker and Harry Collins, William Storey discusses mimeomorphic (skill gained through repetition) and polymorphic (skills based upon judgment) skills in the transfer and development of guns in

Uneducated boys learned about vehicles through touch, sound, smell, and through a process of trial and error that became a form of masculine leisure. Their expertise was both effective—in that cars were repaired and modified—and troublesome. Chapter 3 examines the tension between universal and explicable bodies of knowledge associated with progress and the hand-based expertise that was critical car repair, arguing for a history of development based in tinkering and finger-tip knowledge.²⁹

The second issue is the type of technological actor that becomes visible and significant when expectations about knowledge and technology are changed. Disentangled from narrow definitions of technology emphasizing maleness and whiteness, African women and men become influential to narratives in which they were previously ignored or belittled. African mechanics, for example, were criticized during colonial and national eras because they lacked secondary education and the credential offered by formal technical institutes. But if we—like the mechanics—disregard modernist theories about the nature of technological change, a group of uneducated experts becomes indispensable to fundamental act of modernization: car repair. The same is true for understanding economic change. In chapter five, I show that the formal, and measurable, markets touted by modernization theorists distract from the types of economic networks and exchanges critical to citizens' economic lives during the 1970s and 1980s. Drivers and traveling businesswomen, not the socialist state, produced systems of movement and social capital through which the basic staples of life were distributed, albeit in a technically-illegal manner. As passengers on buses and lorries, traveling businesswomen are easy to overlook; but

South Africa. See, William Storey, "Guns, Race, and Skill in Nineteenth-Century South Africa," *Technology and Culture* 45 (October 2004), 687-689.

²⁹ J.W. Powell, *The Survival of the Fitter: Lives of Some African Engineers* (London: Intermediate Technology Publications, 1995).

they used an apparently passive technological act to become important economic actors. With this diverse array of technological actors, I am able to move beyond the world of colonial and national bureaucrats to a process that James Scott has termed, “metis”—what I understand as an approach to history that levels the analytic playing field between the formal and the informal.

Third, this dissertation places a diversity of technologies and technological systems together in a single narrative. Some of these, like motor vehicles, paths, urban bus networks, and informal economies were “open” to tinkering and modification. Such systems provide fertile ground to build on James Scott’s observations about the limitations of centralized, scientific planning and to place empirical weight behind alternative processes of development. But other technological systems were virtually closed, providing very little room for creativity, innovation, or for influencing structural change. Historians of technology call this, “soft determinism”, noting that large technological systems such as electric grids, transport infrastructure, and computer networks acquire a “momentum” that makes them difficult to change. Thomas Hughes describes such systems as “both socially constructed and society shaping.”³⁰ Chapter 6, “Crude Modernization,” shows how rural modernization in socialist Tanzania became path dependent. Procuring, refining, and moving oil was imbued with the power to transform Tanzania from a former colony into a productive and egalitarian socialist society. But oil markets were both fickle and stubborn. Instead of leading Tanzania to economic and technological liberation, building refineries and processing fuel magnified the hierarchical relationships politicians claimed they

³⁰ Thomas Hughes, “The Evolution of Large Technological Systems,” in *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology*, ed. by Wiebe Bijker, Thomas Huges, and Trevor Pinch (Cambridge: MIT Press, 1987), 45; Madeline Akrich, “The De-scription of Technical Objects,” in *Shaping Technology/Building Society: Studies in Sociotechnical Change* (Cambridge: MIT Press, 1992): 205-224.

could overturn. It even created a new geography of dependency linking “self-reliant” villages in rural Tanzania to banks in London and New York, to oilfields in Kuwait, and to Iraqi bombs falling in Iran.

Writing of modernization as a form of “soft determinism” not only anchors the creativity and agency of other technological acts in this dissertation. It also punctures discourses of exceptionalism that place Africa and the Global North on different historical trajectories. As a global movement, post-war development linked countries with vastly different backgrounds together in common struggle over the common denominator of all modernization schemes: oil. Thus, the story of the Tanzania Petroleum Development Corporation (TPDC) from the 1960s to the 1980s in chapter six is part of a shared global narrative about technological utopias, dreams of liberation, and ultimately, the crude nature of all modernization. When TPDC started in 1969, it had a lot to learn about the world of oil. But the lessons it learned were not unique to Tanzania.

MOBILITY

Since the mid-nineteenth century, mobility has been used to present Africa as a backward place in need of external salvation. As colonial explorers and officials toured eastern Africa with their teams of African guides and porters, they turned their mobility into written stereotypes of Africa as a “dark” place defined by marginality and backwardness. In spite of their utter reliance upon their African guides and porters, traveling Europeans erased and vilified African cultures of mobility by disparaging the region’s transport infrastructure and by linking head portage to slavery. As chapter one illustrates, imperial representations of mobility provided a proxy for justifying external intervention, whether “humanitarian” campaigns against slavery in the 1870s—a movement used to justify ambitious road-building projects—or the civilizing mission

during formal colonial rule. According to Tanganyika's first Labour Commissioner, Granville Orde Browne, African migrant laborers presented a social, physical, and economic threat to themselves and to colonial aspirations. Their methods of mobility, he believed, spread disease, undermined African social structures—a process termed, “detrribalization”—and frustrated administrators' ability to create a reliable pool of African labor. Orde Brown, like many colonial and national authorities who followed him, believed European technology could solve the government's problems. But he and others were wrong. They saw the world from the fleeting experience of the *safari* (an administrative tour), missing as they passed the moral economies, economic networks, and transport infrastructure that Africans used to navigate structural change and build their own lives throughout the twentieth-century.

The power and persistence of these travel-writing stereotypes was not lost on the first generation of African historians. Writing in 1968, Jan Vansina considered migration such an important aspect of African life that he included it in a short list of terms scholars should not overlook or misunderstand in their approach to Africa's past. In *Kingdoms of the Savannah*, Vansina used movement to prove the complexity and variation of regional economic and political traditions before the colonial period; his stated goal was to avoid an image in which “the whole interior of Africa was a green billiard table where the balls kicked one another eternally around and around” without the sharing or production of knowledge.³¹ Other historians used African cultures of mobility to reveal systems of movement as constitutive aspects of social life and historical change within the continent. In addition to uncovering “complexity” and “efficiency” in African history—a stated goal of early Africanist historians—revealing cultures of mobility provided a more fundamental critique of the structural functionalist lens through

³¹ Jan Vansina, *Kingdoms of the Savanna* (Madison: University of Wisconsin Press, 1968), 16.

which colonial officials and outsiders had understood African identities and social systems.³²

Paying attention to moving people, things, and ideas was a first step in decolonizing the study of African history. But African mobility was pushed aside as scholars began to focus on power of global circulations in the 1970s and on micro-histories in the 1980s.

There has long been something disconcerting and unnatural about African movement. According to James Ferguson, this perception can be traced to the conceptual frameworks used in African studies. “Whatever the causes,” he writes, “the high level of spatial mobility of Africans has often confounded modern colonial and post-colonial apparatuses of knowledge, bound as they generally have been to modern Western assumptions about the use and control of space.” Writing about Zambia’s Copperbelt, Ferguson identifies a myth of permanence that blinded colonial reformers and academics alike to the migratory practices of African laborers.³³ Scholars have since undercut long-held perceptions of African permanence by showing the constitutive role of movement in creating in political, religious and economic communities.³⁴

³² Phyllis Martin, “The Trade of Loango in the Seventeenth and Eighteenth Centuries,” in Richard Gray and David Birmingham (eds.), *Pre-Colonial African Trade: essays on trade in Central and Eastern Africa before 1900* (New York: Oxford University Press, 1970): 139-161; David William Cohen, “Doing Social History from Pim’s Doorway,” in *Reliving the Past: The Worlds of Social History*, eds. Olivier Zunz, David William Cohen, et al (Chapel Hill: University of North Carolina Press, 1985), 191-235.

³³ James Ferguson, *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt* (Berkeley: University of California Press, 1999), 79-81.

³⁴ Africanist historians have used mobility in three main ways. The first is to comment on the dispersed nature of power and authority: Frederick Cooper, *On the African Waterfront: Urban Disorder and the Transformation of Work in Colonial Mombasa* (New Haven: Yale University Press, 1987); Louis White, *Comforts of Home: Prostitution in Colonial Nairobi* (Chicago: University of Chicago Press, 1990) ; Nancy Rose Hunt, *A Colonial Lexicon: Of Birth Ritual, Medicalization, and Mobility in the Congo* (Duke University Press Books, 1999). The second is as a weapon of the weak: T. Dunbar Moodie and Vivienne Ndatshé, *Going for Gold: Men, Mines, and Migration* (Berkeley: University of California Press, 1994); Julie Livingston, *Debility*

Yet, missing from these analyses is the full range of meanings associated with mobility in Africa, in particular, the manner in which movement is translated from a spatial practice into a political one.³⁵ Outside of a small group of elites, we do not understand what Africans have thought about movement or circulating things, and we have unquestionably accepted narratives of decline that use deviant mobility or unnatural speed as evidence of social breakdown. Mobility has been used to identify fissures in structures of authority, most especially over the control of young men and women's bodies, but rarely has it been used to examine what Africans thought about the past, the present, the future or the nature of global forces.³⁶

and the Moral Imagination in Botswana (Bloomington, IN: Indiana University Press, 2005); Laura Fair, *Pastimes and Politics: Culture, Community, and Identity in Post-Abolition Urban Zanzibar, 1890-1945*; Steven J. Rockel, *Carriers of Culture: Labor on the Road in Nineteenth-Century East Africa* (Portsmouth: Heinemann, 2006). Third is the role of movement in creating and reproducing community: Ghislaine Lydon, *On Trans-Saharan Trails: Islamic Law, Trade Networks, and Cross-Cultural Exchange in Nineteenth-Century Western Africa* (New York: Cambridge University Press, 2009); Adeleine Masquelier, "Road Mythographies: Space, Mobility, and the Historical Imagination in Postcolonial Niger," *American Ethnologist* 29 (2002); T. Giles-Vernick, "Na lege ti guiriri (On the Road of History): Mapping Out the Past and Present in M'Bres Region, Central African Republic." *Ethnohistory* 43 (1996): 245–275.

³⁵ I have in mind here Tim Cresswell's definition of mobility as the "entanglement of movement, representation and practice" in "Towards a Politics of Mobility" (p. 160).

³⁶ There are many examples of works that use unsanctioned or unnatural movement as an indication of crisis. These successfully locate movement as a central part of meaning making, but are too often from the perspective of a dominant group: Brad Weiss, "'Buying Her Grave': Money, Movement, and AIDS in North-West Tanzania," *Africa: Journal of the International African Institute* 63 1 (1993): 19-35; Andrew Burton, *African Underclass: Urbanization, Crime, and Colonial Order in Dar es Salaam, 1916-1991* (Athens: Ohio University Press, 2005). Exceptions include: David William Cohen, "Doing Social History from Pim's Doorway"; Henrietta Moor and Megan Vaughan, *Cutting Down Trees: Gender, Nutrition, and Agricultural Change in the Northern Province of Zambia, 1890-1990* (Portsmouth: Heinemann, 1994), especially chapter 3. Masquelier, "Road Mythographies"; Janet Roitman, *Fiscal Disobedience*; Gabriel Klaeger, "Religion on the road: the spiritual experience of road travel in Ghana," in the *Speed of change: motor vehicles and people in Africa, 1890-2000*, ed. by Jan-Bart Gewald, Sabine Luning and Klaas van Walraven (Boston: Brill Academic Publishers, 2009), 217-218.

In particular, few have challenged the manner in which representations of movement are used to talk about Africa as a peripheral place defined by a history of marginality.³⁷ As Anna Tsing demonstrates, the construction of peripheral spaces first requires an erasure of movement and external contact. Only then can such places be presented as pristine, untouched, and inhabited by “primitives”; and only then can proponents of external intervention make claims about bringing a backward, uncivilized place into the redeeming circulations of global capitalism.³⁸ As four chapters in this dissertation show, the issue is not whether people are moving or not. Instead, the politics of movement is about the reasons certain forms of mobility count and others do not when claims to power are being made.³⁹ Since the 1870s, colonial officials disparaged African modes of mobility because they destabilized the hierarchies of race and technology informing imperial rule. In particular, colonial discourses of automobility presented Africans as racially and culturally incompatible with concepts of space and time

³⁷ This was an early concern of the first and second generations of African historians. Jan Vansina (1966) includes movement as one of the misunderstood aspects of African life, and like Phyllis Martin (1972), uses cultures of mobility to discuss the complexity of African political and economic cultures. For David William Cohen, recognizing the range of meanings associated with movement was a key to getting beyond descriptions of Africa and Africans as passive historical actors and structural-functionalism (1977 and 1985). More recently, Jan Bart-Gewald’s introduction in *The Speed of Change: Motor Vehicles and People in Africa, 1890-2000* also makes a plea for understanding the wider meaning associated with motor transport in Africa’s history.

³⁸ Anna Tsing, *Friction: An Ethnography of Global Connection* (Princeton, NJ: Princeton University Press, 2005), 214. Tsing’s original analysis on mobility and marginalization is found in *In the Realm of the Diamond Queen: Marginality in an Out-of-the-Way Place* (Princeton: Princeton University Press, 1993). There is a particularly rich body of work on movement, place, and representation in anthropology. See: Arjun Appadurai, “Hierarchy in its Place,” *Cultural Anthropology* 3 1 (Feb. 1988): 37.

³⁹ Tim Cresswell has many publications on this topic, see “Towards a Politics of Mobility” (2010) and “Embodiment, power and the politics of mobility: the case of female tramps and hobos” (1999).

associated with European modernity. A similar process occurred after Tanzanian independence in 1961. Like colonial officials, national authorities linked movement to their vision for governmentality and modernization. Chapter five shows that dissident forms of mobility were connected to capitalist behavior, economic sabotage, and blamed for the shortcomings of national development schemes in spite of their importance to citizens' ability to shape their own lives.

This dissertation departs from such state-based perspectives. Following Timothy Cresswell's definition of mobility as "the entanglement of movement, representation, and practice", this dissertation pushes the literature on African mobility forward in three ways.⁴⁰ The first is to challenge the stereotyped African identities that have informed representations of Africa since the mid nineteenth century. As administrative officers went on their *safaris*, they produced stereotypes about African life that were used to create an image of Africa as a place that simultaneously required and resisted change. I challenge these representations by highlighting the technological and social challenges of administrative *safaris* and especially, the manner in which officials' experiences on tour forced them to rethink the basis of the civilizing mission. Second, I show the importance of movement to the manner in which Africans contested racial and gendered social orders throughout the twentieth-century. In particular, I use the narratives of Tanzania's first African driver and its most remembered female driver to shift the focus from European travel writing to examples of African travel writing and self-representation. Given the importance of travel writing to the narratives produced by national and international development officials, I argue that African forms of travel writing provide a way to provincialize

⁴⁰ Tim Cresswell, "Towards a Politics of Mobility," in *African Cities Reader II: Mobilities and Fixtures* (October 2011), 160.

narratives of power and to construct alternatives to the better-known narratives of state and development.

And third, I use mobility as a means of understanding economic and political structures from the bottom up. By focusing on who, how, and where people and goods moved, the systems and networks that are often placed on the edge of historical analysis become central to understanding economic and political activity.⁴¹ Anthropologists Janet Roitman and Judith Scheele and historian Ghislaine Lydon have recently used this method to uncover networks and modes of economic change not captured in formal economic histories.⁴² In particular, Roitman and Scheele have used mobility to argue that licit and illicit economic activities are complementary and that illegal activity is particularly important when official modernization schemes become untenable. Chapter 2, “Unlikely Cosmopolitans,” uses a similar approach. It shows how three mobile groups—migrant laborers, drivers, and traveling businesswomen—upset colonial and national authorities’ expectations about the possibilities for social and economic change. I follow each group on their journeys to establish the existence of alternative ontologies and networks of economic development in Tanzania from the early colonial period. In

⁴¹ This approach understands actor-network-theory as a method. See, for example, Bruno Latour’s *Reassembling the Social* (2005) as well as Mavhunga’s discussion of mobility in “The Mobile Workshop,” pp. 4-6.

⁴² Janet Roitman, *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa* (Princeton: Princeton University Press, 2005); Judith Scheele, *Smugglers and Saints of the Sahara: Regional Connectivity in the Twentieth Century* (New York: Cambridge University Press, 2012), 20.; Judith Scheele, “Garage or Caravanserail: Saharan Connectivity Al-Khalil, Northern Mali,” in *Saharan Frontiers*, 232-233; Julien Brachet, “Movement of People and Goods: Local Impacts and Dynamics of Migration to and through the Central Sahara,” in *Saharan Frontiers*, 239-241; Ghislaine Lydon, *On Trans-Saharan Trails: Islamic Law, Trade Networks, and Cross Cultural Exchange in Nineteenth-Century Western Africa* (New York: Cambridge University Press, 2009).

this manner, paying attention to details about movement is a method for constructing a social history of development and authority.

DEVELOPMENT

Too much of the history of development has happened in the heads of white men and formally educated African elites. In this dissertation, I provide a social history of development by examining cultures of technology and mobility in Tanzania from the late 1870s through the 1980s. In particular, I show the limitations of understanding development as a monolithic process that emanates from Europe and is implemented by institutions in colonial and national governments. Instead, I build upon scholarship by Donna Harroway and James Scott to move beyond an understanding of African development as having a singular core or essence. Harroway argues for “situated and embodied knowledges” and “against various forms of unlocatable, and so irresponsible, knowledge claims.”⁴³ Following Harroway, the essays in this dissertation approach development from a range of different “situated knowledges,” from auto repair garages to the open road and to oil trading in independent Tanzania. By doing so, we can begin to understand development in African history through actor categories and historical experience instead of privileging linear models of change and analytic categories based upon Western models of social and economic development. As James Scott has put it recently in *Two Cheers for Anarchism*, this is an approach to development that provides room for innovation, seeming

⁴³ Harroway, 583-584.

confusion, and a sense of historical possibility.⁴⁴

It is difficult to write about development without being linear and modernist. For most scholars, the historical study of development begins in Western Europe during the Enlightenment and with the historical processes that resulted in both industrialization and democratization.⁴⁵

The general story follows this pattern: From the 18th to the early twentieth-century, a combination of political, economic, technological, and scientific changes created a perfect storm through which the Western world could dominate others, set standards for progress, and spread its way of life around the world.⁴⁶ This “great divergence”, as Kenneth Pomeranz calls it, attempts to explain contemporary global hierarchies by identifying the historical trends, places, and actors that were most influential in creating the world we know. Not surprisingly, such narratives overwhelmingly focus on the rise of an industrializing Global North and the demise of much of the rest of the world. Though world historians have grappled with ways of creating more inclusive narratives, these histories continuously valorize limited types of historical data and accomplishments as the most salient for scholarly attention. As a result, scholars have focused almost exclusively on the power of universal ideologies and their uptake among subalterns, or conversely tried to explain the means and the motives of colonization and its consequences. Africa, and other parts of the Global South, are part of this singular narrative as

⁴⁴ James Scott, *Two Cheers for Anarchism: Six Easy Pieces on Autonomy, Dignity, and Meaningful Work and Play* (Princeton: Princeton University Press, 2012). Kindle Edition: location 95.

⁴⁵ Examples are numerous, including: Arnold Pacey, *Technology in World Civilization: A thousand-year history* (Cambridge: MIT Press, 1991); Patrick Manning, *Navigating World History: Historians Create a Global Past* (New York: Palgrave, 2003). Even continental histories of Africa slip into this linear narrative of historical development.

⁴⁶ Kenneth Pomeranz, *The Great Divergence: China, Europe, and the Making of the Modern World Economy* (Princeton: Princeton University Press, 2000).

victims—of both human and material plunder—and as a backdrop through which changes in the industrializing world can be contrasted. Though dependency theorists such as Walter Rodney critiqued capitalist narratives, radical histories also relied upon a linear unfolding of history with an end point as developed or underdeveloped.⁴⁷ A social history of development paves new ground by replacing the definitions and categories of officials, theorists, and scholars with historical experience. It moves beyond linear change, seeking instead to understand the universal processes of world history from previously ignored perspectives and spaces.⁴⁸

For the past two decades, scholars have increasingly questioned what is known about modernization and development as historical processes. This trend has been fueled by two interrelated concerns. The first, and most common, relates to the production of knowledge. Beginning in the 1990s, anthropologists, political scientists, and historians questioned the neutrality of the claims made by the development apparatus, arguing that the power of its discourse was rooted in its ability to frame things in a particular way. Using the phrase, “knowledge as power”, scholars deconstructed claims made by national and international bureaucrats who routinely ignored historical and social complexity or local bodies of knowledge as they promoted universal plans for remaking the “undeveloped” world.⁴⁹ According to Arturo

⁴⁷ Walter Rodney, *How Europe Underdeveloped Africa* (Dar es Salaam: Tanzania Publishing House, 1972).

⁴⁸ Joseph Miller, “Beyond Blacks, Bondage and Blame: Why a Multicentric World History Needs Africa.”

⁴⁹ Escobar, *Encountering Development*; Cooper and Packard, “Introduction”; James Ferguson, *The Anti-Politics Machine: “Development,” Depoliticization, and Bureaucratic Power in Lesotho* (Minneapolis: University of Minnesota Press, 2009), 52-56; *The Development Dictionary: A Guide to Knowledge as Power*, ed. by Wolfgang Sachs (London: Zed Books, 1992); Gilbert Rist, *The History of Development: From Western Origins to Global Faith* (New York: Zed Books, 1997).

Escobar, development discourse was the creation of particular moment of history following the Second World War when European powers reframed their relationship with the former colonial world. Symbolized by Harry Truman's Point Four Program speech, postwar development was defined by a belief in a universal unfolding of history that could be administered by subjects of the colonial world as well as it could Europeans. Following this logic, former colonial powers asserted that colonized people could join the modern world by properly deploying the tools of science and technology. "The strength of 'development' discourse comes of its power to seduce, in every sense of the term: to charm, to please, to fascinate, to set dreaming, but also to abuse, to turn away from the truth, to deceive," writes historian Gilbert Rist. "How could one possibly resist the idea that there is a way of eliminating the poverty by which one is so troubled? How dare one think, at the same time, that the cure might worsen the ill which one wishes to combat?"⁵⁰

Even as they critiqued this discourse, scholars underscored an increasing centralization of expert knowledge and the growing power of national and international bureaucrats to define whose knowledge counted, including how development was to be understood and pursued. The type of knowledge that was powerful had the following characteristics: it was produced and circulated by a class of highly educated bureaucrats; it was increasingly portable and universal; it was explicable, or in other words, it could be captured through writing and made visible through miniaturized models. Though scholars were universal in their critique of this "knowledge as power", deconstructions of development discourse also valorized a certain type of knowledge

⁵⁰ Gilbert Rist, *The History of Development* (Zed Books: Kindle Edition, 2013), 1.

and actor as the most important and powerful in histories of development.⁵¹ As a result, the binaries produced by the development apparatus were critiqued, but also replicated, in scholarly studies. In the same manner ideologies of modernization created modern and traditional worlds, so too did critiques of development reify the existence of distinct spheres of knowledge. One was powerful, defined the possible contours of change, and was controlled by an educated class of international bureaucrats. The other was a passive victim of decisions made by the former and received much less attention in accounts of whose knowledge and practice matters.⁵²

The second concern is an increasing uncertainty about the role of states as facilitators and directors of large-scale change. Among scholarship in this school, James Scott's work is paradigmatic not only in its critique of state planning, but also in his recognition of alternative systems and ontologies of development.⁵³ While Scott's case studies have been criticized widely, he nonetheless succeeds in raising fundamental questions about the distance between the

⁵¹ Mitchell, *Rule of Experts*; Scott, *Seeing Like a State*; Escobar, *Encountering Development*; Frederick Cooper, "Modernizing Bureaucrats, Backward Africans, and the Development Concept," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 64-65; Joseph Morgan Hodge, *Triumph of the Expert: Agrarian Doctrines of Development and the Legacies of British Colonialism* (Athens: Ohio University Press, 2007), 208-209 and 255; Mehos and Moon, "The Uses of Portability"; Cooper and Packard, *International Development and the Social Sciences*.

⁵² For cautions on such approaches, see: Gilbert Rist, *The History of Development: From Western Origins to Global Faith* (New York: Zed Books, 1997), 8 and 93-95; Immanuel Wallerstein, *Unthinking Social Science: The Limits of Nineteenth-Century Paradigms* (Philadelphia: Temple University Press, 1991). This is especially the case in anthropological studies of development and governmentality: Tania Murray Li, *Governmentality, Development, and the Practice of Politics* (Durham: Duke University Press, 2007).

⁵³ Scott, *Seeing Like a State*, 309-319. For the colonial period, see also Hodge, *Triumph of the Expert*, and the increasing role of state intervention in spite of limited achievements during the late colonial period (especially, pp. 254-262); for the increasing role of the state in post-colonial development, see Frederick Cooper's analysis of "gatekeeper states" in *Africa since 1940: the past of the present* (New York: Cambridge University Press 2002).

ideals of high modernist planning and their historical instantiations. In particular, Scott and scholars like Timothy Mitchell and William Bissell have targeted the intentionality underlying ideologies and discourses of development. Though the state maintains a central position in their analyses, each questions its capacity to direct change from the center outward by leveraging “knowledge as power”.⁵⁴ Bissell’s study of colonial bureaucracy and planning in Zanzibar is especially useful. He highlights an inverse relationship between knowledge and power, revealing that an increase in what is known is not necessarily followed by an expanded ability to act beyond the walls of colonial departments.⁵⁵ These limitations on colonial and national states should serve as a warning to historians. Though the development apparatus has produced many archives full of evidence about its efforts to change the world, this knowledge is of limited use if historians are to understand development from any other perspective than that of the state. The challenge ahead for scholars is to move beyond statist perspectives without throwing the state out.

To accomplish this task, the following narrative provides different snapshots for understanding development as a tangled and often contradictory historical process. Four definitions of development emerge. First, it is a performance in racial and cultural superiority. During the colonial period, race—and “mental capacity” in particular—was used to present Africans as incompatible with modern technologies and economies, each defined by the imperial

⁵⁴ Mitchell, *Rule of Experts*; Scott, *Seeing Like a State*; William Bissell, *Urban Design, Chaos, and Colonial Power in Zanzibar* (Bloomington: Indiana University Press, 2010).

⁵⁵ Bissell, 106-107. On the limits of knowledge more generally, see Robert Proctor and Linda Schiebinger, eds., *Agnotology: The Making and Unmaking of Ignorance* (Palo Alto: Stanford University Press, 2008). Bissell’s work reflects the problem of what Scott term’s “thin simplification” and Donna Haraway calls, “partial perspectives”: Donna Haraway, “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspectives,” *Feminist Studies* 14 3 (Autumn, 1988): 583-590; Scott, *Seeing Like a State*, 311.

power. Following colonial rule, culture replaced race as an essentialist trait through which officials could distinguish between developed and developing countries. In the practice of daily life, however, racial and cultural distinctions were useless indicators of whose knowledge, technology, or economic activity was powerful. These designations persist because they allow powerful social groups to reproduce their authority by defining others as backward and helpless.⁵⁶ Second, development is social experiment.⁵⁷ Though modernization schemes are often presented as universal bodies of knowledge that are tested and proven, this was rarely the case. Colonial development policies were constructed and implemented in spite of huge gaps in knowledge about the social groups involved, the infrastructure available, or the possibilities for meeting basic labor requirements. According to Christophe Bonneuil, “Planned pilot schemes constituted the laboratories where development could be experimented with using Africans as subjects” during the colonial period.⁵⁸ There is a tendency to see post-colonial development, especially Tanzania’s socialist modernization, as a failed experiment that would inevitably give way to structural adjustment and neocolonialism. The more important point is that top-down development, whether capitalist or socialist, requires the translation of utopian dreams into widespread daily realities. As this dissertation shows, implementing such policies is not only an experiment. It is also a practice in unknowing what is universally known about Africa,

⁵⁶ James Ferguson, *The Anti-Politics Machine: ‘Development,’ Depoliticization, and Bureaucratic Power in Lesotho* (Minneapolis: University of Minnesota Press, 1990).

⁵⁷ Christophe Bonneuil, “Development as Experiment: Science and State Building in Late Colonial and Postcolonial Africa, 1930-1970,” in *Nature and Empire: Science and the Colonial Enterprise*, *Osiris* 15, no. 2 (2000): 258-281.

⁵⁸ Bonneuil, “Development as Experiment,” 259.

development, progress, and technology.⁵⁹

Third, development is a material struggle. Chandra Mukerji demonstrates that creating collective identities requires the construction of material worlds to bind geographically dispersed groups together.⁶⁰ Following this logic, the most important piece of evidence for understanding development is not the uptake of universal ideologies, but details about change and continuity in Africans' material worlds. For colonial and national officials alike, ideologies fractured when translated into material practice. Instead of tools of empire transforming colonial Africans or modernist technologies liberating an independent Tanzania, material realities forced officials to grapple with the limitations of using technology as a tool for social and political engineering. Likewise, the material worlds and networks created in the gaps and failures of formal modernization schemes provide important historical evidence for writing histories of development that are not confined to authorities' blueprints for change. Technical details about car repair, road building, or oil trading provide critical information to the manner in which social and political worlds were built and fractured.⁶¹

Fourth, and above all, development is a practice in tinkering. From policy making to building roads, repairing cars, and procuring oil, no act binds together more actors, places, ideas,

⁵⁹ On cultures of ignorance and unknowing, see the edited volume by Robert Procter, *Agnatology: The Making and Unmaking of Ignorance* (Palo Alto: Stanford University Press, 2008).

⁶⁰ Chandra Mukerji, *Impossible Engineering: Technology and Territoriality on the Canal du Midi* (Princeton: Princeton University Press, 2009). See also: Toby Jones, *Desert Kingdom: How Oil and Water Forged Modern Saudi Arabia* (Cambridge, Mass.: Harvard University Press, 2010), 55 and 135; and James Scott, *Carbon Democracy: Political Power in the Age of Oil* (Brooklyn, NY: Verso—Kindle Edition, 2011), 3.

⁶¹ Paul Edwards, *A Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: MIT Press, 1997), 34.

and historical periods. Tinkering is rarely a desired trait. The Oxford English Dictionary defines the verb, tinker, as the “attempt to repair or improve something in a casual or desultory way, often to no useful effect.”⁶² Though scholars seem to identify with tinkerers and the types of communities they create, tinkering itself is presented as an anomaly in an increasingly industrial world.⁶³ In the pages that follow, I use the word as I think a tinkerer would. Tinkering happens because of breakdowns, surprises, failures, and because it can be meaningful and fun. Neither casual nor desultory, it brings technologies created in foreign factories to young men’s doorsteps and allows them to study, experiment, and even play with them. It opens formalized economic plans to the context-laden world in which actors make decisions about their personal and familial lives. It replaces maps of colonial roads and railroads with a dizzying network of “native” paths and formal urban bus routes with neighborhood alleyways. Though tinkerers admit that their fixes do not always work—or may need more tinkering—it is very difficult to find one who will not try, and try, and try. Tinkering is the assumption that there is always another way. And for this reason, there is no better practice for recapturing a sense of possibility and the roads not taken in African history.⁶⁴

The word, “development”, translates to Swahili as *maendeleo* from the verb, *kuendelea*, which means to continue or to make progress. There are handful of actors in this dissertation who deploy an official understanding of development. They include colonial and national

⁶² Oxford American English Dictionary, Online Version (2013): http://oxforddictionaries.com/us/definition/american_english/tinker.

⁶³ Donald Harper, *Working Knowledge: Skill and Community in a Small Shop* (Chicago: University of Chicago Press, 1987); Kathleen Franz, *Tinkering: Consumers Reinvent the Early Automobile* (Philadelphia: University of Pennsylvania Press, 2011).

⁶⁴ Frederick Cooper, *Colonialism in Question: Theory, Knowledge, History* (Berkeley: University of California Press, 2005), 18.

officials; bus passengers in Dar es Salaam who wrote letters to the editor; and officials at TPDC discussing the relationship between economic growth and oil. The majority of historical actors in this research did not readily talk about *maendeleo* as an official term, using instead what Lynn Thomas has called “intermediate analytical concepts” in her approach to modernity.⁶⁵ They talked about processes of coming of age in repair shops or on the road; of the economic networks through which they could acquire the staples of life; of the types of technical knowledge that were useful in their immediate setting; and of cultures of time and space that cannot be explained through the changes wrought by colonial and post-colonial modernization. As Thomas suggests for modernity, privileging “intermediate analytical concepts” over official designations “would better highlight the depth and texture of our methodological labors than the more distant abstraction of modernity,” or in this case, development.⁶⁶

METHODS

My ability to tell a different story about development—and especially, my ability to tell this story from multiple perspectives—rests upon the diversity of sources, locales, and level of historical actors I sought out during fieldwork. Methodologically, this dissertation was designed to achieve four goals. The first was to expand the geographic focus in which Tanzanian history is written. Following two decades of micro historical studies from the mid-1980s to the 2000s, the recent scholarship on Tanzanian history has focused on Dar es Salaam and other large urban centers. These studies have greatly enriched our understanding of the 20th century, but they have

⁶⁵ Lynn Thomas, “Modernity’s Failings, Political Claims, and Intermediate Concepts,” *The American Historical Review* 116, no. 3 (2011): 727-740.

⁶⁶ Thomas, “Modernity’s Failings,” 738.

also narrowed the focus of research to areas where academics are most comfortable living and where historical evidence is most-easily accessed. It comes as no surprise, then, that the official ideology of politicians and elites features prominently in narratives of colonial and independent Tanzania and that published documentary sources such as policy papers, ideological treatises, and state-controlled newspapers are privileged over oral history work. For these reasons, I spent 15 months in Tanzania and two months in the United Kingdom (UK) traveling on refabricated buses, by bicycle, and by Underground Tube. Like a journalist, I simply followed leads. This was most critical for doing oral history interviews with mechanics, drivers, migrant laborers, and traveling businesswomen. As I collected life histories of these groups, I realized their social, economic, and technological networks were spread across Tanzania and East Africa. So I hit the road in search of interlocutors, their personal archives, and any archival collection I could find.

My base for this research was Morogoro, a town 80 kilometers west of Dar es Salaam. Morogoro has been a hub of exchange and movement since its founding in the mid nineteenth century. There I had research affiliation with the Sokoine University of Agriculture and deep social connections dating back to my first trip to Tanzania in 2003. After I immersed myself in networks of drivers, mechanics, and migrant laborers in Morogoro town, I followed sources and stories in every direction. I was concerned less with exhausting the sources in any given place—though I certainly tried—than with understanding the dispersed networks of knowledge, social capital, and economic activity that have existed across Tanzania since the early nineteenth-century. I traveled to Iringa in the southwest, to Handeni in the northeast, to Mwanza in the northwest, and off the mainland to Zanzibar town. I logged so many hours on buses that the mechanics who repaired them would call conductors during our trips to make sure we were safe. No single region became more important to this research than the west-central district from

Tabora to Kigoma. While this area was the center of precolonial caravan trade and intersected by the first colonial railway, its distance from colonial and national nodes of power provides an important contrast to metanarratives of authority during the twentieth-century. In Tabora, Kigoma, and the towns surrounding them, I found a deep empirical well for discussing cultures of economic creativity, technical innovation, and disengagement from the state. I subsequently found similar data in other regions, but the “muted” (*bubu*) nature of modernization in this region changed the way I approached social and technological change. Instead of beginning in the center and working out, I started on the dirt roads and *bubu* garages in Kigoma and Tabora and worked my way back to Dar es Salaam.

This wide regional scope paid off in other ways as well. It was on buses between Tabora and Kigoma where I first recognized the significance of bus travel to informal economies, especially for women. My ass numb from hours of bumpy roads, I realized that the literature on automobility had missed an important aspect of road travel: there is nothing passive about being a passenger. Instead, buses in rural Tanzania act as moving stores through which owners and traveling women can distribute their goods quickly and discretely at stops, creating alternative economies and networks of social capital as they do so. Equally important, collecting oral histories in various regions allowed me to stitch together a broader network and culture of economic activity during the independent period. While Tanzania’s “contraband” (*magendo*) economy is often presented as an anomaly to official and measurable activities, its presence across the country and its materialization through networks of drivers and bus passengers raises new possibilities for understanding development as a social process. Without official data to measure the size and volume of this market, the dispersed nature of economic networks provided a way to establish the normalization of *magendo* economies in the 1970s. Finally, by following

mechanics from the coast to the lake regions, men's identities as "urban" or "rural" mechanics came into focus. These designations are not only important on their own terms, but also for establishing the relationship between economies of spares, technical creativity, and identity. African mechanics have never been a monolithic working class. Instead, they used the local conditions of labor to establish technological status within global hierarchies of skill and knowledge.

Second, my dissertation research uncovered an immense range of resources for the period after independence in Tanzania. While historians of post-colonial Africa sometimes have an embarrassment of riches from which to construct social and cultural histories, they also face many of the same challenges as those of colonial historians, namely the limiting nature of sources produced by authorities or the dearth of material evidence. In Tanzania, the post-colonial archive does not exist as a single entity, but is rather spread across personal and institutional collections in which entry is often contingent upon social capital, patience, and luck. According to Tanzania archivists, most ministries never handed over their files and many re-used them for office work during a paper shortage in the early 1990s. Finding almost nothing at the National Archives in Dar es Salaam, I put on a tie and went to ministries to ask for basic sources about nation-building projects during the 1960s and 1970s. These efforts were usually fruitless and frustrating. In an attempt to write about the construction of the "Freedom Road" in 1967 from Dar es Salaam to Ndola, Zambia, I spent weeks talking to a principal secretary at the Ministry of Works and Communication. I wanted sources—and I had seen large rooms with files stacked floor to ceiling—but she was interested in college admission processes in the United State for her son. I obliged, but the ministry's short search for material found nothing on its most important project. But other attempts paid off. At the offices *Usafari Dar es Salaam* (UDA), a bus

parastatal that directed urban modernization in Dar es Salaam during the 1960s and 1970s, I found a stack of papers discarded outside the manager's office. I organized and digitized the material, and it provided foundational data for a social history of mobility and consumption in Dar es Salaam. My biggest find was an archive for the Tanzanian Petroleum Development Corporation (TPDC). Founded in 1969 to control oil procurement and exploration, TPDC's archive was created in 1996 to chronicle the significance of energy to Tanzania's past and future development. The collection provides a unique look at the geologists and officials who hoped to build a socialist society by tapping into global oil markets and large technological systems.

In a recent article, Jean Allman asks: "As historians take up the challenge of writing postcolonial and new national histories, do Africanists have something to contribute to discussions of the documentary archive, or will our primary methodological contributions to the discipline of history continue to be in the realm of the 'oral,' the material, or the performed?"⁶⁷ Noting the fragments of archives that survive intentional or accidental destruction in Ghana, Allman answers:

These scattered fragments—either buried in mislabeled files in Ghana's national archive or dispersed in what might be called its 'shadow archive'—do not only and simply 'fill in the gaps' in a linear story of modernization and nation-building. In many cases, the fragments destabilize a 'high modernist' narrative and point toward new history-writing possibilities—possibilities far less anchored in, far less dependent upon, and thus far less likely to be overdetermined by the archiving apparatus of the postcolonial nation-state.

In the following chapters, I pull upon any type of fragment, from letters to the editor in state-controlled newspapers to the minutes of meetings over oil shortages. Combined, they reveal a fractured and fragmented independent state that, at many levels, was aware of its own

⁶⁷ Jean Allman, "Phantoms of the Archive: Kwame Nkrumah, a Nazi Pilot Named Hanna, and the Contingencies of Postcolonial History-Writing," *The American Historical Review* 118 no 1 (February 2013), 107.

shortcomings and vulnerable to scathing critiques from its citizens. As Allman argues, these sources replace generalized theories of state with historical contingencies that are too often ignored. For studies of Tanzania in particular, this evidence moves analysis away from the broad brush strokes of party ideology and the actions of big men to the dreams, thoughts, and struggles of citizens and officials attempting to transform society.

The real promise of this fragmented archive, however, is the way it forces us to look for non-state sources collected and preserved by individuals or small institutions. Such sources offer an empirical base for decentering the study of independent Africa and for capturing perspectives of global structural change and agency from new perspectives. Two sources of personal archives—what Karin Barber has termed a “tin-trunk texts”—became central to my study.⁶⁸ The first is collections from mechanics dating to the 1950s composed of technical training certificates and photo albums. The certificates—what I later term, “paper expertise”—were preserved as evidence of technical competency and used to emphasize the prospects for social mobility among young men who joined garages. They were also used to critique the independent state. In spite of collecting multiple certificates and presenting them at the beginning or end of interviews, retired mechanics used them to discuss technological dreams that were never achieved within official technological hierarchies. The collections of pictures were critical to exploring informal spaces of technological expertise; they brought oral history to life by providing detailed glimpses at the unlikely places in which Tanzania cars were repaired; and the photos were instrumental for recognizing the comparable economic strength of mechanics during the 1980s, a period defined in metanarratives by cataclysmic decline. Photos of home and leisure showed families having fun

⁶⁸ Karin Barber, “Introduction: Hidden Innovators in Africa,” in *Africa’s Hidden Histories: Everyday Literacy and Making the Self*, ed. idem (Bloomington: Indiana University Press, 2006), 18.

by partaking in various forms of leisure, from eating ice cream and playing soccer to listening to the radio and sporting fashionable clothes. The second source of personal archives is a series of memoirs written by Hawa Ramadhani, Tanzania's most famous driver, in notebooks.

Ramadhani's written memories provide fertile ground for rethinking development and modernization as a project confined to universal ideologies and masculine mobility. Instead, she plays with changing gender stereotypes and uses her life behind the wheel to reveal a different stream of thought for post-colonial social change.

Third, my research builds upon Frederick Cooper and Ann Stoler's call to recognize the coproduction of imperial life—that is, to understand the ways in which the colony and the metropole were mutually constitutive.⁶⁹ While much of this scholarship has focused on style, translation, and religion, this dissertation provides important evidence about the coproduction of technology (motor vehicles), technological systems (roads), and cultures of development during the colonial period. I spent three months in the United Kingdom (UK) exploring sources about technology and empire. In London, I visited the National Archives at Kew, the special collections at the School for Oriental and African Studies (SOAS), King's College Military Archive, the Imperial War Museum, and the British National Library. I also visited the London Museum of Science in Wroughton—an hour-long train journey west of London—and the Rhodes House Collection in Oxford. While materials at Kew, SOAS, and Rhodes House provided an important framework for narratives on colonial development and technology transfer, sources at the non-traditional archives for African researches pushed my conclusion in new directions. In particular, the archive of automobile engineer F. Mott at the London Museum of Science

⁶⁹ Ann Laura Stoler and Frederick Cooper, "Between Metropole and Colony: Rethinking a Research Agenda," in *Tensions of Empire: Colonial Cultures in a Bourgeois World*, edited by Frederick Cooper and Ann Laura Stoler (Berkeley: University of California Press, 1997): 1-58.

collection in Wroughton, provides important evidence about the early life of a colonial African car. Because officials conceived of Africa as place devoid of modern technology and resistant to change, they began a series of technological experiments to design a vehicle uniquely suited to the demands of colonial life on the continent. Mott's diaries, drawings, and photos from his time in eastern Africa are critical for establishing the relationship between Africa and the global history of the car.

These colonial archives in the UK are combined with material from Tanzania's National archives. Unfortunately, formerly reliable sections of the important Colonial Secretariat are increasingly unavailable in Dar es Salaam. Worse yet, almost the entire Public Works Department (PWD)—the department responsible for motor vehicles and road construction—accession has gone missing. When Rolf Hoffmeier wrote *Transport and Economic Development in Tanzania: with particular reference to roads and road transport* in 1973, he leaned almost exclusively on this collection of PWD sources. If reader records are accurate, we saw only one PWD file in common. Court records of African car use were completely decimated. Accession books list thousands of infractions of African drivers during the colonial period that evidence the limits of British legal regimes in Tanganyika. I asked for hundreds of these files but none were available.⁷⁰ As frustrating as this was, it also forced me away from the performance of colonial technopolitics in the archive—the subject of Chapter 2—to technological and social worlds constructed by African mechanics, drivers, and labor migrants.

Finally, my research brings together a range of oral history practices from African history. Neither colonial nor national governments paid much attention to the moral economies

⁷⁰ A single collection of traffic offences is quite extensive. If I can find one collection in a regional archive, it will suffice to make generalizations across the colony.

of the societies they tried to change. For this reason, using oral history opens new social groups and spaces or networks to historical analysis. In the following chapters, these groups include mechanics, drivers, migrants, and businesswomen, of whom only migrants are discussed at length in archival sources. In interviews, garages move from indications of underdevelopment—a view of colonial and national officials—to important spaces of innovation in which uneducated African boys became car experts and men. The same holds true for unofficial economic networks. Though some interlocutors were wary of speaking of illegal activity, multiple descriptions of “contraband” activity show its immersion in long-standing moral economies of exchange disparaged by the state. None of these perspectives, however, is used to construct a purely oral presentation of the past. Instead, I put evidence from oral history alongside official colonial and national sources.⁷¹ Sometimes, these views complement one another. But more often, they provide points of divergence that are critical to understanding the diversity of views and experiences of development, especially as a technological practice. In this sense, each chapter is about the production of historical knowledge—about the ways different groups have seen the world and the manner in which these perspectives are made visible or invisible in political and academic realms.

My methods for collecting data varied.⁷² Most interviews were life histories conducted in multiple visits. Gaining access to networks of technical and economic knowledge required I

⁷¹ Luise White, *Speaking With Vampires: Rumor and History in Colonial Africa* (Berkeley: University of California Press, 2000), 260.

⁷² On changes in oral methodologies, especially the status of the oral history interview, see: David William Cohen, Stephan Miescher, and Luise White, “Voices, Words, and African History,” in *African Words, Africa Voices: Critical Practices in Oral History*, edited by Luise White, Stephan Miescher, and David William Cohen (Bloomington: Indiana University Press, 2001): 1-27. For broader changes to oral history in the last 50 years, see “History and Community,” in Paul

privilege familiarity with interlocutors over numbers. This was especially necessary for histories of illicit economic activity among drivers and for chronicling a history of car repair. I interviewed some drivers three and four times before I gained their trust. Similarly, getting mechanics to recall methods of fixing vehicles from 40 and 50 years ago required prolonged and repeated interaction. For the latter, I collected scrap material from junkyards and videotaped some of the methods retired mechanics had used for fixing forged metal without a machine. While mechanics complained that we could not replicate the exact material environment of their early careers, these demonstrations were useful exercises for elaborating upon the technical challenges and accomplishments of their careers.⁷³ In Dar es Salaam, I used a survey approach to learn about urban spatial and social mobility in the 1960s and 1970s, asking simple questions about where individuals went, why, and with what frequency. Most importantly, I joined a garage in Dar es Salaam so I could use participant observation and connect closely with regional networks of mechanics. As an apprentice, I learned not only about brakes—the specialty I was given as a beginner—but about cultures of masculinity and technology in garages. It also provided an important context for interpreting oral histories. Though mechanics like brag about their ingenuity and creativity, the everyday grind in garages is mundane. You pull and pry; you pound; you weld. Garages were important not only because mechanical knowledge sat atop technological hierarchies. They were significant because they pooled together a diverse body of technological practices that could be used for fixing hoes, bikes, and cars alike.

Thompson, *The Voice of the Past: Oral History*, 3rd Edition (New York: Oxford University Press, 2000).

⁷³ For a similar method see: Kurt Beck. “The Art of Truck Modding on the Nile (Sudan): An Attempt to Trace Creativity,” in *The Speed of Change: Motor Vehicles and People in Africa, 1890 – 2000*, edited by Jan-Bart Gewald, Sabine Luning, and Klaas van Walraven (Leiden: Brill, 2009), 151-174.

CHAPTER OUTLINE

Chapter 1, “Colonial Development on *Safari*: Manpower, Horsepower, and the Origins of Development,” uses the practice of colonial mobility (known to colonial officers by the Swahili word, *safari*) to examine colonial cultures of technology and development in Tanganyika from the 1870s through the 1950s. Using colonial sources collected in the United Kingdom and Tanzania, it shows that the ability to move, and the administrative *safari* in particular, was the constitutive act through which Europeans produced knowledge about Africa and presented Tanganyika as a place in need of the civilizing mission. Moreover, this chapter reveals that the colonial *safari* was a technological struggle, and at times, experiment, that came to define the limits of officials’ social and economic power. Cars broke down often; roads were difficult to build; and new imperial technologies such as the Roadless Lorry were both ineffective and expensive. Instead of European technological power transforming Africans into modern colonial subjects, the emergence of a colonial transport infrastructure in Tanganyika relied overwhelmingly on African knowledge and labor. As officials attempted to fix African men and women in place as subservient, tax-paying colonial subjects, they were also forced to recognize cultures of mobility that ultimately forced officials to recognize the limits of their knowledge and

Chapter 2 tells the history of social and economic activity from the perspective of migrant laborers, drivers, and businesswomen. From the early colonial period through the 1980s, these three mobile groups have frustrated authorities’ plans for directing social, economic, and political change. For the colonial government, African drivers were overpaid, irresponsible, and impossible to control, while masses of moving migrants constituted an imminent threat to social, political, and physical health. They were impossible to research. Following independence,

drivers were supposed to be important actors in the spread of modern socialist values, but instead authorities viewed them as “economic saboteurs” and vectors in the spread of HIV/AIDS during the early 1980s. During both periods, traveling businesswomen never showed up on officials’ radar. This chapter turns the above perceptions on their head by analyzing migrant labors, drivers, and businesswomen as cosmopolitan actors who constructed social and economic networks across Tanzania and East Africa. First, it shows that a life on the road was fueled by travelers’ needs and desire to produce long-term domesticity at home. Mobility and access to social and economic capital were central to the manner in which adulthood was achieved throughout Tanzania’s twentieth-century, linking regional travel to the goal of a settled life. Second, this chapter provides a social history of economic development that replaces the concerns of states with the economic strategies and networks constructed by drivers, migrants, and traveling businesswomen. By doing so, it also raises questions about the possibilities and limitations for histories of informal and illegal economic activity.

In contrast to the travel writing of Chapter One, Chapter 3 uses the biographies of two African drivers to explore how moving bodies and technologies provoked discussions about social health and political order in colonial and independent Tanzania. It begins with the life of Vincent Njovu, the African man who drove the colony’s first vehicle from 1924 to the early 1940s. His memoir, *Dereva wa Kwanza Tanganyika* (The First Driver of Tanganyika), describes the driver’s ability to undermine colonial hierarchies of race in which Africans were deemed incompatible with European cultures of mobility and technology. His life illustrates that tools of empire were not always triumphant and that in the hands of African colonial employees, they could be used to undercut the logic of imperial rule from within structures of power. The second section uses a series of memoirs written by Tanzania’s most-renowned female driver, Hawa

Ramadhani, to examine the gendered structures of mobility and technology that accompanied post-colonial modernization. Though some accused her of prostitution, her career on rural roads and urban bus routes provided an alternative to state-led visions of modernization that not only privileged men's labour and mobility, but also predicated it upon women's confinement to the home and exclusion from skilled work. While Africa's roads are often linked to social decline and marginality, in Njovu and Ramadhani's lives they feature as spaces of innovation where two unlikely heroes contested hierarchies of race and gender through the practice of everyday life.

Chapter 4, "African Experts at Work: Making Men and Cars in Tanzanian Repair Garages," examines repair garages as places of innovation and social mobility where both African men and African cars were made. From the early colonial period to the present, garages have been spaces where uneducated, illiterate boys charted new paths from boyhood to manhood as they learned about and experimented on motor vehicles. From the 1910s to the 1940s, Africans served as assistants to European engineers, but by the 1940s, they were using their spare time after work to experiment with their colleagues on part fabrication (salvaging used parts) and vehicle modification (joining major parts of different vehicle companies), eventually creating a culture of automobile repair that flourished during periods of spare part shortages from the 1960s through the 1980s. Known as *ufundi wa kienyeji*, literally, "local auto mechanics", this form of expertise was condemned by national and international bodies alike for its methods of repair, the aesthetics of its work spaces, and most of all, its culture of knowledge acquisition. But it worked. Its technological product was an African car that was defined by its diversity and, especially, by its openness to modifications. The social product was an equally diverse body of boys-turned-men who transformed the human and material resources of repair garages into a desirable vocation, a source of pride, and adulthood.

Chapter 5 is firmly rooted in the independent era and post-colonial visions of modernization. It explores how public transportation became a vehicle for Dar es Salaam residents to critique state policies and share their own visions, hopes, expectations, and strategies for building a socialist society. Using Barbara Rosenwein's term, "emotional community," I identify buses as important technologies and spaces in which Tanzanian passengers experienced, reacted to, and sought to shape socialist policy during the 1970s and early 1980s. In socialist Dar es Salaam, buses were transformative spaces that rallied strangers into daily conversations about their collective experiences and frustrations as residents of a socialist city. Composed of a diverse cross-section of urban society, this emotional community transformed its daily experiences in queues and aboard city buses into newspaper debates about national policy and the nature of state-led modernization schemes. Far from a teleological narrative of socialist demise, I read behind the frustration of letters and poems to show how residents expressed their expectations and hopes of city life in socialist Tanzania by appropriating and redeploying official discourse. I also use oral history to show that residents ignored the state's concerns about private vehicle ownership to create an informal system of buses that exists up to the present. The result is a social history of decline that replaces linear narratives of rise and fall with citizens' rhetorical engagement in newspapers and the transport systems they created in the crevices of state power. Neither apologetic nor teleological, it provides an empirical basis for understanding state-led modernization as a historical process.

The final essay chapter is a meditation on modernization and the possibilities and limits of liberation. In the 1960s and 1970s, Dar es Salaam was a hub of radical scholarship where debates about modernization ranged from a "traditional" form of rural modernization espoused by the state and party to Leninist models preferred by academics. Regardless of ideology,

however, all forms of modernization had a single common denominator: oil. “Crude Modernization: Oil, Liberation, and Survival,” uses archival material from the Tanzanian Petroleum Development Corporation (TPDC) and oral histories with its head oilman to examine economic and political liberation as a complex technological project. It illustrates how the technological systems associated with economic liberation also imbricated Tanzania in costly externalities, sapping its ability to control the direction of economic and social change within its borders. Procuring, refining, and moving oil or building roads (asphalt is made of the by-product of oil refining) were considered necessary steps for underdeveloped nations to modernize. But these nation-building projects also linked Tanzania into a global assemblage of ideas and resources in which it participated as an unequal partner. By chronicling the strategies and stresses of the oilmen who were tasked with transforming crude oil into means of socialist development, this chapter unearths the close relationship between utopian dreams and imminent crisis. As development became a normalized process of survival, the crude nature of rural modernization in Tanzania could no longer hide behind rhetoric of “traditional” modernization and self-reliance.

CHAPTER 1—COLONIAL DEVELOPMENT ON SAFARI: MANPOWER, HORSEPOWER, AND THE OTHER TOOLS OF EMPIRE

The memoirs of retired colonial officers at Rhodes House in Oxford are filled with memories like this one in A.H. Seville's, *When God Had One Eye Shut: Being the Recollections of a Member of the Colonial Agricultural Service During Twenty-Seven Years in Tanganyika*:

On the last day it was getting close to sundown when John approached a wet, boggy patch in the road which could not be avoided. So, changing into bottom gear, he drove the car straight into the bog and came to a standstill with spinning rear wheels. John said nothing other than, "Hamedi—whiskey soda *mbili* (two)." So Hamedi opened the travelling canteen, poured out two tots of Scotch into two glasses, filled them up with soda from the Sparklet syphon and handed them to the two *bwanas*. Having finished his drink John turned and said, '*Hamedi: bunduku yangu na risasi nne*' (Hamedi: my gun and four bullets). Hamedi assembled the shotgun, handed it to John together with four cartridges. John got out of the car and walked to a nearby cliff top, fired both barrels, reloaded and fired them again, returned to the car and invited Hamedi to supply two whiskies and soda. He then sat in the car while 'sengric' (Senior Agricultural Officer) watched the sunset and wondered how they were ever going to get out of the bog as the countryside appeared to be uninhabited. However, just as they had finished their sundowners, over the cliff top swarmed a dozen or more able-bodied Wanyamwezi, ready to heave the *bwana shauri's* car out of the mud hole. It was a standing order that four gun shots fired in quick succession was the District Commissioner's SOS for help to which they were expected to comply with alacrity. When they were on their way once more John turned to his guest and remarked, 'I think you will agree that was an example of what can happen in a well-administered district.'⁷⁴

In Seville's account, John's encounter with a bad stretch of road reflects officials' endless struggle, and failure, to transform Tanganyika as a material space through the introduction of motor vehicles and all-weather European roads. Regardless, John credits himself with a "well-administered district" based upon a metric that never made it into official development policy:

⁷⁴ A.H. Seville, *When God Had One Eye Shut*, Mss. Afr. S. 2094, Rhodes House, Oxford. Hereafter cited as RH.

getting out of the mud by mobilizing African labor with a gun. Ironically, John died years later from a heart attack he suffered while pushing his vehicle out of the mud without the aid of “able-bodied Wanyamwezi.” For colonial officials, the presence of Africans to dislodge automobiles could literally be the difference between life and death. For this reason, there is no better way to understand colonial development and its legacies than with this common sequence of events: a car stuck in the mud, officers drinking sundowners as Africans save the day, and the officers returning home to write about their heroic experiences at the expense of Africans’ knowledge and labor.

This chapter uses the practice of colonial mobility, known to European officers by the Swahili word, *safari*, to examine cultures of technology and development in Tanganyika from the 1870s through the 1950s. Citing colonial archival sources collected in the United Kingdom and Tanzania, it shows that the ability to move, and the administrative *safari*, in particular, was the constitutive act through which Europeans produced knowledge about Africa and presented Tanganyika as a place in need of the civilizing mission. By disparaging African transport infrastructure and cultures of mobility in their own travel writing, colonial reformers created stereotypes of African life that could be used to justify imperial intervention and subsequent colonial development schemes. At the core of this travel-writing logic was the construction of Africa as an empty space that could be remade through the transfer of European technologies. Beginning in the 1870s, abolitionists, and later, colonial officials, aimed to transform Africans’ social and economic lives by replacing caravan roads and “native paths” with European-style

roads and transport equipment.⁷⁵ Their target was mobile Africans, especially head porters and migrant laborers, whom officials considered vectors of physical and social disease undercutting the social, political, and economic goals of imperial rule. Ensuing development plans tied social engineering to material engineering in a logic that was simultaneously simple and grossly ambitious: change the material infrastructure of mobility across an entire territory and Africans will become modern, hygienic, and controllable colonial subjects.

As colonial officials recognized on their *safaris*, this positivism did not translate into the desired results. Cars broke down often; all-weather roads were difficult to build; and the new imperial technologies designed specifically for Africa were both ineffective and expensive. Worse yet, the African cultures of mobility targeted for technological intervention not only survived, but also, they even filled gaps for the colonial government when it did not have the means to move goods before and after harvest. In sum, things that were supposed to be moving and fluid resisted motion, while things that were supposed to be fixed refused to stay put. Instead of European technological power transforming Africans into modern colonial subjects, the emergence of a colonial transport infrastructure in Tanganyika relied heavily upon the very types of African knowledge and labor that had been used to characterize east Africa as a backward place ripe for external intervention. Faced with these contradictions, the most remarkable aspect of colonial development was officials' ability to explain repeated failure through a stereotype of Africa as a place that simultaneously required and resisted change. By doing so, officials not absolved themselves and their plans of responsibility for failure. They also turned development into a tragic comedy that unfolded through predictable acts of folly on *safari*.

⁷⁵ John Kirk to the Marquis of Salisbury, 1 May 1879, Zanzibar, "2nd Earl Granville Confidential Prints (Foreign Office)," Slave Trade, PRO 30/29/367, British National Archives (hereafter, BNA).

This chapter makes three contributions to the historical literature on colonialism and development. First, it pushes studies of imperialism in Africa beyond analyses of discourse and policy by focusing on the material dimensions of colonial development in Tanganyika.⁷⁶ Recent studies in imperial history have made important contributions to the study of development in Africa as a historical topic, but confining scholarly inquiry to changing discourses and policies limits our understanding of colonial development as a historical practice that was rooted, above all, in efforts to transform Africans' material lives.⁷⁷ Below, I use this material obsession of colonial officials to show how one of the most ambitious imperial projects—changing the way Africans moved across an entire colony—ran up against the resistance of dirt, rain, flies, “native paths”, and people. Though officials never lost their positivists views about the relationship between material and social transformations, their *safaris* were a constant reminder of the limits of European social and technological power.⁷⁸ Administrative officers could define development and write about it in their memoirs, but the actual process of implementing it forced officials to move well outside the defined boundaries of colonial development discourse and grapple with material and social worlds that resisted their plans. Highlighting this continual process of technology folly is important because it gets us beyond modernist narratives based upon

⁷⁶ Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca: Cornell University Press, 1990); Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago: Chicago University Press, 2011); Casper Andersen, *British Engineers and Africa, 1875-1914* (London: Pickering and Chatto Publishers, 2011).

⁷⁷ Jean Comaroff and John Comaroff, *Of Revelation and Revolution, Volume Two: The Dialectics of Modernity on a South African Frontier* (Chicago: University of Chicago Press, 1997).

⁷⁸ For this interplay between discourse and materiality, see Rudolf Mrazek, *Engineers of Happy Land: Technology and Nationalism in a Colony* (Princeton: Princeton University Press, 2002).

intentionality, showing instead that development in colonial Tanganyika was a highly contingent process reliant upon African labor and knowledge

Second, this chapter shows the extent to which development during the colonial era was both an experiment and a performance. In spite of rhetoric about the ease of transforming African societies through ready-made European technologies such as roads and cars, the implementation of colonial development was characterized by a continual indeterminacy. This indeterminacy was not only intentional, but also a durable trait of development from its origins in the mid-nineteenth century up to the present.⁷⁹ As colonial research committees in London financed experimentation on building roads and cars for Africa, regional engineers and District Officers in Tanganyika were barely given enough resources to keep their roads passable for half of the year. This disjuncture does not reveal the paradoxes or ironies of colonial development. It reveals the core of its logic. As Robert Prenton has argued for colonial Nigeria, a central tenet of colonial development was the “changelessness” of the societies it targeted.⁸⁰ More recently, Helen Tilley has analyzed Africa as a “living laboratory” in which social and scientific knowledge was produced and challenged through colonial rule.⁸¹ Below, I build on this experimental turn in imperial histories of development by emphasizing the performative nature of colonial development in Tanganyika. Neither constructing roads nor making cars for Africa required technological experiments; rather, they were part of performance of development in

⁷⁹ Daniel Headrick, *Tools of Empire: Technology and European Imperialism in the Nineteenth-Century* (New York: Oxford University Press, 1981); Headrick, *The Tentacles of Progress: Technology Transfer in the Age of Imperialism* (New York: Oxford University Press, 1988).

⁸⁰ Robert Shenton, *The Development of Capitalism in Northern Nigeria* (Toronto: University of Toronto Press, 1986).

⁸¹ Tilley, *Africa as a Living Laboratory*.

which colonial officials held out the promise of a better future for Africans even as that very future became increasingly untenable. This disjuncture provides the basis for interpreting colonial development as a comedic tragedy. As a literary genre, comedies are characterized by a series of missteps and accidents that the heroic protagonists ultimately overcome through perseverance and ingenuity. In the history of colonial development, the officers who attempted to direct social and technological change can salvage their pride from a record of repeated failure by describing Africa as a place where missteps and accidents are the norm.

Third, this chapter reveals a different set of technologies that were critical to the material worlds colonial officials and African laborers actually constructed, including: petrol cans and their wooden boxes, “native paths”, and used oil drums. It takes very little time reading colonial memoirs at Rhodes House in Oxford to recognize that triumphant narratives of European technological dominance conflict with the everyday experience of the officers whose job it was to remake Africans’ material worlds. While colonial modernity existed as a goal on construction blueprints and in the heads of policy makers, its material instantiations—that is, the things that were built and rebuilt—tell a very different story about the nature of colonial technopolitics in Tanganyika.⁸² In particular, the material world of development forces us to reconsider whose technology, knowledge, and labor mattered during the daily practice of colonialism. Historians of empire have largely focused on the role of technological innovation and transfer in making

⁸² Frederick Cooper provides a critique of “colonial modernity” in *Colonialism in Question: Theory, Knowledge, History* (Berkeley: University of California Press, 2005), 15-16. Following Cooper’s warning, I use the term sparingly and with caution. When I use the term, I am referring to the construction of colonial modernity as a process and one, I argue, that rarely went as planned. Like other parts of this chapter, focusing on material over ideological sources allows historians to see the way these terms stabilized and destabilized for various historical actors.

empire possible or in creating enduring legacies of underdevelopment after the end of empire.⁸³ I take a different approach in this chapter. First, I question the narrow definitions of technology that have been used to assess imperial power from the late nineteenth century to the 1950s. Second, I argue that historians must recognize the multiple sources of knowledge officers and laborers drew upon as they built the material world of colonial Tanganyika. In most cases, the built world was neither fully African nor fully European, but rather a hybrid that defies the clean categories of “modern” and “traditional” informing development ideologies.⁸⁴

This chapter also asks for the entire colonial archive to be read as a type of travel writing and to be scrutinized accordingly. Though colonial travel writing is often considered a specific genre of literature targeted at European audiences, this narrow definition overlooks the significance of mobility to the production of historical knowledge about Africans during the imperial era, whether an explicit *safari* report, a document on African laborers, or the annual reports of District and Provincial Officers. Put simply, everything written about Africa for over a century was the product of a colonial mobility that is presented to readers as overwhelming white and male.⁸⁵ From the collection of taxes to the writing of “tribal” histories and the selection of

⁸³ Headrick, *Tools of Empire*; Headrick, *The Tentacles of Progress*. For a different perspective stressing Africans’ roles in the diffusion and alteration of imperial technologies, see: Clapperton Mavhunga, “Firearms Diffusion, Exotic and Indigenous Knowledge Systems in the Lowveld Frontier, South Eastern Zimbabwe, 1870-1920,” *Comparative Technology Transfer and Society*, 1, no. 2 (2003): 201-231.

⁸⁴ As Frederick Cooper wrote in 1979 for slavery, searching for an essence to a topic is misleading. And yet, scholarly pushback against development theory has too often been characterized by replacing European things and ideas with “African” things and ideas. While politically palatable, this can also be trivializing and obscures the complex mixing of knowledge that characterized by precolonial and colonial Africa.

⁸⁵ Donald Cameron, *My Tanganyika Service and Some Nigeria* (London: George and Allen Unwin Ltd., 1939), 47-61.

“traditional” rulers for indirect rule, movement was integral to the everyday function of colonial governments and was a foundational act through which knowledge about Africa was produced and power practiced.⁸⁶ This chapter investigates the manner in which African cultures of mobility and technology are erased and, subsequently, used to present East Africa as a peripheral place in need of Europe’s civilizing mission and technological salvation. In place of the traditional colonial tropes, it reveals the utter reliance of officials upon African systems of movement, technology, and labor, and it shows how moving Africans disturbed colonial theories of race and identity. I do not read against the grain of colonial sources. I simply wait for moments of honesty in which officials and explorers reveal important details about how they moved, how they collected information, and who showed them where to go.

THE MOVING TARGETS OF IMPERIAL RULE

To explorers “opening up” Africa or District Officers on tour, mobility and travel writing (later known as “safari reports”) were constitutive acts of imperial rule through which Africa could be made knowable, governable, and transformable as part of Europe’s civilizing mission. More than a means to an end, colonial mobility was also a representative act through which Africa became a peripheral place in need of Europe’s technological assistance. Whether traveling on foot, driving their cars, or being carried by porters, traveling officials and missionaries used observations from their daily acts of movement to construct discourses of racial difference and to

⁸⁶ Franey, Laura, “Ethnographic collecting and travel: blurring boundaries, forming a discipline,” *Victorian Literature and Culture* 29 1 (2001): 219–239; Libby Freed, “Every European becomes a chief: travel guides to colonial Equatorial Africa, 1900–1958,” *Journal of Colonialism and Colonial History* 12 (2) Project MUSE. Web. 13 Oct. 2011. <http://muse.jhu.edu/>.

justify imperial intervention.⁸⁷ They cited as evidence a lack of transport infrastructure, the reaction of Africans to European technology, and most importantly, the problem mobile Africans posed to the transformation of colonial societies. As a constant threat to imperial designs for social and economic transformation, East African cultures of mobility were linked to various forms of social malaise, including slavery, criminality, the spread of disease, and “detrribalization,” a term that became synonymous with colonial social disorder. Though movement was the constitutive act through which Africans were made knowable and categorizable to administrators and European audiences, traveling colonial officials were also forced to grapple with Africans as social subjects whose lives were difficult to know, let alone control. On *safari*, officials created the stereotypes about Africa and Africans that were considered useful for implementing indirect rule as a political project. But their travel reports also reveal that social engineering in colonial Tanganyika was, at best, a series of unintended consequences and a continual coming-to-grips with the challenges of categorizing and fixing Africans as colonial subjects.

From the 1850s to the end of colonial rule, knowledge about Africa was produced and made global through European mobility and travel writing. In spite of using the infrastructure and knowledge of their African guides, European explorers presented Africa as an empty space

⁸⁷ Examples are numerous. For published examples about Tanganyika, see: Major G. St. J. Orde Browne, *Labour Conditions in East Africa* (London: His Majesty’s Stationary Office, 1946); Elspeth Huxley, *The Sorcerer’s Apprentice: A Journey Through East Africa* (London: Chatto and Windus, 1956); William J. W. Roome, *Tramping Through Africa: A Dozen Crossings of the Continent* (London: A&C Black Ltd., 1930). These representations of Africans are prevalent in *safari* reports published by the East African Royal Automobile Association from the early 1920s (accessed at the Mott Collection at London Science Museum Library and Archives, Wroughton, United Kingdom) and in discussions of migrant labour by colonial officials in files at the Tanzania National Archives, including: ‘Station Rest Camps,’ TNA 10969; ‘Spirillum Fever in Tanganyika Territory,’ TNA 10036/II; ‘Annual Report Dar es Salaam 1924,’ TNA 1733/26.

that needed to be mapped and subdued through the heroic efforts of missionaries and colonial officials. During the mid-nineteenth century, descriptions of paths, caravan roads, and swamps in European travel literature presented East Africa as a static and uncivilized place where movement was arduous, if not, impossible.⁸⁸ Missionary Roger Price's description of his travels in western Tanganyika in the 1870s illustrates the extent to which African travel infrastructure shaped European's views and presentation of East Africa:

We had a great variety of experience—getting into ecstasies as we made rapid strides over level and open plains—then spending well-nigh whole days laboring, to the verge of despondency, to get over the mud banks of rivers, or being half suffocated, half maddened, by the monstrous grasses and burning weeds of the Nguru valley. Our spirits rose again as we emerged from the tangle of the great valley, and we entered upon level, park-like plains our speed attained the cheering rate of a mile and a half an hour.⁸⁹

Mullins's account completely excludes African people and technology. Like other missionaries and explorers on "expedition" in East Africa, Mullins considered his travels a literal practice in making new roads across untouched and resistant African landscapes. In spite of relying heavily on African porters and guides to carry his goods, to create walking paths, and ultimately, to arrive safely, Mullins mentions them only in passing as he explains his travel expenses. By neglecting important details about the function of colonial mobility, Mullins, like other missionaries and explorers, produced a foundational feature of development discourse through their own mobility and writing: Africa was a material space that required heroic efforts to traverse and that, later, would resist efforts at material transformation. More than a trope of

⁸⁸ Steven Rockel, *Carriers of Culture: Labour on the Road in Nineteenth Century East Africa* (Portsmouth: Heinemann, 2006); Richard Francis Burton, *First Footsteps in East Africa* (New York: Praeger, 1966).

⁸⁹ Roger Price, "Letter to Rev. Joseph Mullens," 5 September 1877, *London Missionary Society Central Africa: Letters From Missionaries September 1877 to January 1879*, School of Oriental and African Studies. Hereafter cited as SOAS.

European travel writing, these representations produced a built-in excuse for the futures failures of efforts to transform Tanganyika's societies and landscapes through technological transfer and experimentation. Through their own mobility, missionaries and explorers produced an image of Africa that simultaneously required and resisted change. In other words, even if they failed, it would not be their fault when Africa was stuck in a state of changelessness. Travel writing created a self-fulfilling prophecy of African underdevelopment.

Colonial depictions of mobility also produced a "humanitarian" sense of urgency that Africans needed saving from themselves and others. This time, African mobility was the target. As Europeans moved within East African, they vilified African cultures of movement by associating mobility with slavery, illegitimate commerce, and social decline. Frederick Lugard's description African mobility in Britain's "East African Empire" reflects the manner in movement was used to present Africans as passive agents in need of European intervention:

Muscat Arabians (or Persinas) settled along the islands and the coast of the mainland. Brave and adventurous, they penetrated into the then totally unknown interior, and began that system of slave buying and slave catching which, until their advent, had never assumed such proportions on the East Coast. Boy slaves brought down fro the interior, and belonging to various tribes from the Zambesi to the Tana, grew up in their households, and took their ideas from them, and too often their voices and their foul diseases. There was also a percentage of half breeds, the offspring of Arabs by slave concubines.⁹⁰

In addition to social and economic decline, the caravan trade was linked with the unchecked spread of cholera between eastern Africa and the Arabian Peninsula during the late 1860s. James Christie, the physician of the Sultan of Zanzibar, traced multiple strands of cholera spreading in eastern Africa by talking to the heads of caravan expeditions. He identified caravan routes, especially those used in the transport of ivory, as vectors through which the disease reached even

⁹⁰ Captain F.D. Lugard, *The Rise of our East African Empire*, Mss. Afr. S. 206, RHO.

the smallest and out-of-the-way trading towns. Especially suspect was the “highway” between Unyanyembe and Ujiji, perhaps the most important route linking economies from the Swahili coast to markets in the lakes region. In Christie’s mind, this epidemiological work was foundational for reducing the spread of disease. But his findings also aligned neatly with emerging discourses of African mobility: it led to social, economic, and now, physical decline.⁹¹

Caravan cultures also offended expectations of Africans as social beings who were fixed in and defined by place. As explorers, missionaries, and road builders traveled in eastern Africa, they produced a stereotyped indigeneity in which Africans’ natural state was tied to land and the soil. Evidence was rarely presented to support these ideas about fixed, autochthonous African identities, and Europeans’ complete reliance on African guides suggested the opposite was true. Regardless, travel writers focused unrelentingly on head portage as a justification for the civilizing mission. In spite of relying on, and sometimes being carried by porters on their own journeys well into the 1930s, travelers presented portage to European audiences as a practice that was inseparable from East Africa’s slave trade and thus, incompatible with legitimate commerce and the new form of social health colonial officials and missionaries were attempting to create.⁹² In travel diaries and letters from the 1870s to the 1930s, porters emerge as paradoxical social beings who served as a reminder of Europeans’ limited ability to transform Africa as a material space and, perhaps more alarmingly, to control Africans’ labor. In 1914,

⁹¹ James Christies, *Cholera Epidemics in East Africa: An Account of the Several Diffusions of the Disease in that Country from 1821 till 1872* (London: Macmillan and Co., 1876), pp. 238-241.

⁹² ‘W.M. to F. de Winton,’ 8 October, 1890, Imperial British East Africa Company, File 24, The Mackinnon Papers, Special Collections, School of Oriental and African Studies; Tanganyika Territory, *The Recruitment, Employment, and Care of Government Labour* (Dar es Salaam: The Government Printer, 1930); ‘Labour Department: Annual Report 1940, Zanzibar National Archives (ZNA), BC 9/7.

famed Swahili linguists, Samuel Johnson, requisitioned up to two-hundred porters, including twenty four Africans who carried missionaries in *machela*, for a party of six Europeans *en route* to Morogoro from Kilwa. Johnson sympathized with his overworked porters, even blaming his group of Europeans for excessive packing; but he also grew wary of their propensity to arrive late and to desert *en masse*, an action that forced Johnson's party to discard hundreds of pounds of food, clothes, and lodging.

Only years after Johnson's journey, African porters literally carried the British army as it pursued the German military across East Africa. In his memoirs, Lieutenant GJD Kelly describes the important contributions of porters to the war effort, even recognizing the different cultures of portage that existed in colonial Tanganyika. But he also concluded: "I dislike the porter more every day as a form of transport you can tie animal up but the porter steals and wanders off."⁹³ As Tanganyika's Labour Commissioner, Orde-Browne, justified colonial development schemes in 1926, he added this:

The most conspicuous [form of unproductive work] is that deplorable relic of slave days, the porter system of transport. The wastage entailed by this is almost incredible, and it is going on perpetually in every part of the country; while no doubt it is still to a large extent unavoidable in a country in such an early state of development, it should nevertheless be recognized as a real evil, to be decreased by every means in our power. Costly, slow, inconvenient, and intensely unpopular with most tribes, it represents a stage of development from which we should escape at the earliest possible moment.

As the most recognizable culture of African mobility, portage became a barometer for discussing the possibilities and limits of social and technological transformation in Tanganyika. Regardless of its utility, officials saw it as a relic of African life that needed to go.

⁹³ G.J.D. Kelly, "July 28, 1917," *Diary of Lieutenant GJD Kellie—1 January to 31 December*, Imperial War Museum Archive, London, England. Hereafter cited as IWM.

However, racial ideology about movement and technology is only one part of colonial travel writing. The other is an acknowledgement of unknown worlds and social processes moving at speeds and in directions unknown to the colonial government, or at least, not controllable by them. In fact, the most worrisome element of African mobility after the 1920s, African migrant laborers, were rarely visible on the motor *safaris* conducted by colonial officials. And yet, these migrant laborers provided the most threatening challenge to colonial social engineering for three reasons. First, mobile African subjects were simply not fixable. To colonial officials, this meant that Africans would not contribute to economic development through wage labor and taxes. Indeed, the Hut Tax, the foundation of colonial taxation policy, was predicated upon assumptions that Africans were social beings that operated in a fixed and controllable environment. The second was associated with Africans as vectors and creators of disease whose journeys on “native paths” would lead to an unhygienic colony. A colonial development film on the dangers of “tropical hookworm” reveals this concern clearly by showing an Africa migrant labor strolling through a village on a narrow path who then squats to defecate. The film subsequently zooms in on the man’s feces to the microbial level, and then shows how disease is spread when a passerby unwittingly comes into contact with the excrement.⁹⁴ More commonly, officials from various colonial departments focused on migrant laborers as vectors in the spread of ticks, influenza, and Sleeping Sickness. They threatened every type of colonial development project, from urban sanitation to rural cattle projects.⁹⁵

⁹⁴ <http://www.colonialfilm.org.uk/node/735>.

⁹⁵ “Notes on Camp Hygiene for Employers of Labourers,” Tanganyika Secretariat 22798, TNA; “Provincial Office: Bukoba Migration of Natives,” Tanganyika Territory 215/13, TNA.

Third, moving Africans upset the colonial social geography upon which indirect rule was predicated. To administrative officials, colonial subjects who traveled to towns or migrated frequently for work were in danger of becoming “detrilledized”, a term officials used to discuss the destruction of the social units they believed most important to African life. Tanganyika’s governor, Sir Donald Cameron, put it this way:

It is not possible to guard the natives of a country like this from all the evils which follow in the train of Western civilization unless the entry of the European is altogether banned; if Europeans now enter Tanganyika as they now enter it, and as they have entered it in the past, towns like Dar-es-Salaam must spring up, and a certain number of natives must and will be attracted to them. The only remedy, as it seems to me, was to have educated and Christianised the native population *before* it was brought into collision with a Western civilization, but, even if we had such a clean field before us in Tanganyika, who would be found to-day willing to put forward such a counsel of perfection? The native in town, even when employed, *is* exposed to many temptations and *is* liable to take to evil ways, but if he earns his living honestly and does not offend against the laws he is entitled to as much freedom as anyone else in town.⁹⁶

If colonial officials could fix African bodies in space and control their movement, their goals for economic and social development would be in sight. If Africans moved freely and beyond the gaze of officials, the entire economic and social project of colonialism would be threatened. Though officials never discarded their ideals of fixed, docile, tax-paying African subjects, they were forced to grapple with Africans as moving targets of imperial rule who threatened both the practical and ideological foundations of colonial policy.

This job fell to Major Granville Orde Browne, Tanganyika’s first Labor Commissioner. In both work and hobby, he was obsessed with categorization. Orde Browne began his career in Kenya classifying Africans phenotypically by measuring the distance of body parts from each

⁹⁶ Sir Donald Cameron, “Introduction,” in Major G. St. J. Orde Browne, O.B.E., *Labour in the Tanganyika Territory with a Covering Dispatch from the Governor* (Dar es Salaam: Government Printer, 1926), 9. Accessed at Zanzibar National Archives, BC/9. Hereafter ZNA.

other and then categorizing “tribal” identities. In his spare time he was an amateur entomologist who collected and categorized specimens of insects, leaving detailed drawings and measurements in his journals. His post to the Labour Department in Tanganyika in 1925 provided the biggest challenge of his career. Instead of using calipers and measuring tapes to categorize fixed human beings and dead insects, Orde Browne was responsible for understanding the complex and difficult-to-capture world of African labor migration.⁹⁷ Recognizing the challenge, he traveled to Johannesburg and the Belgian Congo in search of models for controlling and improving the life of African migrants. The result was a meditation on the role of mobility and labor in modern society.⁹⁸ “The Migrant Labourer and the Map” described African mobility as an undesirable consequence of “modern” labor regimes that required immediate attention. “In the past these movements have had far-reaching and permanent effects; example need hardly be cited from antiquity, but later history is rich in instances. Conspicuous of course is the slave trade ... For several hundred years this sustained effort to meet the requirements of a changing and developing labour market continued, and the political and sociological results furnish the modern world with some of its most baffling problems.”⁹⁹

⁹⁷ Papers of Sir Granville Orde Brown, “Anthropometry and Physical Details,” Mss. Af. S. 1117 Box 1, RHO; “Identification of Insects Collected in British East Africa,” 23 April 1913, Af. S. 1117 Box 1, RHO. Hereafter all material for this collection is cited as Orde Browne.

⁹⁸ Orde Browne, “Photographs of Accommodations for Native Labourers: South Africa and the Belgian Congo,” Mss. Af. S. 1117 Box 2/1, RHO.

⁹⁹ Orde Browne, “The Migrant Labourer and the Map,” in the folder, “East Africa Labour Matters: Published Articles by Orde Browne,” Mss. Afr. S. 1117 Box 2. There is no date, but it is included in files listed as years 1933-37.

In Orde Browne's writings, these "problems" did not stem from colonial labor markets, but from the tension between modern economies and colonial perceptions of African life.¹⁰⁰ Tanganyika's colonial economy needed masses of African laborers moving hundreds of miles across a territory, a requirement that contradicted officials' stereotyping of Africans as agriculturalists tied solely to the land. Administrators had tried hiring local residents, but they found such laborers unwilling to see out contracts and adept at desertion and hiding. Colonial economies needed laborers with no social connections to surrounding areas, and so officials looked to distant labor "reserves" to create a more reliable wageworker. This labor policy tested colonial stereotypes and helped create complex networks of mobility and knowledge between the 1920s and 1950s, but it also magnified perceptions of Africans as rural beings whose original state and wellbeing were tied solely to land. Orde Browne was particularly concerned about the long-term effects these changes would have on African life:

The agricultural basis of this system serves as a social shock-absorber which minimizes the effect of fluctuation in employment and excuses the absence of many of the measures found necessary in the modern world for the benefit of the worker in distress. Old-age pensions, out-of-work doles, support of the incapacitated, and various other designs of social welfare, are indefinitely postponed on the strength of the resources in the reserves; it requires little reflection to realize the enormous burden from which industry thus escaped. Consequently the native when divorced from the land will represent a serious and increasing liability, and the 'wage-slave' will require the provision which his dependence necessitates.¹⁰¹

¹⁰⁰ Frederick Cooper, *On the African Waterfront: Urban Disorder and the Transformation of Work in Colonial Mombasa* (New Haven: Yale University Press, 1987).

¹⁰¹ Orde Browne, "The Migrant Labourer and the Map. See also: Orde Browne, "African Labour and International Relations," originally published in 1932, in the folder, "East Africa Labour Matters: Published Articles by Orde Browne," Mss. Af. S. 117 Box 2, RHO.

The dream of fixing Africans to self-sustainable and easily controllable lives on farms was an appealing policy throughout colonial rule, but it was also at conflict with this moving target of imperial rule.

In particular, Orde Browne was concerned about the effects of travel on laborers and the colony's social and economic health:

It is obvious that the movement of thousands of previously untraveled natives must bring them into contact with numerous diseases which they have not encountered before, and against which they have therefore had no opportunity of acquiring the partial immunity of that sometimes seems to occur in the case of more exposed tribes ... Such diseases must obviously find favourable material in the travelling worker; tired, underfed, and insufficiently sheltered, he forms a ready prey to infection; forced to put up with such accommodation as he can find, he must frequently sleep in tick-infested huts, or old fouled camping grounds; while in such towns as he passes through provide ample opportunity for the spread of venereal disease.¹⁰²

According to the Labour Commissioner, everything about the journey from home to work was a complete mystery to the migrant laborer. He believed they did not know the route, the types of food that were portable, or have strategies for coping with physical ailments. For shelter, traveling groups relied solely “upon the abundant hospitality of Africa.”¹⁰³ When Orde Browne toured one migrant route, he used the presence of travelers doing temporary work to claim Africans could only plan the first stage of a journey and that left to their own devices they posed risks to public health and social control.

If migrant laborers were bad travelers, they were no better at settling. Plantations and urban townships quickly became the frontline in a battle against “detribalized” African migrants

¹⁰² Orde Browne, *Labour in the Tanganyika Territory*, 33.

¹⁰³ Orde Browne, *Labour in the Tanganyika Territory*, 32-33. In Orde Browne's papers at RHO, see also: “The Condition of Native Communities in or Near European Centres”, in the folder, “East Africa Labour Matters: Published Articles by Orde Browne,” Mss. Afr. S. 1117 Box 2. There is no date, but it is included in files listed as years 1933-37.

who had few incentives to create settled lives in their place of birth. At plantations, Orde Browne theorized that the gender imbalance of migration was ruining African social life. He contended that men who traveled away from their wives were placed in a demoralizing situation in which they were forced into sexual relationships with local women. When they traveled home, they then spread venereal diseases in their own communities—for officials, this type of public health issue was important because it threatened future wage laborers. Even more worrisome were traveling Africans who did not return home. Orde Brown described an urban floating population at length this way:

Having originally left their homes to seek work, in all probability, they remain in some town after they have been paid off at their original place of employment. There they find some sort of casual, but probably fail to get steady employment; intervals of idleness between jobs tend to increase, until the individual drifts gradually into the class of unemployable loafer, from which stage it is fatally easy to join the definitely criminal class. It is only then that he attracts the attention of the police, and is sent back home. But by this time he is too much addicted to the attractions of the unrestricted town life to be able to return to the village conditions and he finds tribal discipline and custom most irksome. So at the first opportunity he makes his way back to a town and become a unit in the large and growing class of detribalized natives who have fallen away from African social organization without having qualified themselves to take a place in a Europeanised community. This is the more deplorable, since in the first instance it is usually the intelligent and enterprising native who is attracted by the novelties of the town; this is borne out by the percentage of prisoners in the jails who have some knowledge of some knowledge of reading or writing.”¹⁰⁴

For British officials, colonial cultures of labor and mobility transformed rural Africans from subjects tied to land and “tribal discipline” into individuals who had “fallen away from African social organization” without the skills to meaningfully contribute to European culture. The next chapter turns these assumptions upside down, but only after colonial officials attempt grandiose social engineering experiments with technologies that promised to transform Africa.

¹⁰⁴ Orde Browne, *Labour in the Tanganyika Territory*, 59.

TECHNOLOGY FOR AFRICA

As a solution to the challenges of African mobility, colonial officials looked to the transformative power of European technology to create new social subjects. Orde Browne had faith that European technology could drive the greatest episodes of change in African history: “The outstanding feature of recent development in Africa has been the progress in methods of transport; the construction of railways has not yet finished its part, while the motor-car has revolutionized areas which until recently seemed likely to remain unexploited ... All these facilities have led to more rapid utilization of the various natural resources, and this in turn has led to a demand for greater labor.”¹⁰⁵ Colonial technological determinism was at its peak when Orde Brown made this statement in 1930, but this attitude had been a staple of imperial design since a series of ambitious road building projects during the 1870s. By transferring European transport technologies to eastern Africa, abolitionists and colonial officials believed they could end slavery, fix colonial subjects as taxpayers, and above all, replace unreliable African labor with dependable and tested European engineering. However, attempts to transform Tanganyika using cars and roads stalled; so too did efforts to design technologies uniquely suited to operation in colonial Africa. Nevertheless, these projects provide the perfect vantage point for uncovering the motivations and priorities of colonial development schemes. They also reveal the extent to which colonial development was not a transfer, but instead a technological experiment whose repeated failures magnified the significance of African knowledge and labor to imperial rule.

¹⁰⁵ Orde Brown, *Labour: The Recruitment, Employment, and Care of Government Labour* (Dar es Salaam: The Government Printer, 1930).

From the mid-nineteenth century, explorers and missionaries looked to European cultures of transportation and communication as an answer to the challenges they faced “opening up” Africa. Their goal was simple: they needed to find ways to communicate with each other and to move that did not rely upon African labor—which they considered unreliable—or knowledge—a source of expertise that would compromise the rhetoric of the civilizing mission.¹⁰⁶ Specifically, they wanted to replace head portage with a system of transport that could carry the material goods Europeans required for replicating their lifestyles, including: breadstuffs, coffee, sugar, tea, and salt.¹⁰⁷ They tried just about everything. Missionaries on the coast hoped carrier pigeons would provide an easier form of communication than relying upon African messengers to deliver letters. For transport needs, they looked to elephants, oxen, and donkeys imported from other regions. The former were too costly and not readily available for use; other animals were susceptible to disease, especially sleeping sickness, on long journeys across central and northwestern Tanganyika.¹⁰⁸ Importing animals also failed. According to missionaries and explorers, there was something about the African “climate” unsuitable to non-indigenous species. Moreover, the use of oxen and carts to haul bulk goods also necessitated the construction of wider and harder roads that could be traversed during the rainy season. In these early attempts to transform colonial mobility in Tanganyika and reduce reliance on portage, a common theme emerges: social engineering and the goal for a decreased reliance upon African

¹⁰⁶ John Galbraith, *Mackinnon and East Africa 1878-1895: a study in the ‘new imperialism’*. (Cambridge: Cambridge University Press, 1972), 164-165.

¹⁰⁷ Roger Price, “Letter to Dr. Mullens,” Zanzibar, 1 October 1877, *London Missionary Society Central Africa: Letters From Missionaries September 1877 to January 1879*, SOAS Library. See also Burton, *First Footsteps in East Africa*.

¹⁰⁸ Roger Price, Zanzibar, 1 October 1877, *London Missionary Society Central Africa, Letters from Missionaries September 1877 January 1879*, SOAS Library.

labor required extensive material engineering. Changing the social first required a change in the material.

As a solution to the problems of African mobility, entrepreneurs and humanitarians proposed the construction of European-style roads from the Swahili coast to Central Africa, emphasizing their ability to end the slave trade and establish “legitimate” commerce. Financing companies like the Imperial British East Africa Company saw the civilizing potential of European roads as the perfect excuse for economic colonization, what they termed the “opening up” of Africa.¹⁰⁹ The IBEAC advertised the East African Road, an ambitious road-building project from Dar es Salaam to the north shore of Lake Nyasa, as a humanitarian venture in which new corridors of commerce could end the slave trade and save souls through the introduction of oxen cart trade.¹¹⁰ By building wide (8 to 15 feet), all-weather roads that crowned in the middle to allow water drainage into culverts, officials thought they could create new internal markets even as they increased their ability to access goods for export. Once successful, officials believed the East African Road would induce African communities to copy its technological form and engage in the new trading possibilities it was supposed to offer. It was also designed to be the foundation for future colonial technologies. Markers laid down by the construction crew were to be used for telegraph lines, and the trace of the road was to be a basis for future rail construction. Clearing new pathways like the East African Road, then, was considered an easy first step in a more ambitious technological scheme.

¹⁰⁹ ‘Central Africa’s First Road,’ *The Washington Post*, 9 June 1907; see also Galbraith, 49 and 54-70.

¹¹⁰ Galbraith, *Mackinnon and East Africa*, 48-49.

In spite of being presented as an easy technological solution to East Africa's problems, roads came with a high price and many unforeseen challenges. The East African Road, succumbed to a number of technological, financial, and environmental glitches, none more glaring than the company's struggle to convince African labourers to join their cause.¹¹¹ Initially, the lead engineer wanted men from Zanzibar to commence construction in Dar es Salaam, but problems immediately arose over the condition and nature of the work. In a letter to the road's financier, William Mackinnon, the lead engineer, William Mayes, claimed that his request for "coolies" to build a road from the coast to the lakes region was met with a "great response of upwards of one hundred applicants, but their demand for \$6 per month with rations was so outrageously high that for the present and *until I saw what the country was* I told them I would not pay more than \$4 per day with rations" (italics my own).¹¹² The men likely refused because they knew the "country" in which Mayes was about to work required more than \$4 per day salary. Mayes convinced a group of men to work, but when they reached Dar es Salaam to commence the project, the 12 men claimed they had been told they would be soldiers, not road makers. Only with the intervention of the Sultan's soldiers did the men finish their one-month contract and a small portion of the road before returning to Zanzibar. Tired of African laborers, whom he considered lazy and unreasonable, Mayes requested experienced road-builders from Aden and India who arrived in East Africa and then left immediately after seeing the areas in which they were asked to work. A constant struggle over labor ensued, and what was billed as a

¹¹¹ 'W.M. to W. Mayes,' 19 September 1877, Imperial British East Africa Company, File 4, Special Collections, SOAS.

¹¹² Mayes to Mackinnon, 26 September 1877, IBEA Co. File 6, Special Collections, SOAS.

simple engineering project foreshadowed the social and political challenges of building colonial modernity in Tanganyika.¹¹³

The attempted construction of the East African Road provides two lessons for understanding colonialism as a project based upon social and material engineering. First, the construction of large technological systems forced engineers and officials to rely on African laborers and recognize their moral economies. As Mayes and his successor Beardock slowly recognized, the ability to produce African labor was, at best, seasonal, and the pull of Africans' "shambas" and other work opportunities made the production of wage labor on the road a monthly struggle. Only with the help of the Sultan, his soldiers, and threats against local political officials did road engineers manage to produce the minimum workforce required to meet their goals. Letters written from the company's overseers to its financiers are filled with two moral economies constantly grinding against each other. On the one hand, communities and potential laborers along trading routes expected the road-building party to partake in exchanges of goods, knowledge, and labor as other parties from the coast had done for decades. On the other hand, the IBEAC engineers used their affiliation with the Sultan and the Governor to excuse themselves from acknowledging or working within the moral economies of trade and labor they encountered on the road.¹¹⁴ In the short term, this produced begrudging laborers, but in the long term, it produced important consequences. By forcing African men to work for little pay on roads, engineers and abolitionists criminalized a form of pre-colonial skilled labor and ultimately, made their larger goals of technological transformation more difficult to achieve. With the East African road floundering by the turn of the century, road building exposed the

¹¹³ W. Mayes to Mackinnon, IBEA Co. File 9, 3 December 1877, Special Collections, SOAS.

¹¹⁴ W. Mayes to Mackinnon, IBEA Co. File 6, 2 October 1877, Special Collections, SOAS.

limits of technology transfer and the massive cost of building empire in East Africa. After several years, 15,000 pounds had created only 73 miles of a 350-mile road that the IBEAC abandoned in 1881.¹¹⁵

Little changed in the wake of technological failure. Neither abolitionists nor advocates of imperial intervention were deterred from evidence that contradicted their technological determinism. Writing in 1888, abolitionist Professor Lindsay described the Stevenson Road, a route proposed for the lakes region of East-Central Africa, this way: “For humanitarian purposes, it is *the* road into the heart of the continent, for it cuts in two all the important routes of the Slave caravans ... If this route be held, the Slave-trade is cut in two and is paralysed.”¹¹⁶ Two years later, roads (including railroads) became the first tool of mass social engineering in colonial Africa when they were “internationally recognized” in the Brussels Act as “among the most effectual means of attacking the slave trade at its source”.¹¹⁷ The durability of European technology as a solution to social problems in Africa underscores a contradiction at the heart of colonial development: in spite of evidence to the contrary, European technologies continued to provide solutions to the problems of European rule. Technological failures were not ascribed to European cultures of ignorance or imperial hubris, but to Africans as incompetent laborers and to Africa as a place that simultaneously required and resisted material change. Indeed, reading letters from IBEAC engineers, two points become immediately apparent: imperialist knew very little about the social and material worlds they wanted to transform; and in the absence of useful

¹¹⁵ Galbraith, *Mackinnon and East Africa*, 70.

¹¹⁶ Professor Lindsay, ‘How to Fight the Slave Trade in East Africa,’ *Anti-Slavery Reporter*, July & August 1888, 121.

¹¹⁷ ‘Making Africa Yours,’ *The Outlook*, 7 May 1898.

knowledge, they relied on African labor, knowledge, and infrastructure when their plans went awry. British road engineers knew they did not want to follow “native tracks”, but they also did not know where they were going. Original scouting reports were useful for demeaning African labor and knowledge, but they rarely produced useful knowledge for constructing anything in the place of African infrastructure.¹¹⁸

By the end of the end of the nineteenth century, railroads had replaced roads as the most important tool of colonial development in Tanganyika. Once in place, they could transfer goods and materials at a speed and scale that no other form of transport could achieve. For administrators, however, they were far from an ideal tool of colonial power because they created problems that Tanganyika’s colonial government was never able to solve. First, they required massive amounts of labor officials were unable to mobilize. This was connected not only to their construction, but also the process in which primary goods were moved in colonial Tanganyika. In spite of making bulk shipments across vast distances feasible, the much shorter distances between train stations and farms, often as small as ten kilometers, still required a mobilization of labor—in this case, portage—that was not forthcoming by the late 1920s. At a Colonial Office Conference in 1927, it was reported that “the conditions in Africa are different from those in England: here one is seldom more than 5 or 10 miles from a railway, whereas in Africa you may be 100 or 150 miles away.”¹¹⁹ Second, railroads were expensive, requiring a capital expenditure

¹¹⁸ Mayes to Mackinnon, 28 February 1878, Bungalow No. 1, IBEA Co File 10, Special Collections, SOAS.

¹¹⁹ *Tanganyika (German East Africa)* (London: H.M. Stationery Office, 1920), 40-43; Colonial Office Conference Report, “Employment of Road Trains,” in “Transport: Report on features and results achieved by various motor transport vehicles suitable for use under severe conditions in the colonies,” CO 323/976/5, BNA.

that was increasingly difficult to justify during global economic depression and war.¹²⁰ Third, they were an inflexible technology with limited uses outside of the corridors created by tracks. Africans and their communities had to be brought to railroad corridors, sometimes being forcibly settled alongside them.¹²¹ Fourth, as Orde Browne quickly recognized, railways ran opposite to the direction of labor migration routes. While some African migrants used the railways for a leg of their journey, they continued to rely heavily on a transport infrastructure that was not controlled by colonial officials.¹²² In sum, railways were blunt technologies that could not respond to emergent changes in the colony's social, political, and economic landscape.¹²³

This was not the case with automobility. Composed of motor vehicles and roads, automobility offered officials a type of capillary power not possible with railroads. According to members of the African Society speaking in 1929:

The motor-car or lorry or tractor is carrying out the process of opening up Africa both more rapidly and more thoroughly even than the railway. It is not only that the motor-car gives a far wider scope for the individual initiative of the white settler or trader, but it also is opening up a whole new world to the native himself. The native may ride in a railway train, but it never occurs to him to construct one; but when the native becomes the owner of a motor-car he realizes that the whole value for that car to him depends on the existence of roads, and one of the most interesting features in Africa to-day is the passion with which in many districts the natives are throwing themselves into the work of building roads and are clamouring for roads, and the way in which the immemorial curse of Africa, head

¹²⁰ *Ibid.*, 40.

¹²¹ "Memorandum on Transport Problems by the Acting General Manager, Tanganyika Railways," in *Interim Report of a committee appointed to inquire into the question of Competition between Road Transport and Railways in Tanganyika Territory* (1936), in *Coordination of Transport Part I*, CO 822/75/10, BNA.

¹²² Orde Brown, *Labour in the Tanganyika Territory*, 36.

¹²³ *Ibid.*, 70. For the German period, Juhani Koponen called railways a "great disappointment, as they did not release labour from portage to wage work to anywhere near the extent that had been anticipated" (p.445). See Koponen, *Development for Exploitation: German colonial policies in Mainland Tanzania, 1884-1914* (Hamburg: Finish Historical Society, 1994).

portage, is disappearing. The effect of all this not only upon the economic development of Africa, but on the economic and mechanical education of the native, is going to be almost incalculable.¹²⁴

Theoretically, cars could go anywhere and move along an infrastructure that required much less capital expenditure and labor to construct. As Libbie Freed notes for West Africa, motorable roads were conduits of power that facilitated the movement of goods, opened new markets, and expanded the reach of administrative officials to previously unreached areas.¹²⁵ But officials in Tanganyika were hoping for even more. In addition to a means of surveillance, administrators believed that turning Tanganyika into an automobile place would simultaneously transform the colony's material and social worlds. By replacing "native paths" with all-weather European roads, administrators like Orde Browne thought the problems of labor migration—including "detribalization" and the spread disease—could be solved in tandem with the opening of new markets. He and others envisioned a network of motorable roads connecting the busiest hubs of trade and migration. Each hub was to have a "labour camp" where migrants could sleep, eat, receive medical care, and even read colonial literature. Built of concrete and timber instead of mud, labor camps were designed to stop the spread of disease—especially, tick-borne illnesses—and rearrange African bodies through European architecture.¹²⁶ Conceivably, this mobile population would then carry the good news of modern social services across new roads to their

¹²⁴ L.S. Amery and Mr. Ormsby-Gore, "Problems and Development in Africa: Addresses Before the Society by Mr. L.S. Amery and Mr. Ormsby-Gore," *Journal of the African Society* 28, no. 112 (July 1929), p. z1-z2.

¹²⁵ Libbie Freed, "Networks of (colonial) power: roads in French Central Africa after World War I," *History and Technology* 26 3 (2010): 203-223.

¹²⁶ Government of Tanganyika, *Labour: The Recruitment, Employment and Care of Government Labour* (Dar es Salaam: The Government Printer, 1930); "Labour Camps," ACC 61/14/18/I, Morogoro Regional Official, TNA.

sites of work and to their homes. In this manner, the technological project of colonial automobility was supposed to transform social subjects across an entire territory. Instead, it turned into an ongoing experiment and headache that reflected the limits of colonial technopolitics.

By the 1920s, officials across the British Empire were discussing the limits of technology transfer as a colonial policy. While there was nothing inherently wrong with the European technologies they were already using, there was a growing consensus that colonies required something special—that is, something designed specifically for colonial use. This was especially the case in “tropical” colonies like Tanganyika. While the term referenced climatic conditions, its use was closely connected to an imperial discourse of colonies as backward places that resisted change.¹²⁷ Their heat crippled vehicle engines; their rain and mud made road construction impossible; and the thickness of their brush was too great an obstacle for most vehicles to pass. “Tropical” was shorthand for describing an uncivilized place that was resistant to colonial officials and their technologies. For this reason, achieving colonial development in “tropical Africa” required a coordinated technological project based upon design and testing between the metropole and the colonies.¹²⁸ This was a distinct change from previous approaches. From the 1870s through the 1910s, the simple transfer of European technology to “tropical” Africa was considered enough to effect change. But after World War I, British colonies required technologies uniquely suited to the challenges of colonial rule. In part, this was

¹²⁷ Gabrielle Hecht, *Being Nuclear: Africans and the Global Uranium Trade* (Cambridge: MIT Press—Kindle Edition, 2012), 16-17

¹²⁸ Ann Laura Stoler and Frederick Cooper, “Between Metropole and Colony: Rethinking a Research Agenda,” in *Tensions of Empire: Colonial Cultures in a Bourgeois World*, edited by Frederick Cooper and Ann Laura Stoler (Berkeley: University of California Press, 1997): 1-58

due to the increased scale of colonial development in the 1920s. More generally, it was about an approach to Africa as an aberrant place where universal models of change did not take hold. At its core, Africa resisted change, and for this reason, places like Tanganyika required special technologies designed for Africa—or in this case, colonial officials’ idea of Africa filtered through imperial committees and to manufacturers.

In Tanganyika, “roadless” vehicles and “tropical” roads were the focus of such projects. In 1913, motor vehicle experiments for the colonies were institutionalized in the Imperial Motor Transport Council (IMTC), a steering committee tasked with coordinating road transport in the colonies. Composed of representatives from automobile societies, manufacturers, and colonial engineers, the committee bridged the gap between the needs of colonial administrators and the production process in the United Kingdom.¹²⁹ From the late 1910s through the 1940s, it focused on three types of motor vehicle experiments for the colonies. The first was the possibility of using alcohol as motor fuel from “tropical and sub-tropical vegetation and waste vegetable products,” including rice, beans, potatoes, and sugar cane.¹³⁰ The idea was not only to develop “power alcohol” to fuel colonial transport, but also turn “power alcohol” into a colonial export that could supplement the United Kingdom’s reliance upon petroleum.¹³¹ During and after World War I, colonial officials were very sensitive to the empire’s dependency upon foreign

¹²⁹ “The Imperial Motor Transport Council and the Alcohol Motor Fuel Committee: Lists of Officials and Members,” in “Alcohol for use as motor fuel,” CO 323/695; “World Motor Transport Congress, 1927,” CO 323/979/5, BNA.

¹³⁰ “Alcohol as Motor Fuel,” CO 323/630, BNA; “Power Alcohol,” CO 323/930, BNA. The latter file justifies these experiments because of the effect of World War I upon the politics of oil. With finite oil resources, the colonial office was searching for a way to make its transport less reliant upon external sources.

¹³¹ Letter from the Imperial Motor Transport Council to the Royal Automobile Club, 30 July 1914, “Alcohol as Motor Fuel,” CO 323/630, BNA.

reserves of oil. Appealing to public opinion in the *Daily Telegraph*, proponents of the project argued that “the British people are confronted with a revolution in engineering which may spell industrial ruin unless steps are taken to provide for the needs of a new age. The internal combustion engine is the power agent of the future, and it will be a problem of no mean dimensions to provide the very large supplies of fuel which we must have if we are to hold our own in the world’s markets.”¹³² “Tropical” colonies and their seeming endless supply of vegetation offered one solution to the empire’s energy problem. The justification of the project employed racist tropes of travel writing to rationalize an imperial biofuel scheme capable of supporting metropolitan demand:

The natural increase of native population is retarded by civil war, pestilence, and disease, so that large areas are available, almost for the asking ... It will be necessary to select areas with some form of cheap transportation for the manufactured product. Power Alcohol is wanted in settled countries, so that it would have to be available by water to the ocean. The product once on a ship is, ton for ton, much more valuable than the crops from which it is made, and could pay a reasonable freight.

Interested colonial governments were asked to contribute 30,000 pounds toward the project.¹³³

As a form of colonial cash cropping, Power Alcohol was a pipe dream. It would have required significant parallel investment in automobile manufacturing—namely, the alteration of carburetors—before it was a feasible commodity. The project never got off the ground, and it was the only scheme sponsored by the IMTC in which colonies could provide something of value for the metropole. The remaining experiments focused on the ability of British engineers to make technologies that would facilitate economic development in “tropical” Africa.

¹³² “The Fuel Problem,” *The Daily Telegraph*, 13 July 1914, “Alcohol for use as motor fuel,” CO 323/695, BNA.

¹³³ “Alcohol as Motor Fuel,” CO 323/630, BNA.

Most of all, the IMTC was concerned with the “development of a large mechanical transport unit not confined in its operations to good roads.”¹³⁴ One official linked emerging technologies to possibilities in colonial development:

I submit that the need of the empire, and indeed of the world, for such a form of transport is greater than ever, and moreover that technical progress in the last few years has demolished the obstacles which proved insuperable in 1928 ... If Britain should gain a lead in this form of transport then British trade and capital would be presented with valuable opportunities in many parts of the world and the policy of Colonial Development could be accelerated to the great gain of the native peoples and of Empire Trade.

More practically, this type of vehicle offered a technological solution to a conundrum of colonial administration. Railroads were effective for economic development but required too much capital expenditure, too much labor, and required support from motor vehicles or porters. Motorable roads could be built cheaply, but they required a production of labor that was impossible to fulfill season after season.¹³⁵ A “large mechanical transport unit” that required neither road nor rail offered was the perfect answer. It provided the required haulage for moving goods throughout the colony, and it was even designed to blaze new roads across “roadless” territories. In both cases, it replaced unreliable African laborers and infrastructure with a dependable colonial machine. Early models cost colonial governments 10,000 pounds, but funding for its design, testing, and eventual purchase by was provided by the Colonial

¹³⁴ “Mechanical Transport: Development and Experiments,” TNA, Tanganyika Secretariat 12014. The relationship between roads and vehicle design is not unique to Africa. See John Rae, *The Road and the Car in American Life* (Cambridge, Mass.: MIT Press, 1971). Nor is Tanganyika or Africa unique with its condition of roads during this period: Shane McShane, *Down the Asphalt Path: The Automobile and the American City* (New York: Columbia University Press, 1994).

¹³⁵ This was part of a broader imperial trend. David George Meredith argues that the large scale transport projects of the “1900-30 period” were not feasible by the early 1930s. See, David George Meredith, *Colonialism and Development: Britain and its Tropical Colonies, 1850-1960* (New York: Routledge, 2002), 163.

Development Fund of 1930. The act stipulated that “development” would only be financed if it was mutually beneficial to the colonies and England.¹³⁶ The Empire Cotton Growing Association Corporation provided an extra boost—and funds—to the project, believing “roadless” transport was the answer to increasing haulage costs in Uganda, Tanganyika, and Nigeria.¹³⁷

Before the IMTC began its trials in Nigeria, the Gold Coast, and Iraq, experiments were already underway in East Africa.¹³⁸ In 1925, F. Mott, an engineer for British car manufacturer, Morris-Cowley, traveled from Dover, England to Mombasa, Kenya to test a motor vehicle designed for the technological challenges of colonial rule in Africa. Half truck and half tank, the one-ton Morris Roadless Lorry was a product of military engineering from World War I that found a new application as a tool for colonial development. In addition to its stellar haulage capacities, its wheels and chain tracks were interchangeable, allowing drivers to modify the vehicle according to road conditions. Mott’s motor trial was planned to coincide with a conference of East Africa’s governors in Nairobi, Kenya. His goal was to motor across a “roadless” area of Tanganyika and Kenya from Tanga to Nairobi, thereby showing the governors the technological virtues of the machine to political administration.¹³⁹ The Morris-Cowley

¹³⁶ George Abbott, “A Re-Examination of the 1929 Colonial Development Act,” *The Economic History Review* 24 1 (Feb. 1971), 70.

¹³⁷ “Mechanical Transport in Tropical Dependencies—Recent Developments,” CO 323/985/9, BNA.

¹³⁸ This was the first experiment in Tanganyika, but memoranda had circulated in colonial offices about alternative motoring technologies since at least 1919. Austrian engineer, Eduard May, proposed a large “roadless lorry” with an electrically powered diesel engine in officials in London. It was considered promising but inefficient. See “Motor Traffic for Roadless Districts: Furnishes particulars of projects,” CO 323/89, BNA.

¹³⁹ F. Mott to W. Cannell, 21 January 1926, Box 6 (Feb. 19, 1925- Jan.8 1926), Mott Collection, London Science Museum Library Special Collections. Accessed October 4, 2011 in Wroughton, England.

engineer had reason to be confident. Just before its African test, *The East African Standard* reported, the roadless lorry had proven its worth on a beet farm in Suffolk:

The light pressure exerted by the heaviest portion of the load over the driving axle and through the medium of the chain tracks permitted the vehicle, fully loaded, to traverse the fields, without the ground being, in the slightest degree, unduly compressed by the weight; in fact, far less injury in this manner was done by the Morris 1-tonner with its trailer than would have been caused by the passage of a horse and cart ... The ability of the lorry, with its trailer, both being fully loaded, to traverse rough ground would, not nowadays, be questioned.¹⁴⁰

In spite of its success on the beet farm, a break down Voi in Kenya and Moshi in Tanganyika forced Mott to transport his machine to Nairobi via railway. Mott considered this a technological “embarrassment”, but the focus in many of his notes is less on mechanical issues than the challenges of African motoring. He described a trip to Moshi in northern Tanganyika from Kenya saying:

Within four miles of Taveta heavy rain was encountered and the road surface being of red soil quickly became very soft, and it was necessary to fix spuds to the track to enable to the Machine to haul itself up some of those hills. This it did passably well, but with very little reserve of power, although the total load on the Lorry and trailer did not exceed 25 cwts. [A day later:] It was not raining at the time, but there had been some heavy showers—quite out of season—for two or three days previous, and as the road surface was there black cotton soil, partly dried, the track and its gear very soon became clogged with mud. I am afraid it is difficult for you to appreciate the consistency of mud and its nature—particularly when it is partly dried and mixed with grass. With the track gear clogged with mud a extraordinary an extraordinary amount of power was absorbed in overcoming the resistance of the track gear alone—in fact the machine was only able to propel itself and its trailer along a practically level road on second gear, with the auxiliary gear box in action.¹⁴¹

¹⁴⁰ “Motor Topics—Wheel or Chain Tracks at Option: One Ton Lorry Convertible for any Use—Tests in England,” *The East African Standard*, no date, Box 6 (Feb. 19, 1925- Jan.8 1926), Mott Collection, London Science Museum Library Special Collections. Accessed October 4, 2011 in Wroughton, England.

¹⁴¹ F. Mott to W. Cannell, 21 January 1926.

On subsequent journeys, the engine overheated and the drive train proved inadequate to transfer power to the tracks. While such results were unexpected, Mott and his colleagues interpreted the trial as a momentary setback in a larger effort to build a vehicle uniquely suited to the needs of colonial administrators.¹⁴² He was never able to return to East Africa, and the Morris lorry did not become Tanganyika's colonial automobile.

Subsequent vehicle experiments in Tanganyika organized by the IMTC and funded by the Colonial Development Fund made Mott's motor trials seem unambitious. Instead of testing a one-ton roadless lorry, manufacturers designed and experimented with 100-ton motor vehicles they called "roadless trains." They were tractor-like vehicles that could haul one or two large trailers; their operation required two "European" engineers and six African assistants.¹⁴³ This huge increase in haulage was justified in both technical and economic language.

Technologically, engineers cited advances in drivetrains that could provide the power necessary for moving across "roadless" terrain with huge loads. In turn, the ability to move goods 100-tons at a time made the purchase of a "road train" economical for frugal colonial governments. Like Morris-Cowley's "roadless lorry", the "road train" also failed to prove its worth as a colonial machine. Engineers in Tanganyika considered the 100-ton vehicle a gross overdesign. While welcoming the possibility for increased haulage, they deemed the project uneconomic and impractical in the present or foreseeable future, instead encouraging the engineers to design a six

¹⁴² F. Mott, "File of Correspondence between W. Cannell, Messrs. Morris," Box 6 (Feb. 19, 1925- Jan.8 1926), Mott Collection, London Science Museum Library Special Collections. Accessed October 4, 2011 in Wroughton, England.

¹⁴³ "Transport: Report on features and results achieved by various types of motor transport," CO 323/976/5, BNA.

to ten-ton vehicle with six wheels. Regardless, a 5,000 pound grant from London and a curious colonial governor brought an experimental road train to Tanganyika in 1932.

Upon purchasing the vehicle, Tanganyika's PWD and the Railway Department performed a motor trial of their own. The results were not impressive. During the dry season, it was used in the Western Province for sleeping sickness control, but by the next year, it was garaged in Tabora and its driver resigned because of the difficulty he experienced keeping the machine going. The regions in which the "roadless train" operated had soft soiling, causing it to sink; and the units were so heavy that extensive investment in bridges would be needed if the trial was successful. "Vehicles of this kind cannot climb mountains ... and cannot swim," one engineer wrote. "One of them set down in the unbeaten places of the Songea country through which I have recently travelled would be as piteously helpless as a wheeled vehicle."¹⁴⁴ A report that made its way to London was equally critical. After a short trial in Dar es Salaam, the "road train" was railed to Isaka in central Tanganyika where it got stuck:

The first trial run was far from successful. The track of the road train (6 ft. 4 ins.) does not permit the unit to utilize the tracks consolidated by the normal motor vehicle having a track of 4 ft. 8 ins. This caused the unit to be bogged down after 15 miles. It took nearly three days to lift the road train back on to the road. A subsequent trial was made after a few days. On this occasion the road train managed to do 32 miles before it again got stuck in the mud. Its extraction this time took seven days and a cordroyed track had to be constructed to enable the train to be turned and return to base, during which return journey it again became stuck in the mud.

But failure did not necessarily matter. The engineer concluded by adding that normal motor vehicles were having no problem traversing the very same road.¹⁴⁵ But as an "experiment"

¹⁴⁴ "Tanganyika Motor Trade Association," Tanganyika Secretariat, 30170, TNA.

¹⁴⁵ "Report on the Road Train in Tanganyika From March 15th to August 31st, 1936," Road Transport Unit, CO 691/158/1.

financed by the Colonial Development Fund, its success or failure meant little to colonial administrators in Dar es Salaam or London. The most emotion about the “roadless train” came from the engineers who had to operate it, who, unsurprisingly, were annoyed at the time it took away from their duties and irritated that their opinions about the virtues of a smaller colonial vehicle were ignored.

Closely connected to the IMTC’s vehicle design were efforts to build all-weather roads throughout and across the African continent. Since the late-nineteenth century, opening new pathways to the interior of Africa was directly linked to political power and the social mobility of colonial administrators. Before Frederick Lugard designed indirect rule in northern Nigeria, he was a road “pioneer” in East Africa for William Mackinnon who asked him to find a new route to western Kenya.¹⁴⁶ But by the 1920s, “opening” the interior to the coast was not enough. As Rudolph Mrazek has shown for colonial Indonesia, there is a direct correlation between the smoothness and hardness of transport surfaces and officials’ view of social conditions.¹⁴⁷ In Tanganyika, officials spoke of the muddiness, dustiness, and roughness of road surfaces in the same breath as concerns about social health, labor unrest, and expanding economies. True political power was connected to a government’s ability to transform everyday life through technological intervention, none more critical than roads.¹⁴⁸ British colonial officials categorized roads as Main Roads, Grade A, Grade B, or Village Roads and Tracks depending

¹⁴⁶ Margery Perham, *Lugard: The Year of Adventure, 1858-1898* (London: Collins, 1956), 95-111.

¹⁴⁷ Rudolph Mrazek, *Engineers of Happy Land: Technology and Nationalism in a colony* (Princeton: Princeton University Press, 2002), 24.

¹⁴⁸ “The Great North Road,” CO 822/111/21, BNA.

upon their economic and political significance.¹⁴⁹ Of these different grades, only a fraction was “metalled” with stone, and thus passable throughout the year. All were in townships. In 1929, 72 of 15,000 miles were metalled. This grew by nine miles by 1933 to 83 (out of 18,971 miles) and to only 87 by 1938 (out of 21,962).¹⁵⁰ For this reason, the ability to engineer hard, smooth, and all-weather roads in “roadless” Africa was more than a technological project. It would also be an indication of social and economic health; a material manifestation of proper social and economic change; and it would replace the seasonal need for African labor with a surface that could survive the rains.¹⁵¹

Like the “roadless” vehicles above, a key element of road building policy in Tanganyika was its experimental and performative nature. The problem was not whether they could or could not build roads in Tanganyika. They could and did in areas with the densest European populations, often at prohibitive cost. The failure to turn Tanganyika into an all-weather colony was a combination of colonial development policies and the use of precision as an excuse for inaction. Convinced that Tanganyika, like many parts of “tropical Africa,” was resistant to material transformation, civil engineers in the Public Works Department used colonial

¹⁴⁹ These categories also meant many routes did not become part of colonial statistics. Before a road could be recognized as Grade A or B, and thus receive funding for improvement, an official had to make an economic or administrative justification for including a route in the colony’s road network.

¹⁵⁰ Tanganyika Territory, *Blue Book for the year ended 31st December 1929* (Dar es Salaam: The Government Printer, 1929), 257; Tanganyika Territory, *Blue Book for the year ended 31st December, 1933* (Dar es Salaam: The Government Printer, 1933), 306; Tanganyika Territory, *Blue Book for the year ended 31st December 1938* (Dar es Salaam: The Government Printer, 1938), 361. I accessed the 1929 *Blue Book* at the British National Archives, CO 726/10. The latter two are held at the Michigan State University Library.

¹⁵¹ “The Great North Road,” CO 822/111/21, BBNA; “Road Development,” CO 691/147/4, BNA.

development as a proxy for research as well as a means through which officials could perform development without ever building anything. Casper Andersen describes colonial engineers as a group who saw themselves as heirs to nineteenth-century explorers. “Central to this view,” he writes, “was the idea that engineers were representative of the next phase: where explorers had taken control of the frontier by mapping it, engineers were now bending it to commercial exploitation and political subjugation by establishing infrastructure.”¹⁵² In Tanganyika from the 1920s to the 1950s, engineers’ method for subduing the African “frontier” was reminiscent of earlier road building projects. Like the construction of the East African Road in the 1870s, engineering during this period became an exercise in gathering rudimentary information for future projects. Whereas road engineers of the nineteenth-century were obsessed with routes and maps, twentieth-century engineers focused on soil typologies, their suitability to all-weather roads, and their deep histories. Information was either collected on *safari*, sometimes called a “soil reconnaissance,” or by small-scale experiments conducted by regional engineers. It was made global through geography journals, or in the case of civil engineers, through the Institution of Civil Engineers and the International Road Congress, the latter being a body formed for sharing information about road construction techniques across European empires.

Engineers’ papers are littered with details about soil types, stabilizing methods, and even labor techniques for best organizing trained African workers.¹⁵³ According to Edwin

¹⁵² Casper Andersen, *British Engineers and Africa, 1875-1914* (London: Pickering and Chatto, 2011), 115.

¹⁵³ A.J. Mitchell, “Soil Stabilization for Roads in Tanganyika,” *Journal of the Institution of Civil Engineering* 24, no. 6 (April 1945): 134-144; W.H. McLuckie, “Roads and Road Transport in Tanganyika Territory,” *Journal of the Institution of Civil Engineers* 6, no. 8 (October 1937): 572-574; A.J. Mitchell, H. Wallhouse, and J. Williamson, “Correspondence: Soil Stabilization for Roads in Tanganyika Territory,” 24, no. 8 (October 1945): 482-487.

Brinkworth, a Public Works Road Engineer, “The Department in its early days pioneered local experiments in soil stabilization with particular reference to roads, by burning black cotton soil (a pesty soil containing a large amount of decayed vegetable matter) to form a low grade aggregate.” The trial was successful, but engineers continued to experiment for three more decades because their solutions were “uneconomic.”¹⁵⁴ These experiments and publications were achievements for engineers’ careers, but there is a remarkable distance between the precision of data in reports—that is, the ability to analyze dirt on a molecular level and test them in laboratories in Dar es Salaam—and the actual construction of roads.¹⁵⁵ Though a metalled (stone-based) highway across the colony was not commenced until 1954 and not finished until 1956, the amount of geographic, economic, and scientific data in the colonial archive on road building in Tanganyika is vast.¹⁵⁶ Most of it is also completely useless. Lost in this mound of scientific data about soil types, land surveying, the most economic routes, and in suggestions about how to best organize African labor is the simple truth about roads and colonial development: administrators did not want to pay for them and railway companies did not want to give up their monopoly on mass transport.¹⁵⁷ Turning Tanganyika into an all-weather colony

¹⁵⁴ Edwin Brinkworth, “The Professional Engineer in an Emerging Territory,” p. 6, Mss. Afr. S. 1027, RH.

¹⁵⁵ James Scott has identified modeling and miniaturization as paramount in the exercise of high modernity. In this case, miniaturization and modeling was a means of performing development without building anything. See James Scott, *Seeing Like a State: How certain schemes to improve the human condition have failed* (New Haven: Yale University Press, 1998), 196.

¹⁵⁶ “Tanganyika’s Chronic Headache: Beginnings of a First Class Road Network Outline by D.P.W.—Work Must Be Staggering to Prevent Overloading,” *The Tanganyika Standard*, 30 September 1950, in Transport: G.D.C. Scheme in Southern Tanganyika, CO 537/5880.

¹⁵⁷ Rolf Hoffmeier, *Transport and Economic Development in Tanzania: with particular reference to roads and road transport* (Munich: Weltforum Verlag, 1973). See also: J.W. Spiller, “The

would cost 3000 pounds per mile with additional 300 pounds per mile maintenance each year. In spite of special funds for transport construction in East Africa from the Colonial Office in London, an average of only 20 pounds per mile was spent on roads through the end of the 1940s.¹⁵⁸ As a result of this disparity, Brinkworth notes the use of African “pot-holing gangs” was needed each week to keep roads passable.¹⁵⁹

But this is not the history one finds in Tanganyika’s colonial road archive or in papers circulated internationally about the possibility of bringing road development to “tropical” Africa. By couching their assessments in deep geological histories about dirt, engineers provided scientific evidence about Tanganyika’s resistance—as a place—to colonial development—and they did so by doing what engineers were supposed to do. As a result of their publications, transforming society Africa through roads was not a simple engineering project or transfer of European technology. Instead, it involved overcoming the deeply ingrained tides of geological history, a project too ambitious and too expensive for British officials.¹⁶⁰ Writing of colonial Sri Lanka, Bryan Pfaffenberger has defined this colonial technological determinism as a “doctrine that deems the effects of a technology to be so rooted in the imperatives of nature that they lie

¹⁵⁸ Brinkworth, “The Professional Engineer,” 5.

¹⁵⁹ *Ibid.*, 6. In the *Handbook of Tanganyika*, J.P. Moffatt adds that it would take 20 million pounds to turn Tanganyika into a motorable territory after World War II: “A factor which is often disregarded is the recurrent burden of maintenance charges caused by road improvements, which was 775,000 pounds in 1957. It is also seldom realized that bitumen roads are much more expensive to maintain than those with gravel or earth surfaces. The present annual figures per mile are bitumen 330 pounds, gravel 210 pounds, earth 50-120 pounds” (0. 348).

¹⁶⁰ “Committee on Colonial Road Research: Proposal to Study Some Aspects of Normal Practice on Road Construction in East Africa,” January 1960, Road Research Board, DSIR 12/321, BNA.

beyond the control of human choice and values.”¹⁶¹ Inasmuch as they had the power to transform economies and social subjects, Tanganyika’s roads remained susceptible to weather conditions until the end of colonial rule, leading to what one engineer called “a state of pioneer development.”¹⁶²

The next section addresses the incredible amount of manpower needed to keep those roads passable for harvest, but the important point here is the relationship between knowledge and power. While the phrase “knowledge as power” is most often used to emphasize the universal nature of scientific and technological knowledge, sometimes knowledge is powerful because it distracts from the real exercise of power.¹⁶³ In the case of Tanganyika’s roads, engineering experiments did not lead to construction, but rather fed a stereotype of Africa as a place that resisted change and thus required increasingly precise knowledge before anything could happen. The issue was not dirt—or the incompatibility of African dirt with all-weather roads—but a lack of will to spend money on colonial social development because of railway monopolies, global depression in the 1930s, and then world war.¹⁶⁴

¹⁶¹ Bryan Pfaffenberger, “The Harsh Facts of Hydraulics: Technology and Society in Sri Lanka’s Colonization Schemes,” *Technology and Culture* 31, no. 3 (1990), 363-364.

¹⁶² A. Chanter (Traffic Manager), “Preliminary Investigation and Assembly of Material Relevant to an Enquiry into the Question of Competition between Road and Rail in Tanganyika Territory,” in *Interim Report of a committee appointed to inquire into the question of Competition between Road Transport and Railways in Tanganyika Territory* (1936), in *Coordination of Transport Part I*, CO 822/75/10.

¹⁶³ Victoria Bernal, “Colonial Moral Economy and the Discipline of Development: The Gezira Scheme and ‘Modern’ Sudan,” *Cultural Anthropology* 12, no. 4 (1997): 453. William Bissell, *Urban Design, Chaos, and Colonial Power in Zanzibar* (Bloomington: Indiana University Press, 2011).

¹⁶⁴ “An Ordinance to Provide for the Prohibition of the Carriage for Reward of Goods by Motor Vehicles Between Certain Places in the Territory,” in “Zambesi Bridge and Connecting Railway

As technologies designed for Africa, the “roadless” vehicles and African roads reveal a trope that emerged during the colonial era to explain the failures of European tools of empire. The “roadless” lorry experiments present Africa as a place that is so resistant to change that even the grandest designs of European engineering—what Tanganyikan officials considered a case of over-engineering—could not overcome the heat and mud of Tanganyika. That same heat and mud created a nightmare for colonial dreams of automobility on all-weather, Grade A roads. But like “roadless” transport, building all-weather roads uniquely suited to Tanganyika resulted in a performance of precision that distracted from the bluntness of colonial development policy. It shifted blame from a transport policy many officials considered to be ridiculous to a construction of Africa as a place that could not be changed without incredibly precise data and experimentation. Whether transfer or experiment, technologies for Africa were supposed to make African labor and knowledge irrelevant. The next section shows that colonial development continued to rely on African “manpower” and knowledge.

MANPOWER AND HORSEPOWER

Beyond the rhetoric of colonial rule and the experimentations conducted in association with London-based policies, the *safari* was the experience through which administrative officers were forced to grapple with the social and material realities of colonial life. Whether administrative officials were walking, behind the wheel of their vehicle, on a bike, or using combination of methods, their time on *safari* forced them to consider their own limitations as white men with powerful and effective “modern” technologies. Though administrators in Dar es Salaam and

Systems—Proposal to Encourage Traffic for S.W. Tanganyika over railways,” CO 525/151/9; “Colonial Office Memorandum,” Coordination of Transport Part 1, CO 822/75/10.

London could still perpetuate rhetoric about European-style roads and automobiles replacing African labor and knowledge, administrative officials on the ground were faced with a much different reality. In light of technological failure and the experimental nature of many colonial development schemes, administrative officers were forced to rely upon and engage African labor in order to put colonial rule in motion. Even then, it often became hopelessly, and even, comically, stuck. Using the writings of regional and district officers, this section takes the experiences of colonial officers on *safari* to show colonial development from the bottom up as officials attempted to move and build an infrastructure of colonial governance. These narratives not only provide an important counterweight to discourses of imperial technological power; they also reveal unexpected tools of empire and the preeminence of African knowledge in the construction of colonial modernity in Tanganyika. As a colonial project, development attempted to transform Africa by making African knowledge and labor irrelevant. But time and again, development projects were characterized by a double bind in which the very sources of knowledge and peoples disparaged in official rhetoric became paramount in constructing the material world.

Like their superiors in the Colonial Department of State, district and provincial officials wanted to believe that roads and motor vehicles could usher in social and economic transformations in Tanganyika. They were concerned not only with conquering nature, but also with creating technological hierarchies through which colonial officials could be perceived as political authorities. There was a desire, then, to create a colonial technological mystique as a basis for legitimating local political authority. One official described the prestige he gained from auto touring this way:

I was called upon to inspect Pambani cotton ginnery, which was reached by a track leading from the main Mwanza-Tabora road. I was driving Clare's Model T Ford car and as I came within sight of the ginnery, I saw coming towards me a line of porters, carrying large pans, filled with earth, on their heads. With one accord they placed their pans on the ground, bent down on one knee, clapped their hands and called out some sort of greeting. Not being conversant with local native customs, I assumed that they were expressing their admiration for the product of Henry Ford's ingenuity which I was driving. On returning to Mwanza, I mentioned the incident to Clare and learned that, when approaching a chief, it was customary for Africans in Tanganyika to pay their respects to the Chief in this manner, showing that their hands did not contain any weapon and at the same time showing respect for the chief. So I learned that it was the driver, and not the Model T ford, that had been the object of the road gang's respect on my journey to the ginnery.¹⁶⁵

In this manner, the ability of officials to be auto-mobile was critical for legitimizing their authority. Regardless of Africans' opinions of indirect rule, the operation of vehicles on smooth European roads was supposed to be a foundational act through which local officials legitimized their power.

Instead, the *safari* was a comedic tragedy in which administrative officials struggled to transform Tanganyika as a material and social space. As technologies broke down and disappointed, so too did the ideals and rhetoric of imperial power. E. Lumley's desire to be the "first man to bring a motor car in this part of Africa" illustrates well the paradox of technological power in Tanganyika. After working with a neighboring District Officer to build a long road across west-central Tanganyika, Lumley wanted to upgrade his mode of transport from a Triumph motor cycle to a touring car: "I could negotiate the bush tracks on this machine, and with my servant sitting pillion I covered a lot of ground. It was the first internal combustion vehicle that the Waha had ever seen, and while it initially aroused their curiosity it did not make them gasp with wonder. They just shrugged their shoulders and said 'white man's magic!' This

¹⁶⁵ Seville, *When God Had One Eye Shut*.

explained everything. There was nothing to be amazed at, the white man could do anything.”

Given the story that follows this statement, not even Lumley could believe his own assertions about “white man’s magic”. I quote at length to show the manner in which officials confronted their own limitations by narrating technological folly:

From Kigoma to Kasulu there was now a road of sorts, and I managed to bring the Standard through without mishap. From Kasulu to the Malagarasi it was not so good. Leaky’s grades, which were tough going for a motor cycle, were murder for a small tourer with a ten horse power engine. The road went dead straight up and down the highest hills in Kasulu. A crow in flight would have found it an unerring guide. However, with the aid of villages on the way, manpower reinforcing horsepower, I managed to get the Standard through to Malagarasi.

It was early one afternoon when we reached the river. Two hours later, raft and car, with many of my food possessions and food supply had sunk out of sight in twenty feet of water. In midstream one of the canoes had sprung a leak and with the force of the current had filled rapidly with water and dragged the others down with it. We had tried to pole the raft across, but the current was too strong for us and the river too deep for the poles to grip.

I would never make this mistake again, but alas, I had made it here, and the result was tragedy. A local helper was drowned. I had to swim frantically to the opposite bank through a river normally well stocked with crocodiles. My servant and another African clung to the wire rope that ran from bank to bank and we managed to rescue them with bark canoe. We were now stranded in the bush forty miles from my headquarters without food, except what we wore and that was saturated. My servant and I spent the night in a disused and broken down hut, hungry and sleepless. The vermin that abounded therein made sure that we would have no rest.

The following day we set out on foot for Kibondo. I had a slight swelling in my groin, and going was painful. After two nights in the bush, we reached our destination ... So had ended, ingloriously, my attempt to bring the first motor car to Kibondo. The vehicle was now on the bed of the Malagarasi and would probably stay there for a long time. But I was wrong. One morning as I lay in bed my servant entered the room with a grin on his face to tell me that the car had been salvaged.

It happened that some Waha living near the river, skilled swimmers, had by a fantastic feat of diving into twenty feet of water brought the car ashore by means of ropes made of tree bark tied to the front axle. It must have taken them at least

two minutes to secure the ropes and as an example of breath control it defies belief.

The technique employed was to sink upright poles into the bed of the river close to the front wheels. They shinned down these poles with the ropes in their teeth and tied them to the axle.

The only damage suffered by the car was a broken glass in one of the front lamps. African witchcraft had been applied to keep crocodiles away while the divers were at work. It was certainly effective.¹⁶⁶

In one *safari*, Lumley's writings move from a statement about the ability of white men to do anything to a harrowing journey in which he and his technology are completely powerless. In his narrative, the "magic" of the white man is not nearly as "effective" as the "witchcraft" and skill of the Waha divers who return his vehicle. "Manpower reinforcing horsepower" emerges as a constant theme in the everyday experience of colonial development. But it too sells short the significance of African manual labor to colonial automobility. From road construction to portage, it is important to acknowledge the myriad times that manpower *replaced* horsepower in colonial Tanganyika, a situation with which Lumley was all too familiar. Shortly after the incident he describes above, a hernia developed in his groin from his walk home and he was forced to seek immediate medical attention in Mwanza. Without a working vehicle, African manpower was again the answer:

As I was now unable to walk any distance and my Standard was out of action it was decided that I would sit in the car and be drawn by a team of Africans. As many of my loads as possible were put in the car and we set off on the journey to Biharamulo over non-existent roads. We had about eighty miles to cover, but made very good progress until we came to one of nature's major obstacles - a river thirty yards wide but fortunately not too deep. Here we stayed for three days while trees of sufficient length to span the river were felled. We were helped in this work by men from nearby villages. As manpower was our only lifting tackle I

¹⁶⁶ E.K. Lumley, "Forgotten Mandate: a British Officer's Memories of Tanganyika," Mss. Afr. S. 1738, Rhodes House, Oxford, England.

placed ranks of men on each side of a trunk, two men to every foot of length, and by this means we levered each tree trunk across the water until the river was spanned ... I supervised this work sitting on the rear car sections which had been placed on the river bank. Strong tree branches were placed cross-wise on the tree trunks and these provided flooring for our improvised bridge on which the car was drawn across with myself at the wheel.

In Mwanza, both Lumley and his vehicle were repaired.¹⁶⁷ Whether it reinforced or replaced colonial horsepower, African manpower was critical to colonial development, regardless of what officials said about it. Though European technology was supposed to replace African labor, evidence in administrative officers' journals and reports shows the key role Africans played in colonial development, both forced and free.

As Lumley's narrative shows, being on *safari* in Tanganyika forced officials to rethink the natures of technology and African labor. Though officials perpetuated racial ideologies about technology and civilization, they were also faced with material realities that fundamentally undercut colonial discourses about whose knowledge and labor was most powerful. This occurred in at least two ways. First, the construction of roads was a reoccurring headache for local officers who had to prepare transport routes for lorries before the harvest. Doing this seasonal task, officers not only confronted technological and financial problems; they also relied heavily upon Africans for their knowledge and labor. In Lumley's memoir, he emphasizes the usefulness of African knowledge to road building projects by stating that "the African as a wonderful sense of locality, and when from our eminence I point out the route that our road to the river should take my Barundi companions were able to identify its exact course on the ground when we crossed the river to survey the escarpment."¹⁶⁸ This sense of locality was critical on

¹⁶⁷ E.K. Lumley, "Forgotten Mandate."

¹⁶⁸ *Ibid.*

road scouting trips in which African men performed duties as porters, road clearers, and guides. Administrative officers also relied on animals. Lumley goes on to explain that the best survey technique for scaling hills was for a District Officer was to find elephant tracks: “His tracks give you easy grades cause he avoids steepness in his travels and his routes never exceed a grade of about one in sixteen, and this is the grade at which I was aiming.”¹⁶⁹

By the global depression of the mid-1930s, grand schemes for transforming Tanganyika’s transport infrastructure had lost all steam. In its place, F. Longland, a former District Officer and Provincial Commissioner of Tabora, published a manual called, *Field Engineering*, that laid out blueprints and designs for constructing roads and buildings with the labor and resources administrative officers had at hand. The strategy was one used by the military during war. Longland’s work was considered useful to the “non-professional” man—that is, a non-engineer—and within one-and-a-half years of its publication, the government press had sold 3,000 copies and it eventually became core curriculum at Oxford University for training colonial officials. Longland explains:

I thought it would be useful to have some hints as to works when machines are not ready to hand. On a farm for ex, or on an isolated station. I purposely did not mention such things as bull dozers, or road graders, because few if any of the people I had in mind could have the use of them. Besides there are many far better books on modern methods than I could hope to write, but I do not know of a book on these rather out of date, if not, primitive, lines.

The reception of Longland’s *Field Engineering* reflects the nature of socio-technical change in colonial Tanganyika. By Longland’s own admission, the most useful form of construction was “primitive” and remarkably, not “modern”. The task of remaking social and economic beings through technology was not based upon the transfer or design of new technologies for Africa, but

¹⁶⁹ *Ibid.*

instead upon a piece-meal form of engineering familiar to military men and available to non-professionals. As a result, the material world being constructed through field engineering did not reflect ideologies of rule, but was instead a hybrid of European and African systems of knowledge Longland had learned from his time as a District and Provincial Officer. This piece-meal, tinkering form of colonial modernity was never the ideal, but it was constantly the reality for officials who had to implement policies with limited budgets and labor.¹⁷⁰

As their technologies failed, administrative officers were also forced to reconsider Africans as social subjects. Officials produced knowledge about African identities, histories, economies, and political cultures by filling out *safari* reports as they toured their districts. While many of these reports follow the structural functionalist tendencies of colonial social geography, the nature of *safaris* also forced officials to recognize the gaps in their knowledge about Africans. This occurred in two ways. For officers who had created the structure of indirect rule on foot and by bicycle, the use of automobiles was supposed to usher in a new form of governmentality. Instead, it created an era in which the colonial administration knew less about its African subjects: “If one was on foot, it provided an opportunity for a chat and enquiry about crop conditions, etc. But when travelling by car, this was hardly feasible, and the increasing use of the car contributed to the custom’s eventual demise.”¹⁷¹ For E. Lumley, the link between decreasing political strength and the rise of colonial touring reveals the unintended consequences of imperial technology transfer. He writes:

Travelling on foot, if at times irksome and uncomfortable, had its political advantages. It meant that the DC became conversant with almost every yard of his

¹⁷⁰ “Handbook on Field Engineering by Mr. F. Longland, Volume I,” Tanganyika Secretariat 23250.

¹⁷¹ Seville, *When God Had One Eye Shut*.

district, and contacted most of its people. On the road he would meet travellers and talk to them, passing the time of day and gathering information about their activities and means of livelihood. In these wayside conversations he learned much about the affairs of the tribe and the conduct of the village headmen and other native authorities. More information was obtained when he pitched his tent for the night in the headman's village. After a series of these journeys on foot the inhabitants got to know their white administrator and could talk freely to him. In this way, many abuses were brought to light. The knowledge that he acquired from these contacts with ordinary men and women of the tribe was a useful background to this discussions with the chief and elders. When motor roads began to appear, as they did after a few years, these contacts were lessened. The traveller passed along at speed in his car from one headman's village to the next. The chats by the wayside were lost and the only contacts with the people were at the more formal gatherings in the precincts of the native courts.¹⁷²

While offering a type of capillary power railroads could not, motor vehicles created a form of colonial power that, according to officials, worked against the virtues of indirect rule. The more they sat behind their vehicles, the less they knew about those whom they were targeting for change.

As administrative officials pondered the limits of their technological power, they were also forced to recognize social realities and African identities that cut across the grain of imperial structural functionalism. Instead of Africans being defined by rigid ethnic categories and their natural state being of fixity to bounded spaces, officials began to grapple with complex and changing cultures of mobility that flustered their ability to not only know about Africans, but also, to use this knowledge to direct social change. For example, in contrast to descriptions of portage as slavery in late-nineteenth and early-twentieth century colonial literature, administrative officers on *safari* were forced to recognize the importance of porters to their everyday tasks. Seville even described the porters of Biharamulo with this glowing report:

[They were] an elite body of men who were always on call and never did any other work, such as the maintenance of roads and buildings, etc. Each had his

¹⁷² Lumley, "Forgotten Mandate."

chosen load and refused to let anyone else carry it. Thus one man always carried the cook's box, whilst another carried the tin bath, which had a lid over it and into which went one's clothes, bedding, spare shoes, ammunition and anything else that had to be protected against the rain.¹⁷³

He was also impressed by their professionalism, noting they "were a cheerful bunch who would willingly march twenty or even thirty miles a day," as well as their social skills:

One of them was a skilled ventriloquist who used to give shows at night. There would be two huts in the camp: one occupied by the porters and another by the cook, and the instructors. The ventriloquist would maintain a conversation with his dummy, who appeared to be in the kitchen or in my tent, and cross talk would be carried on to the delight of his audience. On occasions the *bwana* (Seville) was the dummy and these conversations always raised the loudest laughs.

Seville even recognized the role of portage for social mobility among young African men. In Manyoni, he met Salehe, a Mhehe who turned a career as a porter during the German era into a position as an agricultural instructor for the British administration: "He became Head Instructor for Manyoni and Dodoma Districts and was invaluable to me. At his suggestion, I bought a bicycle for using during the groundnut planting season. We would go off on safari with our bicycles lashed on the sides of the car. Camp would be established at some convenient spot and leaving Nathanieli, the cook, in charge, we would cycle along footpaths to out of the way villages, which never saw a European officer in the normal course of events."¹⁷⁴ In contrast to imperial rhetoric about faceless and agentless porters who were inimical to social and economic health, administrative officials on *safari* were confronted with a different type of laborer and social subject that was not only necessary to administrators' tasks, but also, capable professionals who used their vocation to mock racial hierarchies.

¹⁷³ Seville, *When God Had One Eye Shut*.

¹⁷⁴ *Ibid.*

This slippage between porters as deviant and porters as instrumental filtered into other areas of colonial administration. Eventually, even officers had to come to grips with the value of the deviant African. Though automobiles and roads were part of an effort to turn Africans into wage earning and tax-paying subjects, the type of colonial subject administrative officers found most useful in their daily tasks were Africans who willfully defaulted on their taxes. This was especially important for mobilizing labor for seasonal road construction. Lumley explains:

The labour I employed were Waha who had defaulted in tax payment. The law allowed me to requisition the labour of any able bodied defaulter for works of public importance. For every annual tax due the defaulter had to work thirty days. Only age, ill health or physical unfitness could excuse him. Without this tax labour I could not have undertaken the construction of a road of this length, for the district vote would never have to run to it. I must confess that I did not press defaulters for their tax. Their labour was of far greater value to me, and they too preferred it that way. If they had money tucked away they could keep and spend it on other things. Besides, I so arranged matters that I could employ them near to their villages so that every evening they could go home.¹⁷⁵

Lumley's use of tax defaulters to create a body of fixed, and forced, labor, not only contradicted the ideological foundation of the civilizing mission. It was also standard practice and a key strategy for colonial officers who could not think of any other way for continually renewing their seasonal infrastructure. An uncomfortable admission in labor reports from the beginning of British colonial rule was the reliance of administrators on forced labor for public works projects.¹⁷⁶ Originally allowed as a temporary measure, forced labor through tax default proved the most effective, reliable, and cheapest form of labor for local officials; for a year's worth of

¹⁷⁵ Lumley, "Forgotten Mandate."

¹⁷⁶ Government of Tanganyika, "Report on Tanganyika Territory for the Year 1924," TNA Library.

taxes, men worked for 40 days (30 for the taxes and ten for the food they ate while laboring).

Tax default rates ranged from 20 to 40% of a district's adult, male population.¹⁷⁷

In this way, roads changed from a technology through which Africans could be turned into controllable, wage earning, and tax-paying subjects into hated sites of forced labor. This reliance on cheap African manpower also legitimized deviance in the form of not paying taxes; it criminalized a form of labor colonial authorities relied upon; and it brought the history of colonial roads full circle. First touted as an answer to African slavery by abolitionist in the 1870s, in oral histories, colonial road labor is recalled as yet another form of enslavement. While District and Provincial Commissioners may have considered their material struggles an example of weakness and their reliance upon African knowledge and labor an ideological embarrassment, the persistence of forced road labor shows that many Africans "found no refuge in the contradictions" of imperial power.¹⁷⁸

CONCLUSION

Colonial development on *safari* never turned out as planned. Through administrative *safaris*, motor trials, and attempts to categorize and fix African migrant laborers in space, officials had to grapple with themselves, their subjects, and the possibilities for change in ways they never anticipated. As they walked, drove, and were carried across Tanganyika by porters, administrative officials were forced, albeit slowly, to recognize that Africans could not be defined through stereotypes about simplicity or sophistication. Rather, Africans were creative

¹⁷⁷ "Annual Report Bagamoyo District," TNA Library; "Annual Report on the Tanga District for the Year 1931," TNA Library.

¹⁷⁸ Meredith McKittrick, "Faithful Daughter, Murdering Mother: Transgression and Social Control in Colonial Namibia," *The Journal of African History* 40, no.2 (1999), 267.

social subjects who confounded colonial theories about “modern” societies, race, and the virtues of categorization through everyday acts of mobility and through networks of knowledge that continually perplexed colonial officials. While reformers like Orde Browne saw symptoms of decline and decay in emergent African identities and migrants’ mobile strategies, he too admitted that there was something at work in colonial Tanganyika that was well beyond his ability to grasp or control. Orde Brown, like others, had first understood Africans as something that could be measured, categorized, and controlled by colonial governments. But by the late 1930s, his research on migrant labor prompted him to admit that neither he nor any government in eastern African could produce basic statistics on inter-territorial migration, and not surprisingly, that they knew even less about migrants’ actual lives.

As colonial stereotypes broke down, so too did European technologies. While tools of empire designed for Africa were supposed facilitate economic growth, transform African societies, and create political stability, in practice the most celebrated technologies of imperial rule packed more rhetorical power than practical punch. On paper, roads, experimental vehicles, and labor camps provided technological solutions to the social challenges of imperial rule and offered the possibility of replacing unreliable African labor with tested European machines and engineering methods. But as colonial officials went on *safari* or built regional roads, they found themselves returning again and again to sources of knowledge and labor that were never supposed to be an integral part of colonial power. Though travel writers often erased and belittled African labor and expertise, district and provincial authorities found themselves reliant upon African cultures of mobility and technology to perform even the most basic tasks of colonial rule. More than a contradiction of colonial power, the reality of life on *safari* provides a way to rethink the fundamental relationship between technology and development in colonial

Tanganyika. Put simply, colonial technological experiments could occur and fail because of the presence of long-term African transport infrastructure, knowledge, and labor to fill the void.

Finally, colonial development in Tanganyika illustrates that failure is not the same as powerlessness. Though colonial ideologies of development were full of contradictions and even blatant misinformation, they ultimately shaped an incredibly durable narrative about the essence of Africa as a place that simultaneously requires and resists change. Through official and unofficial forms of travel writing, touring Europeans not only presented East Africa as a peripheral place in need of Europe's civilizing mission. They also turned development into a comedic tragedy in which heroic officials struggle against resistant landscapes, obstinate African subjects, and endure technological failure in a place that resists even the most ambitious colonial experiments. In these narratives, what matters most is not the success or failure of development, but instead, the ability of colonial officers to distance themselves and their ideologies from the consequences of their actions. Indeed, it is only in these circumstances that John, in the opening vignette to this chapter, could claim a "well-administered district" by mobilizing African labor to push his car out of the mud with a gun. Using this description of development as a baseline, the remaining chapters aim to move beyond the stereotypes about African, technology, and mobility that were forged during the colonial era.

CHAPTER 2—UNLIKELY COSMOPOLITANS: MOBILITY, AUTHORITY, AND DOMESTICITY ON THE ROAD

As he wrote the annual report of Dar es Salaam district in 1931, W. Fryer could not get the image of automobile-using Africans out of his head. After nearly a decade of mandate rule in Tanganyika, the district commissioner was frustrated about the government's inability to regulate social and political change, a state of affairs he summarized by describing a group of motoring Africans he called, "sophisticated natives":

There was a time not so long ago when one of the first concerns of the majority of natives was to get if possible money to pay his tax ... The younger generation between 20 and 35 years of age who have grown up in the Dar es Salaam district prefer to travel by motor car, accompanied often by their wives, to walking and putting aside the cost of the fares for the payment of their tax and fulfillment of their just obligation to the government. He does not often carry his own produce to the market but conveys it by motor lorry and tens of thousands of shillings available in former times for paying tax now go to paying for the cost of motor cars ... The native knows that all he need say when demand for tax is made 'I have no money'. No punishment can follow and the tax is unpaid and the native spends his money in other directions.¹⁷⁹

While motor vehicle use was on the rise in the 1930s, neither the fiscal nor political obstacles to British rule are reducible to a new generation of "sophisticated," motoring Africans. Instead, this image stuck with Fryer for reasons that were at the heart of colonial rule. As Janet Roitman observes, the quest for the knowable civil and fiscal subject was predicated on fixing African bodies and movement in governable spaces.¹⁸⁰ In Fryer's eyes, this mobile group of tax-dodging Africans threatened more than the annual budget, for they also challenged the claims of the colonial administration to control bodies, resources, and technologies at the seat of colonial

¹⁷⁹ W. Fryer, (District Commissioner, Dar es Salaam), "Annual Report for 1931: General Observations," TNA Library, TNA/54.

¹⁸⁰ Janet Roitman, *Fiscal Disobedience: An Anthropology of Economic Regulation in Central Africa* (Princeton: Princeton University Press, 2005), 136.

power in Tanganyika. Driving off as quickly as they appeared, this generation of urban residents confounded the categories and expectations of colonial rule, doing so, to Fryer's chagrin, with a tool of empire and an acute awareness of the boundaries of power.

Though some colonial officials would have interpreted Fryer's report as a symptom of urban disorder, others would have recognized a deeper problem manifesting itself across the colony. In urban townships, on plantations, on labor routes and in colonial departments, officials were struggling to categorize and control a variety of African social subjects, including three types of actors examined in this chapter: migrant laborers, drivers, and traveling businesswomen. Many British officials would have balked at labeling these groups as cosmopolitan, but each was adept at moving between colonial and African moral economies, appearing momentarily like Fryer's "sophisticated natives" and then disappearing into the fabric of colonial society. This tension between mobility and authority was not resolved with the end of colonial rule. Like British authorities before them, Tanzania's independent government overlooked moral economies and forms of social reproduction that had been critical to regional economies and gendered adulthood for centuries. As Julius Nyerere's socialist government attempted to direct social and economic change from above, it was also forced to confront the limitations of its policies and the existence of alternative ideologies of economic development produced by drivers and businesswomen. Instead of using the racist language of colonial rule, it placed these groups outside of the socialist family (*umma*) by labeling their activities economic sabotage (*kuhujumu nchi*). This chapter turns the perceptions of authorities on their head by analyzing drivers, migrant laborers, and mobile businesswomen as cosmopolitan actors who constructed vital social and economic networks across Tanzania. Each group moved across colonial and post-

colonial social categories and turned a variety of tools, whether official discourse or material technologies, toward unintended results.

In particular, I ask: What happens when we understand economic activity, the state, and notions of proper accumulation and distribution from the perspective of these mobile populations? And when we do so, what do structures look like, and what ideologies matter in people's lives?

By answering these questions, this chapter makes three historiographic contributions. The first is rooted in my designation of these groups as cosmopolitan actors. In African history, and the East African literature in particular, cosmopolitanism is based upon specific types of places and to firm connections to global markets. This has created an African cosmopolitanism that is heavily linked to coastal entrepôts, based upon global trends in consumption, and associated with hegemonic understandings of modernity forged in the Global North.¹⁸¹ The same is true in the broader literature on cosmopolitanism. Though the first studies of this field were critiques of parochial nationalist literatures, there remains a homogenizing tendency in analyses of whose ideas, culture, and economic activity should come to the fore studies of world systems.¹⁸² By

¹⁸¹ In East African literature, there is a coastal cosmopolitanism based on consumption of global goods and access to universal ideas, especially in religion: Laura Fair, *Pastimes and Politics: Culture, Community, and Identity in Post-Abolition Urban Zanzibar, 1890-1945* (Athens: Ohio University Press, 2001); Jonathon Glassman, *Feasts and Riots: Revelry, Rebellion, and Consciousness on the Swahili Coast, 1856-1888*; Jeremy Prestholdt, *Domesticating the World: African Consumerism and the Genealogies of Globalization* (Berkeley: University of California Press, 2008). For Africa more broadly, see James Ferguson's arguments in *Expectations of Modernity: Myths and Meanings of Urban Life on the Zambian Copperbelt* (Berkeley: University of California Press, 1999), especially his distinction between "localist" and "cosmopolitan" (p. 91).

¹⁸² Immanuel Wallerstein, *Unthinking social science: The limits of nineteenth-century paradigms* (Temple: Temple University Press, 1991); Jeremy Prestholdt, *Domesticating the World*.

focusing almost exclusively on the inclusion of groups from peripheries into the core, scholars have overlooked the networks and practices through cosmopolitanism is actually produced.¹⁸³ The migrants, drivers, and businesswomen in this chapter are not cosmopolitan because of their place of residence, but because of their ability to mobilize goods, knowledge, and relationships across space. The more obvious cosmopolitan places they went certainly mattered—such as Nairobi, Mombasa, or Dar es Salaam—but it was their ability to navigate the out-of-the-way and in-between places that allowed them to become important social and economic actors during colonial and independent eras. More than extending the title, cosmopolitan, to a different type of historical actor, recognizing these groups as cosmopolitan actors broadens expectations about the types of knowledge and practice that were critical to social health and social mobility in colonial and post-colonial Tanzania. In particular, this approach moves across the periodic divides of African historiography and confounds expectations about modernity and development, especially their linearity and the analytic strength they derive from binaries.¹⁸⁴ Drivers, for example, operated machines that many considered modern, but they never became the industrial men

¹⁸³ Steven Rockel makes a similar argument with Wanyamwezi porters and cultures of modernity in *Carriers of Culture: labor on the road in nineteenth-century Africa* (Portsmouth: Heinemann, 2006). On general trends in studies of cosmopolitanism, see Rami Nashashibi, “Ghetto Cosmopolitanism: Making Theory at the Margins,” in *Deciphering the Global: Its Scales, Spaces and Subjects*, ed. by Saskia Sassen (New York: Routledge, 2007): 243-264. Early definitions of cosmopolitanism are often rooted in H.W. Zorbaugh’s work, *The gold coast and the slum* (Chicago: University of Chicago Press, 1929).

¹⁸⁴ Troubling clean distinctions between modern and traditional has been the focus of Terence Ranger’s work in East Africa, including: *Dance and Society in Eastern Africa, 1890-1970: The Beni Ngoma* (Berkeley: University of California Press, 1975); “Rural Class Struggle and Popular Ideology in the Transkei,” *Southern Africa Review of Books*, (July 1987): 12-13. For more recent takes, see: David Schoenbrun, “Conjuring the Modern in Africa: durability and rupture in histories of public healing between the Great Lakes of East Africa,” *The American Historical Review* 111 no. 5 (2006): 1403-1439; Lynn Thomas, “Modernity’s Failings, Political Claims, and Intermediate Concepts,” *The American Historical Review* 116 no. 3 (2011): 727-740.

colonial and national authorities desired. Instead, drivers recognized that automobility required a deep knowledge of the region's past and proper use of the social relationships that had joined economies across the region for centuries.

Second, this chapter is a social history of economic development that provides an alternative to the externally based theories, sources and evidence generated by formal institutions. While most approaches to development begin and end with statistics created by national ministries and international agencies, my goal is to understand economic history through the terms and experiences of those who created networks and moved goods during the colonial and independent periods.¹⁸⁵ Historian Anthony Hopkins has recently called for a “new economic history of Africa” that moves beyond the “universality of Western economic theory.”¹⁸⁶ Below, I use the strategies of labor migrants, drivers, and businesswomen as the foundation for doing so. Though many of their exchanges were technically illegal, these mobile populations created alternatives to dominant visions of economic change and provide an entre into moral economies that were neither recognized nor understood by the institutions that were supposed to direct social and economic change.¹⁸⁷

As different economic strategies and structures come into focus, so do a host of methodological and analytic questions: How does one measure the size and impact of illicit

¹⁸⁵ For a recent approach on the colonial period, see: Emily Osborn, “Casting Aluminum Cooking Pots: Labour, Migration, and Artisan Production in West Africa’s Informal Sector, 1945-2005”, *African Identities* 7, no. 3 (Fall 2009): 373-386.

¹⁸⁶ Anthony Hopkins, “The New Economic History of Africa,” *Journal of African History* 50 (2009), 176.

¹⁸⁷ An example of these different viewpoints is evident in Ralph Austen and Daniel Headrick’s, “The Role of Technology in the African Past,” *African Studies Review* 26 nos. 3/4 (1983): 163-184; and in a 1990 article by John Thornton and the debate the followed, “Precolonial African Industry and the Atlantic Trade,” *African Economic History* 19 (1990): 1-54.

economic activities? What is the burden of proof for nudging universal theories aside and establishing the existence of alternative discourses and structures of economic health? In sum, which types of evidence and activities are most important to Africa's economic history? The evidence I collected in oral interviews cannot replace the avalanche of numbers measuring formal economic activity available at the Ministry of Finance's library in Dar es Salaam.¹⁸⁸ Drivers and businesswomen spoke of volume in generic terms, saying, for example, they exchanged "a lot" of goods or made "enough" money to meet their most basic needs.¹⁸⁹ But in spite of their vagueness, these activities evidence the existence of alternative systems of economic activity and discourses of economic health that cannot be explained through ideologies produced by the state or the development apparatus.¹⁹⁰ Their durability across historical divides and throughout the regions I visited evidences a cultural repertoire that must be more central to debates about economic activity and social health during the twentieth century.¹⁹¹

To be clear, my point is not that informal markets replaced formal markets. Instead, like recent anthropological work on economic activity in Central and West Africa, my evidence shows that the boundaries between formal and informal, licit and illicit were not only porous, but

¹⁸⁸ On the problematic nature of this data and precision, see Hopkins, pp. 166-167.

¹⁸⁹ T.L. Maliyamkono and M.S.D. Bagachwa estimate that informal economic activity constituted 30% percent of the Tanzanian economy during the early 1980s. See: *The 2nd Economy in Tanzania* (Athens: Ohio University Press, 1990), 133.

¹⁹⁰ For debates on measurement and evidence, see Thornton and the debate in *African Economic History*, especially Patrick Manning's contribution. Manning takes a different approach in "The Prospects for African Economic History: Is Today Included in the Long Run," *African Studies Review* 30 no. 2 (1987), in which he argues that modernist economic expectations are too often projected onto Africa's past. T.L. Maliyamkono and M.S.D. Bagachwa also found common practices across regions with higher incidences along borders.

¹⁹¹ For example, extending to economic history the achievements of social-cultural fields, including: Ranger, *Dance and Society* and Schoenbrun, "Conjuring the Modern."

also complementary.¹⁹² Though migrant laborers were suspected of various forms of deceit, theft, and tax evasion, their illicit activities were overlooked and even defended as part of the overall function of a growing colonial economy. After independence, government drivers and regional trading centers, both nodes in the state's effort to control distribution, were also known as places for the illegal procurement and distribution of contraband goods. While many drivers and consumers were initially wary of participating in illegal markets, by the late 1960s, contraband networks provided an important alternative to state led modernization efforts and the long lines and shortages citizens encountered at state distribution centers. Analytically, these activities help move discussion from the view of the state—including, an obsession over categories and linear models of change—to the messier historical processes that have confounded top-down aspirations for change.¹⁹³ As a result, they illustrate the centrality of long-standing economic networks and strategies to mediating structural change and they call into question the types of activities that should be considered normal or anomalous in African economic history.

Third, this chapter replaces ideologically driven narratives of post-colonial life in Tanzania with the experiences and memories of labor migrants, drivers, and businesswomen. Scholarship on Tanzanian history, and literature on independent Africa more broadly, has

¹⁹² Roitman, *Fiscal Disobedience*; Judith Scheele, *Smugglers and Saints of the Sahara: regional connectivity in the twentieth century* (New York: Cambridge University Press, 2012). In Tanzania, see Aili Mari Tripp, *Changing the Rules: the politics of liberalization and the urban informal economy in Tanzania* (New York: Cambridge University Press, 1997).

¹⁹³ James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 2000).

focused on the uptake and rearticulation of nationalist ideology by different social groups.¹⁹⁴

While documentary sources assume the state as the starting and ending point of history, evidence from oral history interviews shows the need for thinking about states and their structures from different perspectives. Drivers and businesswomen, for example, narrated histories of illegal trading without ever using the terms employed by the state, either contraband goods (*magendo*) or saboteurs (*wahujumu*). Nor did they talk about their activity as anti-national or illicit. They focus instead upon their ability to provide and distribute goods in a way that was not being done by the state. And they focused upon the morality of reproducing familial relationships, achieving gendered adulthood, and creating networks of reciprocity.¹⁹⁵ For them, the period of *ujamaa*—an ideological word they rarely used—was not about socialist principles of morality, but about the process of coming of age by acquiring a house, marrying, and providing for a family. More than provincializing official ideology, this type of perspective is important for answering questions about the nature of African states after independence, and particularly, about the way citizens understood and engaged their states. Frederick Cooper has described the post-colonial

¹⁹⁴ The language of the state is at the center of most analysis in Tanzanian history, including: Donald Denoon and Adam Kuper, “Nationalist Historians in Search of a Nation: the ‘new historiography in Dar es Salaam,’” *African Affairs* 69 no 277 (1970): 329-349; Cranford Pratt, *The Critical Phase in Tanzania: Nyerere and the Emergence of a Socialist Strategy* (Cambridge: Cambridge University Press, 1976); Gregory Maddox and James Gibblin, eds., *In Search of a Nation: Histories of Authority and Dissidence in Tanzania* (New York: James Currey Press, 2005); Andrew Ivaska, *Cultured States: Youth, Gender, and Modern Style in 1960s Dar es Salaam* (Durham: Duke University Press: 2011); James Brennan, *Taifa: Making Nation and Race in Urban Tanzania* (Athens: Ohio University Press, 2012). James Giblin provides the best alternative to this trend in, *A History of the Excluded: Making Family a Refuge from State in Twentieth-Century Tanzania* (Athens: Ohio University Press, 2005). In *Peasant Intellectuals: Anthropology and History in Tanzania*, Steven Feierman also gestures toward the durability of precolonial discourses.

¹⁹⁵ Goran Hyden recognized these moral economies in *Beyond Ujamaa in Tanzania: Underdevelopment and an Uncaptured Peasantry* (Berkeley: University of California Press, 1980).

African state as a gatekeeper that controls access to resources, while Francois Bayart has asked scholars to think of African states as rhizomes that are dispersed but connected through relationships of patronage. Cooper's designation gives the state too much credit for its ability to control the production and distribution of both things and ideology, while elites and big men are still the most important actors of Bayart's narrative.¹⁹⁶ This chapter explores political dynamics and authority from below, using what Bayart calls "a historical sociology of action" to examine what the state looked like by those who operated in its crevices.¹⁹⁷

Why domesticity in a chapter about life on the road? Focusing on cultures of gender and domesticity provides a counterargument to descriptions of mobile populations as inimical to social and economic health.¹⁹⁸ Instead, they appear here as individuals who were cognizant of the social and physical dangers of road travel and capable of producing forms of domesticity as needed to protect both short and long-term interests for themselves and their families. Following these mobile populations also expands the space in which domesticity is understood in African history. Scholars of Africa have long critiqued Western-based understandings of domesticity as tied clearly bounded spaces.¹⁹⁹ This chapter expands on this literature by exploring two forms of

¹⁹⁶ Frederick Cooper, *Africa Since 1940: The Past of the Present, Vol. 1* (New York: Cambridge University Press, 2002), 156-160; Jean-Francois Bayart, *The State in Africa: The Politics of the Belly*, 2nd Edition (Malden, MA: Polity Press, 2009).

¹⁹⁷ Bayart, *Politics of the Belly*, 10.

¹⁹⁸ As shown below, colonial technocrats from the 1920s and public health experts in the 1980s shared in common a demonization of mobile groups, citing in particular their role in the spread of disease. They also shared in common partial glimpses of these groups that renders much of their research incomplete.

¹⁹⁹ Karen Tranberg Hansen, "Introduction: Domesticity in Africa," *African Encounters with Domesticity*, ed. by Karen Tranberg Hansen (New Jersey: Rutgers University Press, 1992): 1-33. Luise White is particularly attentive to the role of place in designations of proper or improper

domestic life critical to navigating a life on the road during the colonial and independent eras. The first practice of domesticity required a cultural toolbox of skills and knowledge that could keep men and women safe on the road, including: the ability to cook, knowledge about the unseen dangers of automobility, and the ability to produce social capital in previously unknown places.²⁰⁰ In addition to providing security and comfort for generations of travelers, this mobile domesticity frustrated colonial and national officials alike for keeping populations beyond their gaze and for reproducing moral economies they did not control. It was also critical in producing the second form of domesticity and the main goal of a life on the road: to build a settled life for oneself and one's family. While their labor took them far from home, each group pursued a form of gendered adulthood that was based upon the ability to settle, to marry, to build a home, to care for a family, and to have dependents—in sum, to build a domestic life through travel.²⁰¹

Tales of the road are never straightforward, and for this reason, the research for this chapter presented two methodological challenges. The first was uncovering the history of illicit economic activity among drivers. Regardless of the location of an interview, whether in their homes or at a taxi stand, drivers routinely lied about their participation in informal economic networks, even suggesting that such a question was offensive. It was only when I returned another day and asked more pointed questions about their use of oil, police checkpoints, or the hiding of contraband goods at borders that drivers began to open up about the economic activities that allowed them to achieve some degree of gendered adulthood. This shift in content

domestic labor in *The Comforts of Home: Prostitution in Colonial Nairobi* (Chicago: University of Chicago Press, 1990), 8-12.

²⁰⁰ Janet MacGaffey and Remy Bazenguissa-Ganga, *Congo-Paris: Transnational Traders on the Margins of the Law* (Bloomington: Indian University Press, 2000), 107-109.

²⁰¹ See White, *Comforts of Home*, p. 8 on the use of earnings as key to unrooting ideologies of domestic labor from paternalistic approaches.

was partly a result of asking questions using drivers' own Swahili phrases. More importantly, however, it was an extension of the cultures of trust that had allowed drivers to navigate risky physical and social environments throughout their careers. Chandra Mukerji has described road lore as one form of "fictional bullshit". In her study of hitchhikers, she shows how strangers created temporary bonds by exchanging false stories: "Truth and falsehood are not issues in bullshitting because this kind of talk is playful; it is a way to make conversations more fun."²⁰² Similarly, life on the road in post-colonial Tanzania required the ability to communicate by talking around the truth; it was less about fun, than about a secure strategy for creating new economic and social bonds in the crevices of state power or in places where one was a stranger. In particular, "bullshitting" for Tanzanian drivers was a means of wrapping illicit activity in dominant ideologies of social and economic health or skirting them altogether through a shared language of need. Years after they had retired, it was also a way to evaluate me and to make me engage them through the rules of their moral economy.

The second methodological challenge was drivers' self-importance as obligatory passage points in networks of power, a lesson I learned during an attempted interview in Morogoro. Upon finding a colonial driver, the man asked for \$150 for the interview. His justification was spot on: "We are both people of the world. You can use my life story to further your career, and so I need to receive something as well. It was not easy to be successful; you know that. And so what do you want to do?"²⁰³ Though we chatted for hours and had several more visits, the interview never happened. My university friends praised my actions for following research ethics

²⁰² Chandra Mukerji, "Bullshitting: Road Lore Among Hitchhikers," *Social Problems* 25 no. 3 (Feb. 1978), 242.

²⁰³ Field Notes, Morogoro, Tanzania, December 10, 2011.

(*maadili ya utafiti*), but I was more fascinated by this driver's self-categorization and his ability to connect his career as a colonial driver to the experiences of an American researcher. It was also a lesson in moral economy, social reciprocity, and the production of knowledge. While I never paid for interviews, I did make myself part of a vast network of drivers over three years of predissertation and dissertation research. Most interactions did not involve research, but consisted of greetings through phone calls; contributions to weddings, local political campaigns, or driving unions; sharing coffee during the evening hours; arguments about soccer; or patronizing taxi and bus services within a drivers' social network. Only by placing myself within such networks of reciprocity did drivers feel they could open up about their social and economic strategies on the road.

'WOULD YOU LIKE TO SEE OUR MISCHIEVOUSNESS?'

For colonial officials like Fryer, the phrase, "sophisticated native," was both a contradiction and a dead end. It was contradiction because the racial ideologies of the civilizing mission assumed African simplicity, not the ability to work within and beyond structures of power. It was a dead end because it was an admission that networks and systems existed beyond the gaze of authorities and would likely remain unknown and unregulated for the foreseeable duration of imperial rule. While officials salivated over the type of heavy-handed policies designed in Durban and Nairobi for governing African populations, such as pass laws, Tanganyika's status as a mandate meant that the more draconian regulations of spatial mobility were only arbitrarily and incompletely enforced. Migrants, especially those in urban townships, were targets of relocation and public health campaigns, but with few exceptions, they found ample space to move within

and beyond the regulations of colonial authorities.²⁰⁴ Using infrastructure, technology, and regimes of knowledge disparaged by colonial officials, migrants expanded their social worlds and their economic opportunities in ways authorities did not anticipate and could not control. Whereas chapter two evaluated the attempts of British officials to fix the moving targets of imperial rule using European technology, the focus here is three groups of mobile Africans—migrant laborers, drivers, and businesswomen—and their ability to work within and beyond structures of power. In addition to challenging the racist underpinnings of colonial technopolitics, these mobile populations showed themselves to be flexible technological actors and innovative social subjects.

There were few individuals in Tanganyika more cosmopolitan than the colony's Labour Commissioner, Granville Orde Browne. But as chapter two showed, he too was grappling with social worlds beyond his capacity to understand. Unlike the Kenyan "tribes" he measured and the bugs he categorized in his spare time, Tanganyika's labor migrants proved too complex and amorphous for him to pin down. And yet, the commissioner's research from 1926 to 1931 left plentiful evidence of the strategies immigrants deployed in order to have some control over the manner in which they built their lives. Orde Brown was most fascinated about the growth of a group he termed "detribalized natives." This "parasitic class" of "half-instructed, but

²⁰⁴ Officials went back and forth between their ideal and practical plans. One official stated pointed out the difficulty of such a vast project: "Wholesale repatriation will be expensive, besides involving the most careful scrutiny and supervision. Once it became known that free passages home were to be had, one can picture the Tanga authorities being inundated with a crowd of applicants, each one of whom could produce evidence of having originated from an up country district. There is no more enthusiastic 'joy-rider' than the African native (vide 3rd class railway traffic)." Quote from: "Repatriation of Unemployed Natives in Townships Vol. I," TNA 21616; see also, "Repatriation of Unemployed Natives in Townships Vol. III," Tanganyika Secretariat 21616, TNA; compare with Andrew Burton, *African Underclass: Urbanisation, Crime, and Colonial Order in Dar es Salaam* (Athens: Ohio University Press, 2005).

uneducated” migrants was setting up a parallel system of wage labor that was influencing cultures of African mobility on scale Orde Brown could only dream of. According to labor reports, these men began as regular wage laborers who left home for work on plantations. But instead of finishing their contracts and returning to their villages to be reincorporated into “tribal discipline and custom”, this group of laborers chose a middle path that became the subject of Orde Browne’s labor reports during the 1920s and 1930s:

Having originally left their homes to seek work, in all probability, they remain in some town after they have been paid off at their original place of employment. There they find some sort of casual, but probably fail to get steady employment; intervals of idleness between jobs tend to increase, until the individual drifts gradually into the class of unemployable loafer, from which stage it is fatally easy to join the definitely criminal class. It is only then that he attracts the attention of the police, and is sent back home. But by this time he is too much addicted to the attractions of the unrestricted town life to be able to return to the village conditions and he finds tribal discipline and custom most irksome. So at the first opportunity he makes his way back to a town and become a unit in the large and growing class of detribalized natives who have fallen away from African social organization without having qualified themselves to take a place in a Europeanised community.

Neither African nor European, the activities of mobile laborers were used to substantiate claims about the threat of “detribalized” migrants to “unsophisticated” African societies. “Little better than chaos, equally to be deprecated from the moral and economic aspects,” African mobility became a proxy for discussing the incompatibility of colonial societies with modern cultures of work, hygiene, and technology.²⁰⁵ With 250,000 recorded migrant laborers—and many more

²⁰⁵ Orde Browne, “The Migrant Labourer and the Map,” in the folder, “East Africa Labour Matters: Published Articles by Orde Browne,” Mss. Afr. S. 1117 Box 2. There is no date, but it is included in files listed as years 1933-37.

unrecorded—in 1937, moving Africans threatened the social and economic plans of colonial development.²⁰⁶

But the information in Orde-Browne's reports ultimately showed the opposite.²⁰⁷ African labor migrancy was systematic, organized, and technologically flexible, just not in the way colonial officials desired.²⁰⁸ To the commissioner's credit, he seemed to recognize this. Through research at labor camps, he scratched the surface of an expansive world of African labor in which news traveled quickly, routes were changed, and strategies for skirting colonial power plentiful. He was first struck by the complexity of African travel infrastructure. What officials criticized as "native paths," laborers knew as long-standing routes of travel that could be used to avoid authorities or because they were familiar and tested over time. Some of these were well-known caravan routes used for precolonial trade, but many were paths that had been part of regional markets and were subsequently incorporated into the longer journeys migrants took across the colony. As routes became more popular, services for assisting travels emerged along the sides of these African paths, including: portable food such as dried fish; temporary labor for individuals needing more resources; and lodging in extra rooms and houses. Neither Orde Brown nor any official had any idea how many laborers were using these routes and their services, but

²⁰⁶ John Iliffe, *A Modern History of Tanganyika* (New York: Cambridge University Press, 1979), 304-305.

²⁰⁷ Literature on mobility and migrants in Africa history as focused on the sending communities and the place of arrival, but has rarely looked at the in-between journey. See: Maynard Swanson, "The Sanitation Syndrome: Bubonic Plague and Urban Native Policy in the Cape Colony, 1900-1909," *Journal of African History* (1977): 387-410; Randall Packard, *White Plague, Black Labor: Tuberculosis and the Political Economy of Health and Disease in South Africa* (Berkeley: University of California Press, 1989). For an exception, see: James Giblin, *A History of the Excluded: Making Family a Refuge From State in Twentieth-Century Tanzania* (Athens: Ohio University Press, 2005).

²⁰⁸ Giblin, *A History of the Excluded*.

he considered it a large percentage. When colonial officials in Tanganyika and Uganda produced a huge discrepancy over border crossings—200 on side and 200,000 on the other—Orde Brown became the highest ranking administrator in Tanganyika to take African infrastructure seriously; he even tried to map routes through interviews with migrants.²⁰⁹ While this caused concern for a labor commissioner interested in social engineering, it shows the extent to which precolonial African infrastructure provided a material template for mediating the changes brought by capitalist wage labor.

While these routes and domestic services worried Orde Browne, he was even more disturbed by the ability of laborers to understand and work within colonial systems of power. He was particularly flustered by the strategies migrant laborers used as they moved eastward to plantations on Zanzibar. Men from the central and western regions, especially from Tabora, were signing contracts with labor recruiters in order to finance and profit from their journey to Zanzibar. By agreeing to wage contracts before they left home, potential laborers had their annual taxes paid by the recruiting agency, were often given free transport to the coast via rail or road, and then they received wages after their arrival. After a couple weeks on the coast, they would leave the plantations that had recruited them, financing their trip to Zanzibar by stealing tools from their employer and selling along the road to the coast. Finally, they would take up work in Zanzibar where they had intended to arrive all along because of its reputation for higher wages.²¹⁰ This was not an isolated case. Controlling migrants was even difficult when laborers and officials were in close proximity. With the pass system unavailable to Tanganyikan officials,

²⁰⁹ Major Granville Orde Browne, *Labour: The Recruitment, Employment, and Care of Government Labour* (Dar es Salaam: The Government Printer, 1930).

²¹⁰ Orde Browne, *Labour in the Tanganyika Territory*, 35.

they relied upon tax receipts as a method of identification and control. This was to keep laborers from leaving home before their annual taxes were paid and to provide a place to return migrants when they broke the law. But these too proved inadequate. Orde Browne considered tax-receipts worthless because laborers were adept at offering other names and cover stories as an excuse for being in urban centers without employment. Moreover, the tax receipts themselves could not withstand the journeys, becoming unreadable or disintegrating completely.²¹¹ Finally, even laborers who were sent home by municipal courts often came back. “Native paths” and old infrastructure were important social and political tools for the colonial subject to mediate colonial authority.

According to Orde Brown, these strategies and networks of knowledge pointed to an expansive world of African migration that made him question the ability to direct social change in Tanganyika:

A host of unforeseen and possibly undetected results will follow the labour migration. The worker may not be very intelligent, nor is his standard of education likely to be high; he will nevertheless inevitably compare conditions in the two countries, whereas previously he may never have thought of criticizing the only government of which he had experience. Taxation, suffrage, land tenure, colour distinction, and a variety of other disputable matters, will crowd in on his brain, to confuse and upset his previous standards; he will form a disruptive element in the country which he visits, and will also probably take home with him new ideas and aspirations which may be most unwelcome to his neighbors.²¹²

More than a detriment to economic and social development, the migrant laborer emerges in reports as a social being who was engaged in comparative assessments of regional labor

²¹¹ *Ibid.*, 36.

²¹² Orde Browne, *Labour in the Tanganyika Territory*, 31-32. In Orde Browne’s papers at RHO, see also: “The Condition of Native Communities in or Near European Centres”, in the folder, “East Africa Labour Matters: Published Articles by Orde Browne,” Mss. Afr. S. 1117 Box 2. There is no date, but it is included in files listed as years 1933-37.

systems and who, based upon material conditions, could look for a better situation by tapping into an expansive network of knowledge. Putting Orde Browne's paternalism aside, his reports show African migrants as cosmopolitan actors who frustrate parochial British officials.

Ever the categorist, Orde Brown did not want his readers to write off the material and social infrastructure of African migration as an insignificant anomaly. As he transitioned into a writing and speaking career in the 1930s, he asked his colleagues to consider African systems of migration as entities that deserved serious attention. Citing the expansive world of migrants, he called upon officials to recognize the inability of a single colonial government to understand or handle the African labor situation alone:

All this mass of moving African humanity must in the aggregate have an ever-growing influence on administration and policy, and it will obviously be important to take this into account before the effects force themselves on the notice of the various Governments. There seems to have been in the past a general tendency for each country to regard itself as a watertight compartment, in which policy could be worked out, and legislation introduced, without any regard for events across an international or even intercolonial border.

When Orde Brown left Tanganyika in the early 1930s, the creativity and stubbornness of migrants became a central part in his argument for changing the nature of colonial citizenship. Though paternalistic, the former commissioner's speeches in the United Kingdom evidence an individual who was changed in ways he could not anticipate.²¹³

While migrant laborers constituted an amorphous, mysterious, and immeasurable mass for colonial officials, the select group of African men who became drivers provided a different source of frustration for authorities. According to the colonial government, African drivers were overpaid, irresponsible, and difficult to control once they pulled out of department garages. Most

²¹³ Orde Browne, "African Labour and International Relations," originally published in 1932, in the folder, "East Africa Labour Matters: Published Articles by Orde Browne," Mss. Af. S. 117 Box 2, RHO.

importantly, they upset the relationship between skill, status, and colonial citizenship. British authorities never considered driving a form of skilled labor, but they felt compelled to pay African drivers as if they were a highly qualified group of colonial employees because of their attachment to an important tool of empire and for their role in a wide range of colonial development projects, including: alcohol control in townships, campaigns against tsetse flies in northwest Tanganyika, sanitation programs in urban centers, transport of British personnel and African laborers, the movement of crops between farms and train stations after harvest, and the collection of taxes.²¹⁴ But like driver-chauffeurs in the United States in the 1910s and 1920s, African drivers occupied a liminal position in structures of authority.²¹⁵ They were not recognized as skilled laborers, and yet their salary and their location within networks of power allowed drivers to see and understand colonial Tanganyika in ways few others could. From manual laborers cutting roads and loading lorries, young boys could be offered a chance to travel and ultimately, operate a machine that was associated with power and respect in colonial economies. As Kevin Borg writes of early American chauffeurs: “They did not behave as servants.”²¹⁶

In contrast to migrant laborers, colonial drivers were a tiny group who never constituted more than one percent of the territory’s population. From the 11 who worked at the Transport Department in 1923, the number grew to 60 in 1926, increasing steadily through the 1930s but

²¹⁴ “Annual Report: Transport Department, 1923,” AB 59, TNA; “Annual Report: Transport Department, 1924,” AB 54, TNA; “Annual Report: Transport Department, 1929-1931,” Tanganyika Secretariat 11789

²¹⁵ Kevin Borg, *Auto Mechanics: Technology and Expertise in Twentieth-Century America* (Johns Hopkins University Press: 2007). Kindle Edition.

²¹⁶ Borg, Kindle Edition, location 214.

never reaching 500, the military's minimum requirement for World War II conscription.²¹⁷

Drivers in Tanganyika had a range of social and educational backgrounds. Unlike other African colonies, driving was not controlled by one ethnicity or region, but was rather open to young men who climbed hierarchies of labor in government departments around the territory; at least one government driver was a migrant from Nyasaland.²¹⁸ While some of the colony's first drivers were formally educated in German colonial schools, most were uneducated boys who came to their positions through years of work for the PWD, through experience with the British military, or by learning to drive tractors and lorries on private plantations. Backgrounds varied from sisal workers, road laborers, a golf caddy, and guitar player in a Rumba and Jive band, to fish sellers, farmers, and carpenters.²¹⁹ For this reason, African drivers never become the type of colonial employees officials desired. Authorities wanted literate and "semi-literate" men who could read colonial driving laws and ascend department hierarchies through mechanical and legal trade tests. Instead, the prospects of operating "a tool of fire" (*chombo cha moto*) and a "foreign thing" (*kitu cha kigeni*) attracted a class of laborers who viewed driving as the bridge from daily wage labor to monthly salaries, paid leave, and ultimately, a new kind of colonial citizenship. Depending upon skill, drivers were offered a monthly salary between 45 and 130 shillings and

²¹⁷ "Annual Report: Transport Department, 1923," AB 59, TNA; "Annual Report: Transport Department, 1924," AB 54, TNA; "Annual Report: Transport Department, 1929-1931," Tanganyika Secretariat 11789; "Headquarters Southern Brigade KAR," in "Public Works Department," SF/10, TNA.

²¹⁸ "Native Staff Vols. I-III" SF/10, TNA.

²¹⁹ Hamadi Saidi wa Mwenye, interview with author, 6 April, 2012, Tabora, Tanzania; Mrisho Sulemani Minchande, Interview with author, 13 March 2012, Mkuranga, Tanzania; Shabbani Mohamudi, interview with author, 9 April 2012, Tabora, Tanzania; Ali Isa, interview with author, 9 April 2012, Tabora, Tanzania; Abraham Mumba Rihani, interview with author, 9 April 2012, Tabora; "Mzee Rashidi Sefu Mpemba: Dreva mwangalifu aacha kazi baada ya kushika Usukani miaka 30," *Nchi Yetu*, March 1972.

were given two weeks of annual paid leave. A driver in Tabora describing his social mobility said: “We got a 100 shillings a month. Can you believe that?”²²⁰ They also received items of status, including a uniform, leather boots, and as one driver recalled, they did not have to remove their shoes like other Africans when they entered a department office.²²¹ For young men, there were few forms of skilled or semi-skilled work that offered a higher payout than driving.

Becoming a driver was gradual process and often began outside centers of colonial power. In the late 1920s, for example, Mrisho Sulemani Minchande, was offered the opportunity to learn about driving through manual work he performed near his home 40 kilometers southwest of Dar es Salaam.²²² He joined a local road gang in the late 1920s where, in addition to proving his worthiness to two African gang leaders, he was able to change his status as a colonial citizen and begin to mature as a young man. Minchande’s father had been forced to work on German roads—a status he equated with slavery—but he emphasized in his interview that even the most menial tasks provided skills and social connections that were critical for young men during British rule:

I was part of the construction when Mohamedi Hoseni (an African overseer) was clearing the path. At this time, the area was a complete forest and filled with dangerous animals. To build a road, you’d climb a tree and direct the crew. “There’s a valley here, let’s go that way.” We got ten cents per day, and this was a lot of money. I didn’t have a family and I didn’t marry until after the Second World War ... It was dangerous work, not just to dig out trees, but there were spirits and unexplained things that happened at places like Shengarao. People just

²²⁰ Hamadi Saidi wa Mwenye, interview with author, 6 April, 2012, Tabora, Tanzania.

²²¹ “Mzee Rashidi Sefu Mpemba: Dreva mwangalifu aacha kazi baada ya kushika Usukani miaka 30,” *Nchi Yetu*, March 1972.

²²² Mrisho Sulemani Minchande, Interview with author, 13 March 2012, Mkuranga, Tanzania; Shabbani Mohamudi, interview with author, 9 April 2012, Tabora, Tanzania. Minchande’s story parallels details gleaned from staff cards in: “Native Staff—General (file includes volumes III and IV),” SF/10/33, TNA.

disappeared. (At this point, I ask him about the profit (*faida*) of his work). You got money to pay the tax and you get clothes to wear for one and half or two shillings; kaniki for three; kanga for three. If you don't work, where do you get clothes? And those who don't pay their taxes are forced to clear roads for forty days.

In addition to earning a wage and distinguishing himself from others in his community, Minchande was also able to work around a motor vehicle for the first time. Through months of loading and unloading vehicles, he created a bond with a driver who offered to train him as a “turner boy” (*tana boi*), a driving assistant whose position was funded by the colonial government because early vehicles required crank-starting. Turner boys also assisted in roadside repairs, loading, washed vehicles, and helped provide security from animals when cars were stuck on rain-bogged roads overnight.²²³ They were paid only daily labor rates—sometimes giving a portion to drivers in exchange for training—but their position provided an entry point into colonial cultures of technology and mobility that were not widely accessible and often required formal education. Minchande spent three years as the turner-boy on PWD road projects transporting trees from Mkulanga to the outskirts of Dar es Salaam in an 8-ton Bedford truck. He was offered a chance to learn driving, but turned it down because his uncle, a driver, was a drunkard.²²⁴

As they passed from daily wage labors to “turner boys” and drivers, these young men learned about colonial Tanganyika on a scale and through spaces—such as colonial departments or the cab of a colonial vehicle—accessible to just a fraction of the colony's subjects. Drivers first recall the creation of a racial consciousness as they interacted with colonial officials in

²²³ “Native Staff—General, Vol I,” SF/10/33, TNA.

²²⁴ Mrisho Sulemani Minchande.

departments and on *safari*. Elias Mwaifani, a driver for the PWD in Mbeya, said he was shocked at the traveling manners of the officials he transported to and from worksites.

The British would say, 'Stop here.' He then got out, popped the bonnet, and had a whole meal and tea to himself as I sat in the vehicle. You couldn't ask for food and you didn't ask what he was eating. When he finishes: 'Let's go.' When we arrived at a guest house, he has all these things with him that you unload. Then you go to the PWD 'parking'. If you have guts, you ask him what time to pick up him up the next day. He tells you: '8 o'clock, but by 7 o'clock I expect you here. Exactly.' The next day at eight in the morning he gets in the car, 'Jambo. Good morning'. You start the engine and you're off.²²⁵

Experience of racial inequality was magnified by drivers' perception of their work as highly skilled. Officials considered the driving tests given by the PWD a poor, but necessary, replacement for written exams and knowledge of mechanics and law. But African drivers describe the test as the climax in a narrative of social mobility and an indication of their technological equality with any other person in the colony who could drive.²²⁶ Having a physical license issued by the colonial government was a way to establish competency within an unequal culture of technology. But drivers also worked within these structures by transforming the colonial system of the "turner boy" into a relationship of reciprocity among maturing African men. Justified by colonial officials because of the design of early vehicles, the "turn boy" system outlasted its technological necessity because it created relationships of reciprocity between two different types of maturing men. Drivers took on younger men as a way to increase their salary, distance themselves from the dirtier parts of their careers, and to create dependents and social networks they could rely upon later in life. As a result of doing so, colonial driver training

²²⁵ Elias Mwaifani, interview with author, Dar es Salaam, 12 November, 2011.

²²⁶ In interviews, drivers went out of their way to describe this process. Hamadi Saidi wa Mwenye, interview with author, 6 April, 2012, Tabora, Tanzania.

became an African institution grounded in the needs of aging drivers and ambitious young men.²²⁷

Drivers are often ignored in political narratives because of their miniscule numbers and the dispersed nature of their trade.²²⁸ But they also used their mobility and skill to challenge the hierarchies informing colonial rule. This began during the 1930s when Mtumwa Makusudi, a driver in Bagamoyo, established a branch of the African Association after making contact with the group in Dar es Salaam; two other drivers were also part of the organization's seven founding members.²²⁹ In addition to moving ideas and formal institutions to new places, drivers were also among the first to use technical labor as a means for challenging colonial hierarchies. Consider, for example, two letters written by a group of Muslim drivers to protest the conscription of drivers for participation in Britain's World War II campaign. The first contested the different types of conscription for colonial citizens, laying bare issues of racial inequality they encountered in their department:

We give notice that we, the lorry drivers of the KAR were pressed into service because of presence of war. We beg to know one thing of you: why does the Government show an affection towards Indians, that is that it lets Indians free while it presses us, Swahilis? Are we only drivers, or are we as fowls and they human beings or are they men of spirit by themselves? They mock us and therefore, it would be better if they, like us, were also pressed into the service-for have they not licenses as we have? If these things do not come about, please understand that you will have to fire us by volley before the war penetrates into Africa. Then O father do not without reason worry yourself by questioning us. No one will answer. We simply want to see Indians coming and dying along with us. If not we will make a great deal of trouble. You may hang us all. Greetings.

²²⁷ Ali Isa, interview with author, 9 April 2012, Tabora, Tanzania; Mrisho Sulemani Minchande, Interview with author, 13 March 2012, Mkuranga, Tanzania; Shabbani Mohamudi, interview with author, 9 April 2012, Tabora, Tanzania.

²²⁸ John Iliffe, *A Modern History of Tanganyika*, 399.

²²⁹ Iliffe, 415.

Never receiving a reply, the drivers moved from issues of inequality between colonial citizens to the relationship between Africans and English colonial officials:

We remind you that we have already sent a letter to you and to our father the DO; why have we had no reply? We are all Almighty God's creation here in the world. Why are you Europeans so high-handed with us Africans, when we are all the children of Almighty God? The reason why you are fighting is that you are quarrelling over us Africans for the right to rule us. Why do you want to kill us now without reason. Why, again, are you seizing us by force without first asking our consent? Would you like us to rebel? For you are trying to kill us by trickery contrary to the will of God and the Prophet. We are now near the month of Ramadahn and you are causing us this trouble. What do you want us to do, you the PC, the DO, the CS and the Governor? Do you want us to rebel? For you don't understand us. But beware of the drivers whom you conscripted by force and also the *askaris* and everyone else whom you have conscripted by force. You are paying them the salary according to your wishes for service which may cost them their lives. We pray to God to give us mutual understanding. We have got your ammunitions and your rifles; would you like to see our mischievousness. Although we might die for it, yet not a single white man would be left in this camp, for we find we are being killed for nothing by you. We therefore ask you to give the men whom you have seized for the KAR good food and good pay; and let every man who has a wife and children get his wages every month, for it is our children who, if we die, will help you in the days to come. Sir, we ask you to give this your earnest consideration, if you disregard it, you will regret it later if not here and now. This is the truth that we are telling you, an Englishman, because your words are pleasant to the ear, but your deeds too bitter. Well then, beware of all us drivers to whom you have been so hostile, constantly fining us and warning us that death is near. What about it now, father? You will not ask us for fines every day now, for drivers are what you want, not money. It is we drivers who will be of more use to you in this great war.

Greetings.

Drivers of the KAR and PWD DSM

If, when you have read this, you want to know more of what we are aiming at, and ask us in a body, we will give you our inner feeling at once.²³⁰

The file holding these letters ends abruptly with no resolution of the incident, but the documents still reveal how skill and knowledge of the wider world could be used to make claims

²³⁰ "Enlistment of African Motor Drivers with the King's African Rifles," Tanganyika Secretariat 27502, TNA.

about status in colonial society. The first letter provides a specific grievance based upon racial inequality among drivers. According to the letter writers, Asians could join the military effort by choice and on their own terms, but Africans were being pressed into service in a dehumanizing manner as if they were only chickens. Officials responded by investigating accusations of forced conscription, which they considered unfounded. But they missed the larger point about skill and status. Using the licensing system—a test that all colonial drivers had to pass—these African employees were challenging the racial hierarchies of colonial technopolitics. They were willing and ready to die—whether they were hung by the British or fighting for them during the war—but they wanted to do so on terms of equality with other colonial subjects. By talking about licenses, they shifted the discussion from entrenched assumptions about race to a vetting process through which all drivers passed or failed as equals. In this manner, licensing allowed the KAR and PWD drivers to make claims about the value of their humanity before they met possible death.

When they did not receive a reply, the KAR and PWD drivers redirected their critique at the broader issues of inequality between African colonial subjects and British officials. Couched in religious language about the equality of all creation, this letter uses the driving occupation—a form of labor in short supply—and pressing world events to contest Africans' treatment as imperial citizens. More than a critique of the civilizing mission, this letter serves as a notice of drivers' expansive worldviews and social acumen. Knowing they offered a necessary service that was in short supply, they felt empowered to threaten armed insurrection; to speak for the mass of unskilled African soldiers (*askari*); and to highlight the contradictions of colonial ideology they experienced on a daily basis. Finally, this letter, written in the early years of war mobilization, reveals the types of claims that preceded the more formal challenges to colonial hierarchies

following the war. In spite of their threatening language, the drivers carefully couch their critiques within broader discourses of domesticity. The first is their designation of colonial officials as their “father” and to references of a colonial family that their children could someday join. More revealing for understanding their motivations, however, is the request that families of soldiers receive their wages; that is, that they not be killed for “nothing.” Having recognized racial inequality within their own department and across the colony, they were willing to drive off to war as long as they could still produce domesticity at home. Their appeal was for their colonial “father” to recognize that they too knew the responsibilities of fatherhood.

The final group of mobile Africans, traveling businesswomen, is not discussed in the colonial archive. While officials recognized and tried to control women’s regional market activities, they never acknowledged African women’s role in longer distance trade.²³¹ Instead, they assumed women were tied to the home and that they could not be significant economic actors outside of regional trading hubs; Orde Brown even justified road infrastructure projects in gendered terms, writing that wives could not accompany male laborers to plantations because of the difficult material conditions of travel in Tanganyika.²³² And yet, women used similar tactics to those of labor migrants to build their lives through travel—what they defined as the ability to have a range of social and economic options beyond home and family at critical junctures in their lives. Women who were born in the late 1930s and 1940s discussed the incredibly small window they had between initiation (*kuvunja ungo*) and marriage for creating social networks on their own terms: “You were initiated and then you were married; and that was it. Those days our

²³¹ Stephen Rockel, “Enterprising Partners: Caravan Women in Nineteenth Century Tanzania,” *Canadian Journal of African Studies* (2000): 748-788.

²³² Orde Brown, “East Africa Labour Matters: Published Articles by Orde Browne,” Mss. Afr. S. 1117 Box 2.

parents didn't think to educate girls.”²³³ Through connections to older women in their families and to friends in urban townships, maturing women in their teens joined networks of mobility and trade that were controlled by the colony's African women. As a strategy for coming of age, trade and mobility provided an economic and social foundation they considered critical for navigating the challenges of family life that lay ahead, especially divorce and widowhood. In interviews, women did not balk at the gendered expectations of domesticity—that is, being tied to home and family after marriage. But they also recognized the significance of alternative strategies and social networks that could be created through travel.

During the colonial period, strategies of travel were passed down through family oral histories and through skills or esoteric knowledge held by mothers and grandmothers. In the two cases that follow, this knowledge became paramount when young wives became widows. Amina Musa of Tabora, for example, used remedies her grandmother, a Mdigo from Tanga, had learned decades earlier through her own travels. With a group of eight other men and women, Musa spent four years walking from Tabora to Dodoma where she purchased *baobab* wood that she transported to her home in urban Tabora. Though her group often walked along the Central Railway Line, they also walked long stretches through dangerous forests: “I could protect against bad people and wild animals; if they're around, you spread this on your skin and they can't see you. I would share with the rest of the group, but I never showed them the trees I used to make the medicine.”²³⁴ Hadija Mahomedi combined colonial rail and road travel with African infrastructure to transport cloth from Dar es Salaam to areas where commodity markets had not yet stabilized during the 1950s. “In those days,” she recalls, “cloth was a blessing, and so women

²³³ Zenabu Saluum, Interview with Author, 13 August 2012, Tabora, Tanzania.

²³⁴ Amina Musa, Interview with Author, 13 August 2012, Tabora, Tanzania.

agreed to me when I came to sell it.” Mahomedi’s grandmother migrated from Songea in southwestern Tanganyika to Kilwa Masoko on the coast and ultimately to Dar es Salaam in the 1920s to flee an abusive husband. She traveled the three-month journey by foot and was aided by her brother. Finding few opportunities in Dar es Salaam, she relocated to Ruvu where she sold beer to laborers on Sundays. In 1942, Mahomedi was born on this very estate where she was told her family’s travel history and taught to brew beer by her mother and grandmother. After marriage in 1955, she moved to Dar es Salaam where she sold beer at a city market called Keko. More than a place to sell goods, Keko was a repository of knowledge and social capital for women to make contacts across the colony. When Mahomedi divorced her husband in the late 1950s, she used her social capital from the market to sell *kaniki* cloth across the colony with four other women. She recalls that travel and business was not a respectable for women during this time, but it allowed her “to search for blessing” (*kutafuta riziki*): “I didn’t get anything of meaning from traveling for myself, but I built a house and could care for my children.”²³⁵

Traveling across Tanganyika required careful planning for food, water, and the safest route, but there was nothing more useful to women’s mobility than a simple piece of cloth. A common theme in oral histories is the usefulness of *kaniki*, a durable indigo-dyed cloth from India that women bought in two pieces and then often sewed together to make one large piece.²³⁶ In addition to its usefulness during travel, women mention its significance to self-presentation and social security as they entered new places. Establishing a trading business in places far from home required relationships with others on the road and at markets where women had few social connections. By stitching together two pieces of *kaniki*, women could present

²³⁵ Hadija Mahomedi, interview with author, 12 July 2012, Dar es Salaam, Tanzania.

²³⁶ Amina Musa; Zenabu Salum; Hadija Mahomedi.

themselves at markets as respectable individuals who were acting according to regional styles and moral economies. “You couldn’t show your face when you walked into town. You needed to have a *buibui*,” Mohamedi recalls.²³⁷ Though these cross-colony activities never registered with British officials, broadening social worlds allowed women to gain a degree of control over the manner in which they matured during a time of structural change. Producing domesticity on the road could be a struggle, but women used African and colonial technologies to create the social and economic networks that were critical to establishing a settled and more secure life. They also created a tradition of travel that became central to women’s social security in the post-colonial era.

AUTOMOBILITY, DOMESTICITY, AND MORALITY

After independence, drivers were supposed to be modern men who contributed to national development by putting things in motion. As the chart shows, Tanzania’s socialist state had a very orderly idea for how distribution should work. Primary goods were to be transported to factories, from whence manufactured goods would be moved to regional trading centers and then distributed to citizens at Regional Trading Cooperatives (RTC) controlled by the party.²³⁸ The system was designed to eliminate capitalist consumption, and drivers were supposed to be a critical link in the distribution of socialist goods and values. Instead, from the 1960s through the 1980s, authorities considered drivers a pressing threat to Tanzania’s economic and social health.

²³⁷ T.L. Maliyamkono and MSD Bagachwa, *The Second Economy in Tanzania* (Athens: Ohio University Press, 1990); Philip Setel, *A Plague of Paradoxes: AIDS, Culture, and Demography in Northern Tanzania* (Chicago: University of Chicago Press, 1999).

²³⁸ “Vyama vya Ushirika Tanzania: Jana, Leo na Kesho—Shughuli za Chama cha Ushirika,” *Ushirika Nyongeza*, 7 July 1974, xi. Also: “Kampuni ya Uchukuzi TZRS,” *Nchi Yetu*, no. 183 (December 1980/January 1981), 15-19; “Usafirishaji Dodoma,” *Nchi Yetu*, (October 1981), 20.

In the 1960s and 1970s, they were called “economic saboteurs” because of their role in the distribution of “contraband” (*magendo*) goods, and in the 1980s, they were targeted as vectors in the spread of HIV/AIDS by national and international public health officials.²³⁹ But like the colonial era, descriptions of mobile populations from national and international authorities were filtered through modernist expectations of social and economic health and based upon partial perspectives of these groups’ lives. From drivers and passengers’ own words and memories, I show that a life on the road was a continual practice in mediating risk and opportunity. While their geographic reach provided social and economic opportunities available to very few historical actors in Tanzania, avoiding the social, spiritual, and physical pitfalls of automobility required an ever-evolving toolkit of cultural knowledge and strategies for economic security that defied the expectations and gaze of official institutions. Guided by gendered discourses of adulthood and morality, drivers and businesswomen built their lives and mediated structural change by producing domesticity on the road.

Retired drivers initially present themselves in interviews as industrial and modern men. In addition to details about engine size and their preferences for truck manufacturers, they emphasize the physical strength they used to put trucks in gear, change tires, or to hold the steering wheel steady on a steep descent or bumpy road. They also establish their manliness by talking about terrible road conditions; the mental fortitude required for traveling at night; the physical toll driving took on their bodies over decades of travel; and the status of being a driver

²³⁹ J.W. Carswell, G. Lloyd, and J. Howells, “Prevalence of HIV-1 in East African Lorry Drivers,” *AIDS* 3 no 11 (Nov. 1989): 759-61; L.R. Barongo, M.W. Borgdorff, F.F. Mosha, et al., “The epidemiology of HIV-1 infection in urban areas, roadside settlements, and rural villages in Mwanza Region, Tanzania, *AIDS* 6 no. 12 (Dec. 1992): 1521-8; The Synergy Project and University of Washington Center for Health Education and Research, “Putting on the Brakes: Preventing HIV Transmission Along Truck Routes,” http://pdf.usaid.gov/pdf_docs/PNACW331.pdf.

during the first decades of nation building.²⁴⁰ But this petal-to-the-metal masculinity is only the shiny surface of these men's careers. While driving was considered a modern profession steeped in details about engine size, transmissions, and expanding concepts of space and time, the most critical knowledge a driver could cultivate was a toolkit of cultural wisdom about the seen and unseen things of the road, both new and old. Road networks took drivers to places they had never been, to communities who distrusted them, and across landscapes where the unexplained was a common occurrence. Automobility, then, required a cultural toolkit that few historical actors in the colonial or post-colonial period possessed. More than collecting knowledge about numerous locales, their cosmopolitanism compressed temporalities by relying on the deep knowledge and old social categories that have long allowed trade and social exchange to take place across in eastern Africa.

Like the colonial period, driving in independent Tanzania was not dominated by an ethnicity or region, but rather open to boys who were willing to learn about a life on the road. One of the first lessons a driver learned was that he was not in control. In spite of sitting behind the wheel of powerful machine, seemingly empty landscapes were filled with dangers that required care and respect. In addition to tales about drivers' modern masculinity, there is a whole genre of unexplained events (*maajabu*) that began to circulate in truck stops during the 1960s.

As Jumanne Juma describes, these events were rarely explainable through technical means:

When I was driving the Scania, I experienced a bunch of crazy things. From Mpanda there is an area called Katavi after the name of a mountain. You can go there with your car, but it will refuse to go up the mountain if you are carrying something that isn't allowed the spirits (*mizimu*) who guard the mountain. One time I was carrying manure from Mashamu to Dar es Salaam. When I arrived at

²⁴⁰ Kanuti Jonas Mitali, interview with author, 12 December 2011, Morogoro, Tanzania; Hassan Saidi, interview with author, 20 December 2011, Iringa, Tanzania; Regani Musa, interview with author, 13 July 2012, Dar es Salaam.

the mountain the car refused to go. So then, there's these old men who tell us, 'Hey you guys, you're carrying cow manure. Dump it and you'll go right up.' So we unloaded the manure and the truck worked again. Once, on the road to Ngerengere from Mpanda at 1 a.m., I encountered people dancing in the road. So I sped up—you know, they want food and this is why people who try to avoid them get in accidents. So I ran them over and they disappeared.²⁴¹

Mountain passes, in particular, were full of events that could not be explained through the visible world. The Kitonga pass near Iringa was not only a dangerous road, but also a place where mechanical failure was such a common occurrence that drivers propitiated the mountain before attempting an ascent or descent. Heeding the advice of local communities, they threw an item of value—whether fish or money—on to the side of the road before this segment of their journey.²⁴² While many drivers are hesitant to believe these stories, these tales constituted a corpus of knowledge through which proper behavior as automobile men was framed. For drivers, this centered around the Swahili term, *mwoga*, which means someone who is fearful, timid, or even a coward. Former drivers use the term to emphasize that the road was a place of unseen opportunity and danger. To survive, one needed to tread warily, to be humble, and be ready to learn about shifting social and physical landscapes on a daily basis.

In particular, there are three common images drivers saw in out-of-the-way places that reminded men of the thin line between opportunity and danger: women, livestock, and old men.²⁴³ Visions of women in desolate places were the most common element in drivers' stories.

²⁴¹ Jumanne Juma, interview with author, Dar es Salaam, 13 March 2012.

²⁴² Anonymous interview with driver, Dar es Salaam, 14 March 2012, Dar es Salaam, Tanzania (this driver readily admitted to illegal activity, but asked for his name to be protected); Saidi Hussein Abdallah Butani, interview with author, 15 March 2012, Dar es Salaam, Tanzania.

²⁴³ For the intersection of spiritual life and road travel, see: Adeliene Masquelier, "Road mythographies: space, mobility, and the historical imagination in postcolonial Niger." *American*

These spirits were said to be witches that would kill drivers if they stopped to provide assistance or cause an accident if a driver swerved to avoid a woman crossing the road; they were not supposed to value their humanity. The danger of women who stood on rural roads in the middle of the night was rooted in rumors of their social danger at truck stops. More than simply posing added costs to the reproduction of domesticity at truck stops, stories circulated about women who poisoned drivers through their cooking and then, presumably, robbed them after they were killed. In other words, they represented a dangerous form of domesticity and were an impetus for drivers to find other means for meeting their basic needs while on the road. The second trope is roaming livestock, including cattle and goats. They were out of place not because of their location, but because there was no one herding them. For young men who were at the center of economic networks, unguarded cattle—symbols of wealth and coming of age for men in colonial and precolonial Africa—represented the dangers of wealth accumulation. Like visions of women, young drivers were told that anyone who stopped was killed by a spirit or through an accident. The third image in drivers' oral histories is old men who appear along the road, but who are always distant from any community. As gatekeepers to sections of a road, they are blamed with putting obstacles in the way of a journey and for offering grim warnings about an impending accident before steep ascents or descents. Some drivers claimed the safest form of passage was to avoid eye contact with the men, but many others said they had to be dealt with through some kind of offering. In return for safe passage, they would give something valuable from their journeys. These old men served as a constant reminder that drivers were passing

ethnologist 29 (4) (2002): 829–856; Peter Chilson, *Riding the Demon: On the Road in West Africa* (Athens: University of Georgia Press, 1999).

through moral economies and landscapes in which they were guests, and that proper propitiation of ritual, was critical to their safety and ability to create their own wealth.²⁴⁴

With these stories in mind, automobile men produced domesticity on the road by using three strategies. The first was to use trucking stops and roadside communities as service centers. While this strategy became the topic of national and international discourse about the danger of African automobility after the emergence of HIV/AIDS, officials overlooked critical details about age, gender, and authority that young men mediated through their time at truck stops around East Africa. In addition to food, petrol, and other mechanical services, truck stops provided an important space for young men to expand their world and to experience new relationships for the first time. Having left their father or mother's house and yet having no home or family of their own, young drivers invested their domestic resources into the goods and relationships available at truck stops. They recall this period of their careers with fond memories. "We were young, had money, and we drove. The women loved us," one driver said.²⁴⁵ Others remember having a network of lovers they could call upon in different regions and others the strategies they used when they did not have a reliable contact in a new place: "It was easy. After you arrived, you paid for your room. If you left the key with the manager, this meant you wanted a woman waiting for you in your room after you'd eaten. You made love, and maybe she would

²⁴⁴ Anonymous interview with driver, Dar es Salaam, 14 March 2012, Dar es Salaam, Tanzania (this driver readily admitted to illegal activity, but asked for his name to be protected); Saidi Hussein Abdallah Butani, interview with author, 15 March 2012, Dar es Salaam, Tanzania; Field Notes, 14 December 2011, Iringa, Tanzania; Ibrahim Moses, interview with author, 20 July 2012, Morogoro, Tanzania.

²⁴⁵ Jumanne Juma.

wash your clothes.”²⁴⁶ Recalling these relationships, drivers presented themselves as cosmopolitan lovers who had experienced the joys of youthfulness on an unprecedented scale. But for young drivers with limited social connections, engaging women at truck stops was also the most accessible way for them to produce domesticity as they moved across new spaces.²⁴⁷

Social scientists have long linked road travel among men to a process of coming of age.²⁴⁸ For young Tanzanian drivers and assistants, the confluence of people, ideas, and technology at truck stops provided a critical space through which they could enter the wider world of automobility and mature as they traveled. In their life histories, drivers present truck stops as places where they collected the experiences and knowledge necessary for not only surviving a life on the road, but also, becoming a respected adult man. Chatting with colleagues over beer and food, they exchanged stories of travel that provided a deep source of knowledge for navigating police checkpoints, the unseen dangers seen on roads at night, road conditions, and alternative strategies for producing domesticity as they traveled. Above all, drivers associate domestic relationships at truck stops with a youthful masculinity that was acceptable because it was temporary. Like migrant laborers and traveling businesswomen during the colonial period, the main goal of a life on the road was to produce a settled life by bringing resources home. As men saved money for marriage and turned their resources toward long-term social security, the joys of their youth became too costly.

²⁴⁶ Rashidi Ramadhani, interview with author, 2 March 2012, Dar es Salaam, Tanzania

²⁴⁷ Regani Musa; Rashidi Ramadhani.

²⁴⁸ Jay Vogt, “Wandering: Youth and Travel Behavior,” *Annals of Tourism Research* 4 no. 1 (September/ October 1976): 25-42.

Drivers became mature by producing their own domesticity on the road. For many driving assistants, the first and most important skill they learned was to cook with the equipment they carried in the back of their cabs. By cooking and cleaning on the side of the road, drivers not only avoided the temptations associated with truck stops. They also were able to hoard their resources for home by leaving half of the cost of their travels with family before they departed.²⁴⁹ The most important strategy for producing mobile domesticity was to create social capital and networks of reciprocity across space. For instance, some men deployed their ethnicity by using “joking relationships” (*utani*) to forge ties in places where they were strangers. During the pre-colonial era, “joking relationships” connected distant communities along trade routes and, like a contract, provided a template for proper social and economic activity. In the context of post-colonial automobility, “joking relationships” allowed drivers to create secure bonds based upon social categories that had allowed trade and movement to occur for centuries. For example, in each town Juma Ramadhani visited, he would seek his *watani* through word of mouth, asking for a place to stay in exchange for a gift he would provide from his travels. After years of traveling along certain routes, he had created a dispersed social network that allowed him to travel in safely and in comfort.²⁵⁰ When old *utani* relationships were not available, drivers created social security and new type of *utani* by distributing goods. Even before acute goods shortages in Tanzania, drivers were able to leverage their central position within regional economies for places to stay and food to eat. By collecting and distributing goods that were rationed by a card system—such as salt, sugar, clothes, oil and salt—and regional delicacies

²⁴⁹ Mohamed Pallo, interview with author, 12 December 2012, Morogoro, Tanzania.

²⁵⁰ Juma Ramadhani, interview with author, 2 March, 2012, Dar es Salaam, Tanzania.

from their trips, men cemented relationships with families that they could call upon in time of need.²⁵¹

But wages did not always provide enough for drivers to produce the type of gendered adulthood they desired. A popular strategy was to use truck owners as patrons. In addition to transporting licit goods, companies in rural townships often needed drivers to transport contraband goods such as ivory, animal hides, or illegal agricultural commodities whose distribution was controlled by the government. Risk not only increased their salary, but also created reciprocal relationships between a driver and his boss that men felt they call upon in times of need. Take, for example, an oral tradition of driving in Morogoro, a town 80 miles west of Dar es Salaam, that I heard on several occasions. A driver and his boss were on the road to Dar es Salaam with a load of elephant tusks when their truck broke down. Normally, a driver with illegal goods could negotiate for passage with police officers he knew and trusted at a checkpoint; but a broken down vehicle full of contraband goods would be difficult for a police officer to let go. For this reason, the driver told his owner to flee, and that he would claim the ivory as his own and take the punishment. He only asked the owner look after his family. After three years in jail, the man returned to Morogoro to find his family living comfortably in their own house, and he subsequently received a compensation that he used to buy lorries for his own business.²⁵² For those who told the story, it was the archetypical example of power and patronage during the socialist era, pointing also to the opportunities that existed for them outside of official channels. Notions of legitimate or illegitimate commerce were not solely defined by the legal or illegal nature of activity, but by the ability to produce a settled life for themselves

²⁵¹ Mohamed Pallo; Regani Musa.

²⁵² Kanuti Jonas Mitali, Mohamed Pallo.

and their families. Though some regret their participation in these activities years later, as young men trying to build their lives, truck-owning patrons provided a network through which they could achieve gendered adulthood and the fundamentals of social security: a home and a family.²⁵³

The most common strategy drivers used to build their lives was to create their own economic networks by distributing goods out of their vehicles and homes. During much of the 1960s, drivers simply offered alternatives to markets that already existed because of their connections to economies in Central and East Africa. But after the nationalization of distribution in 1967, drivers offered an alternative to the consumption and distribution models provided by Tanzania's socialist state. Much of their business was in household staples such as sugar, salt, corn, toothpaste, and soap that were sold at Regional Trading Centers and Cooperative Stores (*maduka ya ushirika*) in amounts set by the state and based upon the size of a family. But they also offered styles of clothing that were not available domestically—especially women's clothes—and even provided an alternative to formal petroleum markets. Because these activities were technically illegal, most drivers were reticent to share details with me during an initial meeting. Having peered into drivers' economic activities through an interlocutor I had known for two years—who claimed “all” drivers created informal networks—the blatant lying in interviews was more frustrating than it was interesting. But when drivers opened up in second and third interviews about their roles in illicit trade, the difference in content between the first and the subsequent meetings helped me understand drivers' strategies for navigating landscapes of

²⁵³ This was mentioned in every interview with a driver. Kanuti Jonas Mitali; Mohamed Pallo; Raphael Juma Maliki, interview with author, 12 December 2011, Morogoro, Tanzania; Juma Ramadhani.

authority.²⁵⁴ In spite of framing their economic activities as “normal” and “necessary,” the ability to perform innocence was a critical skill for individuals who could find themselves in compromising situations.

Creating these economic networks required at least three steps. First, they needed goods to sell. For long-haul drivers who visited the Congo, Burundi, Rwanda, Uganda, Zambia, and Kenya, they procured items by simply shopping and bringing them across the border. But with a little “cleverness” (*ujanja*) drivers on domestic routes could also turn state regulated commodities from Tanzania’s formal market into parallel system of distribution that was not regulated by the government. The easiest item for drivers to distribute on their journeys was petroleum. Before their journeys, they drivers were allotted money for gas; as long as they went and returned as required, there were few questions asked about how they spent their money. Called “beating the snake” (*kupiga nyoka*) after the hose needed to suck petrol out of a gas tank, selling small amounts of oil to car owners and gas stations on their journeys helped supplement their salaries with minimal risk.²⁵⁵ But some government drivers took these activities to a new scale. With the assistance of a civil servant who provided official vouchers for petroleum, drivers obtained petrol at government pumps; they sold it on the road; and they shared their earnings with the civil servant and the pump attendant. Consider the narrative of a policeman in Tabora who escorted political figures, including President Nyerere. During our first interview, he vehemently denied selling oil, but later in the week, I asked him for the “real” (*halisi*) story:

Driver: First, just let me say that our salaries weren’t enough. When we got a trip, the bosses got and arranged everything, not the drivers. Now about the petrol: when we got a trip, we were allocated a bunch of petroleum but normal citizens were getting nothing; private car

²⁵⁴ Regani Musa.

²⁵⁵ Ali Issa; Abdallah Mtamira, interview with author, 8 April, 2012; Tabora, Tanzania;

owners didn't have any. So you get to a place where you are sleeping for the night. During the evening people come to you and say, 'We have a problem. We don't have any fuel. Can you give us 10 to 15 litres?' So you have empty pockets but you have just received an opportunity (*riziki*)—no one is around; and the boss is sleeping in a nice house. Our salary was low and our necessities high. So we sold the petrol. We received 100, 150 or 200 litres for a trip. So you look at your journey and figure out you will only use 70 litres. That means 30 to 70 are extra (in English); so you take a little for your own needs (*kujipongeza*—literally, to congratulate oneself). But you never took so much that you would arrive with an empty tank; otherwise, they would ask, 'What have you been doing with the car?'

Me: Where did you sell it?

Driver: Just like you would suspect. Any village you go to will have a fuel shortage. At this point you don't know to whom you will sell. Sometimes two or three people would come to you and you would end up selling to them. You know, the big men are helping themselves to good food and beer over there, and you can't even get a soda. As they sit and drink, you do your thing.

Me: How much did you sell for?

Driver: This changed depending upon availability. When there was a huge shortage, you could get a big price. But when there wasn't, you would just sell for a normal price. Just so you can help yourself and get a soda.

Idrissi: Was this normal? Were there lots of drivers who did this or just a few?

Driver: Completely, so much so that we drivers would talk amongst ourselves and ask, 'How many liters do you have 'extra' (in English)? 'I got forty.' 'Okay, some guy is coming, what do you say?' So you give him three or four litres. It wasn't just me; it was a normal thing. And those days a driver who didn't know how to sell petrol was not a driver. I'm not going to hide this: every driver, whether in the government or a parastatal, did this.²⁵⁶

Similar strategies were used to obtain large quantities of salt, sugar, and maize at Regional Trading Centers and government-sponsored stores. With the aid of a civil servant, drivers could get extra ration cards that they could use to cover their tracks. They picked up the goods at night and transported them to a region where they could get a higher price for the goods. Rice and corn

²⁵⁶ Suleman Haruna Mgunda, interview with author, 5 April 2012, Tabora, Tanzania.

shortages in Kenya and Zambia, for example, provided opportunities to make a large profit when domestic supplies were adequate.²⁵⁷

The next step was moving goods across borders and police checkpoints using what some drivers call the “ways of contraband” (*njia za magendo*). For some, these ways were actual roads that allowed them to avoid authorities; but for many others, these were strategies and networks that ensured their security as they broke the law. Small quantities of food—such as salt and sugar—and clothes were stuffed under the drivers’ seat and could be transported during the day as part of their regular routes.²⁵⁸ Larger quantities had to be hidden in the cargo and moved at night. Large sacks of corn and rice provided the perfect disguise for hiding t-shirts and sacks of sugar, salt, or soap. So too did *dagaa*, a dried fish moved in bulk from the lakes of western Tanzania toward the coast. “You put whatever you are moving below,” one driver described, “and you top it off with *dagaa*. The smell is strong and no one is going to search through it.”²⁵⁹ In spite of taking great care to hide items, drivers also downplay the threat posed by police and border patrol agents. Drivers who wanted to avoid a search greeted police officers or the border patrol and discretely passed them money. The amount depended upon the size of the cargo, ranging from 10 to 1,000 shillings in my interviews.²⁶⁰ If a search could not be avoided, bargaining ensued over the amount of illicit cargo drivers to be handed over. In this manner, drivers who frequented certain routes created relationships of reciprocity and exchange that reduced the risk of illicit activity. For one man, participating in *magendo* was the result of a

²⁵⁷ Salum Ede; Ramadhani Anzaruni Kiboko, interview with author, 16 April 2012, Kigoma, Tanzania; Abraham Mumba Rihani, 16 April 2012, Kigoma, Tanzania.

²⁵⁸ Jalalah Shabani, interview with author, 5 April 2012, Tabora, Tanzania.

²⁵⁹ Abraham Mumba Rihani.

²⁶⁰ Abraham Mumba Rihani; Jalalah Shabani; Salum Ede.

social network he had put in place for years as a driver. He “never had a problem on the road” transporting used clothes, girls skirts, and women’s wear from Kigoma to Arusha: “Before I started this business, I had lots of friends along the way. You give them some money or a beer, and there: you have a friend.”²⁶¹ In initial interviews, drivers toed the ideological line by speaking of a period of “state strength,” but as they opened up about their activities, networks of reciprocity emerged in which formal and informal, licit and illicit were not opposites, but complementary.²⁶²

Finally, goods were exchanged in two places under the cover of night. Because drivers were known for their central role in distribution, they were asked for items when they stopped at trucking stations, villages, or at hotels in urban centers. “Everyone knew drivers had things, they just had to be discrete (*kisirisiri*) about approaching you. Then you give it to them on the side (*pembeni*).”²⁶³ As evidenced by the police driver’s narrative, exchanges were grounded in a language of shared economic struggle. Consumers framed their requests in everyday, non-economic language by saying, “we have a problem” or “help me and I’ll help you” (*nisaidie nikusaidie*). In addition to disguising illicit activity, these strategies legitimized *magendo* as an activity of necessity and compassion among strangers. Goods that were not distributed along the route, or given to a truck owner, were taken home where they would be sold by word of mouth to interested customers. Most exchanges took place at night and were controlled by a driver’s wife. They were legitimized as family visits and took place in the security of the home.²⁶⁴

²⁶¹ Abrahim Mumba Rihani.

²⁶² Suleman Haruna Mgunda.

²⁶³ Salum Ede.

²⁶⁴ Saluum Abdallah, interview with author, 7 May 2012, Morogoro, Tanzania.

Drivers were not alone in creating *magendo* networks on the road. Across Tanzania, businesswomen used buses and hitchhiking as a means of acquiring goods they could sell out of their homes and at regional markets. Following a strategy their mothers and grandmothers had used during the colonial period, young women born in the 1940s and 1950s used trade in household items to influence the manner in which they matured as women. The key to their mobility after independence was a network of buses put in place by the socialist government known as KAMATA. These allowed women to travel to places with free markets (*biashara huru*) such as Kenya and Zambia, where they procured goods and packed them into their suitcases. Before they reached the Tanzanian border, they gave the driver money for safely navigating any checkpoints. Others worked within domestic markets. In 1961, Mariamo Seiff, a recently widowed woman living in Kigoma, sold the gold jewelry given to her as a wedding gift in order to buy large quantities of cloth from a factory in Mwanza, a city on Lake Victoria 18 hours away by bus. From Mwanza, she traveled across the country to her uncle's home near Kariakoo, the central market in Dar es Salaam, where she stayed until she was out of cloth. Though some women did not travel far from home, they still played important roles in *magendo* networks. In Kigoma, Mariamo Seiff met canoes bringing used clothes across Lake Tanganyika from Burundi and then distributed them at a bus stop to drivers and passengers who took them to markets where access to external goods was limited.²⁶⁵ Few women reported problems with authorities, one recalling that the worse thing she encountered was an officer asking for a bribe by saying, "Help me and I'll help you" (*nisaidie, nikusaidie*). When I asked whether she felt the

²⁶⁵ Mariamo Seiff, interview with author, 19 April 2012, Kigoma, Tanzania.

need to hide her activity for fear of being caught, she said no one was caught and that their activities “were not a secret.”²⁶⁶

Like drivers, women’s mobility and business activity was about producing a settled life in a manner they could control. For most, doing business on the road was a temporary strategy rarely lasting longer than two years. But they also stress the importance of travel to their long-term social security as they became wives and mothers. In particular, divorced and widowed women took to the road to expand the financial resources and networks they could use before their children aged; without a husband’s salary and labor, travel allowed women to create an economic foundation they could use for the rest of their lives. It was also not uncommon among married couples who viewed women’s mobility as a means to increased financial security in difficult times. Zenabu Saluum, who identified herself as a farmer in Tabora, convinced her husband that the business opportunities opened through travel were mutually beneficial. At first, she gave all of her earnings to her husband, but she later began to hide portions of earnings in tin cups around the house for her own use.²⁶⁷ Like men, women had to protect themselves and their reputations on the road. To do so, some used pseudonyms, even when traveling with their neighbors. A woman in Tabora recounted that she and her travel partners, who also lived near her on the same street, cultivated an aloofness that was central to their social and financial security. For men, producing domesticity on the road required a well-equipped cultural toolkit

²⁶⁶ Mariamo Mwanagayo, interview with author, 18 April 2012, Ujiji, Tanzania.

²⁶⁷ Zenabu Saluum, Interview with Author, 13 August 2012, Tabora, Tanzania.

with expansive social ties; but for many women, mobile domesticity required a type of unseen or masked identity they could put on and take off.²⁶⁸

The state considered this a capitalist form of economic sabotage, stating in 1982 that “theft of public property has almost become the order of the day.”²⁶⁹ It followed with a series of crackdowns and arrests from late 1982 to April 6, 1983, a day in which Nyerere tried to place “saboteurs” outside a socialist family concerned with egalitarian nation building.²⁷⁰ But drivers and businesswomen interpreted their activities differently. Like the police narrative above, they justified their activities by contrasting their own livelihoods with those of individuals in positions of power. They did not use the language of economic “sabotage” employed by the state, but rather cited insufficient salaries, growing needs at home, and the exploitative nature of Tanzania’s political class to legitimize technically illicit activity.²⁷¹ “People like us can’t be saboteurs; you have to have a lot of money to be a saboteur. We were just workers. And because of how bad things were, we were helping citizens,” one driver remarked.²⁷² In other words, illicit activities not only helped drivers and businesswomen create settled lives at home, but also facilitated the distribution of basic goods that citizens needed for building their own lives. Though illegal and punishable by three years imprisonment, both groups legitimize their

²⁶⁸ Maria Pimo, interview with author, 13 August 2012, Tabora, Tanzania.

²⁶⁹ “Party and the State,” *The Daily News*, 14 October, 1982.

²⁷⁰ This was the largest national crackdown to date. Regional measures had been taken in places like Mwanza since 1980. See file: E 20/14, Accession 15, Box 17, Mwanza Regional Archives.

²⁷¹ Most informal economy analyses categorize activity by “crime”. Following Basil Owomero, I question accepting state-based categories of licit and illicit activity. See: Basil Owomero, “Crime in Tanzania: Contradictions of a Socialist Experiment,” *International Journal of Comparative and Applied Criminal Justice* 12, no. 2 (Winter 1988): 177-189.

²⁷² Salum Ede.

distributive activities by linking them to important processes of social reproduction, including: cooking and cleaning; clothes for school and weddings; and commodities of style and status like cigarettes and stylish clothes. State language framed *magendo* as an exceptional type of activity, but interlocutors emphasize the normality of their actions, the variety of actors it involved, and its importance to daily life as formal markets lost legitimacy. They also normalized their activities by distancing themselves from a language of official business. Instead of “selling” (*mauzo*) goods—an interview mistake that took me months to correct—they “exchanged” (*kubadilishiana*) items or “helped one another” (*kusaidiana*), activities that fit neatly into broader understandings of *ujamaa* not controlled by the state. As a result, what the state considered sabotage one driver called a “blessing” and another described this way: “If you get the chance you have to do it. You have transport and you have money for your trip. You have to do it because it will give you a chance to live well.”²⁷³ *Magendo*, then, was a rational economic activity that met the needs of a variety of citizens in a manner that state-led modernization did not.²⁷⁴

From a threat to social and economic health for Tanzania’s socialist officials, East Africa’s mobile populations became a pressing physical danger to public health in the 1980s. With the spread of HIV/AIDS in the early 1980s, discourse about mobility and authority shifted from abstract calculations about economic health to the physical bodies of moving men and women. Like colonial officials, national and international authorities did not recognize the diverse strategies drivers deployed for producing domesticity on the road and settled lives at

²⁷³ Salum Ede.

²⁷⁴ Maliyamkono and Bagachwa’s study found that between 26% and 41.5% of state cooperative stores were engaged in some form of informal activities (p. 167).

home. Instead, drivers were defined in public health narratives through stereotypes of hypersexuality and irresponsible social and economic behavior.²⁷⁵ Public health experts even had the statistics to prove it. By drawing blood at truck stops and along roadside communities, international public health experts found over 30% of drivers and service workers infected with HIV/AIDS. But like Orde Brown in the 1920s, their methods only allowed them to see a very partial picture. Because truck stops and roadside communities dominated the research field, the statistics did not account for individuals who created mobile domesticity using a strategy other than sex. Nor did officials consider the context in which their solutions would be received. Just as public health experts condemned drivers' virulent masculinity, their solution was to perpetuate it through the introduction of condoms.

Driver narratives of HIV/AIDS do not mirror the rupture of public health histories, but instead place the disease within the longer temporality of driving and mobility in East Africa. HIV was dangerous, and in particular, the slow speed of its manifestation marked its distinction from previous diseases drivers had encountered and learned to live with. And yet, it was also an illness that like any other required drivers to tread carefully; to change habits if needed; and to pool information from a variety of sources. As they discuss the changing context of their careers during the early 1980s, drivers mourn the loss of their friends by counting the number of colleagues who died of HIV/AIDS on their fingers. But they also emphasize that being a *mwoga* was to recognize the shifting moral and physical landscapes of road travel in the region. Death

²⁷⁵ J.W. Carswell, G. Lloyd, and J. Howells, "Prevalence of HIV-1 in East African Lorry Drivers," *AIDS* 3 no 11 (Nov. 1989): 759-61; L.R. Barongo, M.W. Borgdorff, F.F. Mosha, et al., "The epidemiology of HIV-1 infection in urban areas, roadside settlements, and rural villages in Mwanza Region, Tanzania, *AIDS* 6 no. 12 (Dec. 1992): 1521-8; The Synergy Project and University of Washington Center for Health Education and Research, "Putting on the Brakes: Preventing HIV Transmission Along Truck Routes," http://pdf.usaid.gov/pdf_docs/PNACW331.pdf.

was a harsh consequence for not being a “coward”, especially for young drivers who were still learning about the world when the disease emerged. But it was also a consequence that drivers had thought about and discussed in stations and as they traveled with their “turn boys”. The great irony of HIV/AIDS interventions is that the distribution of condoms provided a technology for perpetuating an element of automobility that was unacceptable to most drivers. Driving was about recognizing and reacting to a constantly shifting landscape; and it was about producing domesticity on the road in order to create a settled life at home for the duration of one’s life. Instead, condoms allowed a type of masculinity to continue and even thrive with the sanction of national and international authorities.²⁷⁶ This narrow focus on physical bodies overlooked the social basis of adulthood among drivers and the strategies they used to create a long-term, settled life at home.

CONCLUSION

As authorities have recognized for decades, mobile populations are difficult historical actors to pin down or control. In this chapter, I have argued that this characteristic of driving, migrancy, and business is precisely what makes them analytically fruitful for reconsidering cultures of authority, mobility, and gender in Tanzania during the twentieth century. Tanganyika’s system of labor migration not only frustrated officials’ desires to know, categorize, and to govern. They also reveal sources of knowledge and infrastructure through which mobile laborers could produce domesticity on the road and take advantage of colonial wage labor. Comparably few in number, colonial driving became an avenue for young men to transform family connections or work reputations into social and technological mobility. By doing so, they became part of a

²⁷⁶ Regani Musa; Kanuti Jonas Mitali.

select group of colonial employees who, ironically, were often disparaged by colonial authorities for their perceived lack of skill and reliability. This disjuncture between skill and status bothered colonial officials but never registered as a problem for the African employees or manual laborers who did not internalize colonial hierarchies of skill and authority. Instead, they recognized their position as obligatory passage points in colonial projects and used their profession to make claims on better positions as colonial citizens, often being among the first to propose ideas of colonial equality that were later instrumental in formal anti-colonial efforts after the Second World War.

The transition to independence is often laden with the language of rupture and newness, and this is the narrative we get if we privilege state generated ideologies. But for drivers and traveling businesswomen, there was much continuity not only with the colonial period, but even with the types of relationships and social categories that were critical to economic life during precolonial times. While circulating goods and people was at the heart of the government's modernization schemes and concepts of economic health and social order, paying attention to the historical processes through which goods and people moved reveals economic activities and moral economies that cannot be explained through state based modernization projects. Nyerere's socializing government crafted a moral language that was supposed to set the terms for proper social and economic activity. Drivers, however, found plenty of wiggle room between the ideological vanguard of the state and the moral economies they passed in and out of through a life on the road. Once again, this disjuncture bothered authorities much more than it did drivers. Instead of fussing over language about economic sabotage, drivers focused on cultivating the social and cultural toolkits necessary for navigating a life on the road and creating a settled life at their homes. Not unlike generations of colonial drivers, they were less affected by government

ideology than by cultures of gender and age and by varieties of domesticity that could be the difference between life and death.

The economic activity and cultures of gender and authority visible in these groups are important for three reasons. First, they show the need to reconsider studies of cosmopolitanism in African history and in scholarship more broadly. Whether migrants in New York or laborers on the Swahili Coast, studies of cosmopolitanism have focused on the uptake of trends in the core by those who reside in or come from peripheries. This core-periphery approach merely replicates the binaries attending studies of modernity and development in historical scholarship. Instead, this chapter shows that drivers cultivated cosmopolitan identities by suturing together the types of places associated with cosmopolitanism with the out-of-the-way places they had to pass through and stay at in order to move both goods and ideas. Drivers consider themselves modern and industrial men, and they are able to list differences in vehicle design based on make and year; but even more important than these technological details, was a type of a deep knowledge that reached back into the region's past to provide drivers with useful knowledge for avoiding social and physical danger. In sum, post-colonial automobility required a cultural toolkit that defies easy categorization between modern and traditional or core and periphery.

Second, the economic activities of drivers and businesswomen provide a new way to understand economic development, especially during the era of independence. Much historical scholarship has focused on states and elites as the most important actors in modernization programs, but drivers and businesswomen played important roles in the circulation and distribution of goods, especially after the 1960s. This is not to argue that the informal replaced the formal, but instead, to draw attention to the porous boundaries and complementary nature of licit and illicit economic activity. Furthermore, it provides a basis for uprooting discourses of

economic and social health from the state and the development apparatus. Finally, these careers and lives provide a way to understand the state from the bottom-up and to evaluate its spatial and ideological limits. Replacing language with historical actions helps balance the focus on African elites and political actors, emphasizing instead the ways communities elided official discourse, changed the meaning of ideology, or as drivers often did, used it as a platform for bullshitting on the road.

CHAPTER 3—HEROES OF THE ROAD: RACE, GENDER, AND THE POLITICS OF
MOBILITY IN TWENTIETH-CENTURY TANZANIA²⁷⁷

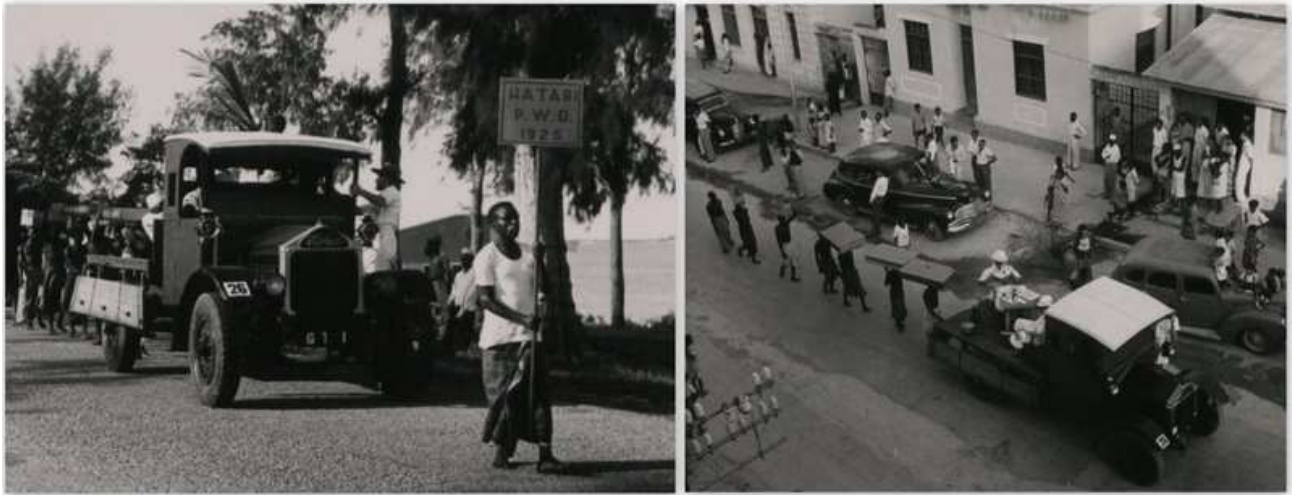


Figure 1.1: The comedic “safari Bwanas” float of 1953 featuring GT 1, British Tanganyika’s first government vehicle.²⁷⁸

In a 1953 parade celebrating Queen Elizabeth II’s coronation, a float featuring a government lorry and six African porters recalled a period of British rule when “men were men and Africa was very dark.”²⁷⁹ Inspired by the early work of the Public Works Department (PWD) in the mid-1920s, the float was introduced to bystanders with a sign stating, “Danger P.W.D.,” referencing the department’s task to conquer African nature by putting a modern colonial infrastructure in its place. The “safari Bwanas” featured the government’s first registered vehicle, GT 1, a 1923 two-ton Albion lorry, carrying two white men in safari gear. Pictures show the safari gentlemen reading, lounging, and drinking whiskey in the truck’s bed along with a “giant

²⁷⁷ A version of this chapter will appear in August 2013 issue of *Africa: Journal of the International African Institute* 83 (3).

²⁷⁸ The National Archives UK, “Africa Through a Lens: Tanzania”:<
<http://www.flickr.com/photos/nationalarchives>>. Pictured on the left is, CO 1069-160-66, and CO 1069-160-74 is on the right. Photos used with permission.

²⁷⁹ “Carnival Procession is Weeks Climax,” *The Tanganyika Standard*, 8 June 1953.

wooden sword in hand to ward off hostile tribesmen”.²⁸⁰ Following the lorry are six African men dressed as porters wearing only cloth around their waists. The first three carry oversized books on their heads, while the others cart the “essentials of life” for touring colonial officials: whiskey, baked beans, and quinine. This “delightful piece of pure fun” helped the PWD win an award for the coronations most humorous floats.²⁸¹ Whatever laughter it elicited from the parade’s African, Asian, and European bystanders, the exhibition mocked African labour and presented an ideal of colonial order that never existed on Tanganyika’s roads.

Using the biographies of two African drivers, this chapter explores how moving bodies and technologies provoked discussions about social health and political order in colonial and independent Tanzania. It begins with the life of Vincent Njovu, the African man who drove GT 1 (the Albion lorry pictured above) from 1924 to the early 1940s. His memoir, *Dereva wa Kwanza Tanganyika* (*The First Driver of Tanganyika*—hereafter, *The First Driver*), describes the driver’s ability to undermine colonial hierarchies of race in which Africans were deemed incompatible with European cultures of mobility and technology. Seizing on the description of GT 1 as the “love of his heart” (*kipenzi chake cha moyo*), I narrate Njovu’s life as an unlikely love story between an African colonial employee and an ideal colonial machine (Njovu 1980: 40). His life illustrates that tools of empire were not always triumphant and that in the hands of African colonial employees, they could be used to undercut the logic of imperial rule from within structures of power. The second section uses a series of memoirs written by Tanzania’s most-renowned female driver, Hawa Ramadhani, to examine the gendered structures of mobility and

²⁸⁰ The National Archives UK, “Africa Through a Lens: Tanzania”:<
<http://www.flickr.com/photos/nationalarchives>>. Pictured on the left is, CO 1069-160-66, and CO 1069-160-74 is on the right.

²⁸¹ “Carnival Procession is Week’s Climax”.

technology that accompanied post-colonial modernization. Ramadhani used automotive skills learned from nuns in the 1940s to build a reputation as Tanzania's most respected driver, eventually becoming Dar es Salaam's first female bus driver and the heroine of a fictional children's book, *Hawa the Bus Driver*. Though some accused her of prostitution, her career on rural roads and urban bus routes provided an alternative to state-led visions of modernization that not only privileged men's labour and mobility, but also predicated it upon women's confinement to the home and exclusion from skilled work. Together, the narratives reveal the importance of mobility and technology to social and political imagination in twentieth-century Tanzania. While Africa's roads are often linked to social decline and marginality, in Njovu and Ramadhani's lives they feature as spaces of innovation where two unlikely heroes contested hierarchies of race and gender through the practice of everyday life.

The Swahili words for hero or heroism, *shujaa* and *ushujaa*, are used in each of the narratives, but the designation of heroes of the road is largely my own. The term serves two purposes. First, it alludes to the production of knowledge in the memoirs and biographies used in this chapter. Published in 1981 during Tanzania's socialist period, *The First Driver* is a post-colonial form of narration Thomas Geider calls a "*habari*" text for its ability to inform readers about unsung cultural heroes instead of pre-colonial rulers or the political figures associated with African nationalism.²⁸² Using a recognizable Swahili lexicon of socialism, the publishers celebrate the driver's ability to game a capitalist (*ubepari*) and imperialist (*ubeberu*) system of rule by defying colonial categorization and by using a tool of empire for his own benefit.

Ramadhani's personal papers, written by the driver in the early 1990s, situate her success against

²⁸² Thomas Geider, "The Paper Memory of East Africa Ethnohistories Written in Swahili," in *A Place in the World: New Local Historiographies from Africa and South Asia*, ed. by Axel Harneit-Sievers (Boston: Brill Academic Publishers, 2002), 272-273 and 276-277.

the challenges she faced as an automobile woman from the 1950s through the 1980s. In the main texts used below, “The Life and Development of Hawa Ramadhani” and “The Life of the First Women to Be a Driver in Tanzania,” Ramadhani distinguishes herself from her male colleagues and the association of career driving (*udereva*) with post-colonial discourses of social and economic decline, emphasizing instead her ability to embody alternative forms of development through a life of transgressive mobility. More than self-aggrandizing narratives, these sources take us away from the concerns of political authorities evidenced in the opening vignettes to the actions and thoughts of two drivers whose everyday practice of mobility challenged established norms of social health and political order. By doing so, these sources not only provide a glimpse at the “underside, or the obverse, of the better known face of social and political history in Africa.”²⁸³ They also bring into focus the historical possibilities generated by individuals who modeled alternatives to lived realities when the direction of structural change was uncertain.²⁸⁴

Second, thinking about drivers as heroes of the road allows us to reconsider the politics of mobility in African history, namely the manner in which African movement is so often presented as unnatural, disconcerting, or as an indication of social crisis and decline.²⁸⁵ As seen in the “safari Bwanas” float pictured above, it is impossible to talk about whose mobility counts and whose does not without analyzing perceptions of Africa as backward place in need of European

²⁸³ Karin Barber, “Introduction: Hidden Innovators in Africa,” in *Africa’s Hidden Histories: Everyday Literacy and Making the Self*, ed. idem (Bloomington: Indiana University Press, 2006), 18; Dorothy Hodgson and Sheryl McCurdy, “Introduction: ‘Wicked’ Women and the Reconfiguration of Gender in Africa,” in *“Wicked” Women and the Reconfiguration of Gender in Africa* (Portsmouth, NH: Heinemann, 2001).

²⁸⁴ Frederick Cooper, *Colonialism in Question* (Berkeley: University of California Press, 2005), 18.

²⁸⁵ I follow Tim Cresswell’s definition of mobility as the “entanglement of movement, representation and practice” in, “Towards a Politics of Mobility” (2010: 160).

technological intervention. In fact, tackling the long history of road transport in Africa forces one to confront a double marginality in which both mobility and technology fuel perceptions of social crisis, of passivity in the face of external forces, or present an underside to modernity in which Africa is incompatible with global standards of change. Thinking about drivers as heroes of the road creates a different set of expectations about movement and historical forces in African history. In contrast to perceptions of African mobility as an unnatural practice or a symptom of decline, speaking of drivers as heroes builds upon David William Cohen's recognition of movement as a "central element in African social structure and process" and an integral part of African political and historical imaginations.²⁸⁶ It also underscores what Tim Cresswell identifies as the "transgressive potential of differentially embodied mobilities" for challenging lived realities and for offering alternatives to the status quo.²⁸⁷ This does not occlude arguments made by other scholars about the dangers of motor transport or the physical and spiritual risks of a life on the road. Instead, it shows how a space associated with forced labour, physical danger, and social decline provided a stage on which two unlikely individuals could become heroes by exhibiting different ways to live in changing worlds.

RACE, LOVE, AND THE TECHNOPOLITICS OF COLONIAL MOBILITY

W. Fryer's 1931 report and the "safari Bwanas" float of 1953 were products of the way Europeans had constructed knowledge about Africa since the mid-nineteenth century. To

²⁸⁶ David William Cohen, "Doing Social History from Pim's Doorway," in *Reliving the Past: The Worlds of Social History*, eds. Olivier Zunz, David William Cohen, et al (Chapel Hill: University of North Carolina Press, 1985), 214.

²⁸⁷ Tim Cresswell, "Embodiment, Power and the Politics of Mobility: The Case of Female Tramps and Hobos," in *Transactions of the Institute of British Geographers* 24 2 (1999): 176.

explorers “opening up” Africa or District Officers on tour, mobility and travel writing (later known as “safari reports”) were constitutive acts of imperial rule through which Africa could be made knowable, governable, and transformable as part of Europe’s civilizing mission. More than a means to an end, colonial mobility was also a representative act through which Africa became a peripheral place in need of Europe’s technological assistance. Whether traveling on foot, by car, or being carried by porters, traveling officials and missionaries used observations from their daily acts of movement to construct discourses of racial difference and to justify imperial intervention.²⁸⁸ They cited as evidence a lack of transport infrastructure, the reaction of Africans to European technology, and most importantly, the problem mobile Africans posed to the transformation of colonial societies. As a constant threat to imperial designs for social and economic transformation, East African cultures of mobility were linked to various forms of social malaise, including slavery, criminality, the spread of disease, and “detribalization,” a synonym for colonial social disorder often followed by the “sophistication” Fryer observed on Dar es Salaam’s streets. This section replaces colonial representations of movement and social order with a love story between Tanganyika’s first African driver, Vincent Njovu, and a perfect colonial machine, his lorry GT 1.

²⁸⁸ Examples are numerous. For published examples about Tanganyika, see: Major G. St. J. Orde Browne, *Labour Conditions in East Africa* (London: His Majesty’s Stationary Office, 1946); Elspeth Huxley, *The Sorcerer’s Apprentice: A Journey Through East Africa* (London: Chatto and Windus, 1956); William J. W. Roome, *Tramping Through Africa: A Dozen Crossings of the Continent* (London: A&C Black Ltd., 1930). These representations of Africans are prevalent in *safari* reports published by the East African Royal Automobile Association from the early 1920s (accessed at the Mott Collection at London Science Museum Library and Archives, Wroughton, United Kingdom) and in discussions of migrant labour by colonial officials in files at the Tanzania National Archives, including: “Station Rest Camps,” TNA 10969; “Spirillum Fever in Tanganyika Territory,” TNA 10036/II; “Annual Report Dar es Salaam 1924,” TNA 1733/26.

As tools of colonial social engineering, roads and motor vehicles were supposed to transform African economies and societies by carrying the civilizing mission throughout Tanganyika. Here, the “safari Bwanas” float, in spite of its comedic intentions, accurately depicts imperial aspirations for change: white men and their machines would bravely lead the construction of colonial modernity with docile and obedient Africans in tow. Instead, as tools of empire, roads and cars revealed the contradictions at the heart of colonial technopolitics—namely, metropolitan technologies were not only insufficient partners for effecting large-scale change; their introduction also offered African colonial employees like Njovu unique opportunities for social mobility as well as the skills and tools to contest racial hierarchies of technology and movement.²⁸⁹ As a rare example of African travel writing, Njovu’s memoir replaces representations of African marginality generated by traveling Europeans with stories of technological competence, social innovation, and love. Like the best love stories, this one has a happy ending, but before we get there, we must examine why Njovu, like any African man or woman in the early twentieth-century, was in an unlikely position to become a hero of the road.

Already wary of African cultures of movement, colonial officials used the introduction of automobiles in the late 1910s and early 1920s to reinforce imperial hierarchies of race and technology. Once again, Africans were considered passive and incapable partners in efforts to transform Tanganyika into a modern colony. In the 1920s and 1930s, the articulation of this racial identity occurred during “motor trials” and motor *safaris* conducted by British officials and European residents on the colony’s rough and narrow roads. For Tanganyika’s new

²⁸⁹ I follow Gabrielle Hecht’s definition of technopolitics as “the strategic practice of designing or using technology to constitute, embody, or enact political goals” (Hecht 1998: 56-57). On technology and imperialism more generally, see Daniel Headrick (1981) and Michael Adas (1989). Luise White (2000) exposes some of the limits to “tools of empire” through oral history and rumor in East and Central Africa.

administration, these journeys were a practical tool aimed at mapping the territory, cutting new road routes, and setting up an administrative framework in areas previously unreached by the government.²⁹⁰ More importantly, they were an act that stabilized hierarchies about whose technology and movement mattered most. Travel writing from this period glorifies both the spirit and technology of European motorists while portraying Africans through two highly racialized tropes. The first emphasized technological simplicity and backwardness, not only describing Africans as “terrified” of automobiles, but also including pictures of naked women and handcrafted wooden objects as supporting evidence of racial difference. An issue of the Royal East African Automobile Society’s annual publication, “The New Southern Equatorial Route: Nairobi to Lake Nyasa,” provides two such examples through picture and caption. One picture shows “native dancing girls” from central Tanganyika wearing “wisps of grass.” Though the girls “much objected to being photographed,” the society used their picture to establish cultural difference between colonized and colonizer. Farther down the road, the automobile society encountered a “witch doctor” as they waited for a bridge to be constructed. Standing on the hood of a car, this man danced, sang, and played a fiddle. “His songs must have been very funny or very improper as they kept our workers in peals of laughter.”²⁹¹

The second trope presented Africans as stationary, their role being to assist in the production of colonial automobility by pushing vehicles out of the mud or selling refreshments

²⁹⁰ “Royal East Africa Automobile Association,” TNA 1072/AB/1069; “Provincial Commissioner’s Reports: Central Province 1928-1930” TNA Library; “Annual Report Manyoni District 1927,” TNA Library.

²⁹¹ Royal East African Automobile Association, “The New Southern Equatorial Route: Nairobi to Lake Nyasa,” (Nairobi: The East African Standard Ltd., 1924). Accessed at the London Museum of Science in Wroughton.

on the side of the road, but not partaking in it actively.²⁹² These stereotypes even made their way into *The New York Times*, presenting eastern Africa as a primitive space to be conquered by adventure-thirsty motorists:

Some of the roads have been pushed right through the heart of the tropical jungle. Herds of giraffe are frequently seen and many varieties of antelope abound. Zebras, wildebeests, lions, rhinoceroses, and elephants made the road building exciting ... Much ingenuity was shown by the engineers in making the roads. Wherever possible, old paths and elephant trails were used as a base ... Bridges had to be built. Many of them at present of bamboo ... Secretary Galton-Fenzi expresses complete confidence in their strength, but admits they feel insecure, as the bridge sways, and the sensation while crossing is like motoring over a carpet stretched in midair. The automobile in a new country pushes its nose through territory that seems impassable, bringing the conveniences of civilization. The natives are terrified at first, but within a day or so they are filling the tank and holding out one hand for a tip. At present they are providing tea and bread and butter for tourists in their little refreshment stands, but soon, if we are to believe Mr. Galton-Fenzi, there will be shacks devoted to hot dogs and coffee.²⁹³

In this manner, Tanganyika became a specific kind of auto-mobile space based on global notions of race and mobility. As they filled gas tanks, fed hungry motorists, or completed the scenic portraits of African landscapes by their mere presence, Africans were visible to motorists as inferiors whose race was incommensurate with a culture of automobility.²⁹⁴ However, the introduction of a unique colonial machine helped set in motion a different story about race, mobility and technology on Tanganyika's roads.

Long before GT 1 (pictured on page 1) was used to celebrate the Queen's coronation, its arrival Tanganyika in 1924 provided a technological answer to the challenges the Transport

²⁹² "Motoring in East Africa," *The New York Times*, 15 March 1927; "The New Southern Equatorial Route: Nairobi to Lake Nyasa," Royal East African Automobile Association, December 1924, accessed in the Mott Collection at London Science Museum Library and Archives, Wroughton, United Kingdom. See also Clarsen and Freed on this topic.

²⁹³ "Motoring in East Africa," *The New York Times*, 15 March 1927.

²⁹⁴ See also: "Development of Motor Road in East Africa—Motor Car Expedition of Mr. Galton Fenzie; Motor Journey from Cairo to the Cape," CO 822/12/19, BNA.

Department confronted on a daily basis. From its inception in 1919, the department set colonial rule in motion by carrying the material burdens of imperial administration and measured progress in tons of things hauled. When tonnage increased from 10,297 tons per year in 1921 to over 15,500 in 1925, the transport officer highlighted tangible benefits of colonial rule his vehicles distributed throughout the territory. For the PWD, the department's vehicles materialized colonial power throughout Tanganyika by building new roads, houses, and administrative outposts. At the Health and Sanitation Department, cess-lorries worked tirelessly transporting human excrement from Dar es Salaam's new European housing complexes in order to make the city a more sanitary, and thus, more modern, place.²⁹⁵ But this progress also revealed the limits of the department's technological capacity. Formed with vehicles that survived Britain's war with Germany in East Africa, the department struggled to keep its fleet running, let alone meet the rising haulage demands of the early 1920s.²⁹⁶ None of the its aging vehicles fulfilled the two ideals of the perfect colonial vehicle—to be both strong and cheap.²⁹⁷ Even vehicles specifically designed for "tropical" Africa's harsh motoring environment, the "road-less" lorries tested in East Africa by British car manufacturers, failed to fulfill the colonial dream for cheap, reliable, and "road-less" transport.²⁹⁸ Instead, the government was forced to hire 30,000 porters per year to keep its vision for colonial change in motion. More than

²⁹⁵ "Annual Report Transport Department 1926," TNA/3046/20. See also: "Cess Emptying Services," TNA 20/39.

²⁹⁶ "Annual Report Transport Department 1923," TNA 1733A/3/48. The transport officer explained in his 1924 annual report that the department struggled to keep 50% of its 36 vehicles operating.

²⁹⁷ "Annual Report Transport Department 1924," TNA/1733A; "Annual Report Transport Department 1925," TNA/1733A/5/56.

²⁹⁸ "Mechanical Transport: Development and Experiments," TNA 12014; "Road Transport Unit," TNA 22802.

compromising its rhetoric about African mobility and the civilizing mission, this recourse to portage was expensive and eventually exposed the government's inability to produce African labour for even its most basic needs.²⁹⁹

Only one lorry stood out as a vehicle durable and flexible enough to meet the demands of colonial administration in Tanganyika. Imported from Scotland in 1924 to haul European excrement in Dar es Salaam, the 1923 two-ton Albion was the first new government car to arrive in the colony and proved to be the ideal vehicle for the territory. This Albion, registered as GT 1, looked and acted like any other effective colonial lorry, but hidden under the hood was a paraffin carburetor that turned GT 1 into a special colonial technology.³⁰⁰ Designed in the early 1900s, paraffin carburetors allowed engines to be powered with kerosene instead of motor spirits. Because kerosene imported into Tanganyika at half the price of motor fuel and was available in larger quantities, this carburetor made the two-ton Albion a perfect vehicle for the frugal administrator.³⁰¹ Cost effective at only 51 cents per mile or 25.5 cents per ton, this Albion model quickly became the government's most common vehicle—with 16 by 1926—and it was the only type of car dispatched by personal order of the Governor to the colony's most important construction projects. A colonial hero in its own right, GT 1 received the honor of starring

²⁹⁹ "Transport—Motor Lorries in Substitution for Porters," TNA 69/41/1; "Annual Report Transport Department 1926," TNA/3046/20. British officials estimated one railway steamer was equivalent in power to 13,000 porters. The relative cost of laying tracks forced administrators to back away from a comprehensive rail strategy. See *Tanganyika (German East Africa)* (London: H.M. Stationery Office, 1920), 40-43.

³⁰⁰ "Annual Report Transport Department 1924," TNA/1733A.

³⁰¹ Government of Tanganyika, *Tanganyika Territory Blue Book for the Year ended 31st December 1923* (Dar es Salaam: Government Printer, 1923), 117; "Annual Report Transport Department 1924," TNA/1733A. From 1921 to 1924, kerosene averaged a price of .056 British pounds per gallon and motor fuel .16 pounds. Tanganyika imported kerosene directly from the United Kingdom, but petroleum was largely purchased from Kenya.

alongside the Safari Bwanas in the Queen's coronation parade in 1953. But it was also an "undisciplined technology" that defied its intended purpose by creating Tanganyika's first African driver and our first hero of the road.³⁰²

Vincent Njovu was one of nine Africans hired by the Transport Department in 1924, but he was the only one assigned to GT 1, making him the colony's first African driver. His biography, *The First Driver of Tanganyika*, begins in southwestern Tanzania during the Maji Maji rebellion of the early twentieth-century. Njovu was only a child at the time, but the conflict between Africans and German colonists deeply impacted his life and worldview. In particular, Njovu mentions the ineffectiveness of local knowledge and technology against German power. Maji Maji soldiers claimed their medicine would turn German bullets into water, but the result for Njovu's family was violence and displacement. Sensing the powerlessness of Africans against the European administration, Njovu joined a German mission school near his home in Peramiho.³⁰³ Life at the school was difficult, violent, and also placed the child in a precarious social position. "Some saw African mission workers or servants as fortunate and respected them for being close to European knowledge," he explains. "Others despised them as people who betrayed African ways."³⁰⁴ Despite this ambiguity, Njovu passed each level at the top of his class, eventually earning a rare opportunity to enter secondary school in Dar es Salaam. In 1912, the future driver and his school colleagues set out for Dar es Salaam with four porters who

³⁰² Bruno Latour, "When Things Strike Back: A Possible Contribution of "Science Studies" to the Social Sciences." *British Journal of Sociology* 51 (2002): 116.

³⁰³ Vincent Njovu, *Dereva wa Kwanza Tanganyika* (Dar es Salaam: Tanzania Publishing House, 1981), 1-12.

³⁰⁴ *Ibid.*, 4.

carried their food and guided them to the railway at Kilosa.³⁰⁵ Njovu was impressed that these men used an oppressive system like portage to become the most popular (*maarufu*) mode of travel in Tanganyika.³⁰⁶ As he told this story to the editors of Tanzania Publishing House in the late 1970s, perhaps he saw the accomplishments of these porters as analogous to his own career as a colonial driver.

At Kilosa, the young boys slept for a night before boarding a train for the first time. Njovu wondered to himself: “How can these two small metal strips carry something that can hold so many people? The idea of a big machine sliding across metal was hard to believe.”³⁰⁷ Before leaving, the District Commissioner gave them three rupees, “a lot of money in those days,” equivalent to the annual tax of an adult or food for 10 days. Even with the money in hand, neither Njovu nor his colleagues wanted to get on the train. Once inside the rail car, he said his heart pounded like an Ngoni drum and that all the boys were so scared they forgot to wave goodbye to the District Commissioner as he waved to them. It took half of the journey—up to Morogoro—for the boys to calm down and enjoy the ride. They arrived in Dar es Salaam after two days. “During this time, the city of Dar es Salaam had no cars and not a single bicycle ... The way to get around was to walk, except for rich people, who could travel in rickshaws pulled by Swahilis. Even the governor traveled in this way. Shortly thereafter, the governor switched to a horse and buggy, a type of mobility that Njovu remembers as the talk of the town.”³⁰⁸

³⁰⁵ *Ibid.*, 8-9.

³⁰⁶ *Ibid.*, 10-12.

³⁰⁷ *Ibid.*, 10.

³⁰⁸ *Ibid.*, 14.

School life in Dar es Salaam was similar to Njovu's experience in Peramiho. He accepted his subservient place within the colonial bureaucracy, and its violence, knowing that his perseverance would be rewarded with a prestigious job as a clerk or a teacher. "You would get whipped (*viboko*) and whipped again ... Anyone who broke a rule would be whipped three times in front of the class and then you would have to sing a song praising Kaiser Wilhelm before class studies could begin again."³⁰⁹ Germany's defeat in World War I temporarily disrupted Njovu's plans and forced him to return home where he and his family subsequently fled to Nyasaland on a boat chartered by the YMCA by the Peramiho's German mission. From Fort Johnoson in Nyasaland, he rode in a motor vehicle for the first time when he and his family were transferred to Zomba. After a week of lock-down in a military camp, the Germany missionaries were sent to South Africa, and Njovu and his family returned to Peramiho where he learned to live under another colonial power.³¹⁰

Through connections with a Ugandan clerk at his church in Peramiho, he worked his way back to Dar es Salaam by becoming the houseboy of Mr. Johnson, a British Major. The bustling atmosphere of Dar es Salaam was a good place for a young, educated man. Earning sixteen shillings a month, he was paid well, and the growing city provided numerous opportunities for Njovu to network with other residents, learn new skills, and be selective about employment. When he tired of the menial tasks of housework and the violence of living in the Major's household, Vincent took a major pay cut by transferring to a local mission. His decision soon paid off. When he heard rumors about the creation of a transport department in Dar es Salaam, a supporting letter from the mission helped Njovu become one of nine African men accepted into

³⁰⁹ *Ibid.*, 14

³¹⁰ *Ibid.*, 22.

the department as drivers. One of his friends, Edward Douglas, an African American who had stayed in Tanganyika after fighting in East Africa during World War I, told Njovu to present himself as an American in order to receive higher pay. Njovu asked Douglas how it was possible for an American to speak terrible English, but his friend suggested he tell officials he left the United States for Africa when he was young. After several weeks of training in driving and auto mechanics, Njovu finally met his love, GT 1.³¹¹

As a foil to colonial travel writing, *The First Driver* presents an African colonial employee who leveraged access to technology and mobility for personal and collective gain. In contrast to the simple, naked, and stupefied Africans described by tourists and officials on *safari*, Njovu's memoir offers a historical actor who was technologically competent and socially innovative. Two themes from *The First Driver* establish Njovu's credentials as anti-colonial hero. First, Njovu erases the conventional colonial narrative of African mobility made visible in anti-slavery publications, Transport Department reports, and the coronation parade of 1953, providing instead a history of African ingenuity in which the colonized were always one step ahead of the colonizers. The most remarkable instance is the driver's defiance of colonial categorization, writing that he received two-and-a-half times the pay of "Bantu" Africans (250 shillings per month instead of 60) by listing himself as an African-American on his application to the Transport Department.³¹² If Njovu's claim is odd in the context of 1920s colonial history, it nevertheless serves two important purposes. First, it transforms his sanctioned form of colonial automobility into a transgressive act and a gaming of unjust hierarchies. More importantly, Njovu mocks the entire technical apparatus of power through which colonial citizens were made

³¹¹ *Ibid.*, 23-28.

³¹² *Ibid.*, 29-30.

and controlled. The ideal colonial subject was fixable, knowable, and taxable, and those who failed to pay taxes (or present tax receipts) were assigned forty days of roadwork with no pay.³¹³ By passing as an African-American, Njovu upset the logic of rule from within, showing himself to be the type of unfixable, “sophisticated native” Fryer denounced in his 1931 report.³¹⁴

Second, Njovu’s memoir replaces racially based stereotypes of technological incompetence with a “love” story between an ideal colonial machine and its African driver. By doing so, *The First Driver* draws attention to an important, but often overlooked, fact of colonial life: technology was central to African personhood and integral to Africans’ opportunities for social mobility, especially among young men. Consider, for example, the reasons Njovu claimed GT 1 as a “lover”—a word he does not use for any human relationships. His assignments for the Transport Department, and later the PWD, took him all over Tanganyika territory, gave him access to three different colonial departments, paid him well, and offered paid leave. His first project building the Dodoma-Iringa Road must have provided a stark contrast between his sanctioned mobility and that of other colonial subjects who largely encountered motor transport through the forced labor of roadwork. For two years, he sat behind the wheel of GT 1 transporting water, food, and laborers to different road camps as road gangs of wage laborers, criminals, and tax dodgers performed back-breaking and dangerous work at a fraction of his pay, if they were paid at all. Subsequent trips took Njovu and GT 1 to Northern Rhodesia, Dodoma,

³¹³ Tanganyika Territory, *The Recruitment, Employment, and Care of Government Labour* (Dar es Salaam: The Government Printer, 1930).

³¹⁴ Emily Osborn, “‘Circle of Iron’: African Colonial Employees and the Interpretation of Colonial Rule in French West Africa,” *The Journal of African History* 44 1 (2003): 29-50; Benjamin Lawrance, Emily Osborn, and Richard Roberts, “Introduction: African Intermediaries and the ‘Bargain’ of Collaboration,” in *Intermediaries, Interpreters, and Clerks: African Employees in the Making of Colonial Africa* (Madison: University of Wisconsin Press, 2006), 3-36.

Tabora, and Arusha in service of Public Works Department and the Department of Land and Mines, allowing the driver to practice a type of spatial and social mobility available to very few Africans.³¹⁵

He even credits his relationship to GT 1 with saving his life. When he was conscripted to fight in World War II, he did so as part of a Rhodesian Motor Transport division, sparing him action on the front lines with African troops.³¹⁶ Finally, by Njovu's retirement in the late 1940s, he was wealthy enough to return home and contribute both his time and money to anti-colonial movements, eventually earning a position on a local development committee. Far from a colonial machine that confused or intimidated its African driver or a tool of empire that transformed African societies and economies, *The First Driver* presents GT 1 an "undisciplined technology" that was used by Njovu for personal and collective good.

For all Njovu accomplished as a driver, his most lasting accomplishment was to make a colonial machine relevant in a post-colonial context. At the Dar es Salaam Institute of Technology, Njovu signed GT 1 into the care of the institute's museum, publicly sharing his love as he turned the colonial vehicle into a national display about his heroic career as an African driver. This was no small accomplishment. GT 1 was built for the rugged decades of colonial administration, for the time when Africa was "dark" and perceptions about uncivilized Africans were constructed by contrasting portage with the civilizing potential of automobiles. The Albion was destined to be retired in the United Kingdom where visitors could read an explanation of how its paraffin carburetor transformed Tanganyika from a 'dark place' into a modern colony at only 25.5 cents per ton. As a testimony to imperial ingenuity, no mention of its

³¹⁵ Njovu, 23-32.

³¹⁶ *Ibid.*, 40-49.

Africa driver would have been necessary. But gone were the days when GT 1 could rely on its unique technological qualities for colonial status. It now relied on its driver's career, and love, to make it relevant in a political atmosphere of decolonization.³¹⁷ Entrusted to a national institute of technology, the vehicle is catalogued not as an artifact of colonial superiority, ingenuity, or of the history of colonial travel. Rather, the GT 1 catalogues its driver's heroism and the history of those who changed the course of colonialism from within.³¹⁸

A WOMAN AT THE WHEEL

Gender replaced race as the primary lens for discussing mobility, technology, and social health following Tanzanian independence in 1961, a reality recognized by *Daily News* reporter, Halima Shariff. In a 1981 article, "Women on the Wheel," Shariff asked five women about their unlikely presence in a career driving (*udereva*), a job dominated by men. "No work is better than the other and no work is meant for one sex only," stated Vicky Chale, a driver for the Tanzania Tourist Corporation who started her career in the military. "What really pulled me into this career is my envy for men drivers. I thought if men could maneuver the trucks well on the road within the camp and outside, why not me?" If the answer to this question was not obvious to the article's readers, Chale and her colleagues highlighted the obstacles women faced in their quests to drive. Patricia Nditi, a driver for the Ministry of Lands, Housing, and Rural Development

³¹⁷ Bruno Latour, *Aramis, or, The Love of Technology* (Cambridge, Mass.: MIT Press, 1996).

³¹⁸ For another argument about the way Africans transform vehicles, see Beck, Kurt. "The Art of Truck Modding on the Nile (Sudan): An Attempt to Trace Creativity." In Jan-Bart Grewald, Sabine Luning and Klaas van Walraven (eds) 151-174. *The Speed of Change: Motor Vehicles and People in Africa, 1890-2000*. Boston: Brill, 2009. Madeline Akrich provides a more general argument about interactions between exogenous technologies and Africans: "The Decription of Technical Objects," in *Shaping Technology/Building Society*, eds Bijker and Law (Cambridge: MIT Press, 1992) 205-224.

located the problem in perceptions of women's bodies. Women she recommended to the ministry were rated as physically "unables," and even Nditi had to be accompanied by a male co-driver because of her gender and the perceived physical limitations of her sex. "I did not like it," she explained, "but I also could not avoid it anyway."³¹⁹

Explanations about the physical limitations of women's automobility were less about what women could do with motor vehicles and more about perceptions of what motor vehicles would do to women, and by extension, society. Mary Mucheleka, one of Dar es Salaam's first female bus drivers, faced accusations she would lose her femininity and womanhood if she continued to operate vehicles. She assured readers women could balance the seemingly contradictory practices of automobility and femininity, but she was working against cultures of technology and mobility in which her presence behind the wheel cut across dominant ideologies of gender and social health. Automobility, defined as autonomous self-movement, was about as far as a woman could get from the post-colonial ideals of womanhood on which economic and political modernization were predicated in Tanzania.³²⁰ In spite of playing a crucial role in national mobilization during the 1950s—a role that required both physical mobility and the capacity to mobilize resources—women in post-colonial Tanzania were expected to be good wives, mothers, teachers, and farmers, that is, good producers and reproducers.³²¹ These tasks linked their personhood to the household and to children's lives, not to the possibilities or dangers of an open road. Consequently, women and their bodies were most visible when they

³¹⁹ Halima Sherrif, "Women on the Wheel," *The Daily News*, 18 January 1981.

³²⁰ John Featherstone, "Automobilities: An Introduction," in *Automobilities*, ed. by John Featherstone, NJ Thrift and John Urry (Thousand Oaks: Sage Publishing, 2005), 2.

³²¹ Susan Geiger, *TANU Women: Gender and Culture in the Making of Tanganyikan Nationalism, 1955-65* (Portsmouth: Heinemann, 1997).

upset these gendered expectations of mobility and fixity. Consider this description of Bibi Titi Mohamed, former leader of the national women's league, whose treason charges were linked by a party secretary to her deviant mobility:

Bibi Titi was a particular kind of woman—the kind who obviously no husband would put up with [because] she was riding around in a TANU Landrover with men for months on ends ... There are many educated women in politics, and this is acceptable because they have drivers who bring them home at night.³²²

This section examines the relationship between gendered bodies and social bodies from Tanzanian independence in 1961, a period of hope and expectation about the possibilities of social and economic change, to the mid-1980s, a period associated with decline, stagnation, and the limits of state-led national development. Using personal histories written by Hawa Ramadhani, it shows how one woman's life on the road generated a new set of meanings about the nature of post-colonial modernization as an economic and political project that not only celebrated men's bodies and mobility, but was also enacted through social positions dominated by men. By examining the changing relationship between gendered bodies and social health, this section demonstrates how and why the sex roles of national development could be inverted and replaced with new ways to think and act in a changing world.³²³ The task here is not to deconstruct idealized gender roles or show the tension between gender norms and historical reality. Instead, I am interested in how Ramadhani's gender, body, and mobility became a way talk about the possibilities and limits of social and political change during Tanzania's first three

³²² Geiger, 185.

³²³ The personal histories are made up of three texts, two hand-written in notebooks and one typed and decorated with clip-art. I draw most extensively on the longest text, "The Life and Development of Hawa Ramadhani," and use the others—"Hawa History" and "The History of the First Women to be a Driver in Tanzania"—for supplementary information.

decades of independence. Like Njovu's story, a key feature of Ramadhani's history is the transgressive nature of her movement. Precisely because automobility was narrowly construed as a masculine activity, it was a spatial practice through which individuals could "undo gender" in order to critique sociopolitical realities and model alternatives to top-down visions of change.³²⁴

In the decades following Tanzanian independence, mobile things were masculine things. Modernization in Tanzania, as elsewhere, was founded on an ideology of circulation that equated national health to the controlled movement of people and things. Ideas of what constituted a functioning economy were informed by Western medical ontologies of healthy bodies: in the same way veins and capillaries moved blood throughout the body, modern economies required transport infrastructures capable of circulating resources both within nations and beyond their borders.³²⁵ Whether in cars, on tractors, in factories, or in coordinating national development in government ministries, Tanzanian men performed a disproportionate share of the tasks that put things in motion or required mobility themselves, ranging from the collection and distribution of resources at the ministerial level to acts of physical mobility practiced by truck drivers or technocrats touring their districts.³²⁶ Like the colonial period, physical and social mobility in independent Tanzania were directly tied hierarchies of knowledge and technology. Men not only

³²⁴ Judith Lorber, *Paradoxes of Gender* (Yale University Press, 1995); F. M Deutsch, "Undoing gender," *Gender & Society* 21, no. 1 (2007): 106; David William Cohen and E.S. Atieno Odhiambo, *Siaya: the Historical Anthropology of an African Landscape* (Athens: Ohio University Press, 1989), 94; Hodgson and McCurdy, "Introduction: 'Wicked Women'.

³²⁵ Erik Van der Vleuten, "Infrastructure and Societal Change: A View From the Large Technical Systems Field," *Technology, Analysis and Strategic Development* 16 3 (September 2004), 396-399.

³²⁶ Aili Tripp, *Changing the Rules: the politics of liberalization the urban informal economy in Tanzania* (Berkeley: University of California Press, 1997), 4; *Cultured States: Youth, Gender, and Modern Style in 1960s Dar es Salaam* (Durham: Duke University Press, 2011), 111-113.

dominated careers in motor transport, but also all forms of wage labour based on “hard” scientific or technical knowledge.³²⁷ As other scholars have noted, this masculinization of labor and knowledge was tied to scientific and technological cultures of post-war development that valued the “hard” knowledge and labor of men over the “soft”, domestic production of women.³²⁸ In this manner, Tanzania was not unique, but was instead connected to global structures of modernization that privileged men’s mobility and knowledge and also defined social health accordingly.³²⁹

As the sole purveyors of a healthy, circulating economy, the masculinity of driving was linked to the technology itself. In interviews, male drivers speak of a time before automatic vehicles to emphasize the physical strength needed to put lorries into gear or make fixes on the open road.³³⁰ Newspapers from the 1960s and 1970s are filled with advertisements of young, muscular men operating or fixing large vehicles. One for Safari King Cigarettes features a

³²⁷ The United Republic of Tanzania Ministry of Planning and Economic Affairs, *Statistical Abstract 1973* (Government Printer: Dar es Salaam, 1974); The United Republic of Tanzania Ministry of Planning and Economic Affairs, *Statistical Abstract 1973-79* (Government Printer: Dar es Salaam, 1980). In “Transport, Storage, and Communication” between 1969 and 1972, women made up from 1.7% to nearly 3% of a workforce of 26,000 to 31,000. During these years, women constituted between 6 and 9% of the enumerated workforce, with between 57 to 61% of their employment coming from “service”. By 1978, women were only 4% of 37,908 employed in “Transport, Storage, and Communication,” and only 12.7% of enumerated employees. Specific numbers on female drivers were not recorded. Oral interviews with both men and women confirm that there were a handful of women who drove professionally, but they were considered exceptional.

³²⁸ Paul Edwards, “Industrial Genders: Soft/Hard,” in *Gender and Technology: A Reader* (Baltimore: Johns Hopkins Press, 2003).

³²⁹ On cultures of technology and masculinization more broadly, see Ruth Schwartz Cowan (1983) and Ruth Oldenziel (1997 and 1999). The association of social health with masculine mobilities is also true during the colonial era in Tanzania. See Giblin (2005), especially chapter 5, for the importance of movement to women’s lives during this period.

³³⁰ Interview with Reginald Regani, 10 July 2009, Dar es Salaam, Tanzania.

muscular lorry driver changing a tire that declares, “The man’s man is now in town,” while another features a bus set against the backdrop of giant boxing glove, evoking one of Tanzania’s most popular masculine pastimes.³³¹ In addition to this rhetoric about physical capacity, much of the gendered structure of driving occurred through training and the process of gaining knowledge about how mechanical things worked. After independence, “*turnboi*” (turn-boy) and “*boispana*” (spanner boy), words rooted in the use of adolescent men to assist in the repair and operation of automobiles during the colonial period, transferred from a racialized culture of technology into one based upon gender exclusivity. As the lowest status in the apprentice system training mechanics and drivers, the very term suggests that only young men enter the auto-training system, thus only men earn the right to work with and on automobiles.³³²

Although development rhetoric in Tanzania celebrated women’s unique role as both producers and reproducers, women were structurally limited to the private sphere or to careers based on the domestic sciences, including elementary education, nursing, or secretarial work.³³³ In contrast to the iconography that celebrated men’s physical and social mobility as nation builders, women were mothers of the nation who were featured in advertisements that tied them to their homes, specifically to the kitchen and washroom. Instead of engendering discussion of

³³¹ Safari Kings Advertisement, *Uhuru*, 28 July 1977; Fiat Advertisement, *Ushirika*, February 1973; *Ushirika*, January 1973.

³³² See Kathleen Franz (2005) and Clay McShane (1994) for hierarchies of knowledge and mobility in the United States, especially on the masculinization of car culture by the 1930s. Gendered discourses of able-bodiedness have been used to exclude women’s full participation in automobile culture around the world. As Siegelbaum (2008) shows in the Soviet Union, these disappeared to an extent during times of war when women were needed to operate convoy trucks.

³³³ Ivaska, 91; Priya Lal, “Militants, Mothers, and the National Family: *Ujamaa*, Gender, and Rural Development in Postcolonial Tanzania,” *Journal of African History* 51 (2010): 1-20.

social and political well being, women's mobility was often used to discuss social decline, moral depravity, and the effects of modernization on African cultures. As Andrew Ivaska demonstrates, women's bodies were at the center of a "sexualized performance of power" that used women's dress, autonomy, and mobility to fabricate social and political crisis and justify patriarchal power. Women in motion were prostitutes, "wicked women", and sexually promiscuous "roamers" who challenged the normativity of domesticity and settled life as well as control over the manner in which women became visible in public life.³³⁴ Like the role assigned to African men and women during colonialism, women in independent Tanzania were supposed to assist in the production of automobility but not to partake in it as equals.³³⁵

According to the author of "Women on the Wheel," women offered something unique to Tanzania's culture of professional driving: they were not men. Writing in 1981, Shariff argued that a masculine culture of automobility was destroying the material and human resources Tanzania needed for economic growth. In particular, she blamed masculine driving for the destruction of vehicles that were purchased and kept running with the country's limited foreign capital and targeted drunk driving as a common practice of men who cared more about alcohol than building the nation. While Shariff's characterization of male driving was grossly overgeneralized, her argument extended beyond Tanzania's culture of automobility to the fundamental relationship between social bodies and gendered bodies in public discussions about modernization. If masculine automobility was analogous to a society out of control, she argued "women on the wheel" could foster a different type of social and economic development because

³³⁴ Ivaska, 104; Hodgson and McCurdy, "Introduction: 'Wicked' Women."

³³⁵ See Lydon (2009) and Rockel (2000) on women's role in producing mobility in pre-colonial Africa.

of the care they showed to vehicles and people.³³⁶ In other words, the very ideals used to construct national womanhood and to exclude women's automobility also provided a set of values capable of transforming public life through women's automobility. Roads, instead of being defined as spaces of physical and social danger unbefitting to women, were places of social and physical danger that required a woman's touch for proper development to occur. While Shariff's argument was undoubtedly influenced by the changing economic realities of the early 1980s, it also reflects two points examined below. First, it underscores the way bodies, especially moving ones, could be used to talk about changing economic realities or to model new possibilities for economic and political life.³³⁷ Second, Shariff's story is noteworthy because it replaces state-generated ideologies of social health with the experiences, ideas, and actions of historical actors who modeled alternatives to the status quo through their everyday lives.

One woman featured in "Women on the Wheel" was Hawa Ramadhani.³³⁸ Born sometime in the early 1930s, Ramadhani's parents were unable to pay for her school fees, so they asked missionaries at an orphanage near Morogoro to raise their daughter. There, Ramadhani met Pharisidia, a German missionary who accepted Hawa into her home and made her feel like her own child. She initially learned domestic duties like needlework, but was also taught how to work a tractor and fix a water pump. One year, Pharisidia surprised the young girl by teaching her how to drive the lorry the mission used for transporting its harvest. Ramadhani writes that from this day on, Pharisidia made the child her private driver on daily trips between home and

³³⁶ "Women on the Wheel."

³³⁷ Julie Livingston, *Debility and the Moral Imagination in Botswana* (Bloomington, IN: Indiana University Press, 2005).

³³⁸ Shariff's article pictures Ramadhani, but it incorrectly labels her as Patricia Nditi. Ramadhani was born as Veronica, but she never used the name Patricia Nditi.

church. In her memoirs, the driver mentions no technical details about vehicles or learning to drive, only that she learned quickly and was the only African woman in the entire village who could drive. “In those days, it would be a shock to see a woman riding a bicycle,” she writes, “so in the village, it was a big deal for me to be seen by elders driving a car, though it surprised them each time.”³³⁹

By 1961, Tanganyika had won its independence and Ramadhani had established herself as a reputable driver. Initially reveling in the attention of her job, she soon found that her career choice raised serious, life-changing questions about her moral character. Ramadhani was first hired at the Dar es Salaam Port Authority where she found that as a woman driver, she was assumed to be sexually promiscuous. After unwanted advances from her boss, she transferred to a position as a bus driver at one of the city’s prisons only to find her status as an auto-mobile woman ruin her first marriage because her husband equated her driving to prostitution. Writing her memoir three decades later, she dismissed the accusations of her first husband as part of the job. “Because driving was a man’s job and I entered a male domain, I was often called a prostitute.” And yet, cognizant of her liminality, she remarried, explaining that “in those days, for a woman to live without a husband was strange” and could also lead to accusations of immorality. What matters here is not Ramadhani’s sexual past, but that promiscuity, driving, and a life of mobility were closely linked—a condition acceptable for men, but so unacceptable for a woman that she might be considered a prostitute for simply driving. Even her children, born in

³³⁹ Ramadhani Personal Papers, “The Life and Development of Hawa Ramadhani”.

wedlock, were teased as “illegitimate” because she left them with her family when she was on the road.³⁴⁰

Far from defining Ramadhani’s driving career, these accusations provided a context in which she could “undo gender” by exhibiting the personal and social benefits of her life on the road. She begins her memoir, “The Life and Development of Hawa Ramadhani,” by addressing the functionalist physical traits associated with masculine automobility, even embracing the essentializing notions that linked masculine able-bodiedness to motor vehicle use. “I was bigger and stronger than other women, having the strength and size of a man,” she writes.³⁴¹ But instead of dwelling on the customary relationship between strength and driving, Ramadhani ties her success as a driver to her femininity. Consider, for example, her ability to link economic development, efficiency, and expectations of post-colonial womanhood to a life on Tanzania’s rural trucking routes during the 1960s and 1970s. “Many businessmen just liked the way I did things. I didn’t pursue, or even like, the comfortable lifestyle of male drivers,” she states, referring to drivers’ reputation to park at trucking depots for sex and alcohol. Instead of sleeping at stations, she rested on the side of the road before continuing her journey. “My car was always ahead of the drivers who liked that other lifestyle. That’s why they were always late. They would drive a little and then stay at a station [...] These drivers didn’t think about their own development.”³⁴² Here, Ramadhani is playing with notions of development shared by many long-haul drivers during this period—that is, a life on the road was only worth the physical and

³⁴⁰ Hamadi Mwinyi Mkuu (Ramadhani’s son), interview by author, 10 June 2012, Dar es Salaam, Tanzania.

³⁴¹ “The Life and Development of Hawa Ramadhani.”

³⁴² *Ibid.*

social risks of driving if it produced a domestic life for oneself and one's family.³⁴³ Domesticity, in other words, was the goal of all drivers, and those who produced it best on the road had the resources to produce it best at home.³⁴⁴ In this context, performing post-colonial womanhood on rural road routes was more than an imposition for Ramadhani—though it certainly was that. It was also a strategy for personal development that challenged norms about whose access to technology and mobility produced social health as well as an opportunity to play with the boundaries of post-colonial womanhood by justifying their extension from the home to the open road.

Ramadhani's mobility was most visible during the late 1970s and early 1980s, a time when citizens were openly questioning the efficacy of modernization as a state-controlled project defined by masculine production.³⁴⁵ From 1977 to 1984, Ramadhani shuttled passengers through the city, and gained a reputation as a stern but understanding and safe driver. At first, her colleagues and passengers wondered how a woman could drive a bus, often mentioning the size of steering wheels on the city's large buses, the stickiness of the gears, and the difficulty navigating Dar es Salaam's deteriorating roads. While most answered this question by ascribing Ramadhani a masculine physique, they soon turned their focus to the type of mobility she embodied. According to former passengers and her own conductor, Ramadhani transformed the

³⁴³ Here, I follow the call of Karen Tranberg Hansen to attend to the "significance of domesticity in the changing constructions of space, activity, power, and gender in Africa" and to recognize "the domestic domain opens up in two directions" (1992: 24-25). For the domestic lives of drivers in Tanzania, see Joshua Grace, forthcoming 2013.

³⁴⁴ For many boys, cooking was the first task they learned from their driver.

³⁴⁵ On issues of legitimacy and disengagement, see Tripp, *Changing the Rules*. President Julius Nyerere, speaking in 1980, called this period a "time of struggle," going as far as to describe Tanzania as technologically "backward" (1980:1).

inside of her bus from a place of overcrowding and chaos—a constant theme in letters to the editor about Dar es Salaam’s socialist bus company—into space of respect, safety and care.³⁴⁶ Long time Dar es Salaam residents remember her being actively engaged in discipline on her bus, likening her conduct to that of a mother in her own home.³⁴⁷ On several occasions, interviewees responded to my question about Ramadhani’s bus by grabbing my forearm to explain the driver did not tolerate disrespect on her bus. They also remember her compassion, and Ramadhani herself writes that she took pride in giving free rides to those who could not afford the fare.³⁴⁸ As a result, unlike other women who traveled to and within Dar es Salaam in the first decades of independence, her body is not remembered for transgressing the boundaries of proper circulation, but for exemplifying an alternative to the gendered demarcation of public space and to the division of labour modernization was predicated upon.

By 1982, the nation’s most-read periodical, *The Worker (Mfanyakazi)*, recognized Ramadhani’s ability to transform public space in Dar es Salaam by calling her a “big-time hero” and encouraging other women to follow her example.³⁴⁹ She retired in 1984 and died in 2010, but the story of her work as a bus driver continues to inform discussions of development and gender through the children’s book, *Hawa the Bus Driver*, a part of Tanzania’s primary school curriculum since 1987. By playing with notions of body and movement, Ramadhani inverted the

³⁴⁶ Hatibu Halfani, interview by author, 17 July 2010, Dar es Salaam; Jonas Rweyemamu, interview by author, 15 July 2010, Dar es Salaam; Ufadhili Issa, 27 July, 2010, Dar es Salaam; “Hawa History”.

³⁴⁷ Donald Mwakaegula, interview by author, 21 October 2011, Dar es Salaam. On several occasions, interviewees responded to my question about Ramadhani’s bus by grabbing my forearm, later explaining that she did not tolerate mischief.

³⁴⁸ Hatibu Halfani.

³⁴⁹ “HAWA mfano wa kuigwa kwa akinamama Tanzania,” *Mfanyakazi*, 4 April 1982.

sex roles of national development schemes and provided new avenues for using gender to talk about social health. The histories she wrote and the histories told about her career replace top-down visions of post-colonial modernization with the contingencies of historical experience and the “alternatives that appeared to people in their own time.”³⁵⁰ As a result, her life replaces narratives of decline and stagnation—in which the late 1970s and early 1980s constitute a point of rupture—with the sense of possibility and opportunity Shariff identified in the “Women on the Wheel”.

CONCLUSION

The heroes discussed in this article shared more than a career in common. Each driver also used a life on the road to model new forms of political and social action at important historical junctures. Njovu, by finding an unlikely ally in colonial Tanganyika’s first and best motor vehicle, destabilized racialized metanarratives about the incompatibility of Africans and mechanized technology. Behind the wheel of GT 1 he transformed colonial roads from places of forced labour and governmentality into the setting of a love story between an African employee and a tool of empire. A theme we must not overlook in *The First Driver* is Njovu’s ability to play with the central mechanism of colonial power, its ability to know and to categorize, by claiming an African-American identity and a higher rate of pay. In contrast to nationalist narratives that mobilized political support by claiming exploitation, Njovu provides a “hidden history” of African ingenuity in which the colonized understood systems of exploitation and could use tools of imperial plunder and control for a greater good. Following independence, gender replaced race as the dominant analytic in representations of mobility and social order. Ramadhani’s long

³⁵⁰ Cooper, *Colonialism in Question*, 18.

career on Tanzania's roads challenged post-colonial cultures of knowledge and labour that idealized masculine bodies and sanctioned their mobility through physical space and social hierarchies. On the basis of her driving career alone, some accused her of violating gender norms, but others saw in her work-life a new model of personal and social development that provided solutions to the emerging challenges of economic and social life during the late 1970s and early 1980s. In the midst of concerns about decline and stagnation, her everyday practice of mobility on Dar es Salaam's streets inverted stereotypes about gendered bodies in public discussions about social health and modernization.

Njovu and Ramadhani's lives allow us to draw a different set of conclusions about roads and representations of mobility in African history. Instead of social crisis, global marginalization, or an underside to modernity, these memoirs show mobility—particularly, transgressive mobility—as a practice of social and political ingenuity in which unlikely individuals can become important historical actors. Roads, instead of tools of intervention, sites of top-down social engineering, or objects of development, emerge as important public places where racial and gendered hierarchies are challenged and reconfigured, and as spaces where alternative visions to hegemonic social orders can be modeled through the practice of daily life.

CHAPTER 4—AFRICAN EXPERTS AT WORK: MAKING MEN AND CARS IN TANZANIAN REPAIR GARAGES



Figure 1.2: State mechanics in Ujiji (western Tanzania), working in their neighborhoods after work. Photograph of personal collection by author.

In 1925, F. Mott, an engineer for British car manufacturer Morris-Cowley, traveled from Dover, England to Mombasa, Kenya to test a motor vehicle designed for the technological challenges of colonial rule in Africa. Half truck and half tank, the Morris Roadless Lorry was a product of military engineering from World War I that found a new application as a tool for colonial development. The logic behind the roadless lorry was simple: colonial administrators needed a cheap and durable solution to the problems of transport in their colonies. Building roads was not only expensive; it also required the ability to produce African laborers willing to do tough work for very little pay. As a potential tool of empire, the roadless lorry promised to replace unreliable African labor with a dependable European machine that could circulate goods and people throughout the colony. Mott's subsequent motor trial in Kenya and Tanganyika was a technological "embarrassment". The machine routinely overheated, became stuck in the mud,

and it failed to provide the haulage capacity needed for circulating goods and people in the colonies. Instead of making African labor irrelevant, the motor trial required 15 African assistants who, dressed in Morris-Cowley overalls, pushed the lorry out of the mud and assisted in roadside repairs. While Mott and his colleagues interpreted the trials as a momentary setback in their quest to create a colonial machine for Africa, it was also the beginning of a historical process in which the labor and innovation of unschooled African mechanics became paramount in making cars work in Tanzania.³⁵¹ Within three decades of Mott's motor trial, African car mechanics were conducting experiments of their own in neighborhood garages across the colony, eventually creating a tradition of mechanical innovation that endures to the present.

This chapter examines repair garages as places of innovation and social mobility where both African men and African cars were made. From the early colonial period to the present, garages have been spaces where uneducated, illiterate boys charted new paths from boyhood to manhood as they learned about and experimented on motor vehicles. By trading their labor for knowledge, African boys obtained a flexible set of technical skills they could use for a variety of trades as well as social networks that provided the human and material resources necessary for different stages of their lives. From the 1910s to the 1940s, Africans served as assistants to engineers like Mott, but by the 1940s, they were using their spare time after work to experiment with their colleagues on part fabrication (salvaging used parts) and vehicle modification (joining major parts of different vehicle companies), eventually creating a culture of automobile repair that flourished during periods of spare part shortages from the 1960s through the 1980s. Known

³⁵¹ F. Mott, "File of Correspondence between W. Cannell, Messrs. Morris," Box 6 (Feb. 19, 1925- Jan.8 1926), Mott Collection, London Science Museum Library Special Collections. Accessed October 4, 2011 in Wroughton, England.

as *ufundi wa kienyeji*, literally, “local auto mechanics”, this form of expertise was condemned by national and international bodies alike for its methods of repair, the aesthetics of its work spaces, and most of all, its culture of knowledge acquisition. But it worked. Its technological product was an African car that was defined by its diversity and, especially, by its openness to modifications. The social product was an equally diverse body of boys-turned-men who transformed the human and material resources of repair garages into a desirable vocation, a source of pride, and adulthood. Below, I argue that the cars and the men who were made in Tanzania’s repair shops provide a different way to understand modernization in Africa as a social and technological project, and in particular, they reveal the manner in which Africans gave shape and meaning to cultures of modernization during the twentieth-century.

This chapter advances three original arguments. The first is a call to reevaluate what type of knowledge matters in studies of modernization and development, and by extension, a plea to reframe analyses of the oft-repeated phrase, “knowledge as power”. Studies of modernization and development have focused on the centralization of expert knowledge during the early twentieth-century and the role of national and international bureaucrats in circulating this portable expertise.³⁵² But this chapter reveals the importance of unschooled experts and decentralized tacit knowledge (fingertip or practical knowledge) to systems of car repair since

³⁵² Arturo Escobar, *Encountering Development: The Making and Unmaking of the Third World* (Princeton: Princeton University Press, 2011); Timothy Mitchell, *Rule of Experts: Egypt, technopolitics, modernity* (Berkeley: University of California Press, 2002); Donna Mehos and Suzanne Moon, “The Uses of Portability: Circulating Experts in the Politics of Cold War and Decolonization,” in *Entangled Geographies: Empire and Technopolitics in the Global Cold War*, ed. Gabrielle Hecht, 43-74 (Cambridge, Mass.: MIT University Press); Frederick Cooper and Randall Packard. “Introduction,” in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, eds. Frederick Cooper and Randall Packard, 1-41 (Berkeley: University of California Press, 1997), 28.

the early colonial period in Tanganyika.³⁵³ Though colonial and national development institutions attempted to create formally educated mechanics by transferring Western car expertise to Africa, the knowledge that was most useful for repairing motor vehicles was seldom a product of transfer, translation, or certification. Instead, young, uneducated men learned through experience and experimentation in the more open technological spaces they found at the Public Works Department (PWD), in lorry owners' shops, or in their own homes. For this reason, if we are to understand how cars have worked in Tanzania during the twentieth-century we need to make room for a new kind of expert and a different type of expertise. By doing so, we can begin to understand modernization in African history through actor categories and historical experience instead of privileging linear models of change or analytic categories that limit scholarly analysis to the sources produced by national and international development apparatuses.³⁵⁴

Second, this chapter advances studies of modernization beyond dichotomies of local and global or colonial and indigenous.³⁵⁵ As products of modernization theory and its emphasis on

³⁵³ There are a number of different terms for this type of knowledge. In *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*, James Scott calls this "metis". In "The Three Forms of Theoretical Knowledge" (1973), Bourdieu terms this "practical knowledge". Clifford Geertz refers to this as "local frames of awareness" in *Local Knowledge: Further Essays in Interpretive Anthropology*. All are defined by similar qualities: their alterity from formal knowledge systems; their flexibility; and the difficulty of capturing their essence empirically.

³⁵⁴ Frederick Cooper, *Colonialism in Question* (Berkeley: University of California Press, 2005), 9-10; Lynne Thomas, "Modernity's Failings, Political Claims, and Intermediate Concepts," *The American Historical Review* 116 3 (2011): 727-740.

³⁵⁵ David Wade Chambers and Richard Gillespie, "Locality in the History of Science: Colonial Science, Technoscience, and Indigenous Knowledge," in *Nature and Empire: Science and the Colonial Enterprise*, *Osiris* 15 (2000): 232-233; Christophe Bonneuil, "Science and State-Building in Late Colonial and Post Colonial Africa, 1930-1970," in *Nature and Empire: Science*

dividing the world into modern and traditional spheres, these binaries invoke a historical narrative that is incredibly limiting, if not useless, for understanding modernization as a historical process in Africa.³⁵⁶ Tanzanian garages were important social and technological spaces because they were sites where globally significant things and ideas were made commensurate with economies of spare parts, the rough conditions of roads, or the aesthetic choices of car owners and mechanics. For this reason, the perspective of modernization from Tanzanian garages is not an external imposition of global over local or colonial over indigenous, but instead a history of innovation and opportunity in which mechanics interacted with global cultures of technology by making cars work in a variety of local conditions. In the following narrative, local and global or colonial and indigenous are not conflicting terms that sit at opposite ends of a historical progression.³⁵⁷ Instead, they are complementary categories that are often deployed by historical actors in tandem: creating colonial technical education required the recognition of useful “indigenous” practices, while the fundamental task for modifying vehicles during spare parts shortages was understanding changes in design and production that occurred

and the Colonial Enterprise, *Osiris* 15 (2000): 280; Richard Rottenberg, “Social and Public Experiments and New Configurations of Science and Politics in Postcolonial Africa,” *Postcolonial Studies* (December 2009), 425; James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1999).

³⁵⁶ Cooper, *Colonialism in Question*, 9-10; Bruno Latour, *We Have Never Been Modern* (Cambridge, Mass: Harvard University Press, 1991); Frederick Cooper, “Modernizing Bureaucrats, Backward Africans, and the Development Concept,” in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997), 64-65. See also Lynne Thomas cited above.

³⁵⁷ Warwick Anderson, *The Collectors of Lost Souls: Turning Kuru Scientists into Whitemen* (Baltimore: Johns Hopkins University Press, 2008). Robert Shenton’s characterization of the “changelessness” imbedded in development discourse is important here for helping to explain why these binaries have such staying power. See, Robert Shenton, *The Development of Capital in Northern Nigeria* (London: James Currey, 1986).

in far away factories. My goal is not to celebrate the triumph of the local over the global, but instead, to reveal points of connection through which we can better understand modernization as simultaneously local and global.³⁵⁸

Third, this chapter challenges colonial and post-colonial ideologies of development that present Africans as incompatible with modern cultures of technology and labor. In particular, it confronts racial stereotypes of technological backwardness that have been used to describe Africa since the mid-nineteenth century and whose persistence up to the present is among the most alarming features of development's history.³⁵⁹ Instead, I show Africans as serious and competent technological actors who were not only passionate about their work, but who also, built their social and economic lives around a technological vocation.³⁶⁰ A key feature of this argument is the collapsing of boundaries between the technological and the social worlds of

³⁵⁸ Debates about the singularity or multiplicity of modernity or modernization have strayed from their intended purpose. Donna Haraway, for example, has encouraged scholars to move from the "partial perspectives" of master categories and top-down perspectives to what she terms "situated knowledges". Her work on feminism encourages scholars to move between different frames—understanding global trends their local frames and vice versa. Critiques of multiple modernities by Frederick Cooper (2005) and James Ferguson (2006) are well founded, but their analytical strength is limited outside of discourse analysis.

³⁵⁹ On the "idea" of Africa and its continued relevance in global politics, see: James Ferguson, *Global Shadows: Africa in the Neoliberal World Order* (Durham: Duke University Press, 2006); Gabrielle Hecht, *Being Nuclear: Africa and the Global Uranium Trade* (Cambridge: The MIT Press, 2012), 16-22; Valentin Mudimbe, *The Invention of Africa: Gnosis, Philosophy, and the Order of Knowledge* (Bloomington, IN: Indiana University Press, 1988). In imperial history, see Michael Adas, *Machines as the Measure of Men: Science, technology and ideologies of Western dominance* (Ithaca: Cornell University Press, 1989) for the intersection of technology and constructions of race; and on the emergence of development policies see, Helen Tilley, *Africa as a Living Laboratory: Empire, Development, and the Problem of Scientific Knowledge, 1870-1950* (Chicago: University of Chicago Press, 2011).

³⁶⁰ Other studies include: Jeff Guy and Motlatsi Thabane, "Technology, ethnicity, and ideology: Basotho miners and shaft-sinking on the South African gold mines," *The Journal of Southern African Studies* 14 2 (1988): 257-278; Colleen Krieger, *Pride of Men: Ironworking in 19th Century West Central Africa* (Portsmouth: Heinemann, 1999).

Tanzanian mechanics.³⁶¹ Repair garages were not only spaces in which cars were taken apart and pieced back together. They were also places where young men could rebuild themselves and each other and where they could tinker with racial and gendered social norms through access to esoteric technical knowledge and social capital.³⁶² Though blueprints for development recognized the mutuality of social and technological worlds, the emergence of repair garages as transformative spaces was still an unintended result of modernization schemes. Colonial and national authorities alike looked to technical training as a tool of social engineering for creating a respectable class of African industrial men.³⁶³ Instead, repair garages became arenas of social and technological innovation where an unlikely group of experts used mechanical knowledge to challenge racial and gendered norms of personhood.³⁶⁴

As spaces of historical analysis, repair garages are useful because they inhabit what

³⁶¹ The mutual shaping of society and technology grew out of debates in the late 1980s and early 1990s. See two volumes: Wiebe E. Bijker, Thomas Hughes, and Trevor Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, MA: The MIT Press, 1987); Wiebe E. Bijker and John Law, eds., *Shaping Technology/Building Society: Studies in Sociotechnical Change* (Cambridge, Mass: The MIT Press, 1992).

³⁶² For examples in American history, see: Kathleen Franz, *Tinkering: Consumers Reinvent the Early Automobile* (Philadelphia: University of Pennsylvania Press, 2005); and Kevin Borg, *Auto Mechanics: Technology and Expertise in Twentieth-Century America* (Baltimore: Johns Hopkins University Press, 2010).

³⁶³ Frederick Cooper, "Industrial Man Goes to Africa," in *Men and Masculinities in Modern Africa*, eds. Lisa Lindsay and Stephan Miescher, 128-137 (Portsmouth: Heinemann, 2003); Mamadou Diouf, "Senegalese Development: From Mass Mobilization to Technocratic Elitism," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, eds. Frederick Cooper and Randall Packard, 291-319 (Berkeley: University of California Press, 1998).

³⁶⁴ Ralph Austen and Daniel Headrick, "The Role of Technology in the African Past," *African Studies Review* 3 4 (1983): 163-184; John Thornton, "Precolonial African Industry and the Atlantic Trade, 1500-1800," *African Economic History* 19 (1990): 1-54. The ensuing debate (included in the same issue) that included Ralph Austen and Patrick Manning is particularly useful in understanding associations of technology and economic progress in African history.

historian Kevin Borg calls “technology’s middle ground.” He writes: “The repair shop is where the weaknesses of technology are laid bare; where progress is stalled, repaired, and sent back on the road; where technological failure is the stock-in-trade and the ideal of the well-oiled machine meets the reality of our entropic world.”³⁶⁵ Precisely because repair garages subsist, and sometimes, thrive, on a continual process of breakdown and repair, they are ideal spaces for scrutinizing the manner in which people and things work.³⁶⁶ This is an especially important virtue for African history. Given the tendency to describe Africa and Africans with metaphors of dysfunction and disrepair, using the term “work” as a heuristic device provides a new way to approach the lives of Tanzanian mechanics, the function of African cars, and more generally, the natures of modernization and development as historical processes. This is especially important as a labor question. Throughout the twentieth century, descriptions of technological dysfunction in Africa rely on racially-informed stereotypes of African dysfunction to describe the failures of state-directed modernization projects. The assumption is that technological things in Africa do not work because Africans do not work, or because they do not have the proper knowledge (or even, culture) to work.³⁶⁷ Jumping into a space that thrives on disrepair and dysfunction, then,

³⁶⁵ Kevin Borg, *Auto Mechanics*, 4.

³⁶⁶ An important turn in the history and sociology of technology was recognizing the usefulness of breakdown and failure to academic study, especially for highlighting historical contingencies and roads not taken. In the Bijker, Hughes, and Pinch volume cited above, see: Trevor Pinch and Wiebe Bijker, “The Social Construction of Facts and Artifacts: Or How the Sociology of Science and the Sociology of Technology Might Benefit Each Other”; Ruth Schwartz Cowan, “The Consumption Junction: A Proposal for Research Strategies in the Sociology of Technology”.

³⁶⁷ For examples from imperial history, see Michael Adas (cited above). Assumptions about whose labor and knowledge is useful are also built into historical metanarratives. For different varieties of this narrative, see: Walter Rodney, *How Europe Underdeveloped Africa* (Dar es Salaam: Tanzania Publishing House, 1972), and the Thornton debate from *African Economic History* cited below. These narratives share in common a notion that European industrialization

provides a unique opportunity to tackle meta-narratives about labor, technology, and modernization in African history.

EXPERTS AND HISTORY

Questions about the power of knowledge have been central to recent work in the sociology of expertise. In particular, sociologists Harry Collins and Robert Evans have challenged normative understandings of scientific knowledge as portable and explicable—that is, as something that can be packaged, shipped, and reproduced anywhere in the world. Instead, Collins and Evans emphasize the importance of tacit knowledge, what they term “expertise by experience”, in both the practice and production of scientific knowledge.³⁶⁸ They write: “Mastering a tacit knowledge-laden specialism to a high level of expertise, whether it is car-driving or physics, ought, then, to be like learning a natural language—something attained by interactive immersion in the way of life of the culture rather than by extended study of dictionaries and grammars or their equivalents.”³⁶⁹ While scholars in Science Studies pushed back against some of these claims, Collins and Evans’ work is useful here for two reasons.³⁷⁰ The first is that “expertise by experience” is the exact phrase used in Swahili by Tanzanian mechanics to describe their training (*utaalum wa uzoefu*). Like its academic meaning, its use in Tanzanian repair garages is rooted in

constitutes a point of rupture from which Africans must catch up by appropriating Western knowledge and cultures of work.

³⁶⁸ Harry M. Collins and Robert Evans, “The Third Wave of Science Studies: Studies of Expertise and Experience,” *Social Studies of Science* 32 2 (April, 2002), 243.

³⁶⁹ Robert Evans and Harry Collins *Rethinking Expertise* (Kindle Edition: University of Chicago Press, 2007), 23.

³⁷⁰ See the June 2003 issue of *Social Studies of Science*, especially: Sheila Jasanoff, “Breaking the Waves in Science Studies: Comment on H.M. Collins and Robert Evans, ‘The Third Wave of Science Studies’” (pp. 389-400).

a debate about whose knowledge and expertise is most useful. From the colonial period up to the present, technical training has focused on the transfer and translation of relevant knowledge to colonial or developing societies. Such programs emphasized formal classroom learning, including the teaching of mechanical theory and the renaming of car parts in Swahili, at the expense of the practical hand knowledge that was most useful for training mechanics. When Tanzania mechanics identify as experienced-based experts, they are not only claiming membership in local traditions of automotive training in which apprentices learn through touch, sound, and smell. They are also critiquing forms of technical education and repair they consider ineffective and wasteful.

Second, Collins and Evans dissolve the sharp distinctions between “lay expertise” or “folk wisdom” and regular expertise: “We say that those referred to by some other analysts as ‘lay experts’ are just plain ‘experts’ – albeit their knowledge has not been recognized by certification.”³⁷¹ With experience as the most fundamental part of expertise, Collins and Evans create an analytical space in which uneducated, illiterate boys could become car experts without qualifying their knowledge as lay, folk, or indigenous. The burden of proof is whether they could or could not fix cars, not whether their knowledge and practice was endorsed by the authorities that used technical vocations as a proxy for social change. This leveling of analytic categories is especially useful for taking stock of the different trajectories of knowledge researchers of twentieth-century Africa must try to reconcile. In spite of efforts to decolonize African social sciences, there is still a tendency to frame Africa’s cultures of knowledge as aberrations from the Western ideals associated with development or to rely on binaries that deny the complex

³⁷¹ Collins and Evans, “The Third Wave of Science Studies”, 238. Critiques of the “folk wisdom” view are in *Rethinking Expertise*, 5-16.

technological worlds Africans have created.³⁷² Below I examine two forms of expertise that intersect in Tanzanian mechanics' life histories. Hand expertise was defined by its openness and effectiveness whereas paper expertise was tied to immediate social mobility and greater access to technological resources. While mechanics recognize each as a distinct sphere, and even compete over whose knowledge is better, the manner in which these cultures collide against and complement each other is crucial to understanding how men and cars were made in Tanzanian repair garages during the independent era.³⁷³

Because tacit histories are rarely recorded in written sources, I combined oral history methods with historical ethnography in repair garages across Tanzania. Oral history interviews were crucial for debunking the claims in colonial and national sources alike that described Africans as incapable technologists or criticized the type of hand expertise required to fix vehicles. They were also useful in creating historical portrait of mechanics' social lives, especially the socio-economic backgrounds of the young boys who have been joining garages since in the early twentieth-century. However, interviews based solely on orality were less useful for exploring the technical details of training and car repair that were so integral to mechanics' work lives, leisure, and social identities. Within the first months of interviewing, it became clear

³⁷² Wallerstein, *Unthinking Social Science*, 56-57.

³⁷³ There is a tendency to separate mimeomorphic (tasks that could be replicated by machine) and polymorphic skills (tasks that require judgment and socialization) in literature on science and technology, especially in discussions of skills that can be replaced by machines. My interlocutors insisted upon the complementary nature of these two different types of skills. By doing mundane tasks over and over, or mimeomorphic skills that in theoretically could be replaced by Artificial Intelligence, apprentices gained competence in polymorphic tasks. See: Wiebe Bijker, Harry Collins, and G.H. de Vries, "Ways of Going On: An Analysis of Skill Applied to Medical Practice," *Science, Technology and Human Values* 22 (1997): 267-285; See: William Storey, "Guns, Race, and Skill in Nineteenth-Century South Africa," *Technology and Culture* 45 (October 2004), 687-689. Generally, modernization schemes assume a type of mimeomorphic replicability that can be achieved through manuals and classroom learning.

that I needed to combine interviews with more hands-on methodologies.³⁷⁴ First, I asked mechanics to reconstruct the fixes they did during spare parts shortages, and when possible, I video recorded and photographed these demonstrations. In addition to creating an archive of African mechanical innovation—my initial goal—these events provided an opportunity for mechanics to discuss the challenges of recreating the material conditions of their work lives. This, in turn, created even more detailed expositions about work and identity in garages. In the middle of a recording in Tabora, one mechanic refused to proceed with the demonstration, aghast at the materials his assistants had brought him for his re-creation. He spoke at length to a garage audience of former colleagues and young apprentices:

This is not history! We didn't have nuts like these; we couldn't even find nuts. We had to make them out of cans and scrap metal. How can I stand here and tell our friend, 'We did this and this and this,' when it isn't true? And what does he know? He'll take this information home and share it with others who are smarter than he is, and they will say, 'That doesn't seem possible.' Things have changed since those days.³⁷⁵

He then finished the demonstration and suggested others with whom I should talk. Such grandstanding was not rare, and his concerns for historical veracity are well grounded. Regardless, this speech illustrates that the smallest technical details are important to

³⁷⁴ There are two schools of thought in oral history on performativity in the production of knowledge. The first considers it an act of embellishment that reflects contemporary events more than historical traces: Elizabeth Tonkin, *Narrating Our Pasts: The Social Construction of Oral History* (Cambridge: Cambridge University Press, 1992). Others, especially those in art history and archaeology, consider demonstrations a useful method for collecting oral and non-oral historical material alike. See, for example: Peter Schmidt, *Historical Archaeology in Africa: Representation, Social Memory, and Oral Traditions*; Kurt Beck, "The Art of Truck Modding on the Nile (Sudan): An Attempt to Trace Creativity," in *The Speed of Change: Motor Vehicles and People in Africa, 1890 – 2000*, eds. Jan-Bart Gewald, Sabine Luning, and Klaas van Walraven, 151-174 (Leiden: Brill, 2009); J. Verrips and B. Meyer, "Kwaku's Car: The Struggles and Stories of a Ghanaian Long-distance Taxi-Driver," in *Car Cultures*, ed. Daniel Miller, 153-165 (London: Berg Publishers, 2001).

³⁷⁵ Kassum Jaha Abdulla, interview with author, 2 April 2012, Tabora, Tanzania.

understanding cultures of labor and technology in African history, and it shows that even a demonstration gone-wrong can provide useful historical evidence.

In Dar es Salaam, I also joined a garage as an apprentice where I was able to follow parts and document methods of repair that subsequently informed interview questions. Even when my own examples differed from a mechanics' historical experiences, the ability to talk-shop with these old men showed that I was invested in the details of their work and the challenges they faced in their careers. Becoming an apprentice also revealed details about garage life that were not readily apparent in interviews. In the interview format, mechanic's stressed their intelligence (*akili*) by recounting their mechanical creativity during their careers. While these stories provide an important foil to colonial discourses about African mental capacity, they also make invisible the bulk of daily activity in a garage. Dropping the transmission out of large vehicles by hand requires a careful orchestration of bodies, while fixing engine blocks manually requires an incredible amount of hand-work and time. Indeed, the most common form of labor was not the innovative fixes mechanics brag about in interviews, but instead the ability to do metal work of all kinds on cars, bicycles, hand-karts, hoes, or on gates. In this manner, repair garages were not only centers for fixing cars, but also places where a range of useful skills could be gained by a young man trying to build his life. Though everyone's goal was to become an innovate *fundi mekaniko* (an engine mechanic), garages were important spaces throughout the twentieth-century because they provided boys a variety of tacit skills that could be used throughout society.

CRAFTING AFRICAN SUBJECTS

Garages were never supposed to be spaces of social mobility and technological appropriation for uneducated African boys. For colonial authorities, both the location and the nature of automobile

repair contradicted plans for social and economic development in Tanganyika. Repair shops were predominantly located in urban centers where Africans could become “detribalized”, and in official views, uncontrollable.³⁷⁶ Furthermore, car repair was based upon a type of knowledge and a set of skills that were deemed incompatible with being African. While British officials held a variety of views about the causes of Africans’ technological inferiority, ranging from studies on race and mental incapacity to cultures of child rearing, they all agreed that their colonial subjects were not ready for European-style industrialization.³⁷⁷ Instead, they focused on creating rural African artisans and “handymen” who, with minimal training, could transform African village life at a minimal cost to the colonial government.³⁷⁸ Even after World War II, demobilized African soldiers who had worked with machines were told to return to their home villages where they could lead a new wave of economic development by spreading artisanal knowledge as village handymen.³⁷⁹ Though shrouded in discourses of moral uplift for African communities, industrial and technical programs designed by the colonial government were social engineering schemes aimed at creating specific types of political and economic subjects in the colonies. This section explores efforts by Tanganyika’s government to create two such subjects: one was a rural handyman who promised to transform African village life; the other was an

³⁷⁶ “Repatriation of Unemployed Natives in Townships,” Tanzania National Archives (hereafter, TNA), Tanganyika Secretariat 21616; W. Fryer, (District Commissioner, Dar es Salaam), ‘Annual Report for 1931: General Observations,’ TNA 54; “Annual Report Dar es Salaam 1924,” TNA 1733/26. On urban policy in Dar es Salaam, see: Andrew Burton, *African Underclass: Urbanisation, Crime, and Colonial Order in Dar es Salaam* (Athens: Ohio University Press, 2005).

³⁷⁷ “Tests of Intellectual Capacity,” TNA, Tanganyika Secretariat 25728.

³⁷⁸ “Development and Reconstruction: Technical Training for ex-Service men,” TNA, Tanganyika Secretariat 33051.

³⁷⁹ “Development and Reconstruction: Technical Training for ex-Service men.”

educated apprentice-class that officials identified as Tanganyika's best chance for achieving social and economic development.

According to education officials, crafting Africans into colonial subjects required the recognition of a shared technological past. For this reason, the proposed "industrial education" was a hybrid of African "indigenous" knowledge and traditions of craft from England. The author of the "Handyman Course," W.H. Percival, described the goals of the course this way in 1937:

This syllabus has been drawn up with a view not to produce artisans or pseudo artisans who will eventually, as some may suppose, displace and usurp the position of artisans in this country, but to produce citizens with wider capabilities, a measure of independence and a keener appreciation of craftsmanship, and who can in later life, when occasion arises, use that skill and knowledge of tools which they have acquired at school. There is ample evidence on all sides that the native of this country is industrious and has a certain degree of manipulative skill and in his traditional crafts displays no little ingenuity. It is with a view to developing these aptitudes that the syllabus has been framed. Care has been taken to preserve as much as possible the traditional crafts of this country, but with the spread of education the native will not be contented with home conditions of a hundred years ago, and the aim is not to oust the indigenous useful articles, but to improve and offer alternatives for the person who cannot afford to buy or to employ an artisan to build and improve his home. It may be urged that a little knowledge is dangerous, but in this case it is submitted that the knowledge gained of simple tool exercises will be an asset to the man for who it is intended, ie the man who is first a farmer and secondly who has the ability to undertake his own running repairs and if necessary build and furnish his own home. In short, a 'handyman'.

Percival's description reveals the delicate dance officials performed when using technical knowledge to create new colonial citizens. On the one hand, neither African skill nor "indigenous useful articles" were adequate for producing "industrious" rural farmers or the hygienic households colonial officials had in mind. On the other hand, spreading knowledge was "dangerous" because it threatened to produce African subjects who were no longer "contented"

with their material conditions. Percival's answer was an invention of tradition that cherry-picked what he considered the best of Tanganyika's "traditional skill" and fused it with the social and economic goals of colonial development. In addition to being a cheap scheme for economic development, training Africans in handicraft was also a way to keep them distant from the types of knowledge officials associated with social and political mobility.³⁸⁰

I describe this course in some detail here not only for what it shows about hierarchies of race and knowledge, but also because the course used a key element of colonial car culture—the petrol box and petrol can (known as a petrol *debe*)—as the scrap materials Africans could use to become more productive and hygienic colonial subjects. The first part of the syllabus centered on forms of carpentry. Section A described how agricultural implements such as hoe handles, ox yokes, and ploughs could be made from local materials, whereas Section B sought to improve upon existing "native" infrastructure, including homes, latrines, and food storage. In Section C, Percival featured useful forms of "indigenous craft", including the construction of beehives, beds, stools, and coconut graters. Section D featured a petrol box furniture collection in which Percival described how the scrap wood in which petrol tins were shipped could be made into a meat safe, chair, bookshelf, cupboard, safari box, and a clothes rack. The second part of the syllabus focused on metal smithery, including forging, welding, and smelting. In particular, it encouraged African handymen to turn metal scrap into household items: "Petrol *debes* and many other discarded tins can, with a little patience and ingenuity, be made into quite useful articles and this section is intended to serve as a stimulus to the pupil to exercise his brain and to learn to recognize whether a discarded article is really as useless as it first appears." Petrol tins, for

³⁸⁰ On the changing boundaries of useful knowledge in technical education, see Lerman, "The Uses of Useful Knowledge".

example, could be transformed into toilets, rattraps, drawer handles, window hinges, planter boxes, drawers, a cooking stove, and small cooking pots.³⁸¹ Regardless of Africans' need or desire for these items, Percival's mix of "European and "indigenous" craft should be interpreted as an ambitious and misplaced salvaging project: in addition to giving petrol tins and their boxes a new material purpose, the handyman course was supposed to salvage "indigenous" technical skills by giving their trade an intellectual stimulus and moral uplift.

In addition to rural handymen, officials attempted to create a class of educated African men who could fill non-clerical positions in carpentry, masonry, and automobile mechanics at the top of the hierarchy. In stark contrast to programs on handicraft, apprenticeship programs in these "semi-skilled" trades stressed distinctions between European and African cultures of technology, specifically targeting an African *fundi* class as an irresponsible group of tradesmen who were stalling economic progress in the colony. An introduction to an apprenticeship program described the problem this way: "The aim of this policy is to produce a body of thinking craftsmen, not only conversant with the technique of their trades but also having a pride of craft, a feature essential to craftsmen which is indiscernible in the existing 'fundi' class."³⁸² In order to achieve these results, officials transferred models from the United Kingdom to Tanganyika that put an emphasis on rigorous theoretical and classroom training instead of the hand-based

³⁸¹ "Handyman Course by WH Percival," TNA, Tanganyika Secretariat 25735.

³⁸² "Training and Employment of Tradesmen in Gov't and Industry 1951 Review", TNA, Tanganyika Secretariat 41619. Apprentice programs in Tanganyika were based on efforts by the colonial protectorate in Zanzibar to create a class of African industrial workers in 1928. The goals were similar to those of the postwar era: "Its object is to fit Africans to take a higher place than that of mere unskilled workers" ("Industrial Education," Zanzibar National Archives, AB 1/68)

knowledge found amongst the African *fundi* “class” educators loathed.³⁸³ This distinction between hand-based knowledge and head-based knowledge was important to colonial officials for three reasons. First, it replicated hierarchies of technology in the United Kingdom in which the ability to read, write, draw, and use theory was the foundation for technical respect and social mobility.³⁸⁴ Second, it was based upon a series of trade tests that allowed the colonial government to control which types of knowledge were rewarded with social mobility and respect.³⁸⁵ Finally, head-based training offered the best chance to create a class of African men who reflected the social and technological ideals of colonial modernity.

Colonial apprenticeship programs rarely produced the technical or social results desired.³⁸⁶ According to technical education officials like G.H. Howell, the limited uptake of industrial training in Tanganyika could be explained in a number of ways, but the main problems were African students and their culture:

Academically, these young men are fairly well educated; they speak fair English and write a good hand, but in the vast majority of cases their training does not seem to have enabled them to fit into any niche in life ... They do not seem to have much idea of taking an interest in whatever employment they may take up with a view to making it a career or profession, but look upon it rather as a temporary means of earning money on an almost day to day basis. They will throw up their employment on the least provocation or on no provocation at all and seem to be unable to apply themselves to any employment with an eye to the future. Many of them seem to lack a sense of responsibility and a lad is just as likely to absent himself from work for a day or two to suit his own convenience and with no thought of the convenience of his employer or the work waiting to be done. The ease with which the young African can exist, is in some measure responsible for this lack of stability. If

³⁸³ “Training and Employment of Tradesmen in Gov’t and Industry 1951 Review”.

³⁸⁴ Lerman, “The Uses of Useful Knowledge”.

³⁸⁵ “Training and Employment of Tradesmen in Gov’t and Industry 1951 Review”.

³⁸⁶ The following excerpts can be classified as what Joseph Hodge terms as “crisis narratives produced by late colonial experts”. See *Triumph of the Expert*, 255.

he is out of employment he can rely on friends and relatives to keep him and he thus attaches less importance to the necessity to make a career for himself and is less inclined to put up with the drudgery and low pay of a learner.

Howell went on to blame the failure of apprenticeship schemes on African “upbringing”, noting not only the support of relatives cited above, but instead a culture of laziness rampant in African village life that undercut the possibility for instilling industrial ideals in colonial subjects.³⁸⁷ By blaming African culture for the limited uptake of colonial industrial ideals, Howell barely touched on the most obvious reason technical education failed to capture the interests of young men: apprentice programs targeted literate and educated African boys who were employable in a variety of high-paying clerical positions.³⁸⁸ In designing their programs, officials did not recognize that there were few reasons an educated young man would trade the salary and social mobility of office work for years of apprenticeship, a lower salary, and a career in manual labor. Instead of recognizing their social miscalculations, officials argued that educated Africans required the moral uplift of hand labor: “With sacrificing the academic content of early education we are now casting about to shift the emphasis to the dignity and vital importance of skilled work with hands, which too few Africans recognize as the true spur to social advancements.”³⁸⁹

By the 1950s, officials began to ask whether technical training had any merit in a place like Tanganyika. Citing linear narratives of Europe’s own economic and technological histories, they asserted that the human and material conditions in Tanganyika precluded the creation of an industrial class of workers required for economic growth and technological advancement. One

³⁸⁷ “Employment and Training of Africans, Vol III,” TNA, Tanganyika Secretariat 22068/III.

³⁸⁸ *Ibid.*

³⁸⁹ “Aptitude Testing of African Artisans”, in “Training and Employment of Tradesmen in Gov’t and Industry 1951 Review”.

official even suggested the term “industrial” had a different meaning in Africa than it did in Europe, adding that development policies based on European history could not be replicated in Africa.³⁹⁰ According to these officials, Tanganyika did not have the necessary preconditions for economic takeoff, and until these conditions existed, efforts to create rural handymen or skilled African apprentices would fail no matter what officials did.

Tanganyika needs the industrial skills of Europe but not necessarily the same techniques. The machine shops of Manchester, Pittsburg, or Frankfurt are geared to a larger supply of raw materials and greater markets than Tanganyika has, and were are never likely to see anything on that scale in this country while its population living above subsistence level is only about the equal of one average English country town. We must therefore beware of too ready an assumption that the same machines, the same technique and the same industrial lore as serve the western world will necessarily serve this patchwork tract of scrub and settlement. Apart from the failure of large scale state-owned enterprises in Tanganyika and elsewhere there have been cases to prove that the mere use of highly-organised western methods is no guarantee of success even here in the rapidly developing capital of the territory, where more than one European contracting firm has been defeated by competition from humbler back-yard businesses.³⁹¹

Regardless of their limited achievements, these programs are important because they reveal the ways in which officials tried to create two new types of African men by leveraging knowledge as power. They also illustrate the difficulty of doing so and the importance of scrutinizing the manner in which hierarchies of knowledge are created and subverted in historical practice. In principal, colonial technical education was based upon clear distinctions between “indigenous craft” and European artisanship, on the one hand, and head knowledge and hand knowledge, on the other. In practice, these distinctions were muddled by the hybrid nature of colonial technical education and the unintended uses of knowledge by trained African apprentices. Indeed, the central concern held by colonial officials was not a clean distinction between hard and soft

³⁹⁰ “Technical Education Vol. II” TNA, Tanganyika Secretariat 24638/II.

³⁹¹ “Aptitude Testing of African Artisans”.

knowledge, but instead their limited capacity to control how Africans used knowledge of any type in the colony.

BOIS TO MEN

From the beginning of the twentieth century, garages have been places where young men and boys (*bois*) entered as immature, unmarried, and dependent individuals, and where they left as self-reliant and respectable family men. In garages young men not only came of age through the acquisition of technological knowledge, but also become socially mobile, distinguishing themselves from others in their community by their familiarity with machines and by their purchasing power as consumers.³⁹² The training of Africans as mechanics began during the British war campaign of World War I. In spite of working on and with vehicles daily, African mechanics are presented as seemingly stupefied by the “magic” of vehicles because its design is “incomprehensible to them”. This description of African mechanics by a British lorry driver is typical for its infantilization and demasculization:

We came to like our black workshop companions for their unaffected, innocent simplicity. I remember one day watching my boy squirting grease through the bung-hole of the differential gear box...With the inside of a motor car a complete mystery to him, it must be understood that although the actual operation was carried out all right after I had started him, he had not the remotest idea of the object.³⁹³

³⁹² On the intersection of knowledge, labor, and accumulation in studies of African masculinity, see: Frederick Cooper, “Industrial Man Goes to Africa”; Lisa Lindsay, “Domesticity and Difference: Male breadwinners, working women, and colonial citizenship in the 1945 Nigerian general strike,” *The American Historical Review* 104 3 (1999): 783-812. An excellent piece for getting beyond dichotomies of colonizer and colonized and generational-based conflict in African history is: Gregory Mann, “Old Soldiers, Young Men: Masculinity, Islam, and Military Veterans in Late 1950s Soudan Francais (Mali), in *Men and Masculinities in Modern Africa*, eds. Lisa Lindsay and Stephan Miescher, 69-85 (Portsmouth: Heinemann, 2003).

³⁹³ William Wallace Campbell, *East Africa by Motor Lorry: Recollections of an ex-Motor Transport Driver of the 1914-19 Campaign in German East Africa* (London, 1928), 121.

In spite of this racial rhetoric, mechanics used their positions within colonial cultures of technology to contest their status in society, and ultimately, to create a tradition of automobile repair that replaced European engineering with African innovation. By doing so, mechanics not only forged new ways for young, uneducated Africans to be recognized as respectable men. They also challenged hegemonic understandings of masculinity held by colonial authorities and African elites.³⁹⁴

Following the war, the center of motor vehicle repair in colonial Tanganyika was the Public Works Department (PWD) where auto mechanic was the highest non-clerical position Africans could obtain. Given its status and the length of time required for training, auto repair positions were dominated by ex-British soldiers and by Asians trained in India. Africans were assigned duties as “native assistants”, a term which translated to the floor shop as the English-Swahili hybrid, *boi* (boy). As a term of derision, *boi* was a product of colonial cultures of race in which even the most capable Africans were to be considered incapable technological actors. Colonial studies of African mental capacity suggested Africans did not have the intellectual abilities to become the equivalent of European adults let alone learn a mechanical trade.³⁹⁵ In spite of its origins and the intentions of those who used the word, the term had the opposite effect on young African men searching for spaces of social mobility. The men I interviewed certainly recognized the racial origins of the term, *boi*, but they understood it as a form of patronage that they could use to become socially mobile, not as an unchangeable state based upon their race.

³⁹⁴ Stephan Miescher and Lisa Lindsey, “Introduction: Men and Masculinities in Modern African History,” in *Men and Masculinities in Modern Africa*, ed. by Lisa Miescher and Lisa Lindsay (Portsmouth: Heinemann, 2003), 6.

³⁹⁵ “Technical Education of Africans (Makerere Commission), TNA, Tanganyika Secretariat 24638.

Indeed, it was only when I prodded former colonial apprentices about racial relationships in repair shops that they mentioned incidents in which they received racially-charged verbal and physical abuse. As they narrated their histories to me, they were more focused on the way in which becoming boy gave them a patron in the short term and a set of skills to become socially mobile in the long term.³⁹⁶ For young men in colonial Tanganyika from the 1910s to the 1950s, becoming a repair shop *boi* was a necessary, and even desirable, step in moving from boyhood to manhood.

The most important feature of colonial automobile shops was the accessibility of their technical knowledge. In contrast to clerical careers that required formal education and social connections within structures of indirect rule, the PWD and its auto shops were a comparatively open places where the uneducated could climb social and technological hierarchies by showing their dedication to technological vocations.³⁹⁷ There were two ways to gain access to automotive knowledge in the PWD. The first, and most desirable for colonial officials and African laborers alike, was through family connections in the department. Many adolescent boys gained positions as auto repair “learners” or as drivers because of a father, uncle, or cousin who had established a reputation in the department in preceding decades. Those who were less connected socially climbed technological hierarchies by proving themselves on PWD road gangs, as porters, as

³⁹⁶ Kassum Jaha Abdulla, interview with author, 2 April 2012, Tabora, Tanzania; Kondo Mfaume, interview with author, 14 December 2011, Morogoro, Tanzania; Bushiri Ali, interview with author, 18 December 2011, Iringa, Tanzania.

³⁹⁷ “Memorandum on the Training of Africans for Employment in the Lower Graded Technical Posts in the Public Works Department,” in “Technical Education of Africans (Makerere Commission), TNA, Tanganyika Secretariat 24638.

drivers, or doing other forms of handwork in any of the department's workshops.³⁹⁸ In fact, though the PWD offered few of its workshop laborers more than daily wage contracts, it managed to attract a class of dedicated workmen who spent decades of their lives at the department trying to ascend colonial hierarchies of knowledge.³⁹⁹ Laborers were evaluated by their "efficiency" and "general conduct". Those with good marks could compete for more desirable positions—including entry into the auto repair shop—while those who frustrated about their positions left the PWD with useful skills and a Certificate of Service they could use to gain employment in other parts of the colony.

This type of social mobility was possible because of the type of knowledge that was important at the PWD. In direct contrast to programs designed by educational officers for industrial education, boys and young men learned about vehicles solely through the experience they gained during each day of work. Even the PWD's long-term director, C.W. Stevenson, and the department's workshop superintendent, E. Hooper, recognized the importance of tacit knowledge to training Africans in motor vehicle repair.⁴⁰⁰ When education officials asked the department to accept mechanical apprentices trained in industrial education at government and missionary secondary schools, Stevenson defended the network of uneducated boys who manned his workshops: "It is not to be expected that boys receiving a haphazard industrial training at a

³⁹⁸ Mrisho Sulemani Mwinchande, interview with author, 13 March 2012, Mkuranga, Tanzania.

³⁹⁹ For this reason, the PWD was a unique space of work in colonial Tanganyika. Similar to the situation Frederick Cooper describes in *On the African Waterfront: Urban Disorder and the Transformation of Work in Colonial Mombasa* (New Haven: Yale University Press, 1987), many other colonial departments and plantations in Tanganyika struggled to produce reliable African labor.

⁴⁰⁰ "Memorandum on the Training of Africans for Employment in the Lower Graded Technical Posts in the Public Works Department."

Mission School situated miles away 'in the blue' can compete with those who go through their training in large workshops in industrial centers where the work and experience gained is of a much more varied and comprehensive nature.” Hooper added that formally trained apprentices had “little knowledge of mechanical repair work and are worth little to the department,” especially because their hiring would force the department to fire the dependable African mechanics who had reached their positions through workshop experience and five years of auto shop training.⁴⁰¹ Though Stevenson and Hooper desired a work force with more “theoretical” grounding, their resistance to formally educated apprentices reflects the nature of auto repair in the PWD and elsewhere: it was a tacit affair in which experienced was gained through workshop immersion, not through the controlled spaces of colonial secondary education.

The colonial government’s repair garages were also unique because they provided uneducated boys a chance to work with and know about a prestigious colonial machine. One former apprentice from Tabora in central Tanganyika described his experience this way: “The head mechanic always wore white from his leather boots up to his wrists. As a *boi spana*, your job was to clean parts with petrol and a rag. When you finished, you alerted him, and he would swipe his finger inside the part and rub it on his uniform. If you dirtied his clothes, you had failed. If no stain showed up, he shook your hand. This was no small thing because it was every boy’s dream in the garage to someday wear the white uniform.”⁴⁰² In contrast to head mechanics, most of whom were European, African apprentices wore blue overalls and rubber boots. They learned about vehicles through the everyday experience of cleaning parts and assisting in repairs. Because African apprentices did not speak English, they learned using

⁴⁰¹ “Public Works Department: Native Staff General Vol. 1”, TNA, Accession 30, File SF/10.

⁴⁰² Kassum Jaha Abdulla, interview with author, 2 April 2012, Tabora, Tanzania.

mnemonic strategies, some using rote memorization and some, like an apprentice in Iringa, by incorporating part names into a song as vehicles were taken apart and put back together.⁴⁰³ While auto repair was undoubtedly physical and required finger-tip knowledge, in oral history former colonial apprentices emphasize the role of their *akili*, their intelligence or brain, as the most important part of their job.⁴⁰⁴ By pointing out the significance of experienced-based education, apprentices' oral histories not only undercut racial discourses of technology and mental capacity. They also tackle a fundamental misconception of colonial development and historical studies of modernization more broadly: in spite of rhetoric about the importance of centralized and portable bodies of knowledge to colonial development, tacit expertise and finger-tip knowledge learned by uneducated boys were critical skills for keeping colonial vehicles on the move.

Outside of the PWD, private garages also provided spaces for young men to climb social and technological hierarchies. Whether in urban townships such as Dar es Salaam or on sisal and tea plantations in rural areas, private repair shops owned by Europeans and Asian businessmen provided important spaces where young men could create the social and technological networks needed for becoming adults during the colonial period.⁴⁰⁵ It also created personal and technological opportunities that did not exist in government repair shops. By aligning themselves with African and Asian lorry owners, mechanics created important networks of capital and knowledge that provided them access to tools and parts, and perhaps more significantly, a space

⁴⁰³ Kondo Mfaume, interview with author, 14 December 2011, Morogoro, Tanzania; Bushiri Ali, interview with author, 18 December 2011, Iringa, Tanzania.

⁴⁰⁴ Bushiri Ali; Fadhili Ramadhani, interview with author, 14 April 2012, Tabora, Tanzania.

⁴⁰⁵ Kassian Duma, interview with author, 8 December 8 2011, Morogoro, Tanzania.

in which technological opportunities were less circumscribed by race.⁴⁰⁶ More than tapping into networks of people and capital, mechanics remember evening and weekend work as a critical and enjoyable time of experimentation and modification. Working for businessmen with tight budgets, African mechanics found an environment in which they were not only encouraged to experiment with vehicle modification and part fabrication, but also to develop new methods for diagnosing and fixing automobiles. By the early 1940s, some African mechanics had acquired enough clients and capital to start their garages in their own homes. For example, in 1942 in the Ng'ambo neighborhood of Stone Town, Mbaraka left a private garage where he had worked for seven years in order to open a home-based garage in an African neighborhood.⁴⁰⁷ There he fixed used cars owned by African, Asian, and Arab businessmen and acquired apprentices of his own whom he instructed in exchange for their labor. In Morogoro and Tabora townships of Tanganyika colony, African mechanics partnered with Indian lorry drivers to create to repair shops that served African and Asian communities alike.⁴⁰⁸ In addition to providing additional spaces for training and experimentation, these African-owned repair shops helped shift the locus of technological expertise from European-controlled areas to more accessible and intimate spaces in African communities.

⁴⁰⁶ Kassum Jaha Abdulla.

⁴⁰⁷ Mbaraka Kassim, interview with author, 8 June 2012, Stone Town, Zanzibar.

⁴⁰⁸ Kassum Jaha Abdulla.



Figure 1.3: Mbaraka Kassim in front of his used parts store in Zanzibar Town. He entered a garage for the first time in 1935 at the age of 14, and by 1942, he had opened his own garage near his current store. Photography by author.

During the colonial era, becoming a mechanic was more than gaining technological knowledge. It was also a process of becoming urban, and for many of the colonial mechanics whom I interviewed, it was an opportunity to achieve a type of respectable colonial citizenship that was only open to a formally educated clerical class. By accumulating knowledge, they also accumulated enough wealth to become adult men by marrying, building homes, and having children. During their evenings, mechanics went out on the town, enjoying cinema, dance clubs, or playing soccer, often sporting the stylish clothes they bought with their earnings. Kassim of Zanzibar even placed his success on equal footing with educated colonial clerks: “Even though I didn’t go to school, I was able to become as successful and popular as the African clerks in town. I went to movies and bought nice clothes. If people saw me walking on the street, they would

say, ‘That guy is a mechanic!’ I was famous.”⁴⁰⁹ Whereas technological hierarchies before colonialism often restricted esoteric knowledge through lineage, garages, as centers of expertise, offered new venues for uneducated boys to pursue respectable manhood by learning about machines.⁴¹⁰ In so doing, mechanics tinkered not only with vehicles, but also with the hierarchies of race, class, and gender in colonial Tanganyika. Indeed, it is quite remarkable that only two decades after Mott’s initial motor trial, African mechanics were performing experiments on vehicles in their own garages. In addition to decentering the locus of technological power in Tanganyika, the emergence of African repair garages provided a new space in which *bois* could become men through knowledge acquisition, consumption, and self-fashioning.

HAND EXPERTS AND PAPER EXPERTS

After independence in 1961, garages became spaces in which competing forms of expertise were applied to a fundamental task of modernization: car repair. In 1961, there were 394 registered garages in Tanganyika that employed 4,000 African mechanics and apprentices; by the mid-1970s the government estimated these numbers had doubled.⁴¹¹ For national and international development bureaucrats, garages were important not only in number, but also as sites of

⁴⁰⁹ Mbaraka Kassim.

⁴¹⁰ Peter Schmidt, *Iron Technology in East Africa: Symbolism, Science, and Archaeology* (Bloomington: Indiana University Press, 1997).

⁴¹¹ Government of Tanganyika, Annual Report of the Labour Division, 1961 (Dar es Salaam: Government Printer, 1962), 77. Accessed at the Zanzibar National Archives, BC 9/27; The United Republic of Tanzania Bureau of Statistics, “Survey of Industrial Production 1974,” (Ministry of Finance and Planning: Dar es Salaam, 1977). The government’s Bureau of Statistics changed its metrics of measurement in 1965 when it began to lump all transport work together. These statistics also do not capture the many unregistered garages that existed during this period.

development from which modern cultures of technology could diffuse throughout Tanzania. In the decades following independence, state garages were supposed to be conduits of technology transfer where international standards and methods of car repair could be distributed throughout the country by Tanzania's socialist government and its ensemble of international experts.

"Technical assistance" programs brought a number of car-based modernization projects to Tanzania in the name of post-colonial development, including European, Indian, and Pakistani mechanics who supervised government garages, technical training programs, and vehicle assembly plants.⁴¹² While these state spaces and projects were proclaimed as sites of modernization and staffed with national and international experts, it would be a mistake to focus on them as the most important locations for determining whose knowledge was powerful in independent Tanzania. To understand how cars were repaired after independence in Tanzania one must move from the obvious spaces of post-colonial modernization to the unexpected locations of automotive innovation that existed under mango trees (*chini ya mwembe*), in alleyways, and in mechanics' front yards. In these spaces, a new generation of African mechanics not only turned mechanical innovation into the gold standard of auto repair; they also transformed garages into a masculine space where unruly boys could become respectable men.

This section examines cultures of technology and masculinity through two forms of post-colonial expertise. The first is paper expertise, and it was accessible through the state-based institutions that attempted to direct social and technological change during the socialist era. In addition to offering the best prospects for social mobility, paper expertise validated mechanics' knowledge and skill as globally relevant through certification programs at technical institutes.

⁴¹² The United Republic of Tanzania, "Report of the Working Party on the Establishment of the National Technical Training Council," November 1978 (Government Printer: Dar es Salaam). Accessed at the Zanzibar National Archive, BD 14/27.

But it also required formal education and the ability to navigate state bureaucracies that valued head-knowledge and certification processes over hand-knowledge and technical competency.

The second type of expertise is hand-expertise, and it was available in unregistered and informal repair shops where mechanics learned through experience and staked their careers on their ability to innovate and fabricate. If during the colonial period garages were spaces where technological knowledge was uniquely accessible, following Tanzanian independence, garages based upon hand-expertise became community institutions for the hard-up and out-of-luck as well places where global cultures of technology intersected with the life trajectories of uneducated or illiterate boys. These cultures of expertise were by no means exclusive, but they do provide distinctive perspectives for understanding whose knowledge and labor was most effective for making men and cars in post-colonial Tanzania.

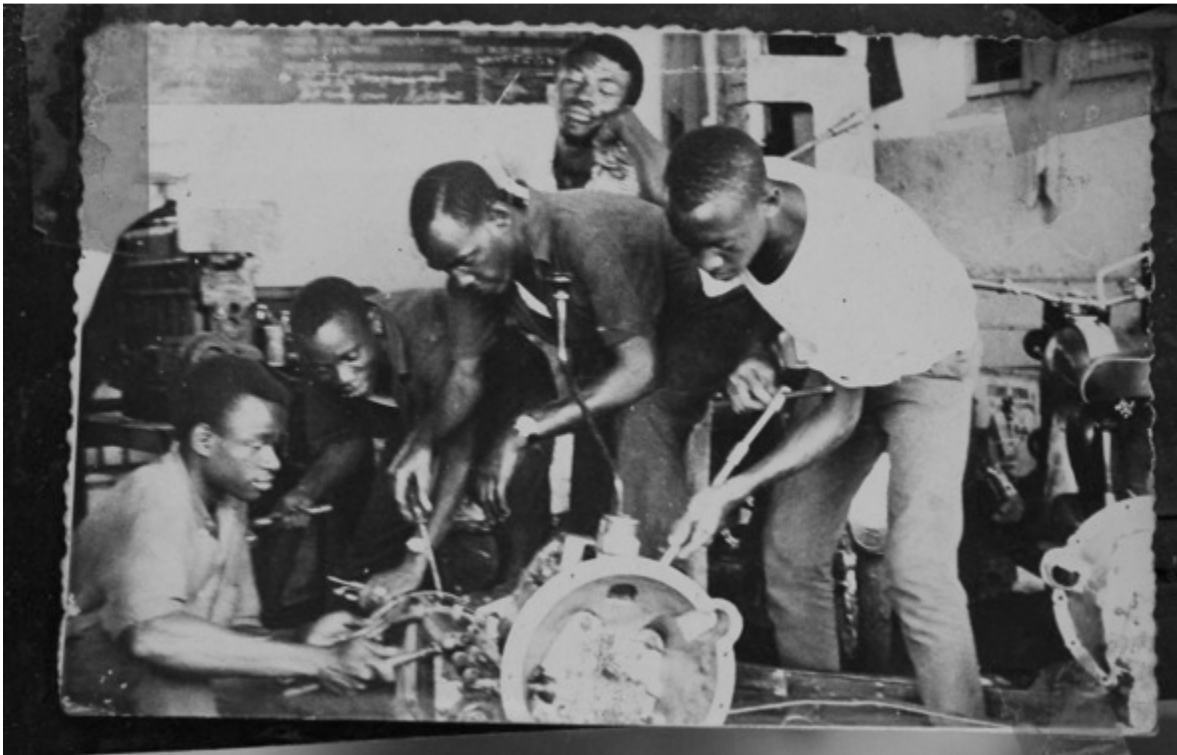


Figure 1.4: Apprentices laboring in a government garage in Kigoma. Photograph of personal collection taken by author.

As formal sites of modernization, state garages and technical institutes were considered the best places for Africans to modernize by accessing universal and portable bodies of knowledge. The main sites for gaining this expertise were the Department of Works (*Ujenzi* in Swahili and formerly the PWD) and vocational training programs offered to adults at night. Staffed with international expatriates and complete with libraries, workshops, machines, and apprentice programs, these spaces offered attractive incentives for individuals who wanted to turn a technical vocation into social mobility.⁴¹³ Indeed, nearly every mechanic I interviewed mentioned these institutions and the trade certificates they offered as the highest prospect for a young man aspiring to be a mechanic and a self-reliant family man from the 1960s to the mid 1970s. In addition to a good salary, mechanics within state systems were given paid leave, were offered courses in how to fix the newest vehicles, worked with newest fabrication equipment, and they had the pride of working for their state.⁴¹⁴

⁴¹³ Mechanics spoke of personal and familial well-being much more than they referenced the nation-building projects that have been at the center of historical analysis in Tanzanian history. In interviews, the broader contours of nation-building did not come up unless I asked a question about them.

⁴¹⁴ Jumanne Mrisho, interview with author, 18 April 2012, Tabora, Tanzania.



Figure 1.5: Hamisi Hamadi and Haji Hamisi Halimtu posing at a training institute in Morogoro. Photograph of personal archive taken by author.

The most attractive feature of state garages was the access they provided to paper expertise and international standards of auto repair. Unlike mechanics who worked private or informal garages, state mechanics could compete for opportunities to receive trade testing and special instruction at government technical colleges or through technical assistance programs. In Kigoma in western Tanzania, for example, I interviewed a group of mechanics who joined the *Ujenzi* garage in the mid-1960s and worked together to ascend the hierarchies of government-controlled trade testing. As we talked about their work lives in one of their living rooms—the three men were neighbors—all of their trade certificates hung on the walls surrounded by pictures of their work, but even more appropriately, of the networks of friends and family they were able to build because of their careers. One picture struck me as particularly apposite for capturing the hopes mechanics attached to state-based training. Pictured above, two of the men stand proudly in front of College of the Department of Works in Morogoro where they received trade testing in advanced motor mechanics. They had been selected to travel to the class because

of excellence at the Kigoma garage, and acquiring another certificate would give them more authority at work and increased financial security.⁴¹⁵ The picture, and the many certificates shown to me across Tanzania, evidence an element of post-colonial modernization that is difficult to overstate: during the 1960s and much of the 1970s, trade-testing represented the pinnacle of technical respectability for ambitious Tanzanian youth seeking to become modern men.

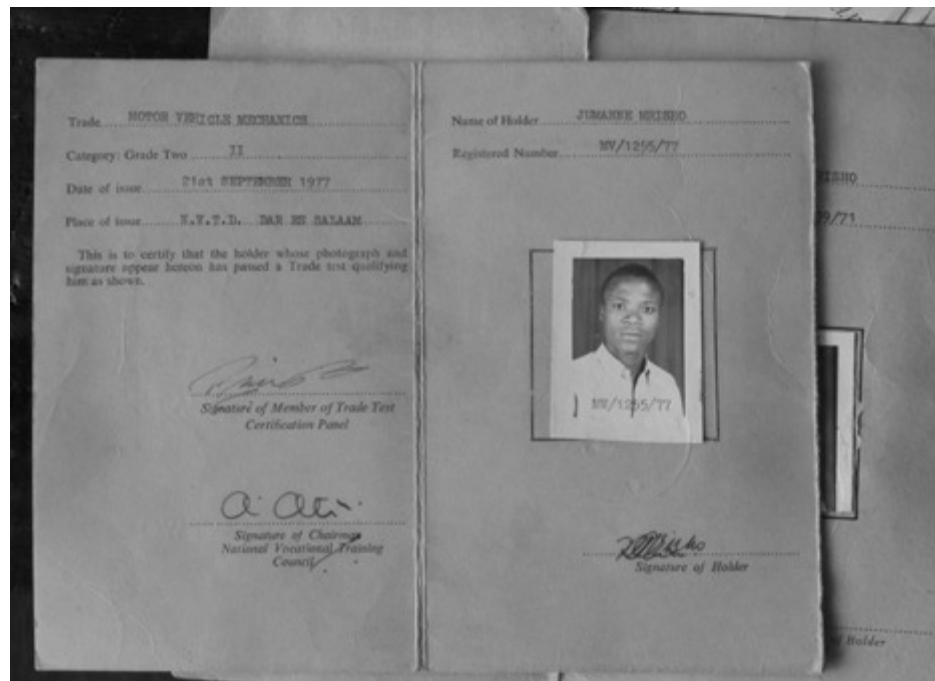


Figure 1.6: An example of a trade certificate from Jumanne Mrisho. Mechanics produced these repeatedly in interviews, but also used them to talk about the limits of social mobility in government repair shops. Photograph of trade certificates by author.

In spite of the hope associated with these state programs, they were also the focus of frustration and disappointment by mechanics who had tied their social and technological dreams to them. For young men looking to build their lives, three issues kept state garages from being

⁴¹⁵ Hamisi Hamadi, interview with author, 20 April 2012, Ujiji (Kigoma), Tanzania; Haji Hamisi Haliyamtu, 20 April 2012, Ujiji (Kigoma), Tanzania.

the type of transformative technological spaces mechanics had desired. First, they were only accessible to men with formal education. State-based training in auto mechanics was modeled on technical education in Western countries that was increasingly tied to classroom learning.⁴¹⁶

One manifestation of this trend was a technical assistance project that translated every part of the vehicle from English into Swahili. While this vernacularization of vehicles was supposed to make technical knowledge more accessible to Tanzanians who did not speak English, this program overlooked the importance of English to African cultures of car repair. My head mechanic described his experience in evening trade courses in the late 1970s this way:

No, none of us knew English, but we always used the English names for cars and parts. I mean, what type of mechanic goes to the parts store and describes a part in Swahili? That's ridiculous. So in classes, it was very funny. The instructors had these books and must have been told they had to teach us the Swahili names for parts, but none of us had ever used those words at work. I can't even remember what they were. None of us actually spoke English, but we had to ask the instructor to use the English terms because we didn't understand what the Swahili words he used meant.⁴¹⁷

Even more, translation projects reinforced cultures of learning that valued heads over hands and books over experience-based knowledge. In practice, this meant that uneducated boys wanting to work in state garages had to persuade managers to give them a chance using other means.⁴¹⁸

One common alternative was for talented athletes to give their skills as soccer players to *Ujenzi* sports clubs in exchange for an opportunity to acquire technical skills. In this way, masculine

⁴¹⁶ On the increasing emphasis placed upon certification in the United States, see Kevin Borg, *Auto Mechanics*. The centralization of auto repair training during the twentieth-century mirrors programs of industrial training during the nineteenth-century emphasized moral uplift (see Lerman).

⁴¹⁷ Kondo Maenda, interview with author, 8 July 2012, Dar es Salaam, Tanzania.

⁴¹⁸ Ridder Samson, *Ufundi wa Magari: mfano wa ukuzaji wa istahili za Kiswahili nchini Tanzania, matumizi na usanifishaji wake* (Leiden: Isimu ya lugha za Kiafrika, chuo kikuu cha Leiden).

leisure was an activity that allowed young men lacking formal education opportunities for social mobility in bureaucratic cultures of technology.⁴¹⁹



Figure 1.7: Hamisi Hamadi gained entrance into the *Ujenzi* garage in Kigoma by starting and managing the department's club. He had asked for a position and was turned down by the manager. The following weekend, his football club, Tricks, played and beat a team from Bujumbura, Burundi. The garage manager was watching and offered him entrance if he agreed to begin a team. Photograph of personal collection by author.⁴²⁰

Second, because state-run garages valued paper expertise (in the form of certificates) over fingertip knowledge, mechanics discuss them as places of frustration where their labor and expertise was not valued. In spite of their ability advance in technical skill through trade training and work experience, they recall that the final decisions for repairing vehicles were made by

⁴¹⁹ Hamisi Hamadi.

⁴²⁰ Hamisi Hamadi.

bureaucrats and managers who knew very little about car repair.⁴²¹ This, in turn, informed the final reason mechanics grew wary of state-led modernization: their technological creativity was being stifled and cars were not being fixed. This mechanic's description from the state's main motor depot in Dar es Salaam was echoed by government mechanics in each region I visited:

How can I put it? Managers didn't care about fixing vehicles. Up until the spare part shortages (*ubaba*) they had the resources to order new parts and new cars. But many times, those resources never made it to the shop floor. Instead, we would ask to do fabrication or modification, but we were told these would be unreliable. So many cars, especially later, just sat. When we could, we cannibalized them and used their parts in any way possible. Lots of the cars and parts were just put up for auction.⁴²²

Recognizing they were caught up in a culture of technology that valued paper over practical skill, state-employed mechanics either opened their own shops or combined their daily labor with productive leisure during the evening.⁴²³

The bulk of mechanical training in post-colonial Tanzania occurred away from official sites of modernization in garages known as *bubu*, meaning, "mute", where mechanics learned with their hands and through experience. Because *bubu* garages were unregistered and existed at mechanics' homes, under trees, or in alley ways, they functioned as an open community space where local boys could be supervised and taught useful trades beginning as young as age 10. The primary attraction of *bubu* garages was their social accessibility and the prospects of social mobility they offered. In them, young boys and men could prove themselves regardless of educational background or class through both physical and mental achievements. Indeed, of the

⁴²¹ Ayubu Abdi Kitumba, interview with author, 20 April 2012, Ujiji (Kigoma), Tanzania; Yusufu Ulimwengu, interview with author, 21 April 2012, Ujiji (Kigoma), Tanzania.

⁴²² Mohamedi Kibwana Kondo, interview with author, 12 May 2012, Dar es Salaam, Tanzania.

⁴²³ Ramadhani Madudi Malambo, interview with author, 17 December 2011, Iringa, Tanzania; Mohamed Sugamiko, interview with author, 17 December 2011, Iringa, Tanzania.

48 mechanics interviewed for this chapter, only two had the resources or educational background required for entering secondary school. The rest either decided for themselves or were told by parents that trading their labor for knowledge in repair garages was their best hope for becoming a productive and self-reliant (*kujitegemea*) adult.⁴²⁴ In exchange for their mechanic's knowledge—whom they called “uncle” (*mjomba*)—apprentices spent at least two years (and more commonly, three to six years) learning about vehicles and garage life by assisting with repairs. Instead of receiving a salary, they were instead given a small percentage of profits, and they were expected to use this money to buy their own tools and supplies.⁴²⁵ By doing so, they not only showed their dedication to their vocation and their head mechanic; they also laid a foundation for becoming a self-reliant *fundi*, a word that connotes both full expertise and adulthood in garages.

While becoming a mechanic was an attractive economic strategy for uneducated and illiterate youth, young Tanzanian men also joined *bubu* and private garages because these spaces offered unique opportunities for achieving masculine respectability. Brian Tshaka, for example, pursued a mechanical life because it allowed him to leave one masculine lifestyle in pursuit of another. Tshaka spent his youth touring East Africa as the head of a Jimmy Hendrix-style band. One day, his father warned him about the economic difficulties many musicians face in their older age and arranged for him to be trained by an Italian company constructing an oil pipeline.

⁴²⁴ Musa Muikikwa, interview with author, 18 December 2012, Iringa, Tanzania; Abdallah Suleiman, interview with author, 5 April 2012, Tabora, Tanzania; Peter William Mabula, 5 April 2012, Tabora, Tanzania; Hassan Saidi, interview with author, 12 April 2012, Tabora, Tanzania; Yusuf Iddi, interview with author, 13 April 2012, Tabora, Tanzania; Peja Mboga, interview with author, 13 April 2012, Tabora, Tanzania; Mohamed (did not want to give surname), 3 May 2012, Stone Town, Zanzibar.

⁴²⁵ Field Notes, Dar es Salaam, 12 January 2012; Kondo Maenda.

Tshaka worked as an assistant until he received a chance to prove himself on a difficult fix in a remote area. His Italian supervisor wanted to go back to the workshop to get a spare part, but Tshaka asked for the opportunity to stay and fix it with the parts at hand. He worked through the night, and when his supervisor returned, he found the truck in good enough running condition to reach the workshop. Given the creativity of Tshaka's fix, he was given a raise, but he decided he had learned enough and had tired of working under other others. Instead, he opened a *bubu* garage in his home where he developed a reputation as Dar es Salaam's most creative mechanics and a staple of the city's vibrant music scene.⁴²⁶



Figure 1.8: Tshaka, pictured on the left, on stage in Lusaka, Zambia before his father encouraged him to pursue a different career. Photograph of personal archive by author.

More generally, though, *bubu* garages were spaces that were known for turning immature

⁴²⁶ Brian Tshaka, interview with author, 17 July 2012m Dar es Salaam, Tanzania.

and unruly boys into men through strenuous labor, taxing mental work, and through clear hierarchies of male power. Three elements of this training are emphasized in mechanics' oral histories. The first was the physical nature of labor. Because apprentices worked in informal garages without jacks, engine hoists, or lathe machines, everything they did required copious amounts of labor. "One of the tests for a new boy was if his back was straight and his chest was out when we were carrying engines in the garages," a mechanic in Dar es Salaam recalled. "We didn't have a hoist, so we hooked the engine to scrap water pipes and hoisted those on our soldiers. If you saw a boy do this (he bends his back and brings his chin to his chest), he wouldn't survive."⁴²⁷ The second element of training was emotional. Though young mechanics were often given leeway to challenge their superiors through joking relationships (*utani*), they were also forced to perform women's work in the garages such as cooking, cleaning, and escorting a head mechanic's children to and from school.⁴²⁸ Their failures as mechanics also followed them everywhere. Aspiring mechanics received nicknames in garages based upon their physical or mental shortcomings in a given task—for example, a student who failed to loosen a nut could be called "*nuti*" or a boy who did not properly reassemble breaks could be named "the brake idiot" (*fala wa breki*). More generally, an apprentice would often be called *msenge*, a derogatory Swahili term for male-male sexual relationships used to feminize men, as a way to reinforce cultures of gendered and technical authority in *bubu* garages. Only when apprentices became full mechanics were they able to rename themselves or be safe from other forms of

⁴²⁷ Jonas Mbawala, interview with author, Dar es Salaam, Tanzania, 29 October 2011.

⁴²⁸ Omari Mayunda, interview with author, Dar es Salaam, Tanzania, 29 October 2011.

demasculinization.⁴²⁹ Much like precolonial rites of passage, then, garages offered a space and a set of procedures through which young men could come of age through physical and emotional transformations overseen by elder men.

Third, and the most important feature of garages for the men whom I interviewed, boys became men through taxing mental work. By taking cars apart and putting them back together, *bubu* mechanics learned the intricacies of vehicle function through the type of tacit skills and experience-based knowledge Collins and Evans emphasize. Though they lacked certificates accrediting their expertise, *bubu* mechanics claimed their form of experience-based knowledge was the most effective and innovative form of vehicle repair. Known as *ufundi wa kienyeji* (literally, local mechanics), the expertise of *bubu* garages is more accurately described as an approach to technology than a compact body of knowledge. From its emergence among African mechanics in the 1940s, its core element was an understanding of automobiles and their parts as open technologies that could be modified and fabricated as dictated by consumer demands, economies of spares, or even the location of a repair.⁴³⁰ This meant it not only varied by location, but also provided generous leeway for mechanics to establish their own styles and methods of repair. It was also the root of their passion for work. A reoccurring theme in oral interviews with mechanics was the restless state of their minds when they had a repair or modification that was incomplete. Men either claimed they could not sleep when a job was

⁴²⁹ The first was my own nickname and the method through which I learned about cultures of naming in garages. I was given one *kung-fu*-style swing at the wrench in order to loosen a nut connecting the radiator to the frame. The other example came from: Kondo Maenda, interview with author, Dar es Salaam, Tanzania, 20 July 2012.

⁴³⁰ Kurt Beck, "The Art of Truck Modding"; Madeline Akrich, "The De-Scripton of Technical Objects," in *Shaping Technology/Building Society: Studies in Sociotechnical Change*, eds. Wiebe Bijker and John Law, 205-224 (Cambridge: The MIT Press, 1992), 207-209.

unfinished or that dreaming provided a means of mechanical creativity.⁴³¹ Either way, the final step for boys to become men was to take their vocation seriously by constantly having cars on their minds.

Like the generation of colonial African mechanics before them, after independence mechanics carried on the tradition of productive leisure by repairing cars after work hours. Tshaka and life-long friend Frank Taylor spent many evenings together drinking beer, fixing cars, and teaching their sons the fundamentals of vehicle repair.⁴³² They worked together on Tshaka's life project, a roadster he called, "*Muungano*", or the "Union", a reference to the status of the car as a union of ideas and parts from around the world. Similarly, in Ujiji in western Tanzania, I found a group of mechanics who worked in state-owned garages by day and in their neighborhood by night (pictured on page 1). From 4 p.m. to the early morning, these men worked on cars outside their homes in a style of productive leisure that allowed them to try fixes disallowed by bureaucrats in state garages. In addition to the extra money they earned, this group described this work as a time for male bonding—especially between fathers and sons—and an opportunity to enjoy their vocation in a manner not possible during the workday.⁴³³ At state or private garages, these mechanics were under the thumb of managers, but after work, they were free to create their own hierarchies of knowledge and networks of labor in the more intimate spaces of homes and neighborhoods. In addition to the enjoyment and pride they received from their labor, training sons and other youth in their neighborhood was also an economic strategy through which able-bodied mechanics could plan for old age. By distributing knowledge about

⁴³¹ Kondo Maenda; Kassum Jaha Abdulla; Kondo Mfaume.

⁴³² Frank Taylor, interview with author, 27 August 2012, Dar es Salaam, Tanzania.

⁴³³ Brian Tshaka; Hamisi Hamadi.

automobiles, and sometimes even their own trade secrets, adult mechanics created networks of reciprocity they could call upon when they were no longer able-bodied.⁴³⁴



Figure 1.9: Tshaka's *muungano* in the making outside of his house. Photograph of personal collection by author.

⁴³⁴ Kassum Jaha Abdulla.



Figure 1.10: Brian Tshaka, his son, and the completed *muungano* in Dar es Salaam. Photograph of personal collection by author.

This productive leisure became especially important in the early 1970s, when, due to a foreign exchange crisis, mechanics and their *bubu* garages became obligatory passage points of car repair for both individuals and the state. In spite of running garages that were illegal and demeaned by the government as “backyard garages”, *bubu* mechanics like Tshaka and the neighborhood mechanics in Ujiji became critical actors in keeping private and state-owned vehicles on the road. The most common approach of repair was the mixing of different vehicles’ parts through fabrication. This could take any number of forms. Buses in rural areas were refitted with heavier front and rear springs and their Scania engines replaced with more reliable Mercedes or Leyland models in order to become economical for operation on the area’s rough roads.⁴³⁵ Popular Peugeot sedans had recurrent carburetor problems that were expensive to fix, so

⁴³⁵ Omari Kamulika, interview with author, 15 April 2012, Tabora, Tanzania; “Ripoti za Magari Makuukuu,” SMZ Mawasiliano na Uchukuzi, Zanzibar National Archives, DA 13/12.

mechanics in central Tanzania fabricated replacements out of spare Toyota or Nissan parts. Rear differentials for popular Isuzu trucks gave out when heavily loaded on rough roads. As a solution, mechanics across the country replaced them with older Bedford differentials that could sustain heavier loads and bumpy roads. Though engines were less open to modification, mechanics kept popular Bedford engines alive in spite of the propensity of their piston rings to give out. With few spares available, mechanics created their own rings out of scrap metal; admittedly, this was not the most-lasting or desirable form of repair, but in the circumstances, it kept lorries on the road.⁴³⁶

Though *bubu* mechanics were united in their preference for experienced-based knowledge, urban and rural mechanics competed amongst themselves for technological prestige. Mechanics in rural areas criticized their urban colleagues as “take-off and put-on” (*kufungua na kufunga*) mechanics whose work was simplified through greater access to spare parts and machinery. Whereas places near the economic centers of the coast had access to lathe machines that could drastically simplify part modification, in the central and western regions mechanics had to be as creative about the methods of fixing as the fixes themselves. When reboring pistons, for example, mechanics created a lever system that used only rope, sand paper, kerosene, and a tree branch, combined with lots of labor, to refinish a crankshaft (see picture below).⁴³⁷ To resize pistons, mechanics in rural areas wrapped cylindrical tree branches in sand paper and twisted until they achieved the desired size.⁴³⁸ For refinishing engine blocks, one mechanic attached sand paper to a sheet of scrap glass and used it to level engines that had been warped by

⁴³⁶ Kassum Jaha Abdalla; Kondo Mfaume.

⁴³⁷ Jumanne Mrisho.

⁴³⁸ Abba Kazue, interview with author, 15 April 2012, Tabora, Tanzania.

overheating.⁴³⁹ Urban mechanics, for their part, decried these fixes as temporary and unreliable. They emphasized instead urban spaces as areas of technological cosmopolitanism that required greater understanding of trends in global car production and more flexibility in meeting the demands of city drivers.



Figure 1.11: Jumanne Mrisho demonstrating the manual repair of crank shafts in Tabora. Photograph by author.

In addition to their creativity, *bubu* mechanics were important technological actors because they hoarded parts and broken-down vehicles; when Tanzania's socialist state failed in its role as a distributor, mechanics filled the void by fabricating and re-purposing the used parts they had collected over their careers and traded amongst themselves.⁴⁴⁰ A major source of these used parts were state garage auctions of the vehicles and parts government mechanics were not

⁴³⁹ Omari Kamulika.

⁴⁴⁰ Mohamed (surname withheld), 3 May 2012, Stone Town, Zanzibar.

allowed to repurpose. Building on the innovation of African mechanics who had fabricated parts in African and Indian garages during the colonial era, collecting used parts and scrapped vehicles was both a technological and social strategy that had allowed Tanzanian men to build wealth in both people and things since the 1940s.⁴⁴¹ As a result of this innovation and hoarding, mechanics created new spaces of expertise and thrived economically during the 1970s and 1980s, a period nominally defined by decline and stagnation. They also transformed motor vehicles from closed technologies produced in foreign factories to open technologies that, whether in whole or in part, could be modified according to changing economies of spares or the material conditions of roads. This innovation and these *bubu* spaces of work underscore the necessity for moving beyond state-based approaches to African histories of modernization. In particular, they illustrate that received hierarchies of technical knowledge must be questioned if we are to understand how both people and things have worked at important historical junctures in African history.

⁴⁴¹ These networks are similar to what David Meyer describes in *Networked Machinists: High Technology Industries in Antebellum America* (Baltimore: The Johns Hopkins University Press, 2006).



Figure 1.12: An example of hoarding in Frank Taylor's *bubu* garage. He began collecting these parts in the early 1970s. The items pictured above are only a fraction of the parts he has distributed around his property. Photography by author.

CONCLUSION

By highlighting the labor of an unlikely group of experts who built their lives by repairing broken down machines, this chapter provides new evidence for understanding how both people and things have worked in African history. While the manufacture of vehicles for Africa began during the early colonial period with European engineers like Mott, African mechanics in colonial and post-colonial periods took this process over from the 1940s through the 1980s by using tacit knowledge to become automobile experts and respected men. Their careers started in colonial, state, and private garages where their technological dreams often ran up against racial and gendered cultures of technical authority; but they came of age as mechanics and as men in the more intimate spaces of *bubu* garages where they could turn evening leisure and work into an

opportunity for mechanical creativity and financial security. In turn, this technological venue created social spaces and networks of labor where young boys could gain access to technical knowledge and where aging mechanics could grow old by accumulating labor, spare parts, and cars. Though these *bubu* garages were disparaged by national authorities, they became important social and technological spaces because of their openness: first, in their role as a social institution that accepted and valued the labor of boys whose families had limited resources; and second, in an approach to vehicles as an open technology that could be made commensurate with local economies of repair through innovation and imaginative uses of resources and labor. By the 1970s, even state ministries sent their vehicles to these illegal garages and their unschooled, uncertified labor forces.

As spaces of historical analyses, the social and technical work performed in Tanzanian repair shops is important for three reasons. First, it pushes scholarship on the history of modernization and development in a new direction by illustrating the significance of decentralized tacit knowledge to the creation of automobile expertise in Tanzania. This stands in contrast to an emphasis on the centralized and portable knowledge of educated bureaucrats and technocrats as the most powerful form of expertise in historical studies of development. Since the 1910s, fixing cars in Tanzania did not require the ability to read or write; nor did it require a technological coordination controlled by the state. Instead, mechanical expertise was gained through the experience and experimentation that was accessible to boys of all educational backgrounds in *bubu* garages. Second, this chapter provides a way to move beyond the binaries attending historical studies of modernization. As a product of modernization theory, clear distinctions between colonial and indigenous and local or global obscure the social and technological attraction of repair garages to African boys who were looking to become men.

African youth joined garages because they were places where the local and the global existed side-by-side in a complementary tension. Existing in alleyways, under trees, and outside of homes, garages and the knowledge they traded in were often irreducibly local; and yet, they offered young men an opportunity to take part in global cultures of technology through repair and innovation. Finally, this chapter replaces representations of Africans as incompatible with modern cultures of technology with the life histories of mechanics who were competent and passionate about their work. It not only reveals the importance of technical knowledge and innovation to contesting racial and gender social orders. It also reveals cultures of labor and technology that are critical to understanding the making of both men and cars in twentieth – century Tanzania.

CHAPTER 5—THE PEOPLE’S CAR OF DAR ES SALAAM: BUSES, PASSENGERS, AND THE STATE IN URBAN TANZANIA, 1960s - 1980s

In July of 1970, President Julius Nyerere used buses to explain the five foundational principals of Tanzania's socialist policies, including: equality, freedom from exploitation, work, leadership, and the nationalization of public property. Speaking at *Saba Saba*, an annual trade fair in Tanzania's capital city, Dar es Salaam, the president explained:

Something foundational for our economy, like buses, should be our buses and not those of some official who says, 'That's my bus.' Your bus? And the driver inside, the same person may say, 'That's my driver.' Your driver? Is it possible for you to have your own driver? A driver is only able to be a driver of the socialist community, not 'your' driver. A driver is the same as a teacher: a teacher is of the community; a doctor is of the community; and a driver is of the same socialist community.

Nyerere concluded his address by stating that an *mjamaa*, a person who follows the principals of Tanzania’s *ujamaa* socialism, could never say “my bus,” for such a person “believes that the work of [the party] is to build a classless society.”⁴⁴² Up to this point, *ujamaa*, meaning “familyhood,” was characterized by state efforts to create self-reliant villages in rural Tanzania. In Nyerere’s speech, buses entered the national vocabulary of socio-political change as the people’s car of Dar es Salaam and the vehicle leading urban citizens down the road of African socialism.

A year after Nyerere’s speech, a newspaper editor used a similar rhetorical approach to discuss the relationship between buses and the everyday experience of urban *ujamaa*. “Using this city’s buses is an experience all its own,” the editorial begins. “First, the speed itself is crazy and you have to hold on with all your strength. Then, there are so many passengers that complaints can be heard both inside and outside the vehicles. Buses constantly cause passengers to be late,

⁴⁴² Julius Nyerere, “Nguzo tano za Ujamaa,” in *Moyo kabla ya silaha* (East Africa Publishing House: Dar es Salaam, 1973), 68. All subsequent translations from Kiswahili are by the author.

and so they complain, curse and even get mad at each other [...] In fact, so many freak events (*vituko*) occur inside our buses that they could be discussed without end.” To substantiate these claims, the author describes the death of a passenger at the hands of a bus conductor and another rider being pushed into an open sewer by the vehicle’s conductor. “For sure,” the editor continues, “there is nothing our socialist community can depend upon (*tegemeo*) more than the daily frustration of riding our buses.”⁴⁴³ Like numerous urban passengers who took time to write letters or compose poems about their dissatisfaction with Dar es Salaam’s urban transportation, this author noticed a contradiction between the socialist ideals of the young nation and the everyday experience of riding city buses. For one poet, socialism on wheels was best described as a bumpy, “stalling and stuttering” ride.⁴⁴⁴ Another, writing in 1979, condensed an entire decade of passenger complaints into verse:

It is perhaps just a common ‘plaint.
O UDA bus!
What is this mess? We wait and wait, Till we are late.

At every stop there is a crop of men and women,
Young and old, anxious students, worried clerks, and shopping maids
Stand and sit and stand again, but in vain
There is no bus, that’s the strain.

At last, when it comes, the wayward bus
Is fully packed and there’s a rush
Who can board it? Gates are jammed,
Shoes are trampled, bush shirts torn
Pushing, pulling, kicking, cursing, shouting, shrieking folks are rammed.
Leaning shelters badly leaking, helter skelter public seeking
Safer spot, Oh, what a lot!

Listless drivers, rude conductors
Some are hazy, others crazy, pinching cents to fill their coffers!

⁴⁴³ “Tegemeo,” *Ngurumo*, 10 November 1971.

⁴⁴⁴ “Shirika la UDA,” *Ngurumo* (Dar es Salaam), 24 May 1977.

Buses creaking cannot start
Some are old, others slow, flat tyres would not go
Most of them are out of order making journey harder and harder

Lo, you see another sight!
—a common sight
Buses trail in one direction but don't come from opposite direction.
You wait and wait, till you frustrate
And return home, Your discretion!⁴⁴⁵

This chapter explores how public transportation became a vehicle for Dar es Salaam residents to critique state policies and share their own visions, hopes, expectations, and strategies for building a socialist society. Using Barbara Rosenwein's term, "emotional community," I identify buses as important technologies and spaces in which Tanzanian passengers experienced, reacted to, and sought to shape socialist policy during the 1970s and early 1980s. In socialist Dar es Salaam, buses were transformative spaces that rallied strangers into daily conversations about their collective experiences and frustrations as residents of a socialist city. Composed of a diverse cross-section of urban society, this emotional community transformed its daily experiences in queues and aboard city buses into newspaper debates about national policy and the nature of state-led modernization schemes.⁴⁴⁶ Some writers signed their names, but many referenced emotional states by signing as "disappointed" or "angry" passengers. Far from a narrative of socialist demise, I read behind the frustration of letters and poems to show how residents expressed their expectations and hopes of city life in socialist Tanzania by appropriating and redeploying official discourse. As Susan Geiger and James Brennan argue for

⁴⁴⁵ "Special Sunday Interview: UDA Revisited," *The Daily News*, 19 June 1977.

⁴⁴⁶ Barbara H. Rosenwein, "Worrying About Emotions in History," *The American Historical Review* 107 (June 2002): 23-26.

Tanzanian nationalist discourse, no single vision of society or ideology suffices for capturing the socialist experience in Dar es Salaam.⁴⁴⁷ Rather, passengers' expressions should be read as what Brennan describes as a "popular nationalist vocabulary" that could be directed toward the everyday minutia of life as well as the more lofty visions of a socialist city.⁴⁴⁸

As this journey of bus passengers unfolds and takes its natural detours, three additional points are crucial to this narrative of socialism. The first is the importance of national institutions to the way Tanzanians experienced *ujamaa* and made claims on their state. Why did a municipal bus parastatal become the site of so much anger and disappointment in national newspapers? The answer is that the city's bus company, like other parastatals, represented the hopes of social, political, and economic change led by a legitimate government. Nationalized in 1970 as Dar es Salaam Municipal Transport (DMT), the city's bus company was renamed *Usafiri Dar es Salaam* (UDA) in 1974 and repainted its buses from green to red to distinguish itself from the colonial company operating it through the first decade of independence.⁴⁴⁹ In Chandra Mukerji's words, Dar es Salaam's bus system was intended as a technological orchestration to "demonstrate a political capacity to rule well."⁴⁵⁰ With a fleet of visible buses, uniformed staff, and posted timetables, UDA was supposed to be the technological manifestation of the

⁴⁴⁷ Susan Geiger, *TANU Women: Gender and Culture in the Making of Tanganyikan Nationalism, 1955-1965*, (Portsmouth: Heinemann, 1997).; and James Brennan, "Nation, Race and Urbanization in Dar es Salaam, Tanzania, 1916-1976" (Ph.D. diss., Northwestern University, 2002), 320-321.

⁴⁴⁸ Brennan, 321. He writes: "TANU coined and crafted much of this vocabulary, but never determined or controlled its shifting content and meanings." This also applies to the socialist period.

⁴⁴⁹ "Shirika la Usafiri Dar es Salaam Ltd: Taarifa ya Mwenyekiti," no date, Usafiri Dar es Salaam (hereafter UDA). I explain this collection in the text below.

⁴⁵⁰ Chandra Mukerji, "Intelligent Uses of Engineering and the Legitimacy of State Power," *Technology and Culture* vol. 44 no. 4 (Oct. 2003), 656.

sociopolitical change socialist politicians promised. For this reason, examining the interaction between UDA and urban residents highlights moments within the longer temporality of *ujamaa* that are crucial for understanding how residents viewed their state and their futures as Tanzanian citizens. Beginning with the nationalization of public services in the late 1960s, a time many described with hope and expectation, the 1970s became a decade of frustration and disappointment in which the institutions tasked with revolutionary change were increasingly viewed as exploitative, wasteful, and corrupt.⁴⁵¹ Passengers' letters from this period reveal not only anger and disappointment, but also a palpable fear about the uncertainty of personal and communal futures when the public institutions tasked with post-colonial change began to falter.⁴⁵² This chapter shows the highs and lows of this process using passengers' descriptions of their journeys and the conclusions they made about post-colonial life because of their time aboard buses.

Second, passenger journeys provide a point of departure for understanding the nature of state power in socialist Dar es Salaam. I emphasize three characteristics. The first is its austere nature. When government corporations faced internal and external challenges, power was increasingly expressed through shortages, long lines, and the material decay of technologies like

⁴⁵¹ "People's Forum: UDA must be helped," 5 July 1980, *Daily News*.

⁴⁵² As scholars like James Ferguson have noted, the demise of the African state in the 1980s overlooks the central role of the state and its bureaucrats in neo-liberal policies. Here, I am referring to a feeling among urban residents that the state was no longer working to create an egalitarian society that included them. See: James Ferguson, *The Anti-Politics Machine: "Development", Depoliticization, and Bureaucratic Power in Lesotho* (Minneapolis: University of Minnesota Press, 1994).

buses that crippled government services.⁴⁵³ This austere power structured the lives of many Dar es Salaam residents, but it was by no means totalizing. Rather, state power was simultaneously localized and intermittent. The former adjective refers to the topography of power evident when legal and illegal bus routes are placed on top of each other to show the many places centralized power did not reach. The latter references the waxing and waning of state power through government operations that only periodically made the practice of government power visible. Often publicized as “operations”, these displays of power were arbitrary, orchestrated, and largely performative.⁴⁵⁴ Such operations, including queuing enforcement at bus stations and Sunday driving bans, were part of a public performance of socialist morality by the state and its officials that conflicted with the reality of urban life in Dar es Salaam and exposed the state’s limited capacity for directing social and economic change at its seat of power.

Third, this chapter illustrates the necessity for moving beyond state-generated discourses of change—and indeed, an overemphasis on discourse and ideology—to an analysis of modernization that privileges the everyday actions of non-state actors. To do so, it leaves the opinion pages of newspapers to examine an illegal bus system that formed in Dar es Salaam neighborhoods during the early 1970s using residents’ private vehicles. If, in the wake of independence, urban residents looked to their state to lead social and technological change, the same residents were also ready to disengage with state policies and pursue their own visions of post-colonial life in their nation’s capitol city. In addition to replacing discourse with action, this illegal bus network builds on James Scott’s call to move away from state-based optics in

⁴⁵³ This chapter draws on Katherine Verdery’s notion of austere power in, *What was Socialism and What Comes Next?* (Princeton: University of Princeton Press, 1996).

⁴⁵⁴ “Understanding Shortages –Nyerere,” *The Daily News*, 2 October 1980.

scholarly examinations of modernization projects. Instead, it shows the social and technological patchwork that constituted an emerging system of large-scale urban transport from the early 1970s through the early 1980s as private vehicle owners and passengers created an alternative to Nyerere's car for the people.⁴⁵⁵ By doing so, this chapter provides the foundation for a social history of decline. Historians of independent Africa are often caught between a rock and hard place. On the one hand, they deal with evidence of discontent and disengagement from citizens that cannot be ignored. On the other hand, they face linear historical narratives in which the demise of post-colonial African states is a foregone conclusion. A social history of decline focuses not only on perceptions of progress and decay among citizens. It also shows they were not passive in the face of change by highlighting the networks urban citizens created as an alternative to state led modernization.

To reconstruct the daily experience of riding buses in Dar es Salaam, I use oral interviews, consultancy reports and periodicals, but the bulk of this paper rests on letters to the editor and poems penned by disgruntled passengers. From the late 1960s through the privatization of buses in the early 1980s, there were few topics discussed as commonly on opinion pages of Swahili and English newspapers. As a "daily topic in Dar es Salaam," some residents even tired of the relentless discussion of public transportation, stating that "too much of anything is harmful. This [bus talk] is now becoming monotonous."⁴⁵⁶ For the majority, however, the importance of transportation to urban life and nation building justified the emotional outpouring facilitated by newspapers' public forums. By citing what they saw or

⁴⁵⁵ James Scott, *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), 316-319.

⁴⁵⁶ "People's Forum: UDA: The Prodigal Son," *The Daily News*, 20 June 1977.

experienced aboard buses and by expressing an emotional attachment to their socialist community, passengers transformed flat tires, ailing buses, and bad driving into issues for collective concern about the direction of national development. In contrast to the hidden, offstage transcripts described by James Scott, these letters and poems evidence an engagement with state power through an openly public transcript written by the residents who tried to place their concerns on the center stage of public debate.⁴⁵⁷ The willingness of state-controlled newspapers to allow this debate is remarkable, not only for what it tells historians about the openness of the state to certain political topics, but also, for examining the evolving language residents used when they talked with and about their state.⁴⁵⁸

In addition to the periodical evidence produced by literate elites and state newspapers, I conducted an oral history bus survey among long-time Dar es Salaam residents to learn more about where men and women went and how they experienced mobility during the socialist period.⁴⁵⁹ While many of these testimonies complement the themes raised by letter writers, they add an important diversity to the views expressed in this paper. Contributors to the opinion pages of Tanzania's newspapers were generally men, well educated, and also expressed their opinions through a template of socialist discourse that was approved by state newspaper censors. In this

⁴⁵⁷ James C. Scott, *Domination and the Arts of Resistance: Hidden Transcripts* (New Haven: Yale University Press, 1990).

⁴⁵⁸ For a good analysis of using periodical sources in post-colonial Tanzanian history see: Andrew Ivaska, *Cultured States: Youth, Gender, and Modern Style in 1960s Dar es Salaam* (Durham: Duke University Press, 2011), 29.

⁴⁵⁹ All surveys were conducted in the first two weeks of August 2010 and in the latter two weeks of August 2012 in the Dar es Salaam neighborhoods of Ubungo, Mwenge, Manzese, Kariakoo, Posta, Ilala, and Temeke. This body of interviews is hereafter cited as Bus Survey. I spoke with 26 men and 20 women for a total of 46 interviews. Because UDA is a formal bus parastatal, some interlocutors did not want to share their names with me; others gave me only a first name. I include names in parentheses if given and indicate if anonymity was preferred.

context, oral history interviews opened up a world that was not confined to the state or its political vocabulary. Regrettably there were no files at the national archives for transportation during this period. At UDA's original office, where the formal parastatal still receives small government contracts, the manager gave me access to anything the Director of Operations had time to show me. Although there were no organized archives or files, I asked to sift through a stack of papers lying outside the Operations office, where I found a dusty, unorganized stack of records dating from 1972 to the present. As fragments of a socialist past, they are limited, and often undated, but provide glimpses inside a government institution whose demise became the concern of a city that once staked its livelihood and identity on the services it offered.

“A UNITY OF CONTRADICTIONS”: TECHNOLOGY, CONSUMPTION, AND MOBILITY IN DAR ES SALAAM

For those listening to their president in the fair grounds, Nyerere's metaphor for urban *Ujamaa* provided a new way to think about socialism in their daily lives. Though city residents heard several speeches about the rural base of Tanzania's socialist policies there had yet to be a populist symbol for social and political change in the nation's largest city. Rather, Dar es Salaam residents were often told of how their urban tastes and consumption habits were antithetical to the national development goals of self-reliance and equality. One newspaper editorial described the city as a “unity of contradictions” where symbols of modernity like skyscrapers, nightclubs, and swimming pools existed alongside “unemployment, squalor, illiteracy and disease.”⁴⁶⁰ Added to these characterizations of town life were the very real economic inequalities leaders faced in prioritizing rural over urban development. Nyerere, for example, noted that investments

⁴⁶⁰ “Combat Conspicuous Consumption,” *The Nationalist*, 25 May 1970.

in urban roads would use the very foreign exchange earned by peasants to enhance the lives of town dwellers, a minority of the nation's population.⁴⁶¹ Whether citing social or economic concerns, urban spaces and their residents posed a particular challenge for *ujamaa* policy-makers.

For party officials, nothing illustrated urban class contradiction more clearly than private vehicles.⁴⁶² Though vehicle ownership was comparatively low in Tanzania (164 people per motor vehicle, in 1967) party leaders targeted private cars as a symbol of capitalist exploitation.⁴⁶³ In *Freedom and Socialism*, President Julius Nyerere warned of the capitalist nature of vehicle ownership, while parliamentarians adopted the Mercedes Benz—a symbol of the capitalist exploiter (*mnyonyaji*)—as a rhetorical tool for their political theatre.⁴⁶⁴ Others wrote of automobiles as a catalyst for corruption that turned honest bureaucrats into casualties of the nation's leadership code. John Rutayisingwa's novel, *Ngumi Ukutani*, narrates the fall of Double Nyaritwa, manager of the fictional Ministry of Palm Oil, who's undoing as a faithful national servant and husband begins when he is entrusted with a government vehicle: "The

⁴⁶¹ Julius Nyerere, *Ujamaa: Essays in Socialism* (Dar es Salaam: Oxford University Press, 1974), 28.

⁴⁶² Discussions on pornography elicited more nuanced conversations about the need for consumer choice than did vehicles.

⁴⁶³ This compares to 160 persons per motor vehicle in Uganda and 95 in Kenya. From the 1930s to 1970, the number of privately-owned vehicles increased dramatically. In 1938, there were 5,175 private vehicles and an unknown number of government vehicles; by 1970 84,000 vehicles were registered. The percentage of increase, however, decreased after independence as well as after the Arusha Declaration of 1967. See Rolf Hofmeier, *Transport and Economic Development in Tanzania: With Particular Reference to Roads and Road Transport* (Munich: Weltforum Verlag, 1973), 101-105.

⁴⁶⁴ Julius Nyerere, *Freedom and Socialism. Uhuru na Ujamaa; a selection from writings and speeches, 1965-1967* (New York: Oxford University Press, 1968), 49 and 168. For examples from parliamentary speeches, see: *Majadiliano ya Bunge (Handsard)* 13 June- 30 June Dar es Salaam: Govt. Printer, 1967), 228.

moment he was given a car, Double's character and priorities changed."⁴⁶⁵ He subsequently takes a government loan to buy a Ford Cortina, the terms of which force him into corruption even as the vehicle makes Double the target of younger women's affection. The novel ends in a courtroom where Double is convicted of corruption and murder.⁴⁶⁶ The socialist politics of automobiles took center stage in newspaper debates when the state made bank loans available for civil servants to purchase cars in 1969. The party, with considerable public support, mounted a campaign to end the "conspicuous consumption" habits of its emerging bureaucratic bourgeoisie. One party official stated that "the purchase of second-hand cars for private ownership and pleasure [contradicts the] TANU (Tanganyika African National Union) creed and the objective of building a socialist society."⁴⁶⁷ Another wrote this in his weekly column: "Imagine the workers soaking in the rain waiting for buses [...], while thousands of cars run on the relatively well-maintained tarmac roads, consuming millions of gallons of petroleum. All this, besides being an unnecessary drain on our foreign exchange and economic surplus, destroys the spirit to work hard among our people."⁴⁶⁸

⁴⁶⁵ John Rutayisingwa, *Ngumi Ukutani* (Dar es Salaam: Ben and Company Ltd., 1979), 9. "Baada ya kukopeshwa gari tu, tabia na mwendo wa Double vilibadilika."

⁴⁶⁶ Rutayisingwa explains the status of the Ford Cortina through Double's soon-to-be girlfriend, Diana: "Her friends told her that she would be a dumbass to refuse someone like Double: a big man with money and a car. They advised her that in choosing men, you should choose someone who carries some weight in society—someone with the type of social stock like double; someone who has a Ford Cortina. Or really, just choose anyone with a car. But they advised her against choosing a man who did not own a vehicle or a guy with an unstylish car like a Honda or Volkswagen—especially a Volkswagen. They added that Volkswagens had the appearance of frogs and that they should be given the nickname: 'save the engine but kill the driver and passengers.'

⁴⁶⁷ "Karadha," *The Nationalists*, November 19, 1970.

⁴⁶⁸ "Combat Conspicuous Consumption."

More than party rhetoric, this “drain” on Tanzania’s foreign exchange was an increasingly important problem for a young state that was completely dependent upon foreign countries for automobiles, spare parts, and petroleum. Unlike some socialist or communist countries concerned about private vehicles and socialist morality, nearly everything about car transport tied Tanzania to costly externalities that made large technological projects difficult to sustain. In the Soviet Union and the German Democratic Republic, for example, building a people’s cars was a state-led project through which governments could claim parity or superiority over capitalist modes of production. In Tanzania, however, the making of a people’s car was more rhetorical than material. With an economy based on the export of primary products, Tanzania barely had enough foreign exchange to procure vehicles and spare parts during the 1960s, let alone attempt to manufacture vehicles themselves. In light of these concerns, the government halted programs for car loans in the late 1960s, increased tax on car importation, and passed a Sunday driving ban aimed at decreasing petroleum consumption in Dar es Salaam.⁴⁶⁹ While these measures were largely performative and only arbitrarily enforced, they reflected an emerging logic of technological consumption in socialist Tanzania: private vehicles represented the present danger of a reactionary bourgeoisie and connected the country to costly technological externalities while the proper use of buses could carry forward the party’s hopes of a socialist transformation.⁴⁷⁰

⁴⁶⁹ “NEC Halts Karadha’s Plan: People’s Money Won’t Be Loaned for Buying Cars,” *The Nationalist*, 20 November 1970; “Kutononoka kwa magari ya binafsi marufuku sasa!” *Ngurumo*, 9 November 1971. See also: Al Noor Kassum, *Africa’s Winds of Change: Memoirs of an Interantional Tanzanian* (London: I.B. Taurus, 2007), 122.

⁴⁷⁰ Adam Masoud, *Mfanyakazi*, 26 October 1974.

The contradictions of urban *ujamaa* also applied to a culture of mobility rooted in Dar es Salaam's late-colonial period. Owing to the needs of a rapidly-expanding city and industrial sector, the colonial government formed Dar es Salaam's first bus system in 1949 to facilitate the movement of labor between geographically-dispersed communities.⁴⁷¹ When J.K. Leslie conducted his social survey in the mid-1950s, bicycles and walking were the most common forms of transport, but taxis, buses, and newly paved roads were increasingly common elements of urban life.⁴⁷² After independence in 1961, both population and mobility increased dramatically.⁴⁷³ In 1952, Dar es Salaam Motor Transport estimated their annual numbers at 7 million passengers, or 600,000 per month.⁴⁷⁴ By 1972, the nationalized services served nearly 70 million city residents annually, increasing only one year later to 86 million, the equivalent of

⁴⁷¹ "Bus Transport for Site and Service Areas, Dar es Salaam," Ministry of Lands, Housing and Urban Development, United Republic of Tanzania, July 1973. Hereafter cited as "Bus Transport."

⁴⁷² J.K. Leslie, *A Survey of Dar es Salaam* (New York: Published on behalf of East African Institute of Social Research by Oxford University Press, 1963) 4, 8, and 68.

⁴⁷³ In 1957, J.K. Leslie estimated the population of Dar es Salaam at 51,000 in 1948, 72,000 in 1951, and 92,000,330 in 1957 (p. 21). By the census of 1967, the city's population was listed as 272, 821 (cited in "Bus Transport," p. 56), and in 1973, the authors of the "Bust Transport" survey estimated the population of greater Dar es Salaam at 500,000. During the same period, vehicle ownership in Tanzania increased by 60,000 (still looking for statistics about ownership in Dar es Salaam *only* over this same period). More important than these numbers are the routes that made travel between urban nodes and rural areas easier and cheaper. J.K. Leslie writes in "How Africans come to be in the town" that "home" (place of origin) for many Dar es Salaam residents is "for the most part within a day's bus ride" (25)

⁴⁷⁴ Tanzania National Archives, "Dar es Salaam Motor Transport Co. Ltd. – Increase in Fares." Unfortunately, this file does not include a list of fares; it only mentions that 1952 fares were consistent with those of 1949, and that an increase in motor vehicle taxes would harm the African passengers who relied on motor transport.

180 bus trips a year for each of the city's 500,000 residents.⁴⁷⁵ According to UDA, over two-thirds of the city's population relied on bus services to traverse the rapidly expanding capital by the late-1970s.⁴⁷⁶ Even at its low point in the early 1980s, the parastatal moved between 100 and 120 million passengers every year.

As the central means for measuring city space and time, public transportation became the defining technology of urban citizenship in post-colonial Dar es Salaam. Colonial mobility was circumscribed within racial zones that divided the city by European, Asian, and African populations.⁴⁷⁷ Colonial bus routes reinforced these divisions, confining most African movement to designated spaces of work and residence. However, within a decade of independence, eleven bus routes and hundreds of stations connected the city's diffuse communities into an increasingly connected network of roads that cut across residential zones previously defined by race. By 1975, over 100 bus routes restructured urban landscapes, redefining Dar es Salaam as a post-colonial space where neither race nor class denied individuals access to a defining right of urban citizenship: mobility.⁴⁷⁸ Postcolonial forms of movement were as diverse as the city's population. As the social, economic, and political center of Dar es Salaam, Kariakoo received over sixty percent of passengers and acted as a transit point for

⁴⁷⁵ National Transport Corporation, "Press Release: Performance of DMT in 1972," 22 March, 1973, UDA; "Bus Transport," 28. This uses an estimated population of 500,000 for what the authors term "greater Dar es Salaam," a geographical designation that includes neighboring suburbs whose residents regularly traveled to the city on buses, including: Manzese, Kawe, Ukonga and Tabata. In 1967, the population of these neighborhoods was estimated at around 30,000, bringing the population of greater Dar es Salaam in 1967 to around 300,000.

⁴⁷⁶ "Operational Statistics: 1978," *Ofisi ya Usafiri Dar es Salaam*, UDA.

⁴⁷⁷ Andrew Burton, *African Underclass: Urbanisation, Crime, and Colonial Order* (Athens: Ohio University Press, 2005).

⁴⁷⁸ National Transport Corporation, "Press Release: Performance of DMT in 1972," 22 March, 1973, UDA.

residents to reach any part of the city.⁴⁷⁹ At its most basic, passenger mobility reflected the practicality of everyday life. Civil servants boarded buses to reach ministry offices in the city center; teachers went to school, and workers travelled to factories. Business men and women travelled to food markets in Kariakoo to buy produce, where they subsequently took a bus to sell their goods in smaller city markets. Others, such as a watch repairman with whom I spoke, traveled wherever business took him. When the workday ended, buses connected social networks across the city and ferried passengers to soccer matches, cinemas, religious obligations, and hospitals.⁴⁸⁰ Long-time residents recall late-night bus journeys to discos and bars, even paying increased fares for bus drivers to operate beyond the allotted timetable.⁴⁸¹ In novelist M.G. Vassanji's words, buses were "portents of life in the city" connecting residents to the social and economic opportunities that brought tens of thousands of Tanzanians to Dar es Salaam in the decades following independence.⁴⁸² Bus fares were occasionally an issue on editorial pages, but subsidization of municipal transport allowed a wide demographic of urban society to partake in

⁴⁷⁹ *National Capital Master Plan: Dar es Salaam, United Republic of Tanzania: City Form and Environment* (Toronto, Canada: Project Planning Associates Limited, 1968), 26.

⁴⁸⁰ "Sudi, a short story by Pili," *The Daily News*, 17 July 1980. This newspaper serial used the rhythm of bus transport to narrate stories: "Luck was on my side. I got the UDA as soon as I reached the nearest bus-stop. While I sat there holding tightly the handle-bar and while the rickety Ikarus dangerously negotiated the sharp streets of Dar es Salaam, my whole two years association with Sudi began to unfold before me like a motion picture."

⁴⁸¹ Bus Survey, (Katunzi).

⁴⁸² M.G. Vassanji, *The Gunny Sack: Africa's Answer to 'Midnight's Children'* (Portsmouth, NH: Heinemann, 1989), 178-179. The brief cessation of bus services in Dar es Salaam followed the revolution in Zanzibar and fears it could spread to Tanganyika. The fear of revolution in Dar contrasts with a later description of city life: "Downstairs the town was awake, the market bustling, the bus stop busy ..." (202).

these sanctioned forms of movement.⁴⁸³ For these reasons, a post-colonial form of automobility sustained by bus transport was integral to the way urban citizens experienced socialist modernization and eventually became a central mechanism for discussing the possibilities and limits of social and technological change in their city.

This motorization of society was welcomed by a state concerned with worker mobilization, but one glaring problem remained: due to the operating costs of municipal transport, buses were operated by the original colonial company for the first nine years of independence. For a nation attempting social and political transformations, the colonial bus company was a material manifestation of the economic and social relations leaders hoped to put behind them.

It was in this context of the urban challenges of socialism and the vestiges of colonialism that Nyerere delivered his 1970 speech. As a technology, buses provided a practical solution to Dar es Salaam's unity of contradictions: they were a convenient technological solution to mass transit needs while offering the president an everyday space in which urban residents could learn about the values of *ujamaa*. As the director of the National Transport Corporation stated in 1973, UDA's challenge was to turn the "structures of colonialism and capitalism" (*mbinu za wakoloni na mabepari*) into an efficient socialist service.⁴⁸⁴ If the colonial bus company was known for rude conductors and crazy drivers, the nationalized service was to be staffed by trained professionals whose efficiency and courtesy reflected a new social fabric. Drivers, conductors, and inspectors underwent training supervised by TANU party officials detailing how they should

⁴⁸³ German Technical Aid Project, "List of Routes," 1977.

⁴⁸⁴ Director of the National Transport Corporation, "Shirika la Taifa la Uchukuzi: Hotuba ya Mwenyekiti Mtendaji wa NTC Akimkaribisha Waziri Mkuu na Makamu wa Pili wa Rais Alipotembelea DMT Tarehe 8 Desemba, 1973," 8 December 1973, UDA.

treat different members of the city's socialist community.⁴⁸⁵ For the working masses, UDA operators were trained reorganize the movement of bodies in a new state space. In contrast to the chaotic boarding procedure of the colonial company, passengers were to board in an orderly and respectable manner with elderly, pregnant, and disabled customers entering through their own door in the front while everyone else queued to board through the rear entrance.⁴⁸⁶ For drunken passengers, one driver recalled, they were asked to go the extra mile and take the "comrade" (*ndugu*) directly to their home.⁴⁸⁷ Ideologically, these buses would be no less than mobile *ujamaa* villages where urban residents learned socialist values as they interacted with state workers and technologies. The state even provided a new material space in which this urban form of *ujamaa* would be enacted. From 1975 to 1983, UDA purchased 220 buses from Hungary's publicly owned Ikarus to replace the British Leylands and Albions of the British-based company. Popularly known as *karusi*, these articulated buses not only shifted state consumption from the capitalists to socialist world, but also, were spaces where party leaders and UDA managers hoped to make Dar es Salaam transport a daily practice in Nyerere's five principals of socialism.⁴⁸⁸

⁴⁸⁵ "Dar es Salaam Motor Transport Co Ltd: Kanuni za Wafanyakazi," no date, UDA. The name of the file, DMT, confirms this is dated before 1974. This document literally defines categories of passengers and the different types of services each should receive.

⁴⁸⁶ "Barua za Wasomaji: Heshima katika mabasi," *Mwafrika*, 15 March 1964.

⁴⁸⁷ Bus Survey, (Vitus Lupate).

⁴⁸⁸ Chief Engineer, "REF: Ikarus Buses," 30 April, 1979, Shirika la Usafiri Dar es Salaam (hereafter cited as UDA).



Figure 1.13: A *karusi* (Ikarus) bus from Hungary. Photography taken by author at UDA offices.

UNYONGE WA DAR ES SALAAM (UDA): THE EXPECTATIONS AND CONTRADICTIONS OF SOCIALIST TIME AND ORDER

The first buses pulled into neighborhood stops at 6:30 in morning, but the journey of a Dar es Salaam passenger began long before the first vehicle arrived.⁴⁸⁹ When I asked long-time city residents about public transportation during the first decades of independence, there is one memory shared by every patron: the endlessly long and frustrating wait to get on board. For the clever few, the wait started before sunrise. One man explained to me that he used to wake up at 4 a.m., head to the bus stop carrying a palm tree stump with his name on it, and place it in line to hold his place.⁴⁹⁰ He recalls meeting a line-up of inanimate objects holding spots for the local

⁴⁸⁹ “Bus Transport,” 25.

⁴⁹⁰ Rashidi Juma, interview by author, 24 July 2009, Dar es Salaam, Tanzania,. Other research confirms the early start to mornings in Dar es Salaam. According to the *National Capital Master*

residents who traded waiting in line for taking their morning tea in the comfort of their home. One respondent even laughed remembering a neighborhood in which individuals paid someone to guard their place-holders from passengers who arrived early and wanted to move ahead of them (or their object) in line.⁴⁹¹

This creativity, however, was only an option for residents lucky enough to live near a bus stop. The rest walked to stations in nearby communities, a stroll that increased in length when UDA reduced the number of stations in the early 1970s. Residents from the city's new growth areas responded by publishing requests for reinstating and increasing stops or expanding routes. The most common complaints came from residents of Buguruni, Manzese, Magomeni and Keko, whose populations made up a significant percentage of factory workforces in the city's industrial area at Pugu Road.⁴⁹² The general sentiment of these letters is reflected in Mikundi N.E.B. Jr.'s letter, "Too much time wasted." Angry over the ten-minute walk to the nearest bus station, Mikundi states that "this wastes hundreds of productive man hours. These hours could have been saved if the workers alighted at the Bora stop [...] UDA should look into this question more seriously, because time wasted by workers is money! [...] The result is poor production which

Plan cited above: "The day begins early in all parts of the city. Each morning as early as 4 a.m. at times, the mass exodus of workers begins into the city, to Kariakoo and to employment centres such as the Pugu Road industrial area and the docks. Buses are always crowded and too few" (p. 24).

⁴⁹¹ The same problem was described by customers who waited for meat outside butcheries. See a comparison in Shadrack Swai's "Ni Kweli Foleni Mbaya au Huduma Mbaya?" *Nchi Yetu*, April 1973.

⁴⁹² "Barua za Wasomaji: Mabasi Buguruni," *Mwafrika*, 20 March, 1964; "Barua za Wasomaji: Kituo cha basi Magomeni," *Mwafrika*, 12 February 1964; "Mawazo ya Wasomaji: Kituo cha bus O/Buy Mbuyuni," *Ngurumo*, 3 October 1967. "UDA move angers passengers," *The Daily News*, 10 March 1979.

leads to the deterioration of the national economy.”⁴⁹³ City bus riders encountered their most significant obstacle when they arrived at the station. Minus the lucky few whose inanimate friends held their spots, passengers waited for hours to get on board. According to opinion letters, passengers regularly waited for over two hours to make it through the line to board the bus. Pictures show that passengers’ memories of waiting in queues would be difficult to exaggerate, with lines winding for back and forth for hundreds of yards. While the gathering of city residents at these transportation nodes provided business opportunities for a few, the rest arrived late to school, work or social activities and paid the associated consequences for doing so. As journalist Shadrack Swai noted in his 1973 article “Bad Queue or Bad Service,” *foleni* had become a staple of everyday life in socialist Dar es Salaam. When he asked a worker what he did while standing in line, the potential passenger stated the obvious: “Man, we’re just waiting for the bus. Do these lines really help or do they just waste our time and make us tired?”⁴⁹⁴ A letter signed, “Socialist,” answered this rhetorical question, stating that “after waiting for buses for two hours, the would-be bus users naturally grow tired and disheartened [...]”⁴⁹⁵

If complaints about lost time seem petty, residents made them important by articulating them through accepted ideologies of building the nation through work. Tanzania’s blueprint of socialism, the Arusha Declaration, declares: “Everyone wants development; but not everybody understands and accepts the basic requirement for development. The biggest requirement is hard

⁴⁹³ “People’s Forum: Too much time wasted,” *The Daily News*, 3 April 1979.

⁴⁹⁴ “Ni Kweli Foleni Mbaya au Huduma Mbaya?” *Nchi Yetu*, April 1973.

⁴⁹⁵ “People’s Forum: UDA is to blame,” *The Daily News*, 17 April 1977.

work.”⁴⁹⁶ The irony of this ideological statement was not lost on Dar es Salaam’s bus riders, one of whom declared that “the deterioration of UDA services is a national problem.”⁴⁹⁷ One passenger even used his experience waiting in line to compose a theoretical piece about the relationship between national development and transport:

Transport is vital to the development of any nation. When better utilized, it broadens the framework of the economy and consequently consolidates progress. Man and transport are inseparable organs. ‘Man’ grows the raw materials and ‘Transport’ ferries them to industries hence to consumers and vice-versa. When the transport system fails, the economy is likely to collapse in one way or another ... Surprisingly enough, a big city like Dar es Salaam has a poor public transport system. I appeal to the National Transport Corporation to revive the public transport system in this city. UDA has got trained manpower yet what we achieve from it is poor services and therefore the retardation of our economy.⁴⁹⁸

More specifically, passengers began to think about what they were losing by waiting for hours at stations. One writer explained: “If all institutions whose employees depend on UDA for their daily movement to and from work were to compile statistics of the number of man-hours lost due to late-comers, the result from just one year would surely be alarming. Employees who have been subjected to the UDA tortures in the morning have no morale left for work and this has a serious effect on output.”⁴⁹⁹ In a subsequent letter, Nicholas Kiwale of the Tanzania Audit Corporation, elaborated on this loss of time by blaming an emerging culture of “slowing down” in production sectors on the troubled bus parastatal. More harmful than the quantifiable hours lost through inefficient transport, Kiwale writes, was an accepted culture of inefficiency rooted

⁴⁹⁶ TANU, *The Arusha Declaration and TANU’s Policy on Socialism and Self-Reliance* (Dar es Salaam: Publicity Section, TANU, 1967), 14. For other examples, see the editorial: “All must get down to work,” *The Daily News*, 1 May 1977.

⁴⁹⁷ “People’s Forum: UDA needs good leadership,” *The Daily News*, 21 June 1977.

⁴⁹⁸ “People’s Forum: Dar Transport Problems Must Come to an End,” *The Daily News*, June 4, 1979.

⁴⁹⁹ “People’s Forum: Inefficient Services,” *The Daily News*, 2 June 1977.

in passengers' daily interaction with public transportation.⁵⁰⁰ Another blamed UDA for job losses suffered by workers who too often arrived late to work while a student added that "the best way to get to school early is to walk. If you wait for UDA, chances are you will get to school at the end of the first lesson."⁵⁰¹ Eventually, this loss time even influenced how workers thought about their nation's future. One teacher explained his embarrassment about routinely arriving to school later than his students, emphasizing that the challenges of training the nation's future workforce were compounded by his inability to personify the principals of nation building for the youth.⁵⁰² By linking the minutia of daily mobility in Dar es Salaam with issues of time, efficiency, and economic development, writers' letters reveal the expectations for post-colonial change held by many of the city's residents. Their complaints challenge representations of Africans as unconcerned with time, efficiency, and work, pointing instead to widespread hopes in post-colonial Tanzania that their new nation could partake in global cultures of modernity through state-led technological change.

With limited buses, spare parts, stops, and trained manpower, existing stations and their long queues became places where the shortages of socialist governance were translated into the experience of everyday life. As letter writers were keenly aware, *foleni* were an example of what happens when government power does not work properly, and they did what they could to transform a system that immobilized them on a daily basis. For this reason, passengers began to call UDA "*Uyonge Dar es Salaam*," the "weakness of Dar es Salaam."⁵⁰³ In socialist Romania,

⁵⁰⁰ "People's Forum: UDA good at inventing excuses," *The Daily News*, 22 January 1979.

⁵⁰¹ "Special Sunday Interview: On UDA Services."

⁵⁰² Bus Survey, (L. Chibona).

⁵⁰³ "Special Sunday Interview: On UDA Services."

anthropologist Katherine Verdery describes similar experiences of socialist governance as “power [...] constituting itself through the effects of austerity.”⁵⁰⁴ The same principle is applicable to socialist Dar es Salaam. Whereas the Swahili phrase, *kupiga foleni* (“to line up”), evidences the intentional power of a teacher over students or a commander over soldiers, the *foleni* that resulted from bus transport reflects a less intentional power of austerity emanating from increasingly-common government shortages.⁵⁰⁵ The unfortunate news for urban passengers was that UDA’s fleet was getting worse, not better. UDA’s own documents showed the parastatal struggling to keep even half of its vehicles operating despite the heroic efforts of overworked mechanics.⁵⁰⁶ Within this context of austerity, things that were supposed to be mobile—whether human or machine—were caught in a vicious cycle of immobilization.

If passengers railed against UDA and the immobilization they experienced standing in line, their letters and poems were not the final word on the history of Dar es Salaam *foleni*. When impatient passengers disregarded queuing practices in the mid-1970s, bus stations turned from places of ordered shortage into chaotic social spaces where thieves preyed on the weak and only the strongest could board buses. Against the backdrop of UDA’s austere power, a new discourse

⁵⁰⁴ Katherine Verdery, *What is Socialism, and What Comes Next?* (Princeton, NJ: Princeton University Press, 1996), 48. For more on the relationship between queuing, waiting, and the practice of power, see, Barry Schwartz, *Queuing and Waiting: Studies in the Social Organization of Access and Delay* (Chicago: University of Chicago Press, 1975).

⁵⁰⁵ Kitula King’ei, *Mwongozo wa siku njema* (Dar es Salaam: East African Educational Publishers, 1999), 4-5.

⁵⁰⁶ “Maelezo Mafupi Kuhusu Mafanikio na Matatizo ya UDA,” 1980, UDA; “National Institute for Productivity: Report on the Organization of the Traffic and Engineering Department,” no date, UDA. There is no date, but references to UDA, instead of DMT, confirm it was written after 1974; it was among other reports from 1979. Per the mechanics, the reports states that they never received days off and even defended their poor work habits on national holidays and weekends.

linked the same, boring *foleni* that provoked anger in previous years with a longing for the social order and equality the government achieved by ordering passengers' bodies into long queues. *Foleni* were inefficient and potentially harmful to national development, but at least the bus lines enforced an equality and order urban residents could identify with the tenets of *ujamaa*.⁵⁰⁷ Decades later, it is no accident that some residents speak of the bus *foleni* as one of Nyerere's best social policies.⁵⁰⁸ If, within the longer temporality of *ujamaa*, austere power structured Tanzanian's lives, there were also socialist moments like the ordered *foleni*, when residents could recognize the tangible efforts of their government to build a new society. Unfortunately, most bus passengers only recognized this achievement when it was already gone.

MOBILE VILLAGES AND THE PROLETARIAT

When passengers finally boarded UDA buses, they were supposed to step into a space capable of transforming urban society according to the socialist values Nyerere described in 1970. This spatial approach to social and economic engineering was not new, but was instead part of a logic that permeated both rural and urban approaches to African socialism in Tanzania. Like rural villages, which were the national icon of *ujamaa*, the state envisioned collectively-owned buses as spaces in which economic, racial, gendered, and political divisions could be overcome through cooperation and common experience. In this sense, like villages in rural areas, buses were supposed to be a political technology through which the state could control the nature of social and economic change and as a result, create an urban family of bus passengers. While many Dar

⁵⁰⁷ "Letters to the Editor: A Tip To UDA," *The Sunday News*, 28 October, 1980; "People's Forum: UDA's New System," *The Daily News*, 17 October, 1980.

⁵⁰⁸ Bus Survey.

es Salaam residents shared these goals, they watched with concerns and fear as their hopes for social transformation produced conflict and dehumanization in their daily routines. Instead of spaces of equality and respect, buses became technologies in which residents articulated their concerns about emerging class hierarchies and the limitations of the state in directing social change. Instead of a socialist community, an emotional community was formed through shared daily experiences and through a collective realization of the social and economic stratification visible from inside the proletariat's car.

According to passengers, the problem inside UDA buses began with the youthful male conductors and drivers who were tasked with facilitating the social change among the city's workers. Like their colonial predecessors, vehicle operators were portrayed as rude, reckless, inefficient, and even as thieves. Numerous letters describe how passengers finally boarded only to wait for conductors to take a break or cancel the route.⁵⁰⁹ By the mid-1970s, conductors were described as the antithesis of an ideal socialist citizen (*mjamaa*). In letters, passengers cited their rudeness and lack of discipline, even referring to them as “shameful” and “hooligans”.⁵¹⁰ One suggestion for solving this problem was for conductors to be trained as wait-staff then transferred to buses: “About these conductors, it would be best if they were taught about consequences and respect, the proper way to respond to customers [...] But conductors are rude idiots who treat passengers carelessly. I agree with [a previous writer who said] that many parents are not

⁵⁰⁹ “Ombi la DMT,” *Ngurumo*, 27 December 1971.

⁵¹⁰ “People’s Forum: UDA conductors a menace to passengers,” *The Daily News*, 12 May 1977.

teaching their children proper manners – this is especially true for these young conductors.”⁵¹¹

This characterization was popularized in newspaper cartoons in which conductors were regularly characterized as greedy and unintelligent. Though higher paid and more respected, bus drivers were not spared passenger outrage. From mid-1960s, when a Temeke commuter described the city’s bus drivers as “difficult people,” they continued to draw the ire of the urban residents, most especially for speeding into bus stops, hitting the gas while passengers were still loading, and reckless driving more generally.⁵¹² Passengers had ample reason to be both angry and scared. UDA accidents were common, and though drivers blamed the conditions of their vehicles, passengers used a language of over-masculinization to link UDA’s socialist manifestation with its colonial and capitalists origins.⁵¹³

Though bus operators were a favorite scapegoat of letter writers, anger was increasingly redirected from these young men to a culture of public transportation that implicated the city’s entire socialist community in immoral behavior. Problems began in the mid-1970s when passengers rebelled against the *foleni* in preference for a free for all boarding that “made it appear as if citizens were battling each other.”⁵¹⁴ Referencing the pleasure some seemed to get from this procedure, another penned: “Mind you mine is a genuine call after observing many people crowding at bus stops waiting for UDA buses only to exercise their potential in athletics,

⁵¹¹ “*Barua zenu Wasomaji*: KONDAKTA No. 330,” *Ngurumo*, 11 September 1972; “People’s Forum: Inefficient Services,” *The Daily News*, 2 June 1977. See also: “Wafanyakazi wa DMT,” *Mwafrika*, 6 February 1964; Bus Survey (Mwaidi Juma, Katunzi, and Jumanne Issa).

⁵¹² Leslie, 68; and “Mabasi na Abiria,” *Mwafrika*, 13 March 1964.; “Bus za DMT,” *Mwafrika*, 11 November, 1964; “Shirika la UDA.” See also: “Madereva,” *Nchi Yetu*, November 1974: 6.

⁵¹³ “Mabasi ya UDA yawe na wakaguzi wa siri,” *Ngurumo*, 25 February 1972.

⁵¹⁴ A.P. Mdoe, “Wasafiri nao, Je?” *Nchi Yetu*, (April 1974), 21-22. The above quote is the caption from a picture on pp., 63-64 of the same issue.

football, judo, bumping and so on and so forth. It is not entertaining at all. While you are at these stops you can easily detect dwindling hopes of fathers, mothers and their children expecting this bus labeled ‘UDA.’”⁵¹⁵ A resident of Manzese noted that “the exchange of fist among passengers themselves, passengers against UDA workers (conductors, drivers and inspectors)” was one of the many “hazardous incidents” that had been normalized aboard the people’s car of Dar es Salaam. Writing in 1979, one writer even drew attention to the socialist-inspired rules that were supposed to apply inside the vehicles. Posted at the front of each bus near the driver was a sign that read: “Please help the handicapped, pregnant women, mothers with children, and the elderly.” But instead of deference and respect to the aged, handicapped or pregnant, the author describes getting a seat as “the biggest nightmare” because most of the seats are “dominated by the young and healthy who would be most disinterested in giving up their seats after such a big fight.” As for the populations listed on the sign, “In the end, the old, the sick and many others you may care to name, are left standing breathing relief that they are at least still alive and kicking, not to mention those who cannot get into the bus at all.” The writer concludes by reminding readers of the importance of socialist values in UDA buses: “What the riders need is a human attitude toward each other [. . .] This is sadly lacking in the Dar es Salaam bus rider. The rules of the jungle only apply here.”⁵¹⁶ As Z.H. Karata wrote, the “moment we step inside the bus our manners are completely forgotten.”⁵¹⁷

⁵¹⁵ “People’s Forum: Hope for UDA Fading,” *The Daily News*, 18 June 1977,

⁵¹⁶ “People’s Forum: The Big Joke in UDA buses,” *The Daily News*, 11 January 1979.

⁵¹⁷ “Barua zenu Wasomaji: KONDAKTA No. 330,” *Ngurumo*, 11 September 1972; “People’s Forum: Inefficient Services,” *The Daily News*, 2 June 1977.

For everything public transport was not, it was a good vantage point for the diverse demographic of bus riders to comment on class and development in their new nation. After a harrowing experience boarding—whether by waiting in *foleni* or a fighting a crowd—passengers were jammed together in buses that were unable to sustain overcrowding, hard driving, or the city’s bad roads. According to UDA’s own records, half of its fleet was in complete disrepair and the other struggling to be roadworthy. The Hungarian Ikarus buses purchased to provide a socialist space for the city’s passengers were unable to endure the city’s rough roads and were replaced by the old, but durable, Leyland and Bedford vehicles that were used by the colonial bus company. Given this material context of passenger experiences, it was only a matter of time before they used their experience as bus riders to comment on emergent sociopolitical hierarchies in Dar es Salaam.⁵¹⁸ The result was a new lexicon about state power and legitimacy that used material objects—especially, cars and buses—to highlight inequality and to condemn the nature of government power from the mid 1970s to the early 1980s. Consider, for example, A.N. Mloka’s letter, “The Big Joke in UDA Buses,” in which he explains how the labeling of vehicles was used to talk about class and politics in buses. Using the ST prefix designated for government vehicles (*Serikali ya Tanzania*), passengers labeled these cars “sitaki tabu,” or “I don’t want any trouble,” vehicles. Mloka explains: “Those who are privileged enough to have acquired some means of transport be it private or are in a position high enough to warrant the use of ‘Sitaki Tabu’ can never know the tribulations, the dilemmas, horrors, struggles for almost survival of a Dar es Salaam bus rider.”⁵¹⁹

⁵¹⁸ “People’s Forum: Did a bomb fall on the 41 buses: UDA has a case to answer,” *The Daily News*, 7 June 1977.

⁵¹⁹ “People’s Forum: The Big Joke in UDA buses.”

In support of this joke's message, writers discussed a socio-political hierarchy that became evident because of their experiences as bus passengers. Speaking of politicians and parastatal managers, one passenger explained that "they do not seem to bother about the suffering of the masses. Why? One reason is clear. They have government vehicles or probably their own means of transport. Why should they care after all? [...] I know exactly that if these big shots were forced to travel by UDA buses, the problem would have been probably solved because they would have felt the pinch themselves."⁵²⁰ As one writer reminded readers, buses were the vehicle of an undervalued and exploited class of workers: "Suggestions to improve its services have been given but because the transport is used by the proletariat, those concerned with this Company have their ears blocked."⁵²¹ Obilla of Dar es Salaam more directly correlated class stratification with illegitimate government power by writing that "the present system of operation is not people-oriented. It is only for the UDA personnel to find an easy means of earning money at the disservice to the commuters."⁵²² One writer accused corporation leaders of a "grab" and "misappropriation," while another put it more directly: "Do you realize that willful mishandling of Government's property is an offence?"⁵²³

These accusations were part of a larger process of change from 1977 through the early 1980s that altered the way citizens talked about their government and viewed its ability to act

⁵²⁰ "People's Forum: Dar Transport Problems Must Come to an End," *The Daily News*, 4 June 1979.

⁵²¹ "People's Forum: Put more effort in solving UDA problems," *The Daily News*, 13 November 1979.

⁵²² "People's Forum: UDA," *The Daily News*, 10 August, 1980.

⁵²³ "The People's Forum: UDA is finished," *The Daily News*, 11 May 1977.

meaningfully in their lives.⁵²⁴ Writers began to commonly mention “*urushaji*” (corruption) and their disbelief with managers’ excuses for poor services by offsetting “operating costs” in quotations in their letters.⁵²⁵ Informing this popular discourse were references to a separate “manager” class that was destroying the nation for personal gain. Of this class, one worker commented that they are “concerned with their own material gains. They may know that their targets are not being achieved, but they may be interested in driving in good cars and craving for other privileges which are beyond the reach of the ordinary worker.”⁵²⁶ More personally, writers expressed fear, anger, and host of other negative emotions about the demise of the institutions that had exhibited promise for sociopolitical development less than a decade earlier.⁵²⁷ “It is most unfortunate and indeed a pity,” wrote one worker, “that most of our institutions have decided to depart from the goals and aims for which they were nationalized, namely to serve the ‘people’ (*wananchi*) as efficiently as possible but with the least cost and inconvenience.”⁵²⁸ National corporations, whose creation was once a gauge for postcolonial political progress, were now discussed as a disease that one newspaper editor termed, “parastatalism.”⁵²⁹ Ensuing letter forums pooled opinions on how the country could be cured of this fatal disease.⁵³⁰

⁵²⁴ “Consumer Prices Adjusted Upward,” *The Daily News*, 17 July 1980.

⁵²⁵ “Letters to the Editor: They Don’t Cooperate at UDA,” *Sunday News*, 24 April 1977.

⁵²⁶ “Special Sunday Interview: Indiscipline ... Negligence...Who is to blame?” 8 May 1977.

⁵²⁷ “Our Dying Parastatals,” *Sunday News*, 19 June 1977.

⁵²⁸ “Don’t Hike UDA Fares,” *The Daily News*, 25 August 1980.

⁵²⁹ “Special Sunday Interview: On UDA Services,” *Sunday News*, 5 June 1977; “UDA Interested in Quick Money,” *The Daily News*, 31 January 1980; Shirika la Uchukuzi la Taifa, “Matatizo ya UDA,” 5 August 1977, UDA

⁵³⁰ Ndugu Ngonyani, “Shirika la Uchukuzi la Taifa: Uniforms,” 12 September 1977, UDA; “Introduction,” No date, UDA. The text refers to discussion about fare raises in 1980.

Like Nyerere's early descriptions of rural development, the president's characterization of urban *ujamaa* pinned social transformation on the organization of bodies in a controlled space. Within the frames of moving buses, UDA professionals were supposed to personify socialist values that could then be taken up by a mobilized workforce and transmitted into places of production. The opposite happened.⁵³¹ By the mid-1970s, when UDA, like other parastatals, struggled to meet residents' expectations, passengers began to lose faith in the ability of their government to enact social change. They framed their complaints using a language of over-masculinization in which women, children, and the disabled were excluded from access to services by the greed and brute force of men, most of whom were young. More worrisome for city's residents was a recognition that the fruits of independence were being distributed unequally. Regardless of who received blame for the disconcerting state of the Dar es Salaam's urban transportation, it is remarkable that writers clung to a vision of socialist morality from Nyerere's 1970s speech and continued engage their states over the terms and conditions of state-led modernization. For many of the city's residents, this vision was already being applied to a different type of mobile village secretly plying the footpaths of Dar es Salaam's neighborhoods. The following sections attest to the fact that the state did not exercise complete control over socialist discourse or the technologies needed to implement post-colonial modernization.

A CAR FOR THE PEOPLE

Following commuters from long queues to the opinion pages reveals residents' frustration with the reality of social change in Dar es Salaam. But it also confines us to a narrative in which the

⁵³¹ This is very clear in the daily routine of Ramadhani Sefu described in, "Special Sunday Interview: On UDA Services."

state directs social and technological change. Indeed, the city map in which the previous narrative unfolded was one of centralized routes where the state and the party were daily visible; it is a map in which all roads lead to the political, social and economic center of the new government: Kariakoo. Moreover, the technologies used were not only state-owned property, but also steeped in the ideology of social, moral and political change. The resulting narrative would be one of a steady decline in which the early hopes of socialist change shared the same fate as the Ikarus buses that were supposed to symbolize a new order: like the effect of Dar es Salaam's roads on these Hungarian buses, the road to socialism was just too bumpy for a newly-independent nation to succeed. Yet, such a gloomy narrative does not fit well with the way long-time Dar es Salaam residents talk about life in the city, state power, or their own agency as historical actors. Nor does it answer James Scott's call for moving beyond state-based narratives of change toward the networks and systems devised by communities in the crevices of state power.

UDA's buses were not the only people's cars of Dar es Salaam. Sometime in the early 1970s, mini-buses began "appearing" in the city's bus stations. Known by their ability to appear out of nowhere and subsequently disappear again, *mabasi ya kuzuka*—literally, "buses that appear"—more popularly known as *thumnithumni*—meaning 50 shillings, the cost of a route—capitalized on transport shortages and began offering services in several neighborhoods outside of the city center. There are no published statistics about *thumnithumni* usage during this period, but in oral histories residents remember them as a common and increasingly important part of the urban landscape.⁵³² By the late 1970s, they are vilified in state newspapers as dangerous and

⁵³² Bus Survey.

unregulated spaces even as they are simultaneously described by letter-writing passengers as a plausible solution to the city's transport problems.⁵³³

According to former passengers and drivers, the *thumnithumni* bus system was distinguished by three characteristics. First, the vehicles were privately owned by civil servants who, aware of party suspicions about vehicle ownership, found novel ways to register their vehicles. Most owners registered the cars or vans as taxis, a strategy that allowed them to operate and carry passengers any day of the week. Another man I talked with registered his bus using his wife's name, knowing the party was unlikely to trace the vehicle to his home.⁵³⁴ Second, the vehicles were as diverse as their owners. State newspapers identified Volkswagen mini-buses as the preferred vehicle of *thumnithumni* operators, but owners and operators used Land Rovers, saloon cars, and even trucks to transport passengers. Third, instead of operating on a government map, they plied vernacular routes through unpaved neighborhood thoroughfares called *uchochoroni* and created bus stops in the more intimate spaces of neighborhoods. Instead of connecting residents to the city's political center, *thumni thumni* routes avoided state power with flexible routes and through personal negotiations with local officials. One driver even laughed when I asked if the police or party was a problem: "No, no, no. You need to understand how *ujamaa* worked those days. If you were pulled over, you apologized and maybe even offered a

⁵³³ "People's Forum: Let Us Dissolve UDA," *The Daily News*, 23 May 1977; Bus Survey (Jamimu Miri, Juma Kanimba, and Komanda Sefu Mbondei).

⁵³⁴ His wife did not take his name in marriage, but instead continued to use her father's name as her surname.

bribe. And that was a good thing. It was good to know people and build relationships with them (*undugu*), because you never knew when you may need their help.”⁵³⁵

Thumnithumni reveal that residents were not passive when faced with the limitations of social, political, and technological transformations in post-colonial Tanzania. On the contrary, passengers, car owners, drivers, and police created networks of reciprocity in which words such as “family” (*wajamaa*) and “relative” (*undugu*) were the result of bus journeys. These buses are also critical for revisiting narratives about the nature of social and technological change in post-colonial Africa. Historical narratives of the 1970s and 1980s are often built upon linear trajectories of decline in which the hopes of independence are replaced with evidence of degeneration and stagnation. As this chapter shows, urban residents were vocally concerned about the prospects of decline and the uncertainty of life in the absence of effective state institutions. However, Dar es Salaam residents also disengaged from the state and created alternative roads to modernization for themselves and their communities. Analyzing these actions is important for two reasons. First, by replacing linear narratives focused on states with the strategies, thoughts, and actions of individuals and communities, alternative perspectives of modernization come into focus. Second, it provides an important historical baseline for understanding the end of Tanzanian socialism and the implementation of Structural Adjustment Policies in the early 1980s. Private buses, disobedient civil servants, and neighborhood routes

⁵³⁵ Ramadhani Saidi, interview by author, 20 August 2010.

were a constructive feature of socialist life long before they became a staple of neo-liberal policy in post-socialist Dar es Salaam.⁵³⁶

CONCLUSION

The history of the people's car of Dar es Salaam is not about the teleological demise of Tanzanian socialism evident in *foleni* and the shells of worn-out buses. Rather, this chapter identifies those queues and bus frames as important spaces and technologies through which urban Tanzanians experienced, reacted to, and sought to shape socialist policy during the 1970s and 1980s. As a modernization project that was a critical part of urban life and identity, Nyerere's vision for a people's car of Dar es Salaam became a mechanism for discussing the possibilities and limits of social, economic, and technological change in post-colonial Tanzania. As an "emotional community" of bus riders, urban residents vocally supported Nyerere's technologically-informed vision for change, and they shared their expectations of post-colonial modernization through complaints about the loss of their time and the emerging class hierarchies they recognized aboard city buses. They also shifted the ideological ground in debates about the nature of a people's car. If buses entered the vocabulary of socio-political change in 1970 as technologies capable of transforming urban culture, passengers' letters and poems evidence the extent to which citizens appropriated and redeployed state discourse to highlight the contradictions of socialist time and order aboard the "proletariat" car. For these reasons, daily act of waiting for, boarding, or riding city buses were integral to the way urban residents thought about state legitimacy in the decades following Tanzanian independence. This chapter also

⁵³⁶ On the role of bureaucrats in this process in neo-liberal Tanzania, see: Matteo Rizzo, "Being Taken for a Ride: Privatisation of the Dar es Salaam Transport System, 1983-1998," *The Journal of Modern African Studies* (2002).

illustrates that state-based approaches to development and modernization are limited in scope.

By entering the narrow paths of *uchochoroni* on which *thumnithumni* appeared and disappeared into Dar es Salaam's neighborhoods, this research shows how civil servants, drivers, and passengers disengaged from state-led projects by creating a people's car of their own.

CHAPTER 6—CRUDE MODERNIZATION: OIL, LIBERATION, AND SURVIVAL

In 1983, the two leading figures of Tanzania's oil market were embroiled in an international scandal. According to *The Observer* of London, Al-Noor Kassum, the Minister of Energy, Water, and Natural Resources, and Sylvester Barongo, the Director of the Tanzania Petroleum Development Corporation (TPDC), had secretly sold oil to South Africa on a ship called the *Ardmore*—breaking an embargo against apartheid regimes Tanzania had boisterously promoted. Barongo and Kassum were also accused of corruption. According to *The Observer*:

Inquiries by *The Observer* have established that the multi-million dollar trade has involved Tanzania in exporting residual fuel oil to South Africa over a four-year period, and more recently in importing refined oil from the same source ... The South African oil deals were arranged by a Swiss-based company called Marcotrade, which is part of Gulf International Holdings of Luxembourg (not to be confused with the major US oil company Gulf). It is controlled by the Gokal family of Pakistan. Abbas Gokal, who holds a British passport, founded Marcotrade in 1974... The [*Ardmore*] departed empty from Lagos, Nigeria, on 26 September. Early in October it called secretly at the Caltex refinery in Cape Town and loaded 20,000 tons of diesel and 1 0,000 tons of jet kerosene. The *Ardmore* arrived at Dar es Salaam on 14 October with documentation showing that the cargo purported to come from Singapore ... Mr. Barongo told *The Observer* that it was 'outrageous' that Tanzania had been sold South African oil. He said he felt 'stabbed in the back.' But our investigations have revealed that in the past Mr. Barongo and Mr. Kassum were apparently promised commissions by Marcotrade for each shipment of residual fuel oil it purchased... Marcotrade arranged for Mr. Barongo, head of the Tanzania Petroleum Development Corporation, to receive a commissions of \$1,500 for each shipment. Mr Kassum was to receive a larger amount, 30c a ton. Since those arrangements were made in 1978 the level of commission has been increased.⁵³⁷

A week later, *The Observer* provided more details in an interview with the Captain of the *Ardmore*: "Last month the British captain of the *Ardmore*, the tanker at the centre of the story, was offered a bribe in Cape Town to falsify his log book and disguise the South African origin of its cargo—but rejected it. Later, after loading had begun in Dar-es-Salaam, Captain Richard

⁵³⁷ "Tanzania has secret oil deal with S. Africa," *The Observer* (1901-2003), 13 November 1983, ProQuest Historical Newspapers The Guardian and The Observer (1791-2003) pg. 1.

Lister was shocked to discover that fake documents bearing his forged signature had been produced to suggest that the cargo had originated in Singapore.”⁵³⁸

The accusations against Barongo and Kassum proved to be false, and a settlement for the aggrieved parties was reached out of court. Nevertheless, the scandal provided a rare opportunity for the public—both national and international—to understand the high stakes game of petroleum politics for non-oil producing nations like Tanzania. In a public defense of its oilmen, the Tanzania government backed up its ideological position against apartheid with a play-by-play of events that involved multiple international companies, several countries, and the type of tangled story that had become everyday life for Tanzanian oilmen like Barongo:

Tanzania has declared and observed a total boycott of all trade with South Africa since the independence of the mainland in December 1961. All our partners in trade, whether private companies or public bodies, have always been informed that a condition of our relationships was the total observance of this rule. In particular it has been written into all oil exploration contracts, and all trade documents related to oil products have specified source of origin or destination of exports.

The government then provided the following sequence of events, which I paraphrase below:

The second financial quarter of 1983:

The Governments of Tanzania and Angola agreed that Tanzania would be supplied with 100,000 metric tonnes (MT) of Cabinda Crude Oil. Because Tanzania’s refinery could not process this type of crude, the deal hinged upon swapping the Cabinda crude for a package of products that could be used domestically. Though buying this type of crude created problems for the Tanzanian Petroleum Development Corporation, they had very few options on the global market. Without enough foreign exchange to buy large shipments from OPEC nations and with shortages effecting nation-building projects throughout the country, TPDC searched

⁵³⁸ Staff Report, “Captain Turned Down Oil Bribe,” *The Observer*, 20 November 1983, ProQuest Historical Newspapers The Guardian and The Observer (1791-2003) pg. 10.

for any bilateral agreement through which they could get oil—even if it was not the right oil for their own refinery. Angola was their best option.

June 20 to July 10:

For the swap to work, five oil companies—Shell, AGIP, Crispin Co., Marcotrade, and Marc Rich—were asked to bid for the shipment. Officials from the Bank of Tanzania, the National Bank of Commerce, and the Tanzania Petroleum Development Corporation decided to trade the Cabinda crude to Marcotrade in exchange for Iranian crude (that could be processed in Tanzania) and for refined products Tanzania could not produce on its own. Marcotrade had come to Tanzania’s rescue in June 1983, delivering 50,000 metric tonnes of oil when a banking deal fell through with Iran. Marcotrade also gained export rights to the residual fuel from the refining in Dar es Salaam.⁵³⁹

July 28 to October 2:

The Iranian crude is shipped to Dar es Salaam and the Cabinda load collected by Marcotrade. Letters of credit established through international banks by the Tanzanian government and Marcotrade to confirm origins and size of the shipment. These lines of credit make money transfers unnecessary—an important detail to a country with dwindling exchanges of foreign reserves. According to the documentation, none of the oil has origins or is processed in South Africa.

October 13:

As part of the swap, Tanzania received refined petroleum products from Marcotrade, such as greases and lubes for factories. According to Marcotrade, these were to arrive in a shipment from BP Singapore. However, further investigation of the ship’s logs by TPDC showed that

⁵³⁹ TPDC, “Crude Oil Imports: Sources and Problems,” M005500.

BP Singapore never sent a shipment to Tanzania, and subsequently, Marcotrade admitted to the South African origin of the products. Exactly one month later the original *Observer* story was published.

In response to the accusations of corruption, the Tanzania government confirmed that bartering residual fuel oil was a regular practice. The deals cited by *The Observer* were conducted by the Tanzania Harbours Authority and sold according to the internationally recognized standards published in Platt's Oilgram.⁵⁴⁰ By the end of the scandal, Barongo and Kassum were cleared of any wrongdoing and issued a public apology tucked away in the bottom corner of page 34 of *The Observer*.⁵⁴¹

The articles struck a nerve in Tanzania because of the relationship between oil and economic liberation. With an extensive coastline and proximity to global petroleum markets, the Tanzanian government tried to position itself as a clearinghouse that could transform oil into a tool for national and regional liberation. When Southern Rhodesia embargoed Zambia's oil supply in 1965, Tanzania responded by forming a joint trucking company with Fiat and the Government of Zambia to move oil from Dar es Salaam to Ndola. With the assistance of the British, American, and Canadian governments, between 4 and 7 million gallons of oil were transported to Zambia in exchange for copper.⁵⁴² The Southern Rhodesian embargo of Zambia was only the beginning of Tanzanian efforts to use oil for liberation. Between 1966 and 1977, Tanzania's government took significant strides to control the flow of oil within and beyond its

⁵⁴⁰ Al Noor Kassum, *Africa's Winds of Change: Memoirs of an International Tanzanian* (New York: I.B. Tauris & Co. Ltd., 2007), 135-141.

⁵⁴¹ "Mr. Al Noor Kassum, Mr. Sylvester Barongo: An Apology," *The Observer*, 3 April 1983, pg. 34.

⁵⁴² "Clearing Work is Started for Oil Pipeline in Africa," *The New York Times*, 23 April 1967, ProQuest Historical Newspapers: The New York Times (1851-2009), pg. 152.

borders: it built an oil refinery in Dar es Salaam and a pipeline to Zambia; it wrestled control for oil procurement and marketing away from multinational companies; it nationalized BP and SHELL; and it tried to side-step its lowly position in global oil markets by operating outside of the standard procedures for buying oil. Spearheading these efforts was TPDC, a parastatal that operated under the Ministry of Energy, Water, and Natural Resources. Formed in 1969, TPDC was tasked with creating an “indigenous” market consistent with Tanzania’s socialist philosophy. Theoretically, the goal was to insulate Tanzania’s young economy against the vagaries of international markets. In practice, socialist ideology had very little to do with TPDC’s daily activities. As the South African oil scandal shows, internal development required interactions with a dizzying number of nations and companies. Liberation was not about disconnecting from the world or changing economic structures, but about learning how to manage in it.

In this chapter, I show that procuring, refining, and distributing oil was the fundamental act of modernization and post-colonial liberation. The story is told in three acts—Liberation, Bombshells, and Survival—and makes four historiographical arguments. First, the chapter interrogates the relationship between technology and development. From the colonial period to the present, external technology has been offered as a universal solution to African economic development. As earlier chapters have shown, perceptions of African underdevelopment are not only fueled by the supposed absence of technology from Africa; moreover, external technology is offered as a means to bridge the gap between a stagnant and backward present and a future defined by progress and growth. This chapter shows the need to rethink the technological determinism of developmental ideologies.⁵⁴³ In particular, it highlights the manner in which

⁵⁴³ For another example, see the chapter, “Dogma of Development,” in Toby Jones, *Desert Kingdom: How Oil and Water Forged Modern Saudi Arabia* (Cambridge, Mass.: Harvard University Press, 2010).

technological systems that were supposed to facilitate independence magnified the very hierarchical relationships they were supposed to overturn. As Tanzania's oilmen struggled against changing oil landscapes and dwindling foreign reserves, the development they discussed in policy papers and minutes centered around "survival", a process in which providing 40 to 60% of minimum oil requirements became the measure success. The legacy of post-colonial technology transfer is not liberation, but the settling in of development as a continual process of "survival" and technological obsolescence. As a result, this chapter interrogates the possibility of "self-reliance", an idea proposed by radical scholars who wanted the Global South to delink from former colonial powers and then coopted by neoliberal ideologues.⁵⁴⁴

Second this chapter reveals the extent to which nation building was a literal practice in building things. Following Benedict Anderson's definition of the nation, historical scholarship on independent Africa is dominated by elite discourse and its uptake or rejection among the masses. But as scholars have recently argued, discourse alone does not build nations.⁵⁴⁵ I illustrate that building a nation hinged upon the ability to transform crude oil into various forms of economic development. While President Nyerere, political theorists, and self-identified members of the radical intelligentsia in Tanzania argued about whose vision for development could lead Tanzania to liberation and self-reliance, they all had one fundamental building block in common: oil. Obtaining oil in Tanzania was a material practice that required telex machines, printouts of international oil prices, refineries, pipelines, lines-of-credit at international banks,

⁵⁴⁴ Gilbert Rist, *The History of Development: From Western Origins to Global Faith*, 3rd edition (Zed Books: New York, 2013—Kindle Edition), 123.

⁵⁴⁵ Chandra Mukerji, *Impossible Engineering: Technology and Territoriality on the Canal du Midi* (Princeton: Princeton University Press, 2009). See also: Toby Jones, *Desert Kingdom*, 55 and 135; and James Scott, *Carbon Democracy: Political Power in the Age of Oil* (Brooklyn, NY: Verso—Kindle Edition, 2011), 3.

and tanker wagons for distributing finished products domestically. Though TPDC was guided by a socialist philosophy, more important than any political ideology were seemingly mundane details about oil types, technological systems, and tanker shipping rates. A key intervention in scholarship on science and technology is the role of technological systems in building social and political worlds.⁵⁴⁶ As the above scandal demonstrates, technical details about oil refining and crude types quickly become political, linking Tanzania, Angola, South Africa, and Singapore together in an unlikely, and unintentional, alliance.

This chapter explores the role of oil in building an independent and socialist economy that could persuade Tanzanians of their government's legitimacy. In particular, it examines the myriad roles of oil in efforts to create a collective economy that could capture the belief and energy of Tanzanian citizens. As Timothy Mitchell has argued, political power in the twentieth-century was increasingly tied to the construction of "the economy". Though an abstraction, "the economy" was a tool of governance that was itself an assemblage of machines capable of transforming global resources into local political power.⁵⁴⁷ How this was done and not done for a newly independent nation with no known petroleum reserves provides an opportunity to scrutinize the important technical details of economic liberation.⁵⁴⁸ Instead of an ideological act, it helps us see liberation a material act that aimed to use a long list of externalities—crude oil,

⁵⁴⁶ Paul Edwards, *A Closed World: Computers and the Politics of Discourse in Cold War America* (Cambridge: MIT Press, 1997), 34.

⁵⁴⁷ Mitchell, *Carbon Democracy*, 109.

⁵⁴⁸ On the role of oil in postcolonial politics in the Congo and Nigeria respectively, see: Kairn Klieman, "Oil, Politics, and Development in the Formation of a State: The Congolese Petroleum Wars, 1963-1968," *The International Journal of African Historical Studies* 41 2 (2008): 169-202; Klieman, "U.S. Oil Companies, the Nigerian Civil War, and the Origins of Opacity in the Nigerian Oil Industry," *Journal of American History* 99 1 (2012): 155-165.

lines of credit, foreign exchange, and oil expertise—to create an imagined community within borders.

Third, this chapter examines the technopolitics of oil from the perspective of a non-oil producing nation. For decades, scholarship on oil and development was dominated by the idea that vast petroleum reserves created a political and economic curse. In the Middle East, the argument goes, the seemingly endless flow of oil and money allowed governments to silence political opponents, buy support, and make minor changes in the quality of citizens' lives without effecting significant structural change.⁵⁴⁹ This also applied to Africa. In his analysis of Nigerian petro-politics, Michael Watts calls the allocation of resources and rights an “incomplete decolonization of Africa, an effort to redeem something from the carapace of reformist nationalism and to maintain the imaginative liberation of an African people.”⁵⁵⁰ He demonstrates that the relationship between oil, progress, and modernity is not only a struggle over resources, but also over the role of the state and the nature of citizenship in a post-colonial context. Incomplete decolonization, for Watts, links discourses and experiences of colonialism and post-colonialism to uneven processes of modernization, and ultimately, to doubts about modernization's redemptive qualities.

More recent research, however, focuses less upon the relationship between quantities of oil and political change than on the manner in which petroleum becomes a politically useful resource. In *Carbon Democracy: Political Power in the Age of Oil*, Timothy Mitchell locates the power of petroleum in the vast technological networks that extract and move the resource around

⁵⁴⁹ Mitchell, *Carbon Democracy*, 1-2. For African history, see Klieman (2008) and (2012).

⁵⁵⁰ Michael Watts, “Petro-Violence: Community, Extraction, and Political Ecology of a Mythic Commodity,” in *Violent Environments*, ed. by Nancy Lee Peluso and Michael Watts (Cornell: Cornell University Press, 2001), 192.

the world. “Political possibilities were opened up or narrowed down by different ways of organising the flow and concentration of energy, and these possibilities were enhanced or limited by arrangements of people, finance, expertise and violence that were assembled in relationship to the distribution and control of energy,” he writes.⁵⁵¹ In contrast to the ability of coal workers to sabotage industrial action in the late nineteenth and early-twentieth century, the emergence of oil as the basis of democratic life after 1945 all but ended opportunities for workers to make egalitarian demands by “interrupting the flow of energy.”⁵⁵² Oil also limited political possibilities. Because networks of underground pipes and lines of credit were mobilized by a handful of multinational companies instead of masses of laborers, the power to transform societies was consolidated within closed networks of finance and technology.⁵⁵³ In sum, the promise or curse of oil is not in the governments that depend upon vast reserves for political power, but in “the processes by which a wider world obtains the energy that drives its material and technical life.”⁵⁵⁴ This chapter examines the strategies of a non-oil producing nation to understand this infrastructure and redirect the power of petroleum from the 1960s to the 1980s. It shows how they viewed petropolitics and how development, as liberation and survival, was two sides of the same coin.

Fourth, placing material realities at the center of analysis brings a different type of historical actor into the story of African independence. Formally educated technocrats and “modernizing bureaucrats”—called the “bureaucratic bourgeoisie” in Tanzania—are vilified in

⁵⁵¹ Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (Norton: Kindle Edition, 2011), 8.

⁵⁵² Mitchell,

⁵⁵³ Mitchell, *Carbon Democracy*, 17-27.

⁵⁵⁴ *Ibid.*, 2.

historical scholarship and mass discourse alike. Their greed, incompetence, or myopic worldviews are cited as the main internal cause for the failure of economic development.⁵⁵⁵ But this approach keeps important details about the function of African states sidelined. In the following narrative, I present Tanzania's oilmen as technologists who worked diligently to understand and change global oil markets.⁵⁵⁶ Their struggles and successes provide an intermediate position from which to understand economic liberation and technological change as a historically contingent process, not as a predetermined story with clear sets of good and bad historical actors. They also provide an opportunity to see national and international politics from some of Tanzania's most important, but least heralded, actors. They did not give speeches or write policy papers, but their proximity to the most important resource of national liberation makes them critical to any narrative of national development.

Before I begin the narrative, I need to discuss the production of knowledge about Tanzania's energy history. The documents used below come from TPDC's own archive in Dar es Salaam, a fabulous collection containing tens of thousands of telexes, thousands of catalogues of technical equipment from around the world, and memos written between TPDC, the Ministry of Energy, Water, and Minerals, and the Office of the Prime Minister. The reading room is highly air-conditioned shipping container that, unlike the National Archives, has electricity and fuel for

⁵⁵⁵ Frederick Cooper, "Modernizing Bureaucrats, Backward Africans, and the Development Concept," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997): 64-92; Mamadou Diouf, "Senegalese Development: From Mass Nationalism to Technocratic Elitism," in *International Development and the Social Sciences: Essays on the History and Politics of Knowledge*, ed. by Frederick Cooper and Randall Packard (Berkeley: University of California Press, 1997): 291-319; Issa Shivji, *The Silent Class Struggle* (Dar es Salaam: Tanzania Publishing House, 1973).

⁵⁵⁶ Gabrielle Hecht, *The Radiance of France: Nuclear Power and National Identity After World War II* (Cambridge: MIT Press, 1998), 5.

its generator. The archive was created in 1996 to recognize the importance of energy and mining to Tanzania's economic history. The act of parliament that funded its creation was a response to the discovery of large reserves of minerals and natural gas by TPDC in 1979—ironically, the survey that uncovered these energy sources was a last-ditch effort to find valuable resources that could be bartered for oil during a foreign exchange shortage. The archive, then, stands as a public testimony to the determination of TPDC to contribute toward national liberation. For this reason, the archive presents a degree of transparency that is nearly impossible to find in other Tanzanian ministries or in contemporary debates about energy and mining. I gained access to the materials through the directors and archivist at TPDC. In addition to this collection, I interviewed former TPDC director, Sylvester Barongo, at one of his former offices in Dar es Salaam. He also provided me access to his own personal archive, though much of the material was duplicated at the archive.

LIBERATION

The road to independence was paved with oil. While Southern Rhodesia's embargo against Zambia and the accusations from *The Observer* linked petroleum to the transnational politics of African liberation, the day-to-day concerns of TPDC from 1969 to 1985 were national, or in their words, "local." There was not a single piece of nation-building policy that did not rely on some form of petroleum. Though politicians and academics argued about the best road to economic development, they all agreed about certain technological systems Tanzania needed to acquire in order to become self-reliant (*kujitegemea*). These must-haves included a long list of value-natural basics, including: roads, grease, motor oil, gas oil for factories and generators, kerosene for lighting in villages, fertilizers for cash crops, and jet fuel to keep hard currency coming in

from the tourist industry. Consider, for example, the process of production and consumption that was at the heart of Nyerere's agriculturally based modernization, *ujamaa*. By pooling their resources and labor, farmers in collective villages were to sell surplus crops to buy equipment—such as tractors, trucks, fertilizers, and milling machines—to allow increased output. Subsequently, the surplus was transported to a factory for finishing or to a port where it could be exchanged on the international market. The profits from selling raw materials at the village level were not only put into production, but also, into socialist consumption. Successful *ujamaa* villages became distribution centers where finished products—especially domestic goods like soap, sugar, coffee, clothes and kerosene—were distributed to farmers. They also became hubs for services such as schools and hospitals, which in turn, were designed to create a more productive socialist laborer.

Nyerere offered this agriculturally based modernization as an alternative to Leninist industrialization or Fordist capitalism by emphasizing the costly externalities of the latter programs. “This is in fact the only road through which we can develop our country—in other words, only by increasing our production of these things can we get more food and more money for every Tanzanian.”⁵⁵⁷ He continued by highlighting discrepancies between urban and rural development:

We must not forget that people who live in towns can possibly become the exploiters of those who live in the rural areas. All our big hospitals are in towns and they benefit only a small section of the people of Tanzania. Yet if we have built them with loans from outside Tanzania, it is the overseas sale of the peasants' produce which provides the foreign exchange for repayment. Those who do not get the benefit of the hospitals thus carry the major responsibility for paying for them. Tarmac roads, too are mostly found in towns and are of especial value to the motor-car owners. Yet if we have built those roads with loans, it is again the farmer who produces the goods which will pay for them. What is more,

⁵⁵⁷ Julius Nyerere, *Ujamaa: Essays on Socialism* (Dar es Salaam: Oxford University Press, 1968), 29.

the foreign exchange with which the car was bought also came from the sale of the farmers' produce.

However, the relationship between *ujamaa* and oil could not be reduced to Nyerere's distinctions between urban and rural or socialist and capitalist. In fact, his plan for rural self-reliance tied Tanzania closely to global petroleum markets. All-weather asphalt roads, critical for moving both people and goods, are made of residual fuel oil (RFO), the byproduct of refining crude petroleum into a finished product. The smaller motor vehicles used by government officials and international experts implementing their policies require motor fuel, and the large trucks and trains used for shipping raw and finished products between farm, factory, and port rely on diesel. The factories finishing raw products for domestic and international consumption use gasoil for their machines. So too did Tanzania's entire electricity network. According to an American ambassador, Nyerere even liked mechanized modernization, saying: "Oh those big machines, I love them. Every time I saw one today I felt good all over. Machines are what we need, big ones. Roads and big machines are the answer. Give us big machines and I will make a new world."⁵⁵⁸

Back at the village, kerosene was a staple of life used in lighting at homes and schools.⁵⁵⁹ In larger *ujamaa* villages, hospitals ran on generators that used gasoil. The finished goods such as soap and textiles sold in cooperative stores were products of diesel, RFO, gasoil, and other industrial lubes—they were shipped to a factory on trucks using diesel and on roads made of RFO; they were processed with gasoil (used in machine equipment and for electricity at the factory) and industrial greases and lubes; and they were shipped to a village with diesel and RFO. Finally, successful villages gained access to fertilizer processed in foreign oil refineries. In

⁵⁵⁸ Quoted in Paul Bjerk, "Sovereignty and Socialism in Tanzania: The Historiography of an African State," *History in Africa* 37 (2010), 284.

⁵⁵⁹ Clapperton Mavhunga also looks at "the village"—what he terms, a "mobile workshop"—as a product of mobilizing goods across space. See Mavhunga, "The Mobile Workshop," p. 11.

the offseason, small villages required 5-8 drums (1,500 litres) per month. A small town where crops were sold and services offered, however, consumed 84 drums (16,800 litres) of petrol per month and 24 drums (4,800 litres) of diesel.⁵⁶⁰ In sum, even the lowest input rural modernization schemes were closely tied to oil. Ironically, the more successful development policies were—in terms of growth in economies and population—the more Tanzania was linked to the changing structures through which oil was procured and commoditized.

Politicians and officials were well aware of the political nature of oil. In *Ujamaa: Essays on Socialism*, Nyerere discussed the risks of linking development to the technical assistance a petroleum-based infrastructure required. “The Arusha Declaration does not say that Tanzania refuses outside aid, or that there is something wrong in receiving it ... What the Arusha Declaration says is that the only group we will rely upon is ourselves; we will not organize our country and our life in such a way that there will be no development unless we get foreign money.” He cited the assistance of the United States to build the Tanzania-Zambia highway and Chinese aid to construct a railway as an example of acceptable technological assistance.⁵⁶¹ As Nyerere linked oil to capitalist cultures of consumption, Sylvester Barongo, writing in 1971 to celebrate 10 years of Tanzanian independence, emphasized the social value of oil new African countries. “Unlike developed/industrialised countries, developing countries depend on oil and natural gas for about 78 percent of their primary energy consumption from commercial energy sources; and alternatives, such as coal and nuclear power, have only limited possibilities for these countries, at least for the medium-term future.” Though new nations in the Global South consumed a minute amount of oil when compared to the Global North, it was disproportionately

⁵⁶⁰ TPDC, “Petroleum Products Supplies Along Tazara Corridor: An on the Spot Survey (15 August 1974),” M01314

⁵⁶¹ Nyerere, 148-149. On the language of aid and assistance in Tanzania, see Gilbert Rist.

important because it was both a driver and gauge of economic growth. In Tanzania, consumption rose from 337,000 metric tons in 1965 to 560,000 metric tons in 1971 and increased nine percent annually until 1981. In 1972, 55.9 percent of oil was used in transportation, 17.2 in factories, 11.9 in households, 5.7 to generate electricity, and 9.3 on large nation-building projects. In the transport sector, nearly 70 percent of petroleum was used in buses and railways while the rest was used by smaller vehicles like Land-Rovers. “From these few statistics, Barongo concluded, “one cannot resist the temptation to conclude that there is very little oil with ‘low social value.’”⁵⁶² While social and intellectual historians can emphasize the diversity of thought in Tanzania during the 1960s and 1970s, petroleum was the common denominator for all development ideas and processes of change. To get to the heart of modernization and economic liberation in Tanzania, we must turn our attention to the technological and economic systems these required.

There was no technological project more important to national liberation than the construction of an oil refinery. It was the magic wand of modernization. By gaining the capacity to refine their own fuel, officials believed they could take a costly global commodity and turn it toward nation liberation. In addition to the foreign exchange Tanzania could save buying crude instead of refined petroleum, refineries were the foundation of a modernized economy. Though they were first built to transform crude petroleum into finished oil that could be used in motor vehicles, industries, and lighting equipment, they also provided the possibility for producing other materials that were critical to modernizing and growing economy—materials that were being purchased with precious reserves of foreign exchange. Once the infrastructure for refining was in place, additions could be constructed that would allow a country to process RFO for

⁵⁶² Sylvester Barongo, “Petroleum Development in Tanzania,” *Tanzania Notes and Records* nos. 79 and 80 (1976), 115-116.

making asphalt, produce fertilizers, and even make plastics. A refinery, in other words, offered a technological solution to issues of self-sustainability by transforming costly external materials into domestically produced goods that could be exported to recoup foreign exchange. In TPDC's language, this process was about changing "non-local" into "local".⁵⁶³ A refinery meant Tanzania gained increasing control over the building block of a modernizing nation, oil, while being one step close to the complete production of its own roads, chemicals, and plastics. Refineries could also transform Tanzania's culture of science and technology. TPDC described refineries as "tool kits" where technological and scientific knowledge could be learned and experienced first hand in Tanzania.

In the 1960s, there was no shortage of international companies offering to build Tanzania a refinery. TPDC's archive has many detailed catalogues of firms—several supported by national governments—willing to build, finance, and oversee the operation of a refinery in Dar es Salaam. But choosing the best deal and most appropriate technological system was not an easy task. Tanzania did not have anyone in government in the mid 1960s with deep knowledge of oil equipment and markets.⁵⁶⁴ For this reason, they hired an Economic Intelligence Unit (E.I.U.) from London to consult with them on the bids they received. Two proposals were considered seriously—one from Stanvac Oil (a joint operation between Exxon and Mobil) and Ente Nazionale Idrocarburi (Eni), a company owned by the Italian government. Technical details were paramount because the type of refinery constructed assumed the availability of certain types of crude at estimated prices—the projection of which assumed the stability of oil markets for at

⁵⁶³ Barongo, "Petroleum Development in Tanzania."

⁵⁶⁴ Mitchell contrasts forms of expertise in coal versus oil extraction in *Carbon Democracy*, pp. 192-193. From locating to extracting petroleum, relevant knowledge is not dispersed as it was during coal mining.

least a decade. For example, the E.I.U warned against accepting the Eni offer because the technical equipment from the Italian firm would limit the type of petroleum it processed to light crude, the availability of which locked Tanzania into one or two major suppliers. Its long-term price on the Libyan Crude to be processed in Dar es Salaam was also too low. The E.I.U. suggested Tanzania accept the Stanvac offer on technical and practical terms. The Stanvac refinery would allow Tanzania to purchase a variety of crude types from various suppliers, giving it the freedom to explore many more options when bargaining for long-term supply contracts. Moreover, Stanvac could build on investments and knowledge it already had as an oil supplier during Tanzania's colonial period, and unlike Eni, it had its own supplies of crude oil.⁵⁶⁵ In spite of this advice—and a higher loan rate—Tanzania accepted the Eni offer.

Technical details aside, Eni was headed by Enrico Mattei, and it had cooperated with many communist countries, including the Soviet Union.⁵⁶⁶ The Tanzania Italian Refinery was finished in 1965 at a cost of 110, 731,000 Shillings to be repaid through dividends and company tax.⁵⁶⁷

With TIPER in place, Tanzania had achieved one of the most important goals of modernization: the ability to transform crude oil into finished products. The construction of TIPER also allowed the Tanzanian government to use oil as a tool of liberation. With Rhodesia's oil embargo, the construction of a pipeline to Ndola, Zambia was set to be the material instantiation of Tanzania's role in African liberation. "No country can develop without adequate sources and availability of petroleum products," TPDC wrote of the pipeline. Nearly 2,000

⁵⁶⁵ Andrew Coulson, *Tanzania: A Political Economy* (Oxford: Clarendon Press, 1972), 172.

⁵⁶⁶ The Economic Intelligence Unit, "ENI and Stanvac Proposals," Rhodes House Library, Oxford, United Kingdom. On the relationship between politics and the design of technological systems, see Hecht, *The Radiance of France*.

⁵⁶⁷ TPDC, "Progress Report on Petroleum: Refining," TPDC Progress Report on Petroleum Refining (Appendix VII-1973) December 1973, M0658.

kilometers long, the pipeline was constructed in 1968 by Eni and boasted seven pumping stations that allowed 115 cubic meters of flow an hour, an annual rate of 760,000 metric tons. It cost 47.5 million dollars and was financed by a joint loan from the Italian government to the governments of Zambia and Tanzania.⁵⁶⁸ Through it flowed crude oil Tanzania purchased from Iran, Qatar, and Saudi Arabia that was turned into a finished product in Dar es Salaam.⁵⁶⁹ While the apartheid embargo on oil in eastern African had been broken, much work remained to be done domestically. The TIPER refinery allowed Tanzania to reduce the import cost of crude, but procurement and distribution was still controlled by the multinational corporations with origins in the colonial period. Five international marketing companies—Shell/BP, Agip, Esso, Caltex, and Total—purchased crude oil from Middle Eastern countries, paid refining cost at TIPER, and then distributed it to different regions. Oil refined at TIPER was distributed to Central and Southern Tanzania, and also sold to Burundi, Rwanda, and Eastern Zaire. Northern Tanzania was supplied through Kenya's Mombasa refinery.

In spite of the share of money it received from processing costs, Tanzania was still dependent upon foreign marketing and distributing operations, and it still could not meet its oil requirements. This arrangement was tolerated through much of the 1960s because of the high cost of entering the international petroleum market and distributing domestically. But in 1969, the Tanzanian government discovered that the multinational oil companies were charging above market prices.⁵⁷⁰ As a result, it bought majority shares in BP/Shell, and it created TPDC as a socialist body to oversee the establishment of an “indigenous” oil market based upon socialist

⁵⁶⁸ “Tazama Pipelines Limited: Construction, Commissioning, and Operation of the Pipeline from Dar es Salaam to Ndola,” R.20/1/2/73, M00759.

⁵⁶⁹ “Crude Oil—Types and Sources,” R 20/1-4/1974.

⁵⁷⁰ Kassum, 118-123.

principles. TPDC was also charged with creating self-reliance through domestic exploration. Colonial geologists did not find minerals worth exploiting in Tanganyika, but TPDC forged ahead by opening petroleum searches to international tender. While most international companies considered the cost was not worth the payoff, Italian company AGIP used seismic surveys along Tanzania's coast and began to build drilling wells at Ras Machuis and Songo Songo.⁵⁷¹ The drilling was still exploratory, but the possibility of having national oil resources was too important an opportunity to miss. By the early 1970s, a foundation was in place for creating an "indigenous" oil market based upon refining, distributing, and exploring for petroleum. But it is also a foundation that requires reflection on the nature of economic liberation. National development is often discussed in containerized terms, by national historians inside borders or by dependency theorists inside South-South networks. But in this case, a key tools and resource of liberation and "self-reliance" lined Tanzania to old and new forms of dependency. Saskia Sassen reminds us that the national economies of European nations required imperial geographies for economic growth. The same is true for African countries during the 1960s.⁵⁷² Only with this relationship between territory, sovereignty, and resources in mind can we begin to understand the nature of decolonization and independence. More than a gradual process, it was spread around the world.

⁵⁷¹ A.H. Jamal. "Mafuta ya Petroli."

⁵⁷² Saskia Sassen, *Territory, Authority, Rights: From Medieval to Global Assemblages* (Princeton: Princeton University Press, 2006), 90.



Figure 1.14: This figure shows the externalities tied to procuring and distributing oil in Tanzania as the government attempted to create an independent and sustainable socialist economy.

Table 1.1

DISPERSED LIBERATION: A KEY

Place	Relationship
Italy	Refinery construction (Eni) Pipeline Construction Oil Marketing Company Exploration (Agip) Loans for Construction Foreign Personnel
London, U.K.	Economic Intelligence Units Banks for Clearing Lines of Credit (LIC) News about the spot market
New York, USA	Banks for Clearing LIC News about the spot market
North Carolina, USA	Contractors to build the “Freedom Road” to Zambia
India	Tankers to Ship Crude from Source to Dar es Salaam Source of rumors about oil trade Consultants for indigenous oil search
Switzerland	Home of Marcotrade
China	Freedom Railway—mechanism for moving oil in bulk
Kenya	Finished Products from Mombassa refinery to northern Tanzania
Libya	Processed and Crude Light Oil
Iran	Processed and Crude Light Oil Bilateral Agreements for Barter Until 1979
Iraq	Processed Oil Products
Kuwait	Processed and Crude Light Oil Hub of the Spot Market in the late 1970s
U.A.E	Processed Oil Products
Qatar	Processed Oil Products
Yemen	Processed Oil Products
Oman	Processed and Light Crude Oil
Algeria	Crude Oil for Barter
Angola	Crude Oil for Barter
South Africa	Minimal finished products (unknown)

BOMBSHELLS

The decade from 1970 to 1980 was defined by bombshells for TPDC. Four events changed oil markets in Tanzania and around the world.

The first was called the “Opec bombshell.” In 1969, the same year TPDC was established, the Organization for Petroleum Exporting Countries (OPEC) attempted its first oil embargo. It failed. But four years later, OPEC successfully wrestled control of oil markets away from multinational corporations and placed them within nationalized command economies. Ideologically, this type of move was consistent with the values of self-reliance in Tanzania. In practical terms, the road to development and self-reliance in Tanzania became bumpier and more uncertain. Between 1973 and 1974, oil prices increased four-fold and the US dollar devalued. Added to the increased price of oil and the decreased value of the dollar, Tanzania’s oil consumption increased at an average of 9% per year. TPDC described the affect of this change in a dispassionately worded memo: “At current prices the foreign exchange outflow is 17.5. million Shillings and the announced prices the outflow is 374 million Shillings. Given the fact that our foreign reserves are about 1,000 million T shillings, the burden on the economy is obvious.”⁵⁷³ With increased operating costs, multinational companies in Tanzania had fewer incentives to import. When Shell/BP warned in 1972 that it would reduce its importation by 20-25%, TPDC wrote that “the uncertain supply position and escalating prices are an increasing concern to Tanzania. Unfortunately though, Tanzania is in partnership with Shell/BP and Agip the entire management rests with the foreign partner. Additionally, there is the complex financing arrangements.” The latter item, “the complex financing arrangement,” was a critically important detail. In spite of the headaches multinational corporations gave the Tanzanian government, they

⁵⁷³ TPDC, “Petroleum Products,” R. 20/1-/10/73.

provided an interest free loan of 90 days that allowed the government to purchase on terms that would be difficult to arrange anywhere else. As TPDC sought to break free from the technological assemblage of foreign marketing companies, it had to ask itself where else it could obtain feasible terms of trade.⁵⁷⁴

Though TPDC labeled this turn of events “OPEC’s bombshell,” they also hoped it would be a watershed event that could alter the environment of global development. In spite of skyrocketing costs, Tanzanian officials wanted to use Arab oil nationalism as an opportunity to replace dependency on multinational companies with partnerships with newly powerful oil producing nations.⁵⁷⁵ Their hopes were not unfounded. As oil-producing countries in the Middle East began to flex their muscles, they also reached out to newly independent countries in Africa, stating unequivocally that the embargo was not intended to hurt their economies. The Shah of Iran spoke of creating aid programs with “surplus funds”; Algeria stated “the Arab countries would not hesitate to assist the developing countries”; the Prime Minister of Kuwait stated “it is our duty to improve the conditions ... of friendly developing countries of Africa.”⁵⁷⁶ All recognized the hardship of higher prices, and according to TPDC, they even showed “a willingness to help.” Tanzanian officials at TPDC interpreted this as a means of sharing the cost of buying and moving oil with the assistance of OPEC nations in the Middle East. TPDC officials had big dreams that could capitalize on Dar es Salaam’s location and the logistic difficulties created by the embargo against South Africa. In a mutually beneficial process, they believed they could turn Dar es Salaam into the largest oil processing and distributing hub in

⁵⁷⁴ TPDC, “Petroleum Products.”

⁵⁷⁵ TPDC, “Evolution of Crude Oil Prices Up to December 1974,” P.40/1-13/75.

⁵⁷⁶ TPDC, “Purchase of Crude Oil,” R.20/1-8/74.

eastern Africa: “Joint production and running of tankers is important if the producer-consumer relationship is going to come to fruition. In the days ahead bunkering of ships is going to be difficult particularly as the embargo on South Africa begins to bite. Therefore the Arab countries should consider the development of Dar es Salaam as a bunkering port on the Eastern Coast of Africa.”⁵⁷⁷ This hope of turning Dar es Salaam into a center of production and distribution went hand-in-hand with politics of liberation in eastern and southern Africa. Creating an oil hub in Tanzania would allow anti-apartheid governments to delink themselves from South African oil refineries, and by connecting themselves to Dar es Salaam, provide an opportunity to attack the oil infrastructure of apartheid without affecting their own economies.⁵⁷⁸

TPDC also suggested the joint ownership of refineries by Arab nations and Central African countries that would use Dar es Salaam as a port.⁵⁷⁹ If these dreams could not be realized, they hoped new methods of exchange could emerge. Ideally, TPDC suggested, a system of bartering in which oil could be exchanged for beef, cereals, shoe and hide products, or “the possibility of establishing a furniture factory” or joint fertilizer production. This way, Tanzania would not have to use foreign cash reserves on oil or other industrial equipment. At the very least, officials thought Arab development banks would provide favorable loans to African nations requiring oil. By 1975, Tanzania’s credit—the tool through which they could buy bulk amounts of oil at cheaper prices—was in a free-fall. The “OPEC bombshell” appeared to

⁵⁷⁷ TPDC, “Petroleum Products”.

⁵⁷⁸ Athur Jay Klinghoffer, *Oiling the Wheels of Apartheid: Exposing South Africa’s Secret Oil Trade* (Boulder: Lynne Reiner Publishers, 1989), 5-10; Martin Bailey, *Oil Sanctions: South Africa’s Weak Link* (London: The Stanhope Press, 1981), 7-12. Baily’s work points out the South Africa’s “weak link” was not oil. It drew 75% of its energy from coal and only 25% from oil.

⁵⁷⁹ *Ibid.*

reshuffle the deck of development politics by providing former colonies a new lifeline.

“Developing countries are faced with a difficult situation,” a TPDC memo stated. “It is important that they face this situation united.”⁵⁸⁰ But as Timothy Mitchell has recently argued, the OPEC embargo was “the crisis that never happened.” It did not wrestle political power away from the actors who controlled financial and technological systems or provide an opportunity to remake the oil landscape in southern and eastern Africa, but gave them increasing power to use energy as a tool for affecting global economic change.⁵⁸¹

OPEC’s bombshell was compounded by disappointment toward Middle Eastern countries as partners in international development. TPDC never found an investor willing to turn Dar es Salaam into eastern and southern Africa’s oil producing and distributing hub. Nor did the terms of trade produce the desired unity among newly independent nations. Instead, the solution among OPEC was to produce a parallel structure of development banks to those already in existence with the backing of the World Bank (WB) and International Monetary Fund (IMF). For example, OPEC made 200 million dollars available to member nations of the Organization for African Unity at a “nominal interest rate.”⁵⁸² Saudi Arabia established the Saudi Arabian Development Fund; Kuwait the Arab-African Bank; and the Islamic Conference explored means of giving favorable treatment to developing countries. But these loans were small Band-Aids on a deep wound. “Lower availabilities of oil required it be purchased regardless of its price,” TPDC reported. By this time, the problem was not interest rates, but a dearth of foreign exchange in Tanzania’s bank of commerce. “This, in turn, forced the price up to \$17 a barrel. Even though

⁵⁸⁰ *Ibid.*

⁵⁸¹ Mitchell, *Carbon Democracy*, 193-199.

⁵⁸² TPDC, “Crude Imports,” R.20/1-1-/74.

Tanzania is still among the allies of oil producing nations—and for this reason was not forced to reduce its import amount—the weight of this price is burying us.”⁵⁸³ This bombshell, far from restructuring the oil market for nations like Tanzania, spread dependency from one part of the world to another. The Arab countries with their massive surpluses can afford to make grants to the developing countries hard hit by the oil crisis. However this does not appear to be the case and concessionary prices are not possible since OPEC ruled out a two-tier price system.”⁵⁸⁴ For TPDC, the “OPEC bombshell” was more than the skyrocketing of prices. It was also the diminishing possibilities of creating new economic relationships in a changing world.

Table 1.2

ALL OIL PRODUCT IMPORTS (IN METRIC TONNES AND MILLIONS OF TANZANIAN SHILLINGS)⁵⁸⁵

	1972	1973	1974	1977	1979	1981	1983
Amount	1,067,00	1,067,739	1,039,683	866,140	881,278	747,517	745,261
Cost	268.7	277.2	680.6	862.6	1,482	2,051.0	2,311.7

Table 1.3

CRUDE OIL IMPORTED FOR REFINING AT TIPER (IN METRIC TONNES AND MILLIONS OF TANZANIAN SHILLINGS)⁵⁸⁶

	1972	1974	1977	1979	1980	1981	1984
Amount	814,396	859,673	675,036	570,701	694,195	466,114	675,893
Cost	102	455.6	549.9	774.5	1,250.2	1,109.6	2,357.4

⁵⁸³ No author. “Hatua za Kupunguza Matumizi ya Mafuta,” M00845.

⁵⁸⁴ TPDC. “Crude Imports,” R.20/1-1-/74.

⁵⁸⁵ Compilation of data from: TPDC, “Takwimu za mafuta yaliyoingizwa nchini kwa kipindi cha mwaka 1974-1984,” M01156; “Summary of Imports,” Petroleum Products Import/Export Summary (Crude, WP, RFO), 1970-1983, M01168.

⁵⁸⁶ TPDC, “Crude Oil Imports Summary, 1972-1986,” M00409.

Two more bombshells were linked to Tanzania's costly technological infrastructure. TIPER, though an example of successful transfer, was operating at mass capacity by 1978. It was designed to last until 1983. In spite of pumping out 6,000,000 barrels of oil per year, the refinery was falling beyond the market demands of Tanzania's economy even though it was operating perfectly and had already received a "debottlenecking" procedure.⁵⁸⁷ This limitation was costly. It not only meant Tanzania needed to import expensive finished oil products, but also, that upgrades to the refinery would have to be shelved. These included important add-ons including the ability to produce asphalt from RFO and petrochemicals for fertilizers and plastics. Such projects could have provided a boon to TPDC's access to foreign exchange. Following OPEC's oil embargo, the export price of RFO for asphalt increased by 700% from \$7.20 to \$50 per barrel.⁵⁸⁸ By 1975, TPDC was exploring means of expanding production output and diversity, requiring investments greater than 40 million shillings.⁵⁸⁹ Worse yet, rising oil prices revealed the incompatibility between Tanzania's refinery and its market needs. In addition to costing 1.16 dollars to process a barrel of oil—30 cents more than the Mombasa refinery—it was tooled to put out the "light products" used for small vehicles instead of the heavy distillates needed in trucks and industry. In one of the absurd ironies of socialist modernization, the TIPER refinery produced light distillate oils that were compatible with the small motor vehicles associated with capitalist consumption. But *ujamaa*, as both an agricultural and industrial project, relied upon middle distillates that could be used in industries, large trucks, on railroads, and to produce

⁵⁸⁷ "Tazama Pipelines Limited."

⁵⁸⁸ ANIC S.p.a., "Bitumen Plant at Dsm Refinery," 5 April 1977, Bitumen Plant Construction Proposal April 1977 M00105.

⁵⁸⁹ No author. "Mafuta ya Petroli."

grease and lubes for factories. Though a small technical detail, this oversight magnified Tanzania's dependence upon externally refined middle distillates at the height of their cost.

Beyond the refinery, the ability to move oil was a huge challenge. As Timothy Mitchell has pointed out, there is great power in the ability to transport petroleum over long distances.⁵⁹⁰ Though procuring and refining crude is critical to modernization, the real trick is to distribute it. For TPDC, this was both an international and a domestic issue. When TPDC entered global oil markets, Tanzania had only one tanker that could ship petroleum. In the long run, the parastatal suggested Tanzania use a World Bank loan to start a shipping fleet. In the short run, Tanzania relied upon the Shipping Company of India to deliver crude oil from a producing nation to TIPER.⁵⁹¹ As a result, for every shipment of crude oil brought to Dar es Salaam, part of the savings in foreign exchange went back to India. It was equally difficult to distribute finished product domestically. As an agricultural modernization project, *ujamaa* not only depended upon the procurement of oil, but also its distribution to the villages that were supposed to serve as models for sustainable development. Even after the construction of the TAZARA railway with Chinese assistance—a project that was supposed to facilitate development along a technological corridor—*ujamaa* villages in the region continued to face oil shortages for basic needs. Distributing oil across the nation via rail would require 170 large tanks; at maximum capacity, Tazara railway could take only 46 per day, and realistically, it was 23.⁵⁹² Even when adequate quantities of oil were sitting in Dar es Salaam, getting them to factories in places like

⁵⁹⁰ Timothy Mitchell, *Carbon Democracy: Political Power in the Age of Oil* (New York: Verso, 2011), 36-39.

⁵⁹¹ TPDC, "Crude Imports," R.20/1-1-/74.

⁵⁹² "Taarifa Kuhusu Hali ya Mafuta Nchini," Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

Mwanza proved so difficult that factories were shutting down in 1981.⁵⁹³ At one point 179 out of 405 wagons to move by rail were out of service.

Unfortunately for two textile factories in northwestern Tanzania, these cuts came as they were expanding production, and consequently required 30,000 more liters per month.⁵⁹⁴ A TPDC memorandum from 1973 summed a situation that did not change through the 1980s. Villages along transport corridors were still struggling to obtain basic needs because there were no large fuel stations, including petrol for tractors and boring equipment for wells.⁵⁹⁵ The situation away from main transport corridors was even worse, especially in northwestern Tanzania, where recurrent diesel shortages meant harvested coffee crops—a valuable source of foreign exchange—could not be moved. The same was true for washed out dirt roads that inhibited the transport of cotton in Mwanza and Shinyanga and for large quantities of manure needed for cash crops.⁵⁹⁶ Annual requirements of manure that needed to be spread around the country exceeded 60,000 tons. Sometimes half of this sat in silos.⁵⁹⁷ And when crop production

⁵⁹³ “Matatizo ya Umeme na Mafuta Kuendesha Viwanda Vya Mutex na Mwatex,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁵⁹⁴ “Kumbukumbu za Mkutano Kuhusu Tatizo la Mafuta Katika Ukanda la Ziwa Victoria, Jumamosi, Tarehe 1/8/81 Saa 4,00 Asubuhi,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁵⁹⁵ Tanzania Petroleum Development Corporation, “Huduma za Mafuta ya Petroli Kando Kando ya Reli ya Uhuru,” R. 20/1-9/73.

⁵⁹⁶ “Taarifa ya Utekelezaji wa Malengo ya Kujinusuru Kiuchumi Uuzaji Mazao Nchi za Nje, Januari 1981 – Juni 1981,” Kamati ya Waziri, Makatibu Wakuu ya Mipango ya Kujinusuru Kiuchumi: Matatizo ya Mafuta, 1981, M01896.

⁵⁹⁷ “Mpanga wa Taifa Kujihami wa Mwaka 1981/82—Kumbukumbu za Kikao cha Tana (5) cha Kamati ya Makatibu Wakuu Uliopanyika Wizara ya Mipango, Tarehe 6 Julai, 1981 Saa 4 Asubuhi,” Kamati ya Waziri, Makatibu Wakuu ya Mipango ya Kujinusuru Kiuchumi: Matatizo ya Mafuta, 1981, M01896.

resulted in food shortages, corn from the United States and the Soviet Union required diesel before it could be shipped to affected areas.⁵⁹⁸ The list goes on and on. Oil had the capacity to transform societies, but it had to be distributed through a costly technological infrastructure.

Table 1.4

REGIONAL DISTRIBUTION OF REFINED PRODUCTS⁵⁹⁹

Region	Amount (metric tons)
Central Line and Southern Highlands	347,113
Dar es Salaam Area	128,384
Zanzibar and Pemba	8,273
Northern and Lake Zone	87,238
Mtwara and Surrounding Areas	26,287
Tanga	29,821

The fourth, and final, event of the 1970s was a series of literal explosions. First, was the bombing of Iran by Iraq. Throughout the 1970s, Tanzania received between 40 and 60 percent of its crude petroleum from Iran because it could supply the light Arabian oil TIPER required. The Iraqi invasion of its neighbor in 1980 completely cut off half of Tanzania's oil supplies at a time when it was incredibly difficult to forge bilateral agreements. The Iran conflict further stabilized global oil markets for TPDC: "The Iranian conflict meant less flow of crude oil into world markets and consequently OPEC decided to exploit the situation by hiking the 1978 prices by 14.5 % ... This unethical behavior by OPEC has sent our forecasted bill off gear completely. We are now faced with not only fantastic high prices of white supplies, but also with uncertain

⁵⁹⁸ "Mkutano wa Waziri Mkuu Juu ya Hali ya Chakula Nchini Uliofanyika Siku ya Jumatano Tarehe 27 Mei, 1981 Katika Ofisi ya Waziri Mkuu," Kamati ya Waziri, Makatibu Wakuu ya Mipango ya Kujinusuru Kiuchumi: Matatizo ya Mafuta, 1981, MO1896.

⁵⁹⁹ TPDC, "Distribution of Refined Petroleum Products: Problems and Possible Solutions," D.401/1-16/75, M00841.

sources of supply.”⁶⁰⁰ When Tanzania and Iran negotiated a long term contract for 400,000 metric tons of light crude, bombs got in the way. “The load from Iran however has not been possible because of frequent Iraqi aerial attacks on Iranian seaports including the loading terminal of Kharg Island. Not many shippers are willing to send their vessels to this war zone. For those adventurers willing to risk their vessels, the War Insurance Premium is very prohibitive—nearly 2.5 percent of the hull value.”⁶⁰¹ War Insurance Premiums were thus added as another possible drain on Tanzania’s foreign exchange.

Two other explosions took place closer to home. The first was the destruction of an oil-drilling rig at Songo Songo off Tanzania’s southern coast in 1976. With the assistance of India’s Oil and Natural Gas Commission, TPDC oversaw the drilling of a natural gas well to 2,880 feet, where it encountered a pool of gas and exploded.⁶⁰² The mishap did not derail the corporation’s search for natural resources, but it killed any immediate hopes of using Tanzanian petroleum to finance development. Officials had planned to use indigenous natural gas reserves to process fertilizers for cash crops, a project that could have greatly reduced Tanzania’s dependence upon foreign fertilizers. Then, in 1979, Iddi Amin’s Uganda invaded in northwestern Tanzania. The victory cost Tanzania an estimated 500 million dollars in foreign exchange, equivalent to about four years of oil supply or to improvements that could have been invested in expanding

⁶⁰⁰ TPDC, “The Position of Petroleum Products vs Foreign Funds Allocation,” 18 April 1979, BOT Import License Application Forms TPDC July 1982, MO1816.

⁶⁰¹ “Board Paper: Department of Operations and Marketing,” Petroleum Products—Import Requirements Crude Oil Import Logs, 1977-1982, M01071.

⁶⁰² Kassum, 127.

capabilities. By dispelling a communist threat from East Africa, Tanzania had hoped neighboring and Western countries would help finance the war. They were wrong.⁶⁰³

Combined, these events forced a reassessment of energy use in Tanzania. “Save Fuel, Save the Nation,” became the mantra of TPDC and the goal of every ministry in the government. The report called for rationing by limiting the sale of all petroleum products to three days and for limiting car use to working hours only. In addition to a Sunday driving ban, the report targeted a reduction in UDA bus operation in Dar es Salaam; better care and loading procedures for city buses; that places of leisure close at 10 p.m.; a means of using fuel oil instead of gas oil to create electricity; using coal instead of diesel for tea processing; using steam engines instead of diesel on trains; suppressing the importation of gas stoves and insisting on coal for citizens. Finally, the report suggested a national campaign about the political significance of oil to national development.⁶⁰⁴ But the oil problem in Tanzania had nothing to do with consumption levels. Saving the nation required more than saving fuel. TPDC needed to find a way to procure and move bulk shipments of crude oil in spite of runaway petroleum costs and their nation’s foreign exchange crisis. Oil consumption, TPDC often reminded ministries, was a sign of a healthy modernizing economy. Saving fuel to save the nation was contradictory to anyone who believed in economic growth and self-reliance through modernization.

SURVIVAL

Modernization meant transforming crude oil into national development, and for this reason, it also meant that for nations like Tanzania, the end point of development was not self-reliance, but

⁶⁰³ Coulson, *Tanzania: A Political Economy*, 310-311.

⁶⁰⁴ No author. “Hatua za Kupunguza Matumizi ya Mafuta,” M00845.

survival. By 1981, Tanzania's economy was in serious trouble. One internal memo claimed the economy "will collapse between late 1981 and 1982" while another acknowledged the rise of "proto-*magendo*" markets around the country.⁶⁰⁵ As the Ministry of Commerce scrambled to resuscitate economic growth, TPDC's staff became important players in plans to alleviate "collapse" and to save the collective socialist economy from a slide into "proto-*magendo*". Across the country, shortages in diesel limited the ability of *ujamaa* villages to circulate cash crops, while for industries, getting supplies to factories and running their machines was increasingly difficult.⁶⁰⁶ "Of all the problems standing in the way of pushing our economy forward, one of the biggest is getting oil for our machines to function." The policy of economic survival dictated that officials find a way to do more with less. In 1980, TPDC requested 1,785 million shillings of foreign reserves to buy refined and unrefined oil; it received only 900 million. Oil use was rationed so the country could make it to the next purchase in July and August. But when this period arrived, 1,200 million shillings were given to purchase oil instead of the 1,440 million requested. Sitting across from in his old office in 2012, Barongo described this process to me by drawing a graph. With limited foreign exchange, Tanzania bought oil on credit, usually a three to four month supply with three months until repayment. This meant that

⁶⁰⁵ "Taarifa ya Utekelezaji wa Mpango wa Taifa wa Kujihami Kiuchumi," Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁶⁰⁶ "Taarifa ya Utekelezaji wa Mpango wa Taifa wa Kujihami Kiuchumi," Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

every time the country needed oil, they were paying for at least two—and usually, several—previous loads of oil.⁶⁰⁷

Thus began the period of “survival” (*kujinusuru*—literally, to save oneself), an official policy designed to guide Tanzania through a constraining economic period. The problem was not oil use—the report listed figures showing steadily decreasing use of oil between 1979 and 1981—but rather their inability to fuel economic growth by purchasing oil. Shortages affected every area of the economy and all aspects of life. While food and factory production did not meet goals, they were compounded by the difficulty of moving goods and raw material in bulk. At times, factories did not have anything to process. Soap factories were used as an example of the spiraling effect of oil shortages with Lake Soap, Kirani Industries, Tip Soap, and Kamal and Mirakai closing, leaving only two producers for domestic supplies. Estimate domestic demand was 200,000 cartons per month, but production fell to only 15,000 by November of 1981. Similar shortages occurred in the production of bike and car tires, corrugated sheets for housing, cotton wool and sanitary towels, house utensils, construction equipment, toothpaste, and agricultural implements.⁶⁰⁸ While TPDC usually had between 10-30 days of oil in reserves, during this time, the country only had stock of gasoil and kerosene to last for one week.⁶⁰⁹ When the bank provided limited funds, TPDC scrambled to figure out ways to distribute with 41 and

⁶⁰⁷ Sylvester Barongo, interview with author, 2 July 2012, Dar es Salaam, Tanzania.

⁶⁰⁸ “Taarifa ya Utekelezaji wa Mpango wa Taifa wa Kujihami Kiuchumi,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁶⁰⁹ “Supply of Petroleum Products in the Country January-December 1981,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

15% shortfalls in Premium and Regular fuel respectively. They had to do the impossible: get fuel with foreign exchange.

Table 1.5

“NOT THAT BAD”—JULY TO DECEMBER, 1981⁶¹⁰

	Stock (metric tonnes)	Daily Consumption	Days to Last
Liquefied Petroleum Gas	387	16	24
Aviation Fuel	0	7	0
Synthetic Oil	5,841	209	27
Gas Oil	11,405	750	15
Industrial Diesel Oil	2,972	149	19
Furnace Oil	4,846	450	10
Kerosene	5,936	200	29

Procuring oil become such a challenge that minimal supplies was described as, “generally, not that bad.”

Table 1.6

SELECT INDUSTRIES—JANUARY TO JUNE, 1981⁶¹¹

Exporter	Product	Percent of Minimum Needed to Rescue Economy
Coffee Authority	Green Coffee	54
Sisal Authority	Sisal Fiber	35
Mwadui Diamonds	Diamonds	71
SUDECO	Sugar	30.59
Shell & BP (state owned)	Gas and Oil	8
Tantimbers	Timber Products	13
Tanzania Tea Blenders	Tea	28
T.C.C.	Cigarettes	32.39
Tanganyika Packers	Corned Beef	126
General Tyre	Tires and Tubes	30
Tanzania Saruji	Cement	3.78
Total		44.5

⁶¹⁰ No author. “Taarifa kuhusu hali ya mafuta nchini,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁶¹¹ No author. “Taarifa ya utekelezaji wa malengo ya kujinusuru kiuchumi uuzaji mazao nchi za nje, Januari 1981 – Juni 1981,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

Table 1.6 (cont'd)

Rescue efforts set minimum export goals for saving the economy. Nearly every explanation for shortfall is linked to petroleum. The total of 44.5% reflects an average of activities not listed above.

There were a couple of ways to do this. The first was to play the spot market. By 1979, Tanzania depended upon the spot market, a “freely competitive market in which a very small part (below 10 percent) of OPEC’s exports were traded.”⁶¹² Without the foreign exchange needed for creating lines of credit for long-term supplies, the spot market offered short-term answers to critical development needs. This meant relying upon individuals located at important international financial markets and looking for large quantities of crude without knowing the price.⁶¹³ Communications were done by Telex, and the growth of the spot market introduced a new actor to the “oil picture” in Tanzania.⁶¹⁴ In the 1960s, Tanzania dealt with the multinational companies who had deep-rooted procuring and distribution markets; in the early 1970s, they learned to deal with Middle Eastern states nationalizing their resources. From the late 1970s, however, they were forced to enroll the aide of international consultants who sold information and access to tankers of oil being held at ports. These consultants created trust by providing their biographies over telex. Consider the telex biography of Nasser Al Salem, the founder of Warba National Contracting Co.: “I joined the Kuwait National Petroleum Co., April 20 1968 in the personnel department. I worked there for 15 months and was then transferred to the International Marketing Dept. in London. Subsequently, I worked in that department for almost 8 1/2 years. I

⁶¹² Dermot Gately, “A Ten-Year Retrospective: OPEC and the World Oil Market,” *Journal of Economic Literature* 22 3 (Sept. 1984), 1101.

⁶¹³ Telex to TPDC, “Telexes on Fuel Imports, Exports, and Crude Oil Spot Cargo, 1978-1979,” M00936.

⁶¹⁴ Telex to TPDC from Abdul Razak Al-Awadi, Warba National Contracting Co., “Telexes on Fuel Imports, Exports, and Crude Oil Spot Cargo, 1978-1979,” M00936.

left KNPC in Jan. 1968 to pursue private business.” Al Salem goes on to list a vast international record, working from New York to Pakistan and sitting on national committees and boards of international business. The goal was not to sell technical credibility, but to sell his connections to an internationalizing oil market. He ends his telex by giving TPDC insider information about spot oil he gleaned “just returning from New York.”⁶¹⁵ These consultants took advantage of supply shortages and price volatility. From their privileged places at centers of production and international finance, they controlled information on price and availability at a time of emergency in Dar es Salaam. It meant that almost everything, from pricing to shipping, was out of TPDC’s hands.

In the context of this new market, TPDC sent its own people to gain knowledge about the spot hubs. Roy Chaudhri up residence in Kuwait where he searched for knowledge and relationships that could be leveraged for oil. He wrote Barongo the following:

I made approaches to 3 different sources and now have something firm from sources.

1. I talked to an oil brokerage firm of international repute in London. They deal on basis of spot buying of oil on international market. I find their price excessive but reproduce the tlx I received from them last Friday.

Quote: ‘Ref December crude oil requirement for Dar es Salaam refinery we may be able to arrange supply of 50,000 tons cargo of Arabian Light for lifting December but as I warned you there is absolutely no possibility that present official price of dollars 12.70 per barrel for will apply as this crude is currently commanding a premium of up to dollars 2.00 per barrel...

2. The other is this Royal contact I have in Saudi who has his own company. I have discussed the matter with him on the phone and he told me that he could

⁶¹⁵ Telex to TPDC from Nasser Al-Salem, “Telexes on Fuel Imports, Exports, and Crude Oil Spot Cargo, 1978-1979,” M00936; Warba National Contracting Co. provides a short history online at:http://www.warbagroup.com/index.php?option=com_content&view=article&id=47&Itemid=53.

make it possible for you to have this oil direct from Petronin in Saudi Arabia if you would guarantee him a commission of 50 U.S. cents per barrel that you buy from Petromin.

The above appears to be the cheapest and the best chance we have of obtaining oil. After receiving above telex I did a lot of checking up and it appears that the prince is a serious person and can effectively perform.⁶¹⁶

Winning the competition for the spot market required quick decisions. Barongo awoke to this message from Chaudhuri one day in 1978:

O was awake whole night expecting your call. Many countries are around and spot cargoes when available are grabbed by the highest bidder at unbelievably high price. If there is favorable response by now from India to give us a load it is better for me to withdraw from this market. If cargo is a must from here may I have your okay to go up 2 dollars per barrel, repeat two dollars per barrel, over yesterdays approved rate if absolutely necessary. Otherwise you can indicate the ceiling up to which I can bid. In the meantime let CA be in consultation with NBC (the national bank) to transfer a lc (line of credit) to London at bare minimum time on receipt.

Chaudhuri received a reply stating, "Price considerations irrelevant as absence of crude is more costly." This reply, sent from Barongo in Dar es Salaam, underscores the conundrum of steering modernization policies in Tanzania. The only thing more costly than the systematic procuring of oil on the spot market, was to run out of crude altogether.⁶¹⁷

Another method for survival was to barter raw goods produced in Tanzania for crude oil, preferably a desirable type of petroleum. An official policy of the Ministry of Energy states: "These fuel shortages have forced us to think about long-term methods for getting oil on terms we can rely upon year after year. One way to do this is to explore possibilities for entering long-term contracts (five years or more) with friendly nations like Algeria and Iraq so that we get a

⁶¹⁶ Telex to TPDC from anonymous (telex unreadable), "Telexes on Fuel Imports, Exports, and Crude Oil Spot Cargo, 1978-1979," M00936.

⁶¹⁷ Telex between Roy Chaudhuri and Sylvester Barongo, "Telexes on Fuel Imports, Exports, and Crude Oil Spot Cargo, 1978-1979," M00936.

certain amount of oil and they get coffee, meat, sisal ropes, etc. (Barter Trade).” Citing a provision agreement with Algeria to exchange an unspecified amount of oil for 20,000 tons of coffee and 200 tons of frozen meat, the policy concluded that bartering provided a means of “using the resources we have to get out of day after day and month after month of not having oil.”⁶¹⁸ The report concluded by issuing warnings about the policy, and the nature of negotiations meant they were conducted by ministry officials, not TPDC. Historical evidence about these negotiations is scant, but they involved big players who had the authority to grant resource concessions without parliamentary approval, such as future Tanzanian president Benjamin Mkapa.⁶¹⁹ As the South African scandal from the opening of this chapter shows, bartering was a survival strategy with high risk and low reward.

Procuring oil became so difficult that even achieving the 40 to 60 percent of the minimum required for economic “survival” became a success.⁶²⁰ Barongo recalls sleepless nights waiting at the office telex machine anxiously waiting to hear about a spot cargo, the clearance of a line of credit, or a bilateral agreement that could get them three more months of supply. Just as he had told Chaudhuri in a telex message from Dar es Salaam to Kuwait, the immediate cost of oil no longer mattered, only that they could get it. “There were times I thought we would not make it and run completely out of oil. That never happened. But I lost a lot of

⁶¹⁸ “Mpango wa Taifa wa Kujihami Kiuchumi wa Mwaka 1981/1982: Maelezo Mafupi Kuhusu Item Na. 4 na 5 za Agenda,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896.

⁶¹⁹ Kassum,

⁶²⁰ “Report of the Fuel Conservation Committee,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896. On “success in failure,” see Jones, *Desert Kingdom*,

sleep.”⁶²¹ From a bureaucratic standpoint, Barongo and his colleagues were heroic. In Kassum’s words, their efforts reveal the type of “ingenuity” and perseverance required to run development programs in independent Africa.⁶²² The more important point, however, is that development became a continual process of survival and obsolescence. In the late 1970s and early 1980s, the dream that a universal unfolding of economic growth could occur through technology transfer was replaced with the normalization of crisis and the goal of mere economic survival. TIPER was no longer the magic wand of modernization, nor did the procurement and distribution of oil offer Tanzanian officials an opportunity to remake a former colonial territory into a socialist society. Moreover, survival was a benchmark that could be continually revised as global structures and policies changed.

As a strategy of development, the virtue of survival was its ability to buy time. As one official put it: “This a consolidation and survival programme ... Faced with collapse in 9 to 12 months any survival strategy that does not consolidate and rebuild use of existing capacity is of no value. At the least it wins time for maneuver or a price of good luck—eg a first in Brazil, on oil strike in the delta—without its own viability depending on good luck.”⁶²³ In 1979, the Ministry of energy gambled on a hunch of Tanzania geologist. Using 65 million dollars—the equivalent of six months of oil—the Ministry and TPDC oversaw a geological survey by a Canadian Company. With large reserves of natural gas, copper, mercury, and numerous sites with uranium, Tanzania became rich in minerals over night. “All of these could be the foundation for developing the country, building an industrial base and extending the agricultural

⁶²¹ Sylvester Barongo, interview with author, 2 July 2012, Dar es Salaam, Tanzania.

⁶²² Kassum, 123.

⁶²³ R.H. Green, “A Programme for Survival.”

sector. The prospect was exciting,” Kassum wrote in his memoir.⁶²⁴ At a time when state-led development was increasingly untenable for most Tanzanians, officials at TPDC and the Ministry of Energy were celebrating a new dawn for economic modernization. There is no greater legacy of development than this proximity of crisis and progress and the unevenness of survival.

From the official perspective, Tanzania’s economy did not survive. Liberalisation measures were under way as early 1983 and were formally implemented when Nyerere retired, giving way Ally Hassan Mwinyi. By this time, the “proto-magendo” economy that ministers connected to oil shortages had stabilized as the real economy for most Tanzanians, and it would soon be coopted and exploited by neo-liberal institutions. In spite of economic downturns, TPDC survived and even thrived. It survived not only because of the information and experience it had collected battling oil markets during the 1970s, but also because of bureaucratic structure. TPDC moved money between sellers and consumers, but never kept large amounts of money on its books for an extended period of time. As debt weighed heavily on other parastatals, TPDC was one of the few government institutions in Tanzania to break even during the socialist period. And now, its archive in Dar es Salaam stands as a tribute to the centrality of oil to economic development and survival.

CONCLUSION

This chapter tells the story of the men who learned about Tanzania’s place in the world through changes in global oil markets. At its most general level, it raises important questions about the relationship between technology and development. In historical and development literatures

⁶²⁴ Kassum, 124.

alike, external knowledge and technology is offered as a solution to underdevelopment and dependence. In spite of the high cost of purchasing and coordinating large technological systems like oil refineries and oil markets, achieving development—as defined in the manner it is most often deployed—demands such an interaction. Developed societies have asphalt roads, lighting systems, hospitals, and must be able to take control of some percentage of domestic consumption. They have to be able to make soap and get it to their citizens; they have to be able to pick up crops and move them around. The list goes on and on. They have to have oil. There was, then, never a possibility of liberation or independence if we rely on the most basic definitions of these terms. There was only the possibility of joining a vast network of nations, companies, ideas, and technological systems and learning that the rules of the game are as fickle as they are stubborn. The relationship between technology and development is not liberation, but of obsolescence and survival. Even success creates crisis. TIPER did what it was built to do. But increasing demand and use of oil in Tanzania was not only an indication of economic growth and success; it was also the precursor to even closer ties to a costly external resource.

Second, this chapter argues for an understanding of nation building as a material process. In the 1960s and early 1970s, officials did not write often about the link between social engineering and material things. In the early 1980s, however, they connected oil shortages to the emergence of a “proto-magendo” economy. Creating a political and economic entity that followed official ideology rested upon the ability of the government to procure crude oil, transform it into a finished product, and to move it across the country.⁶²⁵ This, in turn, required

⁶²⁵ “Taarifa ya Kamati Ndogo Ya Utekelezaji wa Ugawaji na Usambazaji wa Bidhaa Muhimu Nchini,” Kamati ya Waziri, Makatibu Wakuu wa Mipango ya Kujinusuru Kiuchumi—Matatizo ya Mafuta Nchini, 1981, M01896; R.H. Green (Special Assistant to the Minister of Finance), “A Programme for Survival: Some Bones Toward a Skeletal Structure,” Kamati ya Waziri,

lines of credit, numerous tanker trucks, hotels in Kuwait, and a telex machine. Social worlds were not created through ideology, but through the ability to use technology to transform social and political lives. Finally, this chapter introduces a new kind of historical actor into the history of independent Africa. Scholarship on the independent period has moved between political elites and masses of citizens; lost in the middle are technologists who are often written off as corrupt or inept bureaucrats. Africa is also home to technologists who were important political actors in the decades after independence. Learning to see the world from their perspective provides an important vantage point for understanding the changing structures within which African nations struggled for independence.

What does this tell us about modernization? On the surface, there seems to be a great diversity of thought about modernization and the way it unfolds. In Dar es Salaam alone, Julius Nyerere, Walter Rodney, Clive Thomas, Issa Shivji, and Abdal Rahman Babu all published powerful works of political economy in the decades following independence. But if we follow the material substance of these plans, they all rely upon the ability to procure and use oil as the lever of development. In other words, in all of its official forms, modernization was path dependent. To believe in any form of modernization as development is to tie a country into a network of ideas and goods that require continued access to mass quantities of oil. As universal ideology of progress and an answer to the challenges of independence, modernization was crude in every way.

CONCLUSION

As I have written this dissertation, I have repeatedly returned to that small stretch of Unduli Road in my mind. Sitting one hundred yards apart, Brian Tshaka's *bubu* garage and the Upanga branch of TPDC sit together naturally, overcoming any binaries that would place them at opposite ends of a theoretical spectrum. In this dissertation, I argue that the *ad hoc* nature of *bubu* garages and formal institutions like TPDC were (and indeed, still are) complementarity parts of a single system of technology and politics that was itself, composed of a wide array of inputs from the precolonial, colonial, and independent periods. My argument is not that there are multiple, overlapping, or even alternative modernizations. Rather, modernization has always been a more diverse historical process than its theory, proponents or critics have recognized.⁶²⁶ When I began this research, I sought to disentangle these inputs and make sense of them in their singularity. But in interviews and in garage inventories alike, I learned that the complexity of technological spaces and lives required an analytic framework not only more flexible, but also more tolerant of contradictions and unresolved tension. Colonial cultures of technology sought to displace, but ultimately relied upon African knowledge and labor. The ability to repair cars promised to transform Africans into modern, industrial men; but the locus of innovation was found in informal spaces and controlled by uneducated experts. Even TPDC, an official organ of the socialist state, found modernization to be a process of survival requiring tinkering and constant maintenance.

⁶²⁶This is similar to Bruno Latour's argument in, *We Have Never Been Modern* (Cambridge, Mass.: Harvard University Press, 1993) and David Edgerton in, *The Shock of the Old: technology and global history since 1900* (New York: Oxford University Press, 2007). In Tanzanian history, Geiger's *TANU Women* achieves this for political movements by showing the reliance of formal politics on the language and networking of urban women.

The importance of these technological histories is found not in the distance between rhetoric and reality. They also reveal the impotence of modernist historical narratives and theories of modernization for examining structure and agency in Tanzanian history. Scholars of Africa have fought the exclusionary nature of modernist narratives for five decades.⁶²⁷ And yet, historians must still push against standards of economic, political, and technological progress considered neutral and objective across the discipline. We often hear that Africa's societies, economies, and political entities have not worked because they do not align with standards forged in Europe and the United States over the past two centuries. In particular, technology, or its absence, is singled out as both a cause and symptom of the continent's underdevelopment.⁶²⁸

The preceding chapters tackle this perspective through both social and material histories of modernization. By using the terms "work" and "function" heuristically, this research highlights the practices, social subjects, and bodies of knowledge that have been critical to political and economic power since the 1870s. Here, the details of technological use, design, and repair take on political significance by providing an alternative to the binaries attending modernization theory and by removing history from the pages of colonial and national documents. Instead, they show modernization and development as historical processes that broke down and required repair, often relying upon the very actors and technological practices they disparaged for their maintenance. Understanding development as a historical process is helpful in two ways. First, it wrestles definitions of social, economic, political, and technological progress away from

⁶²⁷ Geiger, *TANU Women*; Cooper, *Colonialism in Question*, 9-11, 96.

⁶²⁸ Ralph Austen and Daniel Headrick's, "The Role of Technology in the African Past," *African Studies Review* 26 nos. 3/4 (1983): 163-184.

authorities. Second, it brings diversity to processes that are too often monolithic; it allows us to understand universal movements through particular experiences instead of the other way around.

Since the late nineteenth-century, development has been founded upon the idea that Africa simultaneously requires and resists change. By erasing long-standing cultures of mobility and technology, European travelers presented Africa as a place ripe for technological transformation. For nineteenth century humanitarians, roads provided a tool of mass social engineering and a solution to the slave trade. For colonial administrators, automobility solved the problems of rail transport and gave officials a political technology suitable for indirect rule. The impact of European technologies was underwhelming, incomplete, and came at a high cost—costs paid not only in capital, but through underpaid and forced manpower. But the distance between the lofty ideals of administrators and the results on the ground should not be interpreted as failure. Though colonial administrators often operated in a world of binaries, the distinction between success and failure was murky. And for the historian, focusing on success or failure can distract from the real power play at the heart of development. When cars broke down and roads refused to be all weather, British administrators rarely reflected upon the wrongheaded nature of their policies, the ridiculousness of their experiments, or the deep knowledge they found in African laborers. Instead, they added to the nineteenth-century travel writing tropes of Africa as a place that had long resisted the very changes it required. As they did so, the importance of African knowledge, technology, and labor to colonial technopolitics was decreasing visible in official sources even as it was increasingly important to the “field engineering” of administrators like Longland. The result of colonial development schemes was a powerful paradox: the more imported development schemes failed, the more Africa needed a type development that was conceived and driven by external forces.

Colonial and national officials were not alone in defining or pursuing development. Chapter 2 illustrates how three groups used mobility to create networks, markets, and moral economies on the road. As colonial and national officials struggled to understand and control these Africans, the latter worked within and against structures of rule, drawing upon older forms of affiliation, long-standing cultures of gendered adulthood, and using precolonial technologies to pursue a common goal: to create a settled and secure life at home. Their individual stories and social networks make space for talking about development as a social process with multiple meanings and actions instead of a policy implemented and defined from the top-down. They also provide a starting point for examining modernization and development as diverse, and even, contradictory, social and technological processes. Chapter 4 presents uneducated African men as car experts and their *bubu* garages as the center of technological innovation and education from the late 1940s to the present. In both colonial and national periods, technical education was considered a tool of social engineering for turning educated boys into modern men. Instead, *bubu* garages became spaces where both men and cars were made, each in ways that pushed against the social and technological ideals of authorities. And yet, government officials relied upon these unlikely experts when their own programs failed. Like the *thumnithumni* bus system that emerged in the 1970s in Dar es Salaam, *bubu* garages were not an anomaly to the more recognizable forms of modernization; they were a system of repair that included socialization processes, spare part exchanges, competition between mechanics, and a shared pedagogy. Wrestling definitions of modernization and development away from authorities requires a recognition of such spaces and practices as significant elements in the function—socially, economically, and technologically—of everyday life in Tanzania.

Though cars and roads are the departure point for this research, this dissertation is about a system of technology and politics in Tanzania that has shaped the possibilities for social change and economic empowerment since the late nineteenth-century. Chapter 6, “Crude Modernization,” shows that we cannot separate an infrastructure of automobility from railways, telex machines, lines of credit, kerosene in villages, diesel for tractors, or gasoil for creating domestic markets through industrialization. They were all part of a single technological system that promised to transform collective lives by creating new economies and by providing new tools of political power. Such promises were not the result of decolonization or a “postwar moment”; nor did they breakdown because Africa resist the very changes it needs. Instead, these post-colonial experiences were part of a system of power with origins in eastern Africa in the 1870s when abolitionists promised to end slavery and save souls by replacing caravan paths with European roads. This system stabilized in Tanganyika during the 1920s with motor vehicle and road building experiments, and with the experiences of administrative officers who found themselves reliant upon African manpower to create the most basic of infrastructures for colonial motoring. Costs were always too high; labor was always difficult to stabilize; and plans for social and technological change constantly oversimplified—or completely ignored—their targets for change. For these reason, the distance between rhetoric and reality we often see in histories of development was not a product of corrupt post-colonial states or unique to the era of African independence. It was forged in the 1920s and 1930s through the racial politics of colonial development; and fittingly, it stabilized at the same time that modernization became popular as a theory with universal applicability.

As I traveled the country, watched repairs, and tried to learn myself, I wrestled with the nature of this technopolitical regime. How can *bubu* garages and oil trading be part of a single

system? How do the seemingly trivial economic activities of migrant laborers and drivers fit alongside the formal economic structures that we are told are most powerful and most important for understanding historical change? How can the promises of technological change be resolved with the repeated and almost predictable breakdown of modernization's promises? My interlocutors answered these questions for me by sharing their life histories and by gently explaining that I needed to think differently about power, structure, and agency. They constantly collapsed the border between formal and informal, state and non-state, and licit and illicit; and they suggested that I learn to do the same. Modernization *bubu* does not deny the influence of formal institutions to affect change, but it does deny their monopoly on power and the binaries that have driven their logic for over a century. At the same time that it brings diversity to universal claims of progress, it also forces us to think about modernization and development as processes that will always require tinkering.

APPENDICES

APPENDIX 1: ARCHIVES CONSULTED

- Tanzania:
- Tanzania National Archives, Dar es Salaam (TNA)
 - Zanzibar National Archives
 - TNA in Dodoma and Mwanza
 - Tanzania Petroleum Development Corporation
 - Usafiri Dar es Salaam*
 - The National Library, NBA Room
 - The Library at the University of Dar es Salaam, East Africana Room
 - The National Development Corporation Library
 - The National Institute of Transport Library
 - The Ministry of Finance Library
 - Personal archive of Hawa Ramadhani
 - Personal archive of Brian Tshaka
 - Personal archive of Frank Taylor
 - Personal archive of Hamisi Hamadi
- UK:
- British National Archives at Kew (BNA)
 - School of Oriental and African Studies (SOAS)
 - King's College, London
 - British National Library
 - Rhodes House, Oxford (RH)
 - Imperial War Museum, London
 - London Museum of Science, Wroughton

APPENDIX 2: INTERVIEWS

Table 1.7

INTERVIEWS	
Name	Place (all in Tanzania)
1. Hamadi Saidi wa Mwenye	Tabora
2. Mrisho Sulemani Minchande	Mkulanga
3. Shabbani Mohamudi	Tabora
4. Ali Isa	Tabora
5. Abraham Mumba Rihani	Tabora
6. Elias Mwaifani	Dar es Salaam
7. Zenabu Saluum	Tabora
8. Amina Musa	Tabora
9. Hadija Mahomedi	Dar es Salaam
10. Kanuti Jonas Mitali	Morogoro
11. Hassan Saidi	Iringa
12. Regani Musa	Dar es Salaam
13. Jumanne Juma	Dar es Salaam
14. Saidi Hussein Abdallah Butani	Dar es Salaam
15. Ibrahim Moses	Morogoro
16. Rashidi Ramadhani	Dar es Salaam
17. Mohamed Pallo	Morogoro
18. Juma Ramadhani	Dar es Salaam
19. Raphael Juma Maliki	Morogoro
20. Abdallah Mtamira	Tabora
21. Suleman Haruna Mgunda	Tabora
22. Ramadhani Anzaruni Kiboko	Kigoma
23. Abraham Mumba Rihani	Kigoma
24. Salum Ede	Tabora
25. Jalalah Shabani	Tabora
26. Saluum Abdallah	Morogoro
27. Mariamo Seiff	Kigoma
28. Mariamo Mwanagayo	Ujiji
29. Zenabu Saluum	Tabora
30. Maria Pimo	Tabora
31. Hamadi Mwinyi Mkuu	Dar es Salaam
32. Hatibu Halfani	Dar es Salaam
33. Jonas Rweyemamu	Dar es Salaam
34. Ufadhili Issa	Dar es Salaam
35. Donald Mwakaegula	Dar es Salaam
36. Kassum Jaha Abdulla	Tabora
37. Kondo Mfaume	Morogoro
38. Bushiri Ali	Iringa

Table 1.7 (cont'd)

39. Fadhili Ramadhani	Tabora
40. Kassian Duma	Morogoro
41. Mbaraka Kassim	Zanzibar
42. Jumanne Mrisho	Tabora
43. Hamisi Hamadi	Ujiji
44. Haji Hamisi Haliyamtu	Ujiji
45. Kondo Maenda	Dar es Salaam
46. Brian Tshaka	Dar es Salaam
47. Ayubu Abdi Kitumba	Ujiji
48. Yusufu Ulimwengu	Ujiji
49. Mohamedi Kibwana Kondo	Dar es Salaam
50. Ramadhani Madudi Malambo	Iringa
51. Mohamed Sugamiko	Iringa
52. Musa Muikikwa	Iringa
53. Abdallah Suleiman	Tabora
54. Peter William Mabula	Tabora
55. Hassan Saidi	Tabora
56. Yusuf Iddi	Tabora
57. Peja Mboga	Tabora
58. Jonas Mbawala	Dar es Salaam
59. Omari Mayunda	Dar es Salaam
60. Frank Taylor	Dar es Salaam
61. Omari Kamulika	Dar es Salaam
62. Abba Kazue	Tabora
63. Rashidi Juma	Dar es Salaam
64. Ramadhani Saidi	Dar es Salaam
65. Sylvester Barongo	Dar es Salaam.

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